NPS Form 10-900
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NAT. REGISTER OF HISTORIC PLACES
NATIONAL PARK SERVICE

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United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials and areas of significance, enter only categories and subcategories listed in the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Battery 223

other names/site number

2. Location

street & number Beach at Cape May State Park ☐ not for publication

city or town Lower Township ☐ vicinity

state New Jersey code NJ county Cape May code 009 zip code 08212

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I certify that this [x] nomination

☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property

[x] meets ☐ does not meet the National Register criteria. I recommend that this property be considered significant

☐ nationally [x] statewide ☐ locally. ☐ See continuation sheet for additional comments.

Signature of certifying official/Title — Date 4/14/08

Amy Cradic, Assistant Commissioner Natural & Historic Resources/DSHPO

State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet for additional comments.

Signature of certifying official/Title — Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that this property is:

Signature of the Keeper — Date of Action

[✓] entered in the National Register. ☐ See continuation sheet. — for Edson H. Beall — 6.25.08

☐ determined eligible for the National Register. ☐ See continuation sheet.

☐ determined not eligible for the National Register.

☐ removed from the National Register.

☐ other, (explain:)

5. Classification

Ownership of Property
(Check as many boxes as apply)

- ☐ private
- ☐ public-local
- ☒ public-State
- ☐ public-Federal

Category of Property
(Check only one box)

- ☒ building(s)
- ☐ district
- ☐ site
- ☐ structure
- ☐ object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
1		buildings
		sites
		structures
		objects
1	0	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions)

Defense
Military Facility

Current Functions
(Enter categories from instructions)

Vacant/Not in Use

7. Description

Architectural Classification
(Enter categories from instructions)

mid-20th century

Materials
(Enter categories from instructions)

foundation Wood pilings
walls Concrete
roof Concrete
other

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets.)

8 Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- [X] **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- [ ] **B** Property is associated with the lives of persons significant in our past.
- [ ] **C** Property embodies the distinctive characteristics of a type, period or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- [ ] **D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria considerations
(mark "x" in all the boxes that apply.)

Property is:

- [ ] **A** owned by a religious institution or used for religious purposes.
- [ ] **B** removed from its original location.
- [ ] **C** a birthplace or grave.
- [ ] **D** a cemetery.
- [ ] **E** a reconstructed building, object or structure.
- [ ] **F** a commemorative property.
- [ ] **G** less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)

Military

Period of Significance
1942-1944

Significant Dates
1942

Significant Person
(Complete if Criterion B is marked above)

Cultural Affiliation
N/A

Architect/Builder
Army Corps of Engineer, Phila.
White Construction

Narrative Statement of Significance
(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography
(cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- [ ] preliminary determination of individual listing (36 CFR 67) has been requested
- [ ] previously listed in the National Register
- [ ] previously determined eligible by the National Register
- [ ] designated a National Historic Landmark
- [ ] recorded by Historic American Buildings Survey # _____
- [ ] recorded by Historic American Engineering Record # _____

Primary location of additional data

- [X] State Historic Preservation Office
- [ ] Other State agency
- [X] Federal agency (National Archives, Mid-Atlantic)
- [ ] Local government
- [ ] University
- [X] Other (Cape May Point State Park, Cape May Historical Society)

Name of repository:

10. Geographical Data

Acreage of property Less than one acre

UTM References
(Place additional UTM references on a continuation sheet.)

	Zone	Easting	Northing		Zone	Easting	Northing
1	18	503852	4309177	3			
2				4			

☐ See continuation sheet

Verbal Boundary Description
(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification
(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Margaret Newman, historic preservation specialist

organization Holt•Morgan•Russell Architects date 2/19/08

street & number 821 Alexander Road telephone 609.452.1070

city or town Princeton state New Jersey zip code 08540

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items
(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

name State of New Jersey, Division of Parks and Forestry

street & number 501 East State Street, P.O. Box 404 telephone 609.984.0370

city or town Trenton state New Jersey zip code 08625

Architectural Description

Constructed in the fall of 1942 and completed in June 1943 as part of the Harbor Defenses of the Delaware, Battery 223 is made of thick reinforced concrete with a substantial blast proof roof. It is roughly T-shaped with a long rectangle running east west parallel with the shoreline and a center block extending south. Although originally covered with earth, today it is fully exposed set upon wood pilings, an incongruous man-made object within the natural setting of the beach. Its floor plan has twenty rooms including several shell rooms, a plotting room, a switchboard room, a latrine and a chemical warfare room among other features.

Today, Battery 223 is located on the beach within Cape May Point State Park (Photo 1). When it was first constructed, it was located 900 feet from the shore; by the 1970s, however, its pilings were underwater due to beach erosion that is severe at this location. In 2005, to stave off the erosion, the Army Corps of Engineers began a beach replenishment project that brought 1.4 million cubic yards of sand to the Cape May beaches (Photos 2 and 3). This project set Battery 223 back from the shoreline, re-establishing it in the sand as it was originally constructed. Plans call for the beach to be replenished every four years by an additional 650,000 cubic yards of sand. However, the erosion continues and at high tide, it is once again close to the water, although still dry.

The exterior of Battery 223 is a series of windowless blocks of formed concrete set on wood pilings which, when constructed, were below grade. Throughout the structure, there is significant staining and efflorescence with areas of spalled and missing concrete. The north façade (Photo 4), the original entrance to the Battery, has a projecting entrance block roughly centered where the original doors were; they are gone and the opening is boarded. There were originally wing walls that protected the entrance; these have fallen and are now offset triangles of concrete in the sand. In the large eastern block, there are two other openings that are boarded up. These provided fresh air for the systems. According to the original drawings, there were also wing walls at these openings but there is no evidence these were ever built. Also on the north façade, there is a small chimney at the set back of the western block; this is for the latrine on the interior.

The west elevation, the one that is the closest to the Cape May Point visitor center, has three staggered blocks set at right angles from each other (Photo 5). The walls are smooth concrete with chamfered corners to the flat roof above. At the southern end, there is an entrance to the battery with wing walls and shell storage units (Photo 6). The east elevation is similar to the west with a three-block configuration and entrance. On this elevation, however, the northern-most block is larger than its counterpart on the west (Photo 9). The south elevation along the shore is a single wall of concrete that turns north at the ends; on the interior, this is the corridor that runs the full length of the building. It has the same chamfered corners at the roof juncture. On this elevation, a thinner concrete slab is visible above the roof. This is from the Navy's tenure when a Quonset hut was added on top of the structure; this slab is the floor of the added building (Photos 7 and 8). Farther south, now mostly under water, are the concrete pads for the 6-inch guns. These were located just south of the east and west entrances to the Battery.

Originally, there was a battery command station on the roof that extended above the earthen cover. It was a seventeen-foot by seventeen-foot concrete square with a viewing slot. It is no longer extant and aside from the original drawings, there is no evidence of its existence.

The interior of Battery 223 is T-shaped. An east west corridor runs the full length of the southern side of the Battery; it is the top bar on the capital T-shaped floor plan. Off this corridor is a series of small rooms. These were storage rooms for shells, powder and other operational equipment for the guns. Each of these rooms had a door, some wood, others metal. In conjunction with these inner doors, there was a large outer door on a metal track that covered the shell room doors; this added further protection from the shells within. Today, only remnants of the doors and casings remain (Photo 10). Each of the rooms had electricity with a light in the center of the ceiling; power came up from conduits under the floor in applied surface conduit that ran to plain, utilitarian fixtures. Each room also was painted. In most cases, the paint was light grey on the upper half of the walls and darker grey on the lower although in some shell rooms, blue paint was used. In total, there are twelve small rooms for the gun operations—six to the west and six to east. In other words, the east and west ends exactly mirror each other.

Roughly centered on the top bar of the capital T-shaped floor plan is a northern section that forms the stem of the T. This section was the heart of the operations of the Battery. A corridor bisects this block and ends at the main entrance to the structure at the north. To the east of this corridor is the power plant. It consists of the Power room, muffler gallery and water cooler room. The floor height of this side is below the rest of the Battery by two feet. To the west is the plotting complex which includes the plotting room, switchboard room, latrine, chemical warfare service (CWS) room and an airlock.

These rooms to the west including the switchboard plotting and CWS rooms and the latrine were occupied by the soldiers. All of these had electricity, heat and air conditioning with red vinyl tile floors and drop-tiled ceilings. The walls were painted grey. The doors were metal covered wood; some remain.

In the plotting room, coordinates sent from the fire control towers were plotted. Arm setters manned the plotting table, which had posts, each representing the tower assigned to it. One arm setter set the coordinates from the prime tower; the other set the coordinates from the secondary tower. The coordinates enabled the setters on the board to pinpoint the target. This was then translated into aiming directions. The guns were fired and the process was duplicated with the corrections derived from the splash coordinates.

The switchboard room connected to the plotting room and is where the coordinates were received from the fire control towers. There is a pit that was the signal corps splicing pit; it retains conduit sleeves that were used for antennas. A cable trench runs the length of the west wall with intermittent slots behind. The slots were for the communication equipment that was in this room. Although the original drawings indicate that there was a partition in this room, it is no longer present.

The latrine, chemical warfare service (CWS) room and an airlock make up the northern end of this section. The air lock ensured a safe atmosphere in case of a chemical attack. Between the latrine and CWS room there is a terra cotta block wall; the rest of the interior is concrete. The latrine had a beaded board toilet stall. The rest of the rooms were unadorned, housing the necessary equipment.

To the east of the north south corridor were the mechanical rooms including the power room, muffler gallery and water cooler room. The power room housed three diesel generators and a switchboard; the slabs on which they sat survive.

There is a large opening in the southwest corner; this provided air intake. There is another opening in the southeast corner where there was a ventilating fan. The walls are painted blue and grey and the original acoustical ceiling survives. Within the debris on the floor, remnants of the light fixtures survive; they are green porcelain over metal. The muffler gallery contained exhaust pipes and mufflers for the power room equipment. In the southwest corner is the opening for the ventilation fan from the power room. At the northern end, there is a large vent opening to the outside. The water cooler room housed the radiators used to cool the generators. There were three evaporative water coolers housed here. There also is an exhaust duct opening to the exterior in the northeast corner and an air intake along the southern wall. There is blue paint in this room.

Generally, Battery 223 is in good condition and retains its historic integrity. Its construction of thick concrete has deteriorated little over the years. While there are areas of minor spalling, cracking and deterioration, for the most part the Battery is sound. On the interior, while many of the smaller architectural details like the doors and lights have deteriorated or are lost, the floor plan and general character of the Battery remains in good condition.

Statement of Significance

Begun in the fall of 1942 and completed in June 1943 as part of the Harbor Defenses of the Delaware, Battery 223 was an integral part of Fort Miles based at Cape Henlopen, Delaware. It was equipped with two 6-inch guns and worked in conjunction with several other batteries at Cape Henlopen to protect resources in Delaware, Pennsylvania and New Jersey. Battery 223 is eligible for the National Register of Historic Places under Criterion A for its association with the U.S. coastal defense system established during World War II.

The 1940 Modernization of the Coastal Defense was a significant chapter in the history of the defense of the United States. Done in reaction to the belief that the American defenses were inadequate and events on the world stage indicated it was time for modernization, the upgrading of the American coastal defenses was begun when the Harbor Defense Board drafted a new harbor defense master plan and began construction in 1940. This modernization program was to be comprehensive, covering both coasts of the United States, Hawaii, areas of the Caribbean, the Panama Canal Zone and beyond. By the end of World War II, about two-thirds of the system was constructed. Battery 223 is an important surviving element of this system of national protection.

The design of coastal fortifications during the 1940 Modernization was mass produced and affected by technological advances in weaponry during the 1930s. On the weaponry side, the development of big guns with long ranges meant that fewer fortifications were required to protect the same area. On the fortification side, the increased range of enemy armaments from both battleships and airplanes meant that all the components of the permanent harbor defenses needed to be able to withstand a direct hit. This resulted in structures that were built of thick, reinforced concrete. In conjunction with this, standardization of designs led to mass produced fortifications system-wide. From the west coast to the east, the fortification components were homogenized.

Battery 223 is representative of this. It was one of three of the 200-series, designating it as a 6-inch battery, built within the Fort Miles system. Constructed of reinforced concrete with a thick blast proof roof, it was constructed in the dunes and covered with earth to add additional protection and camouflage it from the enemy. Its floor plan, like the other 6-inch batteries in the system, had several shell rooms, a plotting room, a switchboard room, a latrine and a chemical warfare room among other features. It had electrical power, heat, air conditioning and water. It was manned twenty-four hours a day and worked in conjunction with the other batteries of Fort Miles, including the big 16-inch gun of Battery Smith, to provide protection to the wide harbor of the Delaware.

History of Cape May Point

In 1623 Cornelius Jacobus Mey of the Dutch West India Company sailed into the Delaware Bay. He called the land to the west Cape Cornelius and the land to the east, Cape Mey. South of Cape Cornelius he named for an associate Thymen Jacobsen Hindlopen. Hindlopen and Mey stuck and became Cape May and Cape Henlopen. At the time of the arrival of the Dutch West India Company, the Sickoneysincks, Lenape Indians, occupied both areas.[1]

The first landowner of Cape May Point was Jonathan Payne. In 1710, John Stites purchased the land from Payne. It remained in the Stites family through the eighteenth century. Captain Alexander Whilldin acquired the land through marriage to Jane Stites. He built the first house here in the early 1800s. In 1816, at the end of what is now called Sunset

Boulevard but was originally called the Cape Island Turnpike, the road that has connected Cape May Point to Cape May since the beginning of the nineteenth century, Captain Wilmon Whilldin (a relative of Alexander) established a landing for a passenger steamship that provided service between Cape May and Philadelphia. For most of the nineteenth century, upon arriving at Cape May Point, passengers boarded hotel wagons and traveled to Cape May on the Cape Island Turnpike. Since at least 1823 but possibly as early as 1785, a lighthouse has existed at Cape May Point. The current lighthouse was built in 1859, making it the third (or possibly fourth) such structure.

Aside from immediately around the Lighthouse, the land to the east, the location of Battery 223, has remained undeveloped. An 1850 map shows the Lighthouse and to the east the "Wilden Estate" with no structures in the areas. No structures can be found on several nineteenth century maps. Map research confirm that the battery is the first structure built in the immediate area.[2]

The steamer spurred development along the Cape Island Turnpike[3]; an early map of Cape May Point shows houses along the road as early as the 1840s.[4] With the introduction of rail service, passengers used the Delaware Bay and Cape May Railroad, which brought them from the landing to Cape May City along the oceanfront by the Lighthouse (and Battery 223). Development followed; houses sprang up at Sea Grove, an 1875 Presbyterian Resort constructed near the Lighthouse and rail line.[5] Several hotels accompanied Sea Grove; only one remains and is now St. Mary's By-The-Sea, a convent located just to the west of the Lighthouse. The steamship ceased operation in 1903.

Since at least the mid-nineteenth century with the Lighthouse, there has been a federal presence at Cape May Point. The Coast Guard had a reservation here when the first guns were erected; a 4-gun 155mm battery was installed at the end of 1937. With the implementation of the modernization of the Harbor Defenses of the Delaware at Fort Miles, there was military occupation of Cape May Point. In addition to Battery 223, there were barracks, officers' quarters, an infirmary, a mess hall and a theater. Battery 223 was decommissioned in 1944, and in the 1950s the Navy took over some of the Army base. The Navy was gone from Cape May Point by the end of the 1960s.

With the departure of the army and coast guard, Cape May Point State Park was developed, establishing a wildlife refuge at the tip of New Jersey. Today, Battery 223 is included in the 230-acre park. Severe beach erosion has changed the context of the Battery in its sixty-five year history. When it was first constructed, it was located 900 feet from the shore.[6] In the 1930s, it was estimated that the shore line of Cape May was receding at a rate of roughly three feet per year.[7] However, it occurred more quickly, in places by as much as fifteen feet per year. By the 1970s, the pilings of Battery 223 were underwater. In 2005, to stave off the erosion, the Army Corps of Engineers began a beach replenishment project that brought 1.4 million cubic yards of sand to the Cape May beaches. This will be replenished every four years by an additional 650,000 cubic yards of sand.[8] This project has set back Battery 223 from the shoreline, re-establishing it in the sand as it was originally constructed. However, erosion continues and the water nears again.

Coastal Defense History of the United States

The construction of Battery 223 was a continuation of the long important history of protection of coastal defense of the United States. In 1794, the newly formed United States undertook its first national program of construction for its own protection. This system focused exclusively on its seacoast communities where distinctly defensive forts were built to

discourage attack as well as provide protection if an attack were to occur. In the eighteenth century, guns on shore were more dependable and accurate than those afloat. The mere presence of guns and fortifications, therefore, was seen as a reliable method of deterrence. Fortifications and guns were placed to deny the enemy a strategic position or at least, to force the enemy to move into positions pre-selected by the defender into open locations or otherwise unattractive areas. By placing the forts in the right location, an economical use of personnel and equipment could be assured. This was an important feature of these early fortifications; the American public was generally against possessing a standing, professional army. These characteristics of the first system of fortification—defensive and economical—continued throughout the history of American coastal defense in which eight generations of systems were developed.[9]

Following the first system, which emphasized open works and earthen parapets, more permanent fortifications of stone construction, were built. The second system of construction was built from 1804-1812, just before the impending War of 1812. These forts were often star shaped. Fort McHenry in Baltimore and the island fort, originally called Fort Wood, which now houses the Statue of Liberty are two extant examples from this period of construction. The third and fourth systems of seacoast fortifications 1817-1867, were devised by the Bernard Board and largely continued the second system. However, rather than star-shaped, hexagonal structures were constructed. Fort Sumter in Charleston, South Carolina is one such fortification that survives. Following the Civil War where technological innovations in armament had made the single fort a hindrance rather than a strategic advantage, the fifth system, 1870-1875, evolved into dispersed batteries over large stretches of land. This system was further honed in 1885 when President Cleveland and his Secretary of War William Endicott established a board to review the entire coastal defense infrastructure. Known as the Endicott Period (1890-1910), the sixth system emphasized weapons rather than fortifications for the first time. Reinforced concrete batteries were built to blend into the surrounding; disappearing carriages allowed guns to withdraw and become hidden when not in use. Heavy guns were installed around the continental harbors. This period lasted through the Spanish-American War and into the first years of the twentieth century. Fort Mott, located in Pennsville, New Jersey, is a fort with features from this era as is Fort Hancock. Because New York Harbor was America's most important port, Sandy Hook was chosen for America's first concrete gun battery, Battery Potter. Named in honor of Civil War General Joseph Potter, this battery was completed in 1895 with two 12-inch guns;[10] its design is emblematic of the Endicott Period.

In 1905, President Roosevelt and his Secretary of War William Howard Taft devised the seventh system known as the Taft Period. This system accessorized the Endicott period defenses with searchlights and electrification. A new aiming system was developed during the Taft Period. Prior to this, sighting instruments on individual guns did the aiming. This was highly ineffective for moving targets being largely dependent on educated guessing. The new system relied on optically sophisticated instruments, mathematical triangulation and instant transmission of data for highly accurate aiming. This aiming system continued to be used during World War II including for the guns of Battery 223. Under Roosevelt and Taft, there was also a reorganization of the Army; field and coastal artillery units were separated as distinct entities. The Army was installed as the defender of the coast in permanent fortifications with the Navy as free roamers, responsible for the protecting the waters beyond. Several batteries at Fort MacArthur outside Los Angeles are from the Taft era. Most of the fortifications from this era were built outside the continental United States, including several found in Puerto Rico. During World War I, there was some construction of rapidly erected guns in previously undefended positions. However, this was emergency construction and was abandoned within a year or two. Guns were

installed in Cape May in the 1918 period but were removed within a few years. The 150 years of American coastal defense history informed the final period of seacoast defense fortification construction erected during World War II.[11]

Evolution of the Harbor Defenses of the Delaware

With each generation of coastal defense, fewer fortifications were required. This was a result of increased technology of armament in which guns became longer-ranged, more flexible and more accurate. It also was because increased commerce demanded more spacious harbors and wider river mouths leading to fewer strategic positions with passable ports (see Figures 1-4). For the defense of the Delaware, this evolution is clear. In 1750, the first guns were mounted on Society Hill, in the heart of the city of Philadelphia. On the eve of the Revolution, Mud Island was fortified. This island was a few miles below Philadelphia and remained the principal protection through 1820 when a third generation of defense was built at Fort Delaware on Pea Patch Island, forty miles down river. This was supplemented through the years to become a three-tiered defense—including Fort Dupont and Fort Mott—that lasted almost 100 years. Some of the batteries of this system are still extant and date from 1896-1903. The line moved down an additional fifty miles with the emplacement of four long-ranged guns erected after World War I at Fort Saulsbury. Finally, the entire area of the river and its harbor was defensively enclosed with the installation of Fort Miles on Cape Henlopen and Cape May during the Harbor Defense Modernization of World War II begun in 1940 (Figure 3).[12]

The evolution of the Harbor Defenses of the Delaware can be seen with a list of the forts, the guns and the years they were in operation. This list from the Coastal Defense Study Group website shows the technological improvements and their manifestations within armaments. For World War II, one 16-inch gun at Fort Miles was supported by several 12-inch, 6-inch, 3-inch, 90 and 155 mm guns.

Harbor Defense Modernization, 1940-1945

In 1931, the Army established a Harbor Defense Board to supervise the execution of projects involving coastal defense. With the growing tension between the United States and Japan, funds spent until 1938 focused almost exclusively on the Pacific Coast (although four 90-mm guns were installed at Cape May Point in 1937). The threat of war in Europe in 1939 prompted expansion to the Atlantic Coast. At this point in history, the U.S. Navy was on par with the British. However, the Army was little more than a token force that was ill prepared to counter threats to its security.[13] With this in mind, in 1940, the Harbor Defense Board surveyed the seacoast defenses. This review led the Chief of Coast Artillery to say, "With but few exceptions our seacoast batteries are outmoded and today are woefully inadequate..."[14]

Few military principles were as enduring as that of the superiority of guns ashore over those afloat. However, the technological advances in artillery developed in the 1930s made this 200-year maxim obsolete; no longer could this principle be the basis of a sound American defense system. This brought on an increasing awareness of the threat posed to permanent harbor defenses by long-range artillery from ships and carrier-borne aircraft. No longer was the mere existence of coastal artillery a deterrent from attack; technology had advanced so that air and sea borne armament was a true threat. An entirely new system was required in which new, farther-reaching guns were installed and fortified to withstand attack. This prompted the Harbor Defense Board to draft a new harbor defense master plan that took into

account these new requirements. The resulting document called for a comprehensive program of construction to produce a complete American system of seacoast fortifications.[15]

The Secretary of War, the War Department and Congress approved the Harbor Defense Modernization Program in September 1940. Some of the proposed construction was to be entirely new, like at Fort Miles. Other construction supplemented existing fortifications. The 1940 Plan included the defense of nineteen harbors along both coasts of the United States as well as the Caribbean, Hawaii and along some of the Canadian coast. These defenses were based on new, paired 16-inch or 6-inch guns. 16-inch guns, the most massive of coastal artillery yet developed, had a range of twenty-six miles. 6-inch guns like those on Battery 223 could hit targets that were nine miles out. In addition to the gun batteries, this modernization program also included supplemental construction like fire control towers, searchlights, additional fixed and mobile guns for antiaircraft, railway guns, mine fields with their own protective units of searchlights and secondary armament, beach defenses with automatic weapons and barbed wire barricades and barrage balloons.[16] Fortifications from Florida to Maine on the East Coast were upgraded or installed. The West Coast was equally modernized; California, Washington and Oregon were installed with new armaments. The Harbor Defenses of Portland, Narragansett Bay, Long Island Sound, the Delaware, Charleston, Tampa Bay, San Francisco and Puget Sound among others all saw modernization during this program.[17]

The number of batteries required to defend a coast was determined by the size of the weapon installed. The larger the guns; the fewer required. 16-inch guns were the largest and covered the most area. They were the primary guns and were supported by smaller weapons. For the Delaware, a 16-inch battery, Battery Smith, was built in 1943 at Cape Henlopen. Battery 223, among other smaller guns, supported it, ensuring complete protection.

An important component of the 1940 Modernization Program was the emphasis on the standardization of the plans for fortifications. The homogenization of design simplified maintenance, training and ammunition manufacture. This can be seen throughout the fortifications including with the batteries. During this era, all batteries were constructed of reinforced concrete. Overhead protection was emphasized, a new feature for the gun emplacements to ensure protection from planes.[18] All were camouflaged whether hidden in a hillside or if on flat terrain, earthen covered. While the overall size varied, the floor plans were basically the same and all functioned the same way.[19]

The 1940 Modernization Plan not only decided the locations and types of armaments which were to be constructed it also determined the equipment that would be required as well as associated costs. In addition, it established schematic floor plans for the batteries. For the 16-inch battery, 100 acres were required with a minimum 500 feet between each gun and at least 600 feet from roads or inhabited buildings. The location of the plotting and switchboard rooms was to be located to the rear of the battery. Similarly, the requirements for the 6-inch battery as well as a schematic plan were developed. Like the 16-inch battery, a 600-foot buffer from human habitation was required. 35 acres were needed for the 6-inch battery and 180 feet was needed between each gun.[20]

Another emblematic feature of the 1940 Modernization Program was the optical aiming system for the guns. Although it had been developed during the Taft Period, it reached its American peak between 1940 and 1943. This system depended on mathematical triangulation through coordinates provided by base-end stations, often referred to as fire control towers, which were sent on to aim the guns. From the towers, coastal artillery soldiers scanned the horizon for enemy activity. If

a ship was spotted, the men used an instrument called an azimuth to determine the azimuth, or horizontal angle, to the target from the tower. One tower worked in tandem with another tower, with one station serving as the prime and the other as the secondary. The line between the two towers constituted a known distance. Therefore, because two angles (one from each of the two towers) and a side of the triangle were known, the guns could be directed and the targeting side of the triangle could be determined.[21]

When a ship was in the area, a time interval bell sounded every fifteen to thirty seconds. The observer spotted and followed the ship through the azimuth while the reader noted the coordinates on the azimuth at the determined intervals. The reader then sent these coordinates via a telephone communication system to an arm setter of the plotting board located in the plotting room of the gun battery (Figures 11 and 12). In the plotting room, arm setters manned the plotting table, which had posts, each representing the tower assigned to it. One arm setter set the coordinates from the prime tower; the other set the coordinates from the secondary tower. The coordinates enabled the setters on the board to pinpoint the target. This was then translated into aiming directions. The guns were fired and the process was duplicated with the corrections derived from the splash coordinates.[22]

By World War II, triangulation through azimuth reading was a sophisticated system. In addition to the coordinates from the observers, the plotting room personnel also took into account the weather, tide and wind as well as the time it took for a shell to reach its target. For the larger guns, it could take as long as fifty-three seconds for a shell to travel the twenty-six miles to its target.[23] For the other adjustments, there were supplemental devices in addition to the plotting board. There was a deflection board, a range percentage corrector and a wind-component indicator. An operator manned each of these. All of these components were factored together every fifteen to thirty seconds and forwarded electrically to each gun, which were aimed accordingly and fired.

With the increasing tensions in Europe and Japan, all existing Regular Army and National Guard coast artillery regiments were brought up to full strength in 1940. Several new coast artillery regiments also were added. By the fall of 1941, there were 45,000 troops in coastal defense. In January 1942 that number was 54,000. It swelled to 70,000 in 1943 when there were forty-seven regiments defending the fixed seacoast defenses of the U.S.: nineteen in the Regular Army, twelve in the National Guard and sixteen in the Organized Reserves.[24]

In July 1942, wartime construction reached its peak with $720 million being spent per month and a 1 million-man workforce. In 1942, $17.8 billion was spent in construction, which was 11% of gross national product. By the end of 1942, the Army could house over 4 million soldiers.[25]

Fort Miles

In 1682, William Penn declared Cape Henlopen, Delaware for the "usage of the citizens of Lewes and Sussex County," making this land one of the first American lands designated for public use. The military began to use the land when, during World War I, the area was designated as the Cape Henlopen Military Reservation and consisted of a bivouac and a single gun emplacement. This single gun was supplemented by another temporary battery and gun at Cape May. Although both guns were removed in 1918, the Navy continued to use a portion of the land at Cape Henlopen for a

wireless telegraph plant. In 1938, the Army once again made Cape Henlopen a military base, naming it Fort Miles in 1939.[26]

Lieutenant General Nelson Appleton Miles was born in 1839 near Westminster, Massachusetts. In 1861, at the outbreak of the Civil War, Miles organized and led a company of volunteers from Massachusetts. During the Civil War, he distinguished himself in many important battles and was made brigadier general in 1864 and major general in 1865. He remained in the Army as a colonel and led campaigns against the Native Americans in the West. Famous for his acceptance of the surrender of the Apache under Geronimo, he became a Commanding General of the Army, rising to the rank of Lieutenant General in 1901. He served during the Spanish-American War and led troops that occupied Puerto Rico. He retired in 1903, wrote several autobiographies and died in Washington D.C. in 1925. The new fort was named after him to commemorate his hundredth birthday.[27]

Cape Henlopen was chosen for its strategic position adjacent to the Delaware Bay and the Delaware River (Figures 3 and 4). Its charge was the protection of the cities in this region and also the vast industrial centers located up river including DuPont Company plants, oil refineries in Chester and shipyards in Philadelphia. From the beginning, there were several ideas about what guns were required to protect the Delaware. Early on it was thought that full protection could be provided by four 155-mm, two 8-inch and two 14-inch guns at Cape Henlopen which would be supplemented by four 155-mm guns at Cape May and four 12-inch guns at Fort Saulsbury. This was further honed with the addition of the necessary supplemental requirements including the fire control network that would be required to aim the guns, spot lights and mine casements. Following the Modernization Plan and the development of the big 16-inch guns, this plan evolved; the batteries that were installed at Fort Miles were the one 16-inch, one 12-inch and three 6-inch guns. The Philadelphia District of the Army Corps of Engineers began the installation of the massive eleven-foot thick concrete emplacements for the 16-inch guns at Fort Miles in 1940. These guns were to be the primary weapons of the fortification. This massive artillery along with the support batteries sealed off the Delaware River. In addition to the land-based protection, Fort Miles also had mine fields, patrol boats and airplanes protecting the Delaware.

The construction projects at Fort Miles were the Philadelphia District's first new assignment. In addition to the gun batteries, this group was responsible for the construction of an underground mine control center located on the Delaware side, the fire control towers in both Delaware and New Jersey, the barracks and all the supplemental facilities. "At the end of 1941 the Military Construction Program of the [Philadelphia] District had a total estimated cost of over $6,000,000, of which about two-thirds was already in place. By December 1942, the program had expanded to a total cost of over $111,000,000 (90% in place), and reached close to $150,000,000 (approximately 97% in place) by December 1943."[28]

Fort Miles expanded rapidly. Private contractors, especially White Construction and George and Lynch were responsible for most of the construction at Fort Miles. The 1939 Reorganization Act authorized by President Roosevelt allowed private industry to participate in war construction projects. This ensured that the massive building campaign required to prepare the U.S. for war could be accomplished. The Corps of Engineers Philadelphia branch oversaw this contract.

On July 27, 1942 authorization was received for the construction of Batteries 118, 221, 222, 223 and Battery Hall.[29] Battery 118, also known as Battery Smith, was the massive 16-inch battery. It was to be located at Cape Henlopen. The

two hundred series were the 6-inch batteries; they were based on the type plan file number 168-168-20. 221, Battery Herring, and 222, Battery Hunter, were built on Henlopen; 223 was built at Cape May; Battery Hall was a 12-inch battery constructed at Fort Saulsbury, further up the river in Delaware.

The 6-inch batteries of Fort Miles were all begun and completed in 1942 and 1943. Battery Herring was begun in January of 42, Hunter in April and 223 in September/October. Battery Smith, the big 16-inch and Hall (519), a 12-inch both located at Henlopen, also were built around this time. By April 9, 1943, the final positions of the gun centers for the five batteries of Fort Miles were approved; this means that by this time, all the guns were functional.[30]

The implementation of the Modernization Plan was occurring all over the United States. On the East Coast, construction at Fort Miles was indicative of the rest of the country in general and the East Coast in specific. In March 1943, a report on the progress of the delivery of armament and power plants for seacoast batteries for the East Coast exemplified this. At this time, 6-inch guns had been delivered to two batteries in New York, one in Philadelphia (Battery Herring, 221) and were enroute to Newfoundland and Bermuda. Anticipated delivery for Battery 222 was April 15, 1943 and for Battery 223 was June 1, 1943. The 16-inch guns were not far behind. Two were enroute to New York and those for Battery Smith (118) were enroute for Philadelphia. In addition to the guns, speed gears, shields and power plants were all required before the armament could be fully functional. These were shipped separately. Those features that accessorized the weapons usually followed soon after the guns while the power plants followed, often as long as several months later. For instance with Battery 223, the guns and carriages and speed gears were expected for delivery on June 1, 1943, the shields on July 30, 1943 and the power plant on January 1, 1944. The expected completion of the power plant was March 1, 1944.[31] For 223, the armaments and equipment were to be shipped to the Cape May Sand Company and then transported to the site.[32]

By the end of construction at Fort Miles in 1944, the fire power included six batteries and three mine batteries supplemented by a network of twenty fire control towers. Features of Fort Miles stretched from Fenwick Island to North Wildwood, about 200 miles of shoreline. Originally, there were 96 men from the 261st Coast Artillery stationed at Fort Miles when it was first established in 1939-40. The 261st was a reserve battery that was stepped up to permanent assignment with the onset of the war. By the end of the summer of 1941, more men arrived from the 261st as well as five batteries of the 21st Coast Artillery who had been in training at Fort Dupont further up the Delaware River. Three of the 21st were artillery; the other two were used to plant mines.[33] Navy and Air Force personnel joined the coastal artilleries until there were 2,000 men stationed at Fort Miles.

Battery 223 at Cape May Point

To begin implementation of the modernization program to upgrade the Harbor Defenses of the Delaware at Fort Miles, discussions began in 1941 about the desired locations for the 6-inch batteries. For the New Jersey side, land at Cape May Point was evaluated in a September 20, 1941 report. In this report from a local land appraiser to the War Department, a 140-acre tract within Block 27 of Lower Township was evaluated for its character as well as its ownership. The tract was comprised of upland and meadow land. Streets entered it to the north, west and south; no water or sewer existed. Immediately adjoining was a small sewer plant owned and operated by the Borough of Cape May Point. Lots 2-47 (except 39 and 40) were owned by The Trustees of the University of Pennsylvania and the Trustees of Israel H. Johnson;

they had been acquired in 1911 from the Cape May Improvement Company. Lots 39 and 40 which comprised .115 acres were owned by Gertrude Speake. The total land, Lots 2-47, was appraised at $8,425.[34] By December 1941, agreements had been executed with the U.S. Government and two of the three owners; Ms. Speake could not be reached.[35] This land was undeveloped as confirmed by a 1941 map of the 140-acres as well as the appraisal. There was a small Coast Guard Station around the lighthouse with a small assemblage of buildings; this was the only development in the immediate area (Figure 5).

In December, 1941, the final set of drawings for Battery 223 was completed. A full set—thirty six sheets—was sent to the local Cape May inspector and White Construction and George and Lynch who were already under contract with the government.[36] They were responsible for most of the construction in Cape May, including that of Fire Control Tower No. 23, one of the towers used by Battery 223.

In the summer of 1942, prior to the start of construction of Battery 223, there was some consideration to changing its siting further inland and to the northeast from the original proposed location which was 900 feet from the shore.[37] Correspondence went back and forth until it was decided that the original location was best. The alternative site was not approved because it "would restrict the use of direct fire and some dead spaces would probably be produced by structures on the adjacent Coast Guard reservation." The original location was approved and construction could begin. Temporary magazines for the Panama mounts were constructed to the south of the proposed location; this would enable the 155-mm guns to be used if necessary during the construction of the battery.[38]

Over the summer and fall of 1942, the design as developed for the 6-inch batteries in 1940 was being fine-tuned. As the Corps of Engineers oversaw the construction of these batteries throughout the country, problems were discovered and minor changes were made. This led to numerous letters from the senior levels of the Operations Branch of the Construction Division of the Corps of Engineers to the Division Engineers and down to the branches, including Philadelphia which oversaw the construction of Battery 223.

Several of these changes are documented in the files at the National Archives. In one, the size of the plotting room and switchboard rooms was enlarged as was the opening between them. This is reflected in Battery 223. Similarly, in the original 1940 plans for the 6-inch battery, there was to be a battery room for use by the Signal Corps. This need was eliminated and this space was used for Chemical Warfare Service and dehumidification equipment. This occurred at 223 where Room 11 was used for this purpose. Other changes occurred along the way including conduit size and numbers, the addition of waterproofing membranes as well as clarifications for mounting the gun carriages. For bomb resistance, it was decided that it was important to round and chamfer all corners.[39] In addition there were minor detail changes like altering the roof and burster slabs to lower the profile making the battery easier to conceal and create a smaller target for the enemy. Another change included increasing the exterior walls to 6'-0".[40]

Other changes were made that were more specifically targeted for the conditions at Fort Miles. For instance a problem caused by hard driving rains at Battery 118 at Cape Henlopen led to the raising of the floor in the gas-proofed area of Battery 223.[41]

In the fall of 1942, construction began on Battery 223. Within the files at the National Archives, one source says it commenced on October 17, 1942[42] while the completion report attributes its beginning to September 12, 1942.[43] Regardless by mid-October 1942, construction had begun on the battery. By this time, construction was already underway on both of the other two 6-inch batteries at Fort Miles.

In order to maintain the system of mass production of battery construction, individual changes requested by local engineers were often denied. This occurred at 223 where its physical isolation caused Captain Howard Robertson to request an estimate be made to change the existing plan to include a fire control switchboard room. The estimated cost for this change was $1,000. The typical plan for a 6-inch battery called for a 10' x 20' switchboard, spotting or radio room. To meet the needs of the fire control switchboard room, another room of roughly the same size would be required. This would be a change from the standard 6-inch battery plan. Because of this, the area engineer could not approve this change but needed a higher authorization for approval of the change.[44] This change was not made.

But other changes were made. Conduits were placed in the base slab of Battery 223 but not in 221 or 222. This was because at the time of the order, construction at the other batteries had progressed beyond the stage where changes were still feasible; at 221 and 222, the wiring was left exposed.[45] A Battery Command Station was erected on the roof of all the 6-inch batteries of Fort Miles, including Battery 223. A stove was deemed necessary for these stations; a 4-inch stove flue was added, a change from the original drawings.[46] At Battery 223, a diesel generator was requested rather than using commercial power. This was approved.[47]

By the summer of 1943, Battery 223 was completed and it was over budget. In June 1943, request was made for additional funds. The original estimate for the battery was based on the costs of Batteries 221 and 222 which were completed before 223. Their cost was $241,170 each. However, this was inadequate for 223 for several reasons. Because of its isolation, all costs for utilities and services had to be assumed by the battery alone rather than shared by other nearby construction projects as was able to be done with the other batteries. This isolation also caused a longer road to be constructed than was normally needed. A 2,000-foot gravel road was required from the troop camp; its construction across a swamp also increased the cost because significant fill was required. This increased fill was also needed to raise the grade at the battery enough; it was more than had previously been anticipated. In addition, although a septic system was originally designed, because of its location, hook up to the Cape May Point system was required. This further increased the cost. Finally, when the water line was added for the battery, it also was decided that to add fire protection for the troop camp at the same time; this increased its price. In addition, minor changes were made to the interior walls for the installation of heating and dehumidifying equipment. This overrun was approved and in July 1943, an additional $101,838 was allocated for construction.[48]

Although only one of the thirty-six drawings for Battery 223 was found, the specifications were uncovered. They provide interesting insight into the construction process, particularly with the mechanical equipment including the heat and air conditioning. Two air conditioning units were installed; they were to be the vertical floor type without humidifiers. The heating units were three, 3,000 watt units. In the summer, the temperature was not to exceed 70 degrees while in the winter, it was not to fall below 67 degrees.[49] This information was confirmed in the electrical plan drawing which shows the locations of both the heat and the air conditioning in the working switchboard and plotting rooms.

In May 1944, there was a District Engineer directive to install fire resistant doors at the Fort Miles batteries. At the time of their construction, the use of steel plate doors was prohibited as it was too important a commodity. Provisions were supposed to have been made for future upgrades at the time of the original construction, "Provide for imbedded items for future installation. If immediate closure is required, install temporary wood doors." Instead, temporary wood doors on the powder rooms were constructed. Battery 223 had six shell room doors and four powder room doors for a total of ten doors. By August 1944 it was not deemed necessary to put on fire resistant doors.[50]

According to the Completion Report for Fort Miles, construction was completed on Battery 223 on June 23, 1943. It had Borough of Cape May Point water and sewer and was powered by battery power plant. Although the others batteries of Fort Miles were given names (Smith, Herring and Hunter), no name was ever given to 223; its number was used exclusively.[51]

The plan of the adjacent Cape May Reservation shows the amenities that accompanied the gun batteries. They include several barracks, officers' quarters, an infirmary, a mess hall and a theater among other buildings. This was supplemented by several fire control towers that were positioned along the Jersey shore. There were four towers in New Jersey which served Battery 223 after it was completed. Tower No. 23, the closest to the battery, provided range finding for Battery 223 only. It had two azimuth instruments and exclusively served this battery. It was B^1S^1 of Battery 223. The "B" stood for base end, which was actual fire control or aiming of the guns with readings from one of the azimuth. The "S" stood for spotting, which was done after the shell was fired. The numbers next to the letters corresponded to the plotting arms of the board in the plotting room of the battery. There could be as many as sixteen azimuths along the Fort Miles coastline dedicated to a battery. This led to extremely accurate aiming.

The other New Jersey towers served Battery 223 as well as other gun batteries located in Delaware. Tower 24 located on Beach Avenue in Cape May City had six azimuths. Two of its azimuths were designated B^2S^2 of Battery 223. The other instruments were dedicated to Battery Smith and Battery 519 in Delaware. Tower 25 was located at Wildwood Gables (now Wildwood Crest) and also had six azimuths; two of which were B^3S^3 of Battery 223; the other four were dedicated to Battery Smith and Battery 519. B^4S^4 of Battery 223 were two of the four azimuths at Tower 26 in North Wildwood; the other two were B^8S^8 of Battery Smith.[52]

Searchlights were also built at both Delaware and New Jersey to work in conjunction with the towers to spot enemy ships at night. There was a searchlight to the east of Tower 24. There was another searchlight in West Cape May. There were two additional lights near Battery 223[53] (Margaret Newman interview with Richard Straughn of Erma, NJ whose father was a searchlight operator in Cape May).

At Cape May, Battery 223 was supplemented by Battery 7 which included four 90-mm guns; two of these were fixed and two were mobile. This battery was begun on January 1, 1943 and completed June 15, 1943. In addition, Battery 26 was located here. This battery was made up of four mobile 155-mm guns. They were the first guns here. They were begun in December 1941 and completed by June 15, 1942. These guns were positioned right in front of Battery 223 and allowed for its protection during construction.

An interview with Henry "Hank" Branagan who was a rammer stationed in Cape May from December 16, 1941 to March 1943 provides interesting insight into life at the Cape May Reservation. He described the early days of the reservation, "Oh there were four enlisted men's barracks and one officers' barracks located to the east of the lighthouse. In fact, I think that they are still using one as the offices for the park down there. Next to the barracks were a small hospital and then our latrine (laughing). You know, we used the Convent as a barracks until ours was built. After the Convent, we moved into tents. We lived in those tents all through the winter, then, when summer rolled around they finally finished the barracks and we moved in...Boy it was cold in those tents. I'll never forget that."[54] Although located right next to them, the Army men had no relationship with the Coast Guard, according to Branagan.

The guns were manned twenty-four hours a day. At Cape May, there was an eight-man crew for each gun. There was a range setter, an azimuth setter, a gunner and a fuse man. Two men carried the shell to the gun carriage, a rammer positioned it in the gun and a man loaded the charge (Figures 13 and 14).[55] When a ship was spotted, the men would call the Commander and he would set off the alert signal. With the signal, everybody would report to their stations. The time interval bell would sound every 15 seconds; readings were taken each time the bell sounded. No enemy was ever spotted but according to Branagan, there were many drills: "Sometimes the Commander would come back from town drunk and pull the alert signal. I think he was trying to keep us on our toes."

The guns were never fired in anger but only for target practice when a target would be towed offshore and the men would try to hit it. All the men vividly remember testing the artillery. According to radio operator John J. Gallo, who joined the National Guard and was sent to Fort Miles with Battery A when the battalion was federalized in 1941, when the guns were tested, the artillery men would shout "Shot on way!" The men in the towers would use their instruments to watch for a plume of water to identify where the shell struck.[56] The men would use the azimuth to identify the coordinates of the plume of water; the accuracy of the aiming system was then assessed.

According to Captain Leonard L. Millar of Rehoboth, who was stationed in Cape May at the beginning of his career but later went to Delaware where he commanded Battery C, "The object of artillery was if a ship came down and tried to get through, we were supposed to fire at the ship." He said ships were required to stop at the entrance of the bay for inspection by the Coast Guard. Sometimes allied ships would not stop in order to make better time. Battery C's 3-inch guns provided a clear message when it was fired in front of the ships, called a "bring to" shot. "It would throw up a geyser that would bring them to a stop pretty quickly."[57]

Cape May During the War

From 1940-1945, Cape May was bustling with military activity. The Army, Navy and Coast Guard were all stationed here. The Navy had been here since World War I, when it established its air base.[58] The rest of the military presence was newly established for the upcoming war. Due to the lack of existing infrastructure, as well as the immediate need for services for the troops, several Cape May hotels were called into service as barracks and hospitals. The Admiral, Cape May's largest beachfront hotel, was used to house naval officers and their families.[59] Even private homes were used by the military, as accommodations were tight, especially in the winter; only a limited number of houses had heat. Some residents opened up their houses to share. Others provided individual rooms to the military and the civilian staff

associated with the various military outposts.[60] Schools were taken over for training bases and gymnasiums doubled as hospitals in case of emergency.[61]

Cape May continued to operate as a coastal resort and promote itself to visitors. All along the coast, the military pressed light control regulations in the hopes of creating a safe environment for shipping. However, merchants in Cape May fought these blackout and dim-outs, requesting extension of hours.[62] After several months of losing ships, the military prevailed and notices were distributed throughout the community explaining dim-out regulations and suggestions for opaque materials to prevent any light from escaping.[63] Store windows were shrouded in blue with signs that read, "Bright Lights Inside," in hopes of coaxing shoppers inside.[64] The city itself replaced its streetlights with blue, non-glare lights and promoted them as, "effective and beautiful."[65] When driving at night, parking lights alone were allowed. Night fishing was prohibited.[66]

The changes to Cape May were not just evident at night but were a part of daily life. It was illegal to take photographs of the ocean.[67] Fishing from bridges or causeways or near or under them was no longer allowed.[68] As 1942 progressed, there was increased military activity on the coast. In April, the Civilian Aircraft Warning Service of Atlantic Coast cities predicted air raids.[69] In May, the Eastern Defense Command was designated as a military area. This designation extended from Maine to Florida and "effective control of artificial lighting for a reasonable distance inland" was enforced by local law enforcement.[70] The Coast Guard requested men with horses to volunteer to patrol the beaches, "to protect the shores against invasion by submarine-borne spies and saboteurs..."[71]

Cape May residents participated in the war effort. In addition to the rationing that was occurring all over the country, Cape May had coastal lookout towers. These were established for volunteers to look for airplanes and ships. The "Instruction Manual for Coastal Lookout Tower Observers" discussed procedures and reviewed the ships and airplanes that may be witnessed.[72]

After the War

After mid-1942, the need for continental defense progressively declined as the emphasis shifted from facilities to production, from the home front to combat in war theaters. Construction workers were sent to factories. By September 1942, the prospect of completing the seacoast defense modernization planned for in 1940 seemed unlikely. For those that had been completed, it seemed even more unlikely that the guns would ever be used.

Between 1940 and 1945, modernization had cost more than $220,000,000.[73] As military and naval events in all theaters began to turn in favor of the Allies, the project was gradually curtailed until mid-1944 when the shifting of the war away from American shores brought it to a halt. Dismantling of the coastal defense system began as early as 1943 and the Modernization Program was never fully completed. Only about two-thirds of the system was constructed and some fortifications were never provided with anticipated armament. The technology of amphibious invasion, including land troops and air attacks, along with the heavy guns of ships made obsolete the entire concept of harbor defense by long-range artillery. "Amphibious warfare had been developed to such an extent during the war that beaches far removed from

built-up ports were successfully used...this enabled the fixed defenses at large seaports to be outmaneuvered, and since not all of the coastline could be effectively defended by permanent fortifications, they lost their value."[74]

By 1948, only seven short years after the system was developed, it was outmoded. By 1948, all guns of the seacoast defenses had been declared surplus and were scrapped.[75] By 1950, the US Army had dismantled all its fixed gun harbor defenses on both coasts; the coastal defense reservations were either converted to other military uses or declared surplus. By 1950, the Coastal Artillery was abolished as a separate branch of the Army and recombined with the Field Artillery to form a single Artillery branch.[76]

Battery 223 was decommissioned in 1944 (Figures 6 and 7). The Navy took over the Army facilities in 1953. Although no paperwork has been uncovered about the Navy's ownership of the battery specifically, records about Fire Control No. 23 confirm that the Navy took over all the Army resources at Cape May Point. Under the Navy tenure, there was a Quonset hut on top of Battery 223; it was used for radio communications.[77] A concrete pad was poured on the roof to accommodate this structure; remnants of the pad remain today (Figure 8).

The Navy held ownership of the Army resources for eleven years. At some point, a set of stairs went to the top of the battery and the platform was used by fishermen (Figures 9 and 10); these were taken down when erosion of the battery made it too dangerous for use.[78]

The Army closed Fort Miles in 1958; part of it was used as a Naval Radio Station from 1963-1976. The rest became the Fort Miles Recreation Area, Cape Henlopen State Park, Fenwick Island State Park, Delaware Seashore State Park and Henlopen Acres. On the New Jersey, the military lands including Battery 223 became Cape May Point State Park in 1962.

Since the Revolutionary War, there have been hundreds of forts erected on both coasts that participated in the coastal defense system of the United States. The system of fixed armament protecting American shores went through several incarnations until its final configuration in World War II, after which technological advances made the entire concept of fixed gun protection obsolete. Fort Miles was an important component of the national system of construction for defense that was occurring due to the 1940 Modernization of the Coastal Defense master plan. Battery 223, an integral part of this system, aided in the protection of resources in New Jersey, Delaware and Pennsylvania. It is an intact example of a vital component of our national defense built during World War II.

Most of the batteries, fire control towers, barracks and auxiliary support buildings that were erected on both coasts between 1940-1945 have been lost. The World War II system that remains is rarely interpreted; it survives because it was forgotten, not because it was valued. The seacoast fortifications that have undergone restoration are specimens of the Third System and earlier. This is because of their relative rarity but also because of the public tendency to equate antiquity with historical and architectural value. As with much of its history, the U.S. has looked to the preservation of its distant past, often at the expense of its recent history.

Within New Jersey like the rest of the country, there are few World War II resources that are interpreted. Fort Mott is a historic site. However, all its resources predate the Second World War; they date to the nineteenth century and earlier

coastal artillery technology. Fort Hancock at Sandy Hook, which participated in the defense of New York since the eighteenth century, interprets Battery Gunnison. The battery itself predates WWII; it was built in 1904. However, in the 1940s, it was modified when two Model 1900 6-inch Barbette guns were mounted; these guns are the only surviving guns at Fort Hancock and are likely the only extant guns in New Jersey that remain in their original location.[79] The relative rarity of other such resources in the state adds to the significance of Battery 223.

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[29] ARC Identifier 593861, Box 5. Record Card, Engineer Department, U.S. Army.
[30] ARC Identifier 593861, Box 4. Final Positions of the Gun Centers from M.H. Greaser, Major Corps of Engineers to Major Howard L. Robertson, Artillery Engineer (April 9, 1943).
[31] ARC Identifier 593861, Box 4. Report on Progress of Delivery of Armament and Power Plants for Seacoast Batteries—Modernization Program (Month ending March 31, 1943).
[32] ARC Identifier 593861, Box 4. Delivery Dates of Ordinance Material (March 1, 1943).
[33] Drew Ostroski, "Giving a Little Piece of Mine: Delaware Man Worked on Mine Boat," www2.newszap.com/lookingback/ww2/capefear.html.

[34] National Archives Record Group 77. ARC Identifier 593861. Declassified Correspondence Relating to the Harbor Defenses of the Delaware, 1940-1944. Box 2. Letter from V.B. Vaughan, Lieut. Colonel, Corps of Engineers to The Chief of Engineers, U.S. Army with September 20, 1941 appraisal report, (September 23, 1941).
[35] ARC Identifier 593861, Box 2, Status of Land Acquisition (Military), (December 26, 1941).
[36] ARC Identifier 593861, Box 5 Transmittal of Tracings from Major M.H. Greaser to Chief, Operations Division (December 10, 1941).
[37] Beitel, 142.
[38] ARC Identifier 593861, Box 4. Emplacements of Temporary Armament (August 10, 1942).
[39] ARC Identifier 593861, Box 4. Modification of Switchboard Room from Colonel F.J. Wilson to District Engineer, Battery No. 223 (October 13, 1942); Battery No. 223, Cape May New Jersey from Area Engineer to the Chief, Operations Division (August 31, 1942); ARC Identifier 593861, Box 4. Type Plans for 6" Battery Emplacements from Lt. Col. Sherwood Smith to all Division Engineers (January 4, 1943 and February 22, 1943).
[40] ARC Identifier 593861, Box 4. Simplification of Roof and Burster Slabs for 6-inch Batteries—200 Series from Lt. Col. Sherwood Smith to Division Engineer (July 31, 1942).
[41] ARC Identifier 593861, Box 4. Battery No. 223, Cape May New Jersey from Area Engineer to the Chief, Operations Division (August 31, 1942).
[42] ARC Identifier 593861, Box 5. Record Card, Engineer Department, U.S. Army.
[43] ARC Identifier 593861, Box 2. Report of Completed Works—Seacoast Fortifications (May 1, 1944).
[44] ARC Identifier 593861, Box 5. Fire Control Switchboard—Battery 223 from C.H. Bischoff, Local Engineer to Commanding Officer, Philadelphia (September 26, 1942).
[45] ARC Identifier 593861, Box 4. Type Plans for 6-Inch Emplacements from Lt. Col. George B. Sumner to the Chief Engineers (March 25, 1943).
[46] ARC Identifier 593861, Box 4. Construction BC-CRF for 6-inch Batteries, Harbor Defenses of the Delaware from Lt. Col. Sherwood Smith to The District Engineer (January 22, 1943).
[47] ARC Identifier 593861, Box 5. Power Battery 223 from Lt. Col Sumner to the Chief of Engineers (January 27, 1943); approval from Lt. Col. Sherwood Smith (February 11, 1943).
[48] ARC Identifier 593861, Box 4. Request for additional funds from Lt. Col. George Sumner to Chief of Engineers, U.S. Army (June 22, 1943) and Letter of Apportionment E270-7 to the area engineer from Major R.H. Nash (July 19, 1943).

[49] ARC Identifier 593861, Box 5. Specifications for Battery 223, Cape May, New Jersey, Corps of Engineers, United States Engineer Area Office, Fort Miles, Delaware (January 1, 1943).
[50] National Archives Record Group 77. ARC Identifier 592862. General Correspondence Relating to the Harbor Defenses of the Delaware, 1940-1944. Box 4.
[51] ARC Identifier 593861, Box 4. Battery No. 223, Cape May New Jersey from Area Engineer to the Chief, Operations Division (August 31, 1942).
[52] "Report of Completed Works—Seacoast Fortifications of Fort Miles" 1 May 1944.
[53] Cape May Point State Park Archives
[54] Elizabeth Bailey interview with Henry Branagan (January 11, 2002).
[55] Elizabeth Bailey interview with Henry Branagan (January 11, 2002).
[56] Ostroski; Submariner
[57] Ostroski.
[58] "Navy Assumes Control of New Air Station at Rio Grande," *Cape May Star & Wave* (4-8-43): 5
[59] "Admiral Will House Naval Officers," *Cape May Star & Wave* (5-14-42): 1.
[60] Margaret Linton, "Life In Coast Resorts Where Lights Are Low," Everybody's Weekly: A Magazine Supplement to The Philadelphia Sunday Inquirer (1942): 4.
[60] The Wildwood Leader (5-21-42): 1.
[62] Ibid.
[63] "Explain Regulations for Store Dim-Outs," *Cape May Star & Wave* (12-31-42): 1.
[64] Linton, 4.
[65] "Mayor Asks Correction of 'Time' Slap at Seashore," *Cape May Star & Wave* (6-11-42): 1.
[66] "Coast Guard to Register Boats Here," *Cape May County Gazette* (5-15-42): 1.
[67] Linton, 4.
[68] "U.S. Bars All From Beaches after Sunset," *Cape May Star & Wave* (7-2-42): 1, 5.
[69] "East Coast Air Raids Predicted," *Cape May County Gazette* (4-17-42): 8.
[70] "Whole East Coast Made Defense Area," *Cape May Star & Wave* (5-21-42): 6; "County Formally Designated as Military Area," *Cape May County Gazette* (5-22-42): 8.
[71] "Coast Guard Calls For Men With Horses To Patrol Shores," *Cape May County Gazette* (8-7-42): 4.
[72] "Instruction Manual for Coastal Lookout Tower Observers," United States Coast Guard Auxiliary, Fourth Naval District (1943) 1-32.
[73] Conn, 52-54.
[74] Joe Freeman, et al, "Seacoast Fortifications Preservation Manual, Golden Gate National Recreation Area, San Francisco, California," National Park Service and Kea Environmental (July 1999), 40.
[75] Freeman, 37-40.
[76] Lewis, 115-125.
[77] Richard Degener, "Erosion Undermining World War II Bunker;" October 19, 1953 letter from the Secretary of the Army to the Secretary of the Navy; December 15, 1971 memorandum between the Naval Facilities and the Naval Facilities Historian. From the Cape May Point State Park archives.
[78] Degener.
[79] http://www.nps.gov/archive/gate/shu/pdf_files/history_defenses_of_sandy_hook.pdf

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Entry 29. General Correspondence Relating to the Harbor Defenses of the Delaware, 1940-1943. 5 cu. ft. F-05-23-08-6 to F-05-23-09-4. NA Boxes 1-11.

Entry 30. General Correspondence Relating to the Harbor Defenses of the Delaware, 1943-1944, 2 cu. ft. F-05-23-09-4 to F-05-23-09-6. NA Boxes 1-4.

Entry 42. Former Security Classified General Correspondence Relation to the Harbor Defenses of the Delaware, 1933-1941. 1.5 cu. ft. F-05-23-09-6 to F-05-24-01-1. NA Boxes 1-4.

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Geographical Data

Verbal Boundary Description
The extent of the nomination includes Battery 223 only; it does not extend beyond the boundaries of the structure. It constitutes less than one acre.

Boundary Justification
140 acres were purchased for the construction of Battery 223. This land is no longer associated with the battery. Because the guns are no longer operation, no buffer land is required. Therefore, the nomination only includes the battery itself.

Photographs

All photographs taken by Margaret Newman in February 2007 except where noted.

Photo 1
Bunker 223 from the north looking through Cape May State Point State Park
September 2006

Photo 2
Bunker 223 from the west. In 2005, a beach reclamation project brought 1.4 million cubic yards of sand to the Cape May beaches. This work included dune replanting.

Photo 3
Bunker 223 from the west. When originally constructed, it was 900 feet from shore.

Photo 4
The north façade of Bunker 223. The projecting center bay was the original entrance to the structure. The offset triangular pieces of concrete in the sand below the door were the original wing walls for the entrance.

Photo 5
The west elevation of Bunker 223.

Photo 6
At the southern end of the west elevation, there is an entrance to the battery with wing walls and shell storage units. This provided easy access to southern gun which was just east of the entrance.

Photo 7
The south elevation along the shore is a single wall of concrete that turns west at the ends; on the interior, this is the corridor that runs the full length of the building. It has the same chamfered corners at the roof juncture. On this elevation, a thinner concrete slab is visible above the roof. This is from the Navy's tenure when a Quonset hut was added on top of the structure; this slab is the floor of the added building.

Photo 8
When constructed, the pilings were buried deep below grade and the battery was covered with earth. Beach erosion has exposed the pilings.

Photo 9
The east elevation mirrors the west elevation with the same entrance and shell storage, providing easy access to the eastern gun to the south.

Photo 10
The long east west corridor of the southern side of Battery 223. Off this corridor is a series of small rooms. These were storage rooms for shells, powder and other operational equipment for the guns

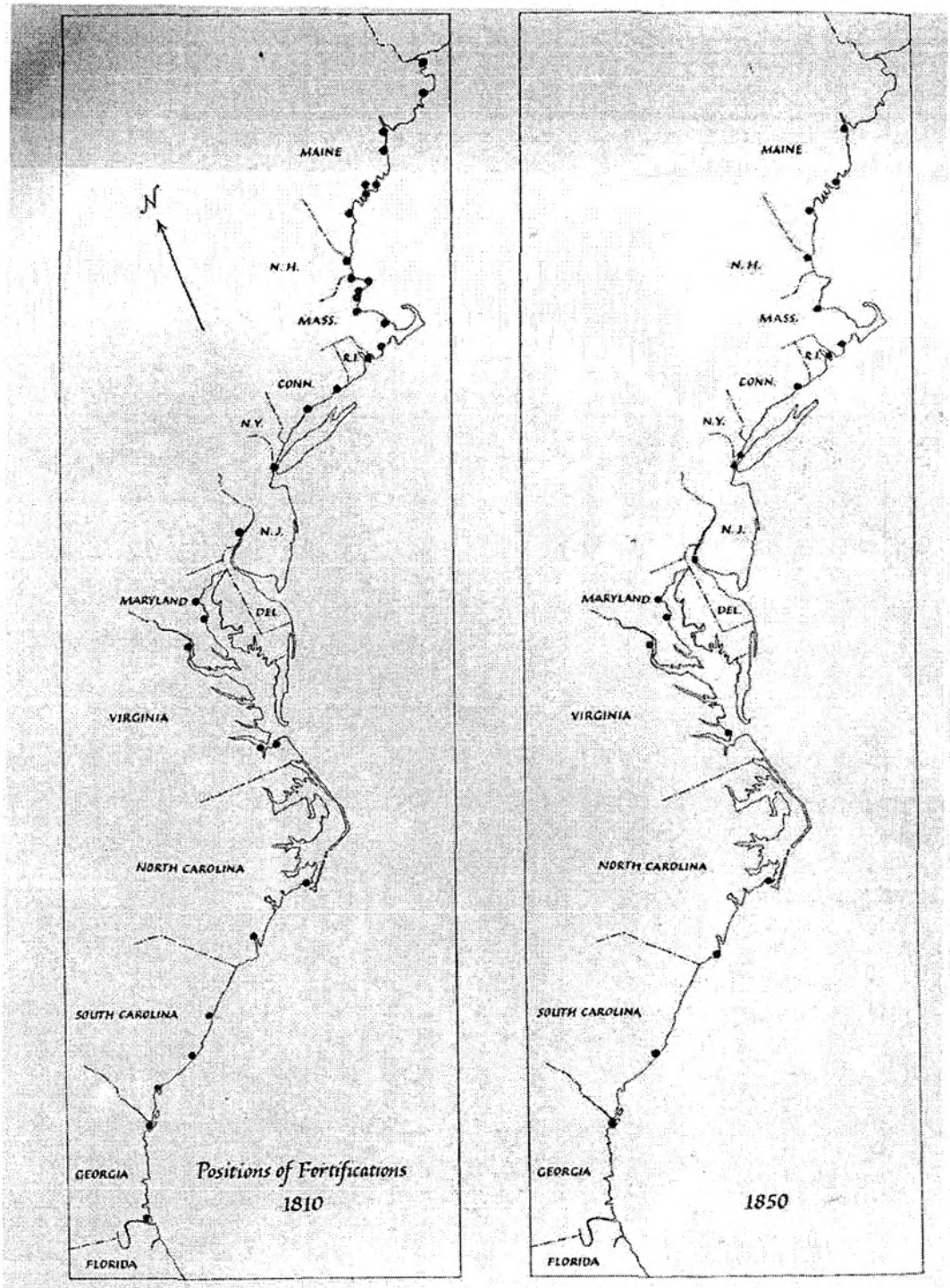

FIGURE 1. Maps showing progressive reduction in the number of fortified localities, 1810–1940.

Figure 1: With technological advances, fewer and fewer fortifications were required.[1]

[1] Emanuel Raymond Lewis, *Seacoast Fortifications of the United States* (City of Washington: Smithsonian Institution Press, 1970), 10.

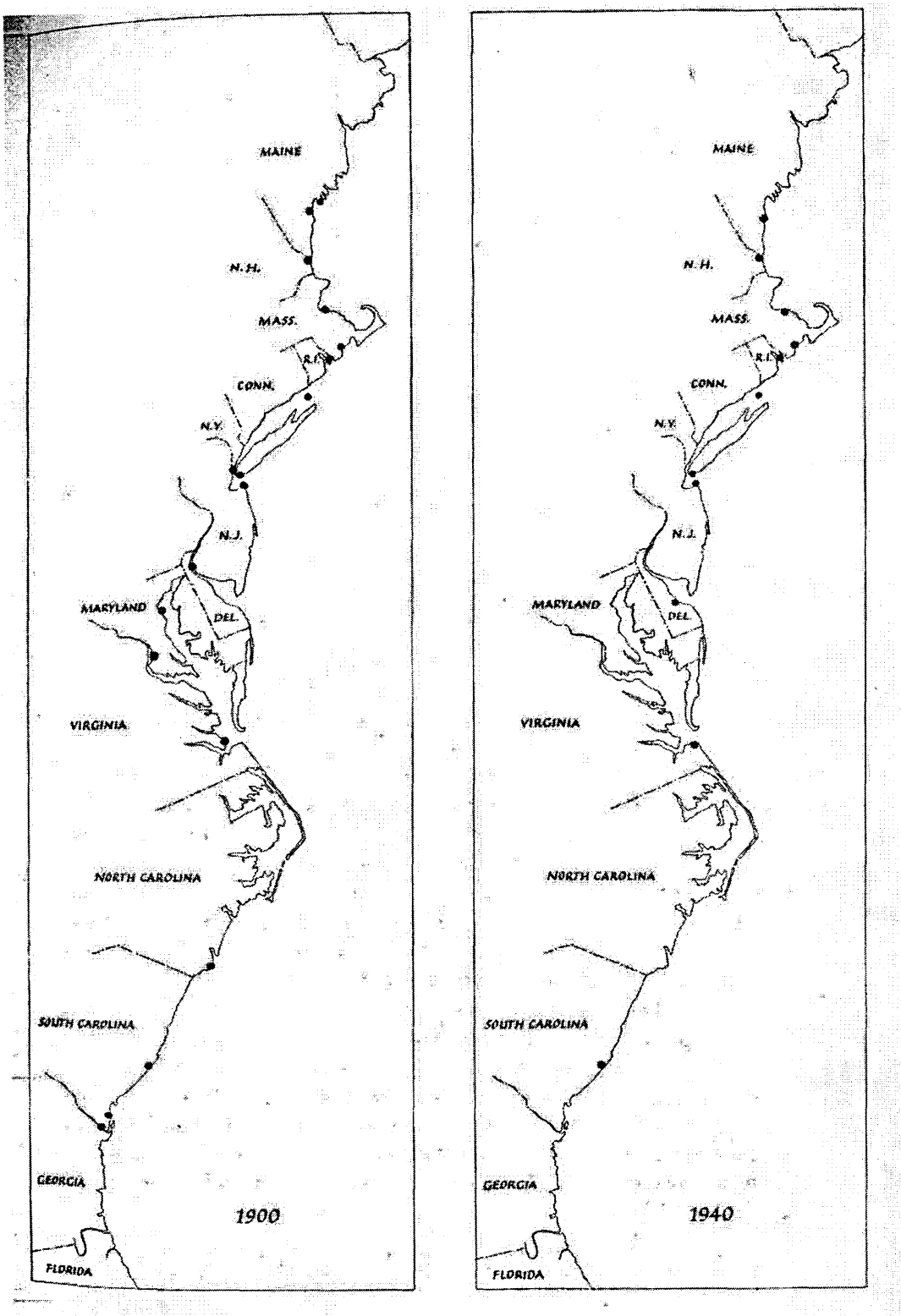

Figure 2: The reduction continues with each successive generation of coastal defense.[2]

[2] Ibid., 11.

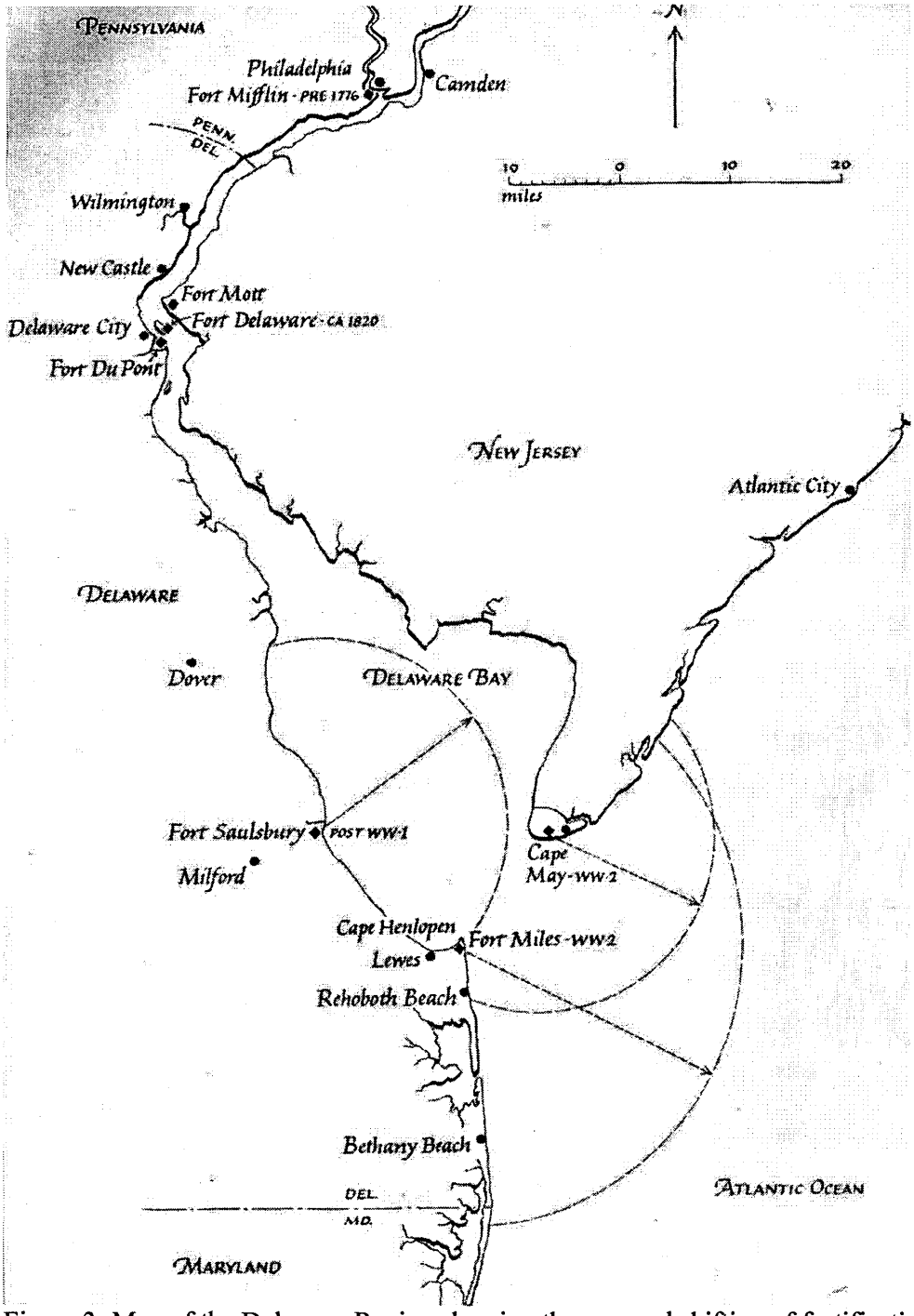

Figure 3: Map of the Delaware Region showing the seaward shifting of fortifications. Between 1800 and 1945, the range of coastal artillery increased by a factor of 25. More water area could be covered, increasing the range more than 600 times.[3]

[3] Ibid., 13.

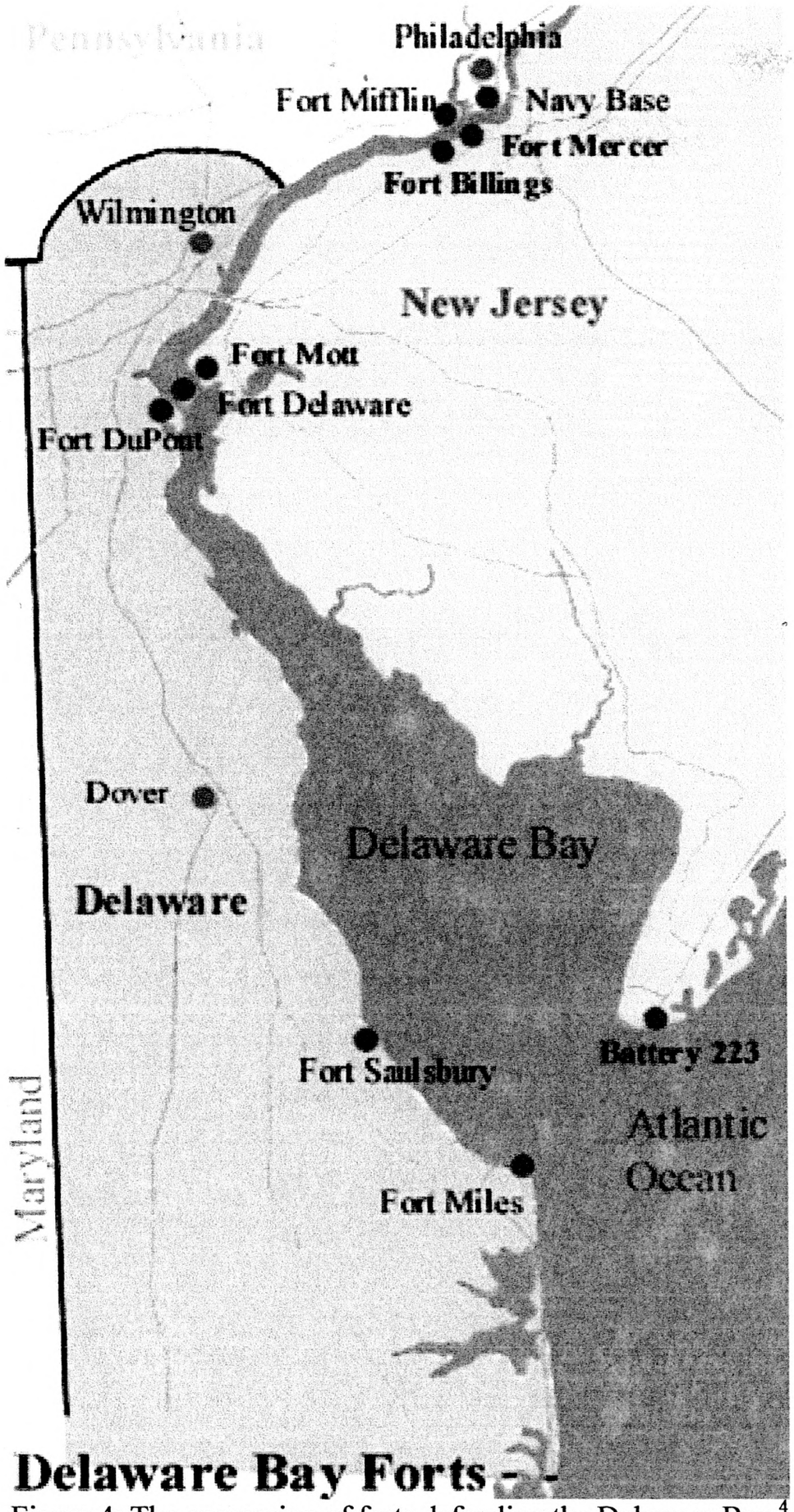

Figure 4: The succession of forts defending the Delaware Bay.[4]

[4] http://www.geocities.com/naforts/delawaremap.gif

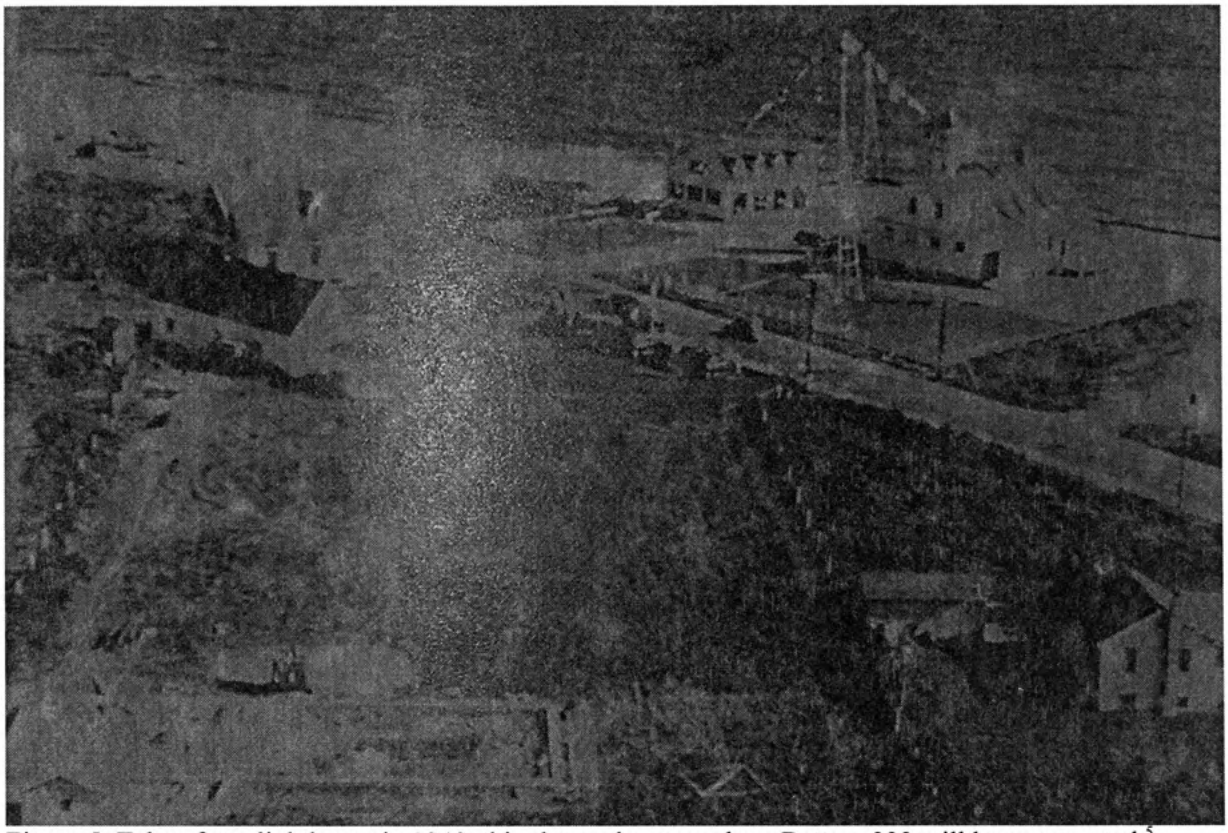

Figure 5: Taken from lighthouse in 1940, this shows the area where Battery 223 will be constructed.[5]

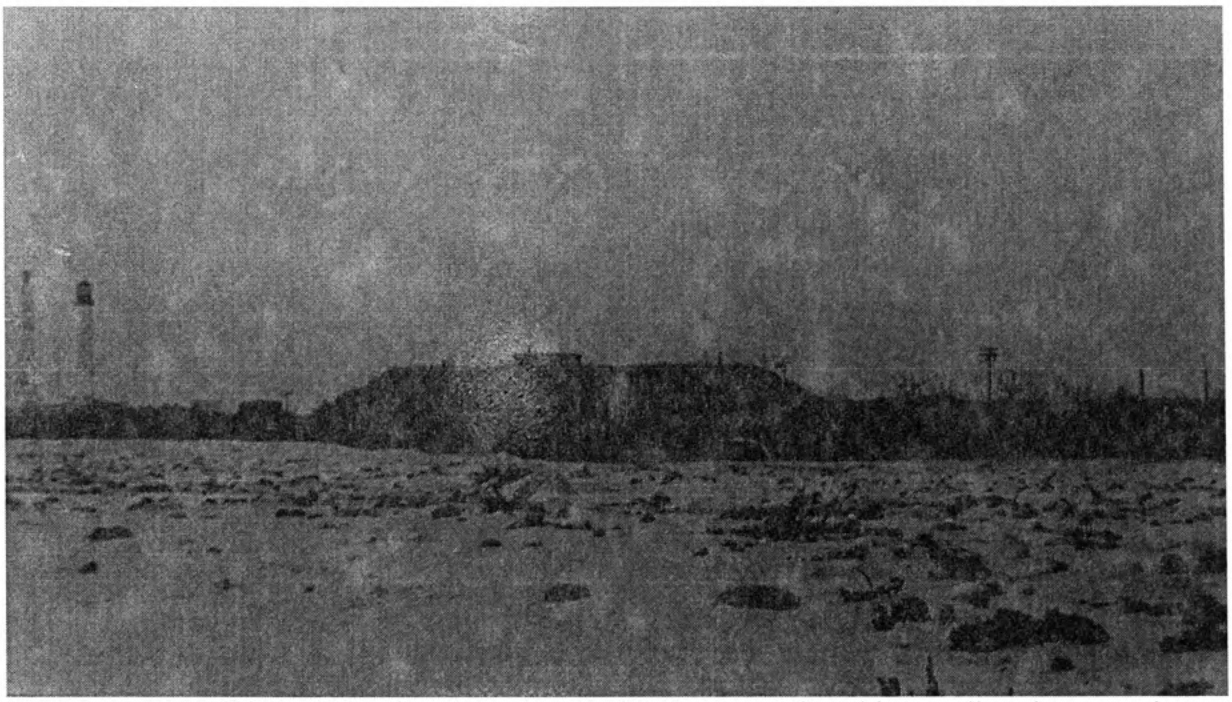

Figure 6: Battery 223 in 1947. Note the earth covering that camouflaged it as well as the square battery command that originally was located on top.[6]

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[5] Herb Beitel and Vance Enck, *Cape May County: A Pictorial History* (Norfolk/Virginia Beach : Donning Co. Publishers, 1988).
[6] From the Cape May County Historical and Genealogical Society.

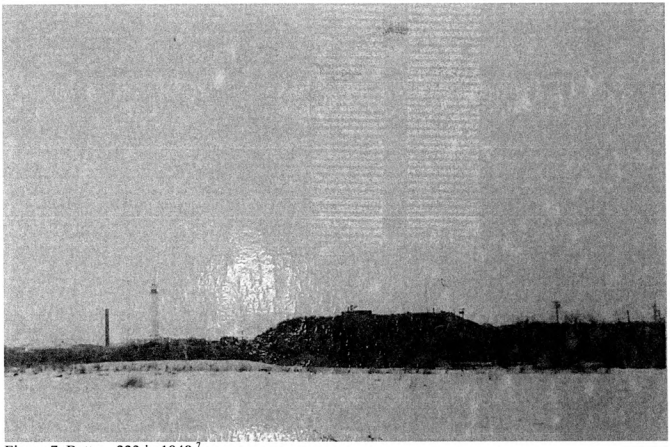

Figure 7: Battery 223 in 1948.[7]

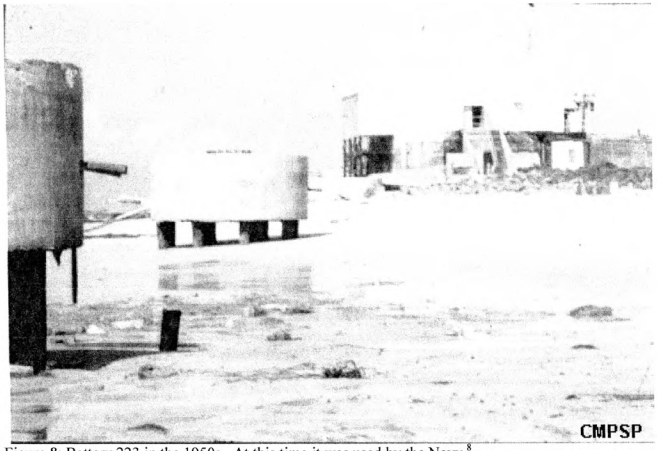

Figure 8: Battery 223 in the 1950s. At this time it was used by the Navy.[8]

[7] Cape May County Historical Society.

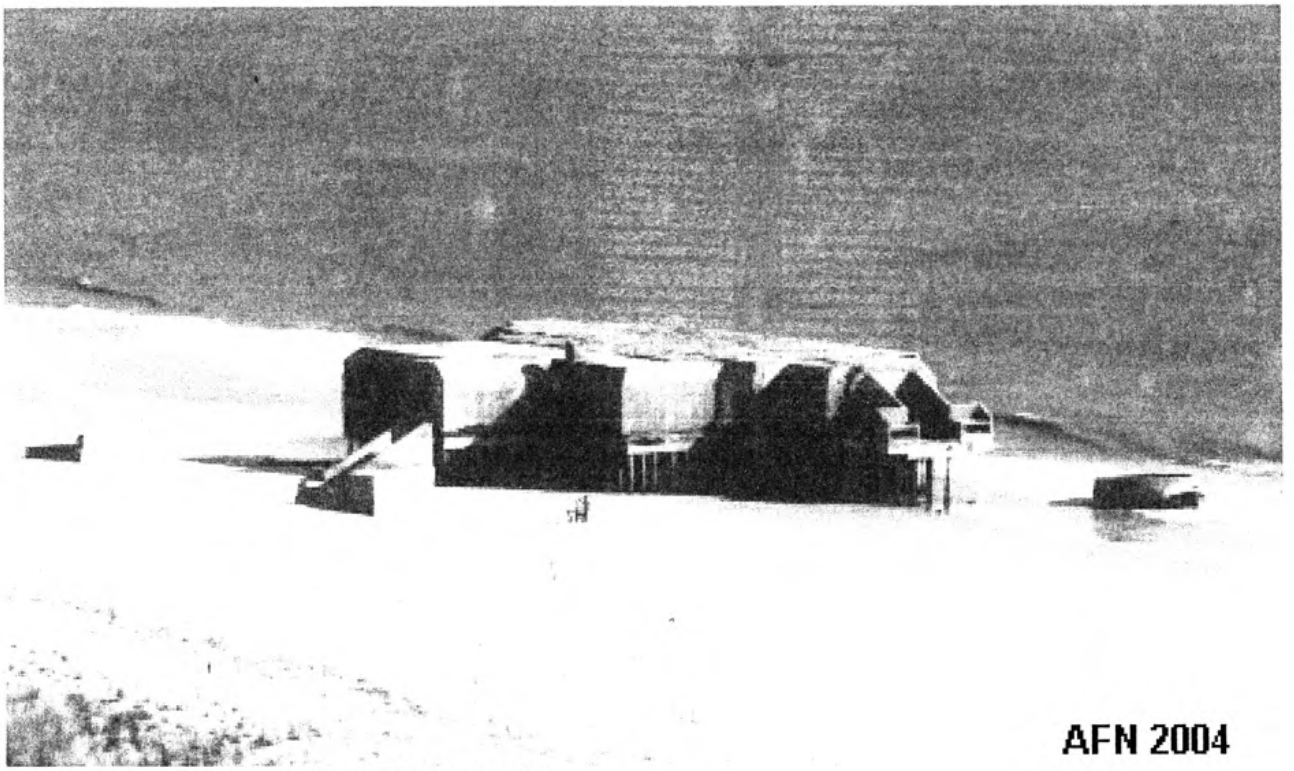

Figure 9: Battery 223 in the 1970s at low tide.

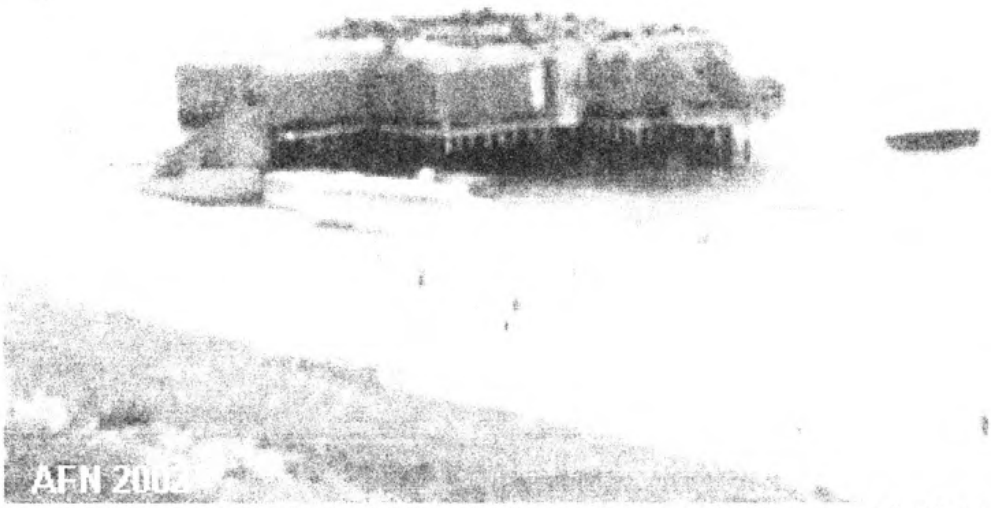
Figure 10: Battery 223 in the 1970s at high tide; it is completely surrounded by water.

[8] http://www.cdsg.org/cdsgrep/capemayr.htm

Figure 11: March 1942 plotting room at Fort Story, Virginia. The plotting board and supplemental range-correction board and deflection board would resemble that found in Battery 223.[9]

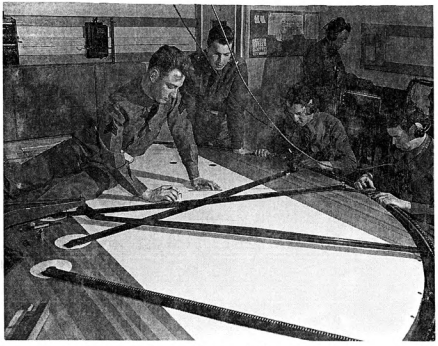

Figure 12: Another photo of a plotting board. [10]

[9] Alfred T. Palmer, photographer, "In This Coast Artillery Plotting Room at Fort Story, Virginia," (March 1942). Library of Congress Prints and Photographs, Call Number LC-USE6 –D-005050. Available on line at www.memory.loc.gov.
[10] Alfred T. Palmer, photographer, "In This Coast Artillery Plotting Room at Fort Story, Virginia," (March 1942). Library of Congress Prints and Photographs, Call Number LC-USE6- D-005049. Available on line at www.memory.loc.gov.

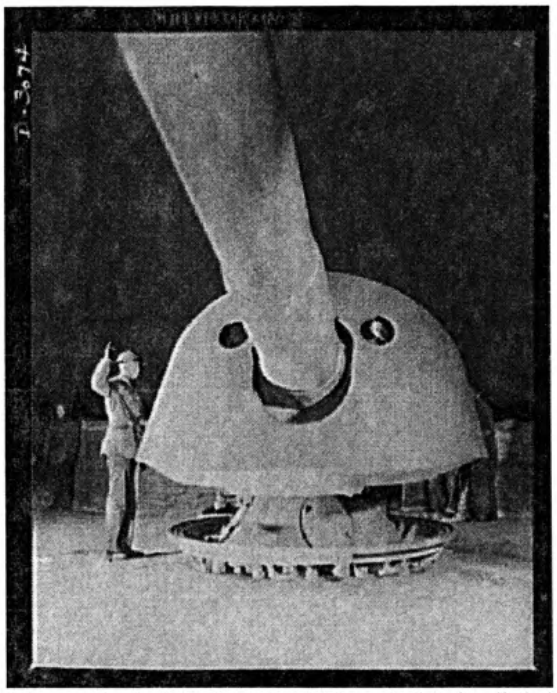

Figure 13: A 6-inch gun. Although this is slightly different than the ones on Battery 223, this image gives an idea of the great size of the guns. [11]

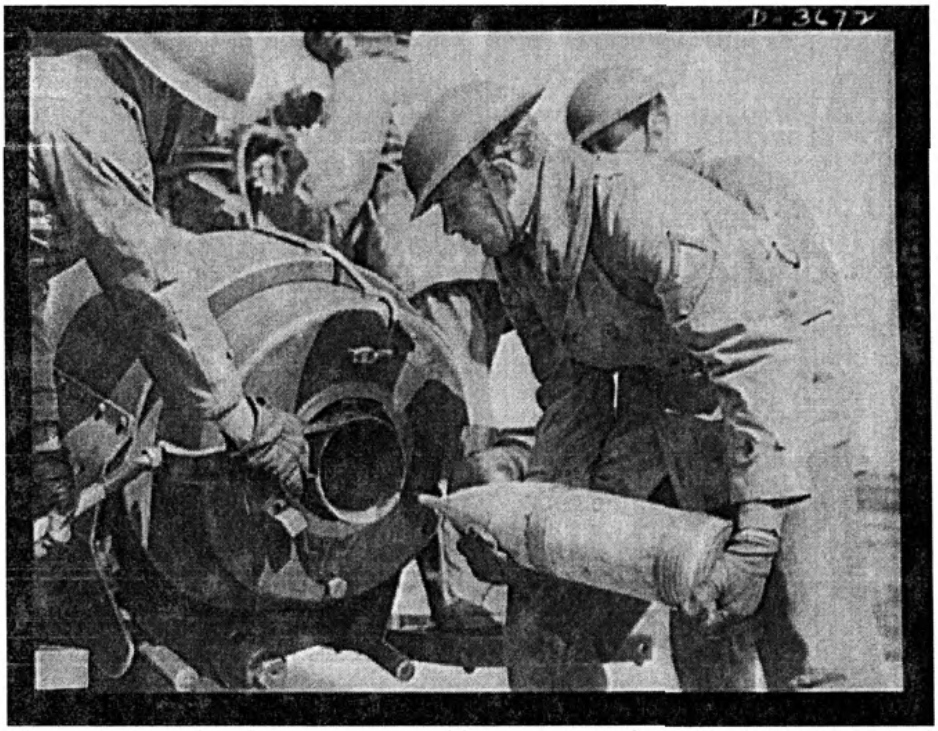

Figure 14: Manning the guns was a multi-person operation. The shells were stored in the battery.[12]

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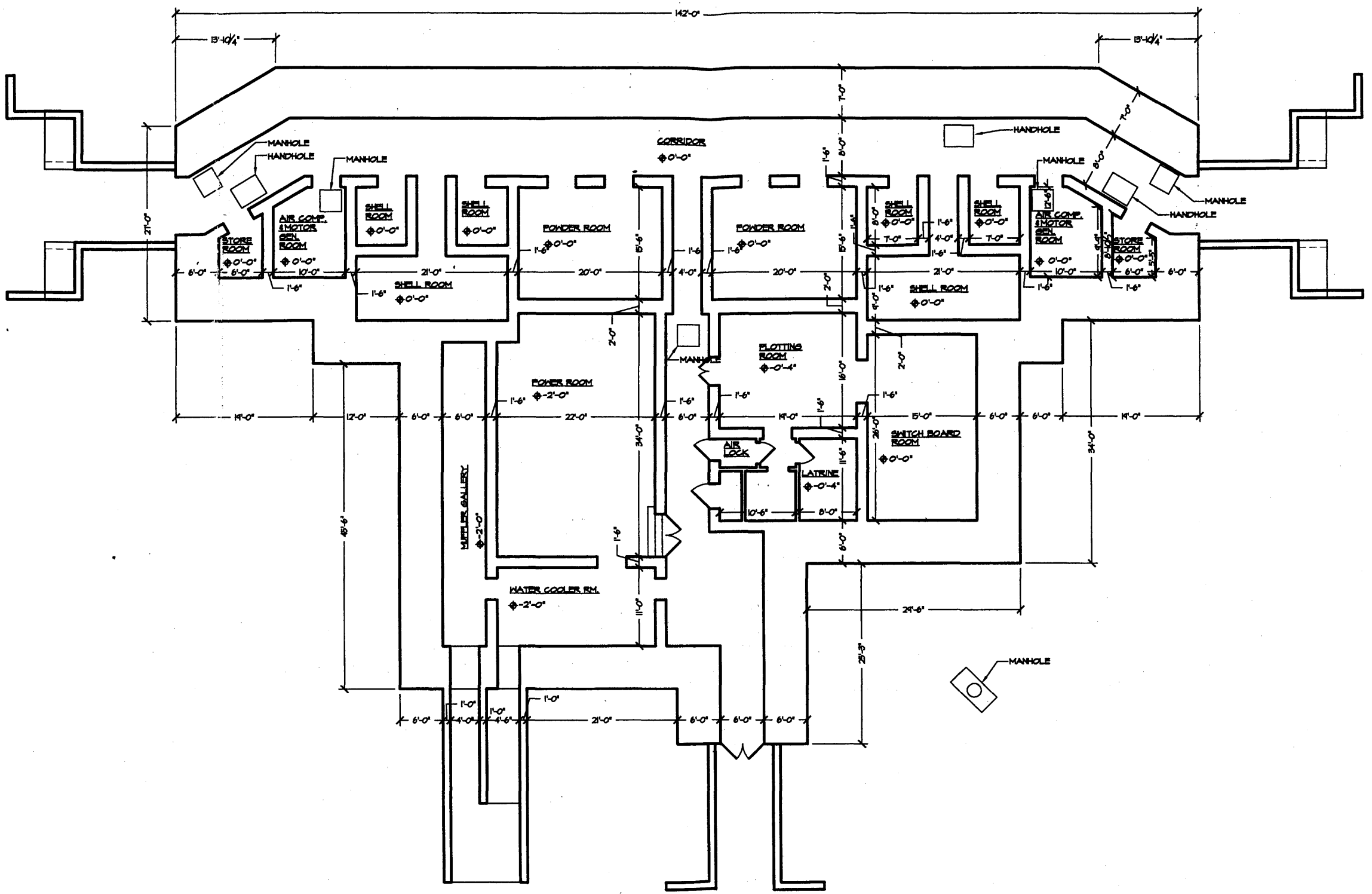
[11] Alfred T. Palmer, photographer, "Soldiers at Fort Story, Virginia, operate a six-inch gun mounted on a barbette carriage.," (March 1942). Library of Congress Prints and Photographs, Call Number LC- LC-USE6- D-003074. Available on line at www.memory.loc.gov.

[12] Alfred T. Palmer, photographer, "Fort Story Coast Defense. Loading One Of Fort Story's Six-Inch Guns" (March 1942). Library of Congress Prints and Photographs, Call Number LC-USE6- D-003672. Available on line at www.memory.loc.gov.



1 / A-1 FLOOR PLAN

SCALE: 1/16=1'-0"

HMR ARCHITECTS
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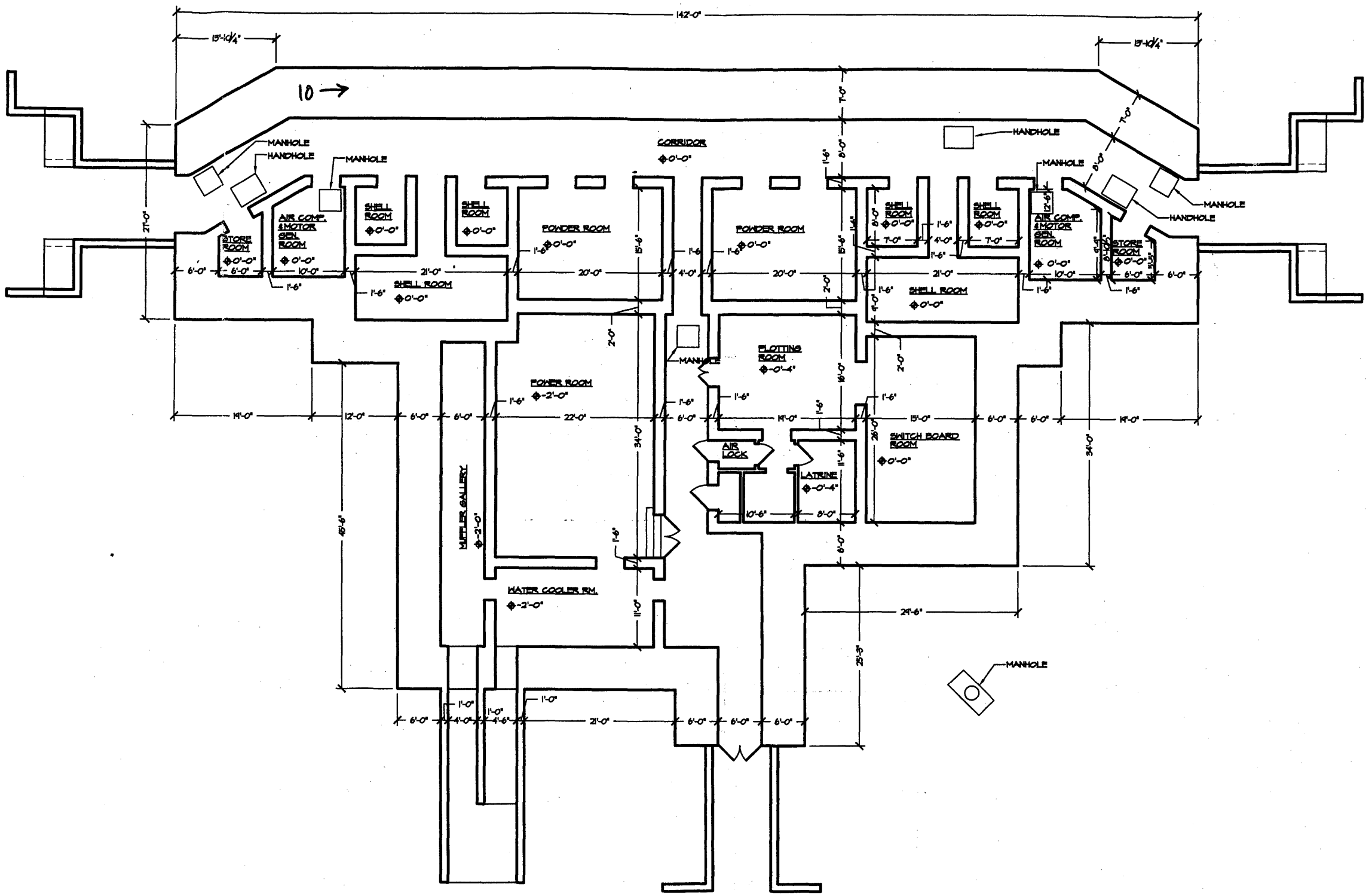
SCALE: AS NOTED
DRAWN BY: TT
DATE: 012307

A-1

FLOOR PLAN

NATIONAL REGISTER NOMINATION
BATTERY 223
LOWER TOWNSHIP
CAPE MAY COUNTY, NEW JERSEY



1 / A-1 FLOOR PLAN

SCALE: 1/16=1'-0"

PLAN NORTH

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A-1

FLOOR PLAN

PHOTO LOCATIONS

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