



**US Army Corps  
of Engineers®**  
Rock Island District

Defense Environmental Restoration Program  
for  
Formerly Used Defense Sites  
Ordnance and Explosives

**FINAL**

## **Archives Search Report**

for  
the former

# **FORT TAYLOR**

Key West, Florida  
Project Number IOFL022701  
24 January 1996

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IOFL022701\_01.02\_0003\_a

14 May 1996  
Mr. Ofslager/sf/6024

MEMORANDUM FOR Commander, U.S. Army Corps of Engineers  
Engineering and Support Center, Huntsville,  
ATTN: CEHND-OE-AI (Mardis), P.O. Box 1600,  
Huntsville, AL 35807-4301

Subject: Ordnance and Explosive (OE) Archives Search Report for  
the Former Fort Taylor, Key West, Florida, Project Number  
I04FL022701

1. References:

a. Memorandum, CEHNC-OE-PM, 24 January 1996, subject:  
Results of Technical Advisory Group (TAG), Review of Archives  
Search Reports (ASR), Revision of Fact Sheets and Risk Assessment  
Code (RAC), Forms for Defense Environmental Restoration Program-  
Formerly Used Defense Sites (DERP-FUDS), Project No. C03VA001501,  
I04FL0220701, and D01RI033803.

b. Draft Archives Search Report, dated March 1995.

2. The purpose of this memorandum is to transmit revised pages  
for the subject report.

3. As a result of a TAG review and comments (reference 1a), a  
change to the report (reference 1b) is required. Page for page  
changes are at enclosure.

4. With these changes posted, subject report should now be  
considered final. Further distribution of this report may now be  
made as needed.

CENCR-ED-DO  
SUBJECT: Ordnance and Explosive (OE) Archives Search Report for  
the Former Fort Taylor, Key West, Florida, Project Number  
I04FL022701

5. The POC for this office is Mr. George Ofslager, CENCR-ED-DO,  
telephone (309) 794-6024.

FOR THE COMMANDER

ORIGINAL SIGNED BY  
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Encl (3 cys)

ROBERT W. KELLEY, P.E.  
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for the Former Fort Taylor, Key West, Florida, Project  
Number I04FL022701

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## **DISCLAIMER**

The purpose of this archives search report is to present the findings of research undertaken for this specific Formerly Used Defense Site (FUDS) property. All of the factual information found during the research is included in this "Findings" volume. Reference may be made in this volume to a separate "Conclusions and Recommendations" volume. In some instances, the Conclusions and Recommendations volume contained recommendations of individuals performing the analysis that may contain inferences or conjecture not supported in subsequent reviews. Because these statements are not always factual in nature, the US Army Corps of Engineers has determined the Conclusions and Recommendations volumes, where they exist, do not necessarily represent the opinion of the USACE and are not available for public release. The Risk Assessment Code (RAC) form that was contained in the Conclusions and Recommendations volume has been inserted in a separate Appendix of this finalized report.

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM  
for  
FORMERLY USED DEFENSE SITES

FINDINGS

ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORMER FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

24 January 1996

Prepared For  
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ORDNANCE AND EXPLOSIVE WASTE  
 ARCHIVES SEARCH REPORT  
 FOR  
 FORMER FORT TAYLOR  
 KEY WEST, FLORIDA  
 PROJECT NUMBER I04FL022701

**ACKNOWLEDGMENT**

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ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORMER FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

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ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORMER FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

1. INTRODUCTION

a. **Subject and Purpose**

(1) This report presents the findings of a historical records search and site inspection for ordnance and explosive waste (OEW) presence located at Former Fort Taylor, Key West, Florida. See plate 1 for general site location map. The investigation was performed under the authority of the Defense Environmental Restoration Program for Formerly Used Defense Sites.

(2) The purpose of this investigation was to characterize the site for potential OEW contamination utilizing historical records, interviews and on-site visual inspection results.

(3) For the purpose of this report, OEW is considered unwanted and abandoned ammunition or components thereof, which contains or contained energetic, toxic or radiological materials, and was manufactured, purchased, stored, used, or disposed of by the War Department, Department of the Navy, or the Department of Defense.

b. **Scope**

(1) The investigation focused on 51 acres that were used as the Former Fort Taylor.

(2) This report presents the site history, site description, real estate ownership information, results of a visual site inspection, confirmed ordnance presence based on available records, the site inspection, and evaluation of potential ordnance contamination based on site ordnance components and site information.

2. PREVIOUS INVESTIGATIONS

a. **Preliminary Assessment**

(1) A Preliminary Assessment of Fort Taylor was conducted under the Defense Environmental Restoration Program, Formerly Used Defense Sites (DERP-FUDS) by the U.S. Army Corps of Engineers, New England Division. At that time, the Finding and Determination of Eligibility (FDE), dated 10 June 1991, concluded that the approximately 51 acre

site located in Key West, Florida had been formerly used by the U.S. Army and Navy (See document E-1).

(2) The FDE concluded that there were eligible categories under the DERP FUDS program. Due to the fact that the site was used by the Army as a coast artillery fort, an Ordnance and Explosive Waste (OEW) project was recommended, DERP FUDS Project Number I04FL022701, the principal subject of this report (See document E-2 and Table 2-1).

TABLE 2-1 DERP FUDS PRELIMINARY ASSESSMENT PROJECTS				
Project Number	DERP Category	Present Phase	Comments	Location
I04FL022701	OEW	SI	Ordnance and Explosive Contamination	Entire 51 Acres (See Plate 1)
	BD/DR		None Recommended	
	HTRW		None Recommended	

**b. Other Investigations**

No other investigations pertinent to this site were located.

**3. SITE DESCRIPTION**

**a. Existing Land Usage**

(1) The Former Fort Taylor consisted of approximately 51 acres of land in the City of Key West, Florida (See plate 1).

(2) The 51 acres that made up the Former Fort Taylor is currently owned by the State of Florida. The site is administered by the Florida Division of Parks and Recreation.

TABLE 3-1 CURRENT LAND OWNERS/USAGE					
AREA	FORMER USAGE	CURRENT OWNER	CURRENT LAND USAGE	ACREAGE	COMMENTS
A	Casements	State of Florida	Historic Site	3*	See Plate 3
B	Disposal Area	State of Florida	Moat and Adjacent Area	7*	See Plate 3
C	Remaining Lands	State of Florida	Beach and Park	41*	See Plate 3
* Indicates approximate acreage				TOTAL	51

#### b. Climatic Data

(1) The climate of Key West is semi-tropical. The area is greatly influenced by the proximity of the Atlantic Ocean and Gulf of Mexico. Surface winds blow predominately from the east with changes to the east southeast during summer and northeast during winter. The average yearly wind velocity is 11.2 miles per hour.

(2) The coldest month in Key West is January; the warmest is July. The lowest recorded temperature is 41 degrees Fahrenheit and the highest recorded temperature is 95 degrees Fahrenheit.

(3) Total yearly precipitation at Key West averages approximately 39 inches. The wet season is May to November and 72 percent of the rain falls in this season.

(4) Hurricane season runs from August through November. Between 1900 and 1983, nineteen hurricanes have occurred at Key West (Reference B-2).

#### c. Topography

The Fort Taylor area is situated at the western most tip of Key West. The majority of the land was formed from dredging material from the main ship channel. The area is nearly flat with an average elevation of less than 10 feet. There are no streams on the site. Surface drainage is toward the ocean and to a moat surrounding the casement walls.

#### d. Geology and Soil

(1) The Florida Keys are a narrow chain of small islands extending from Soldier Key on the north to Key West on the south and west, a total distance of about 150 miles. The greater part of the Keys is low-lying, projecting two to

four feet above high tide. The highest point is Windley Key, which reaches an elevation of 18 feet.

(2) Intertidal flats border both sides of the islands. These are shallow water areas, barely covered at low tide, which gradually slope into the deeper water of the surrounding platform. The surfaces of most of the Keys are flat and of about the same elevation throughout their extent. Offshore dredging operations that involve making new land and converting mangrove areas into habitable sites are numerous.

(3) Like the southern part of the mainland, the bedrock is limestone. The bed rock of the lower keys began as an underwater east-west mound of unstable oolite. As it grew higher by the addition of more ooids, the mound gradually became broader to the south as well as the north and eventually covered the underlying corals. Tidal currents cut channels in the unstable oolite at right angles to the long direction of the mound. When the sea level lowered during the glacial times, the exposed oolitic material hardened. The subsequent rise in sea level enabled the ocean waves to attach the mound. These waves concentrated on the old tidal channels originally formed while the mound was composed of loose ooids and eventually formed narrow channels that today separate the lower keys from each other (Reference B-3).

(4) The soil of the Fort Taylor site is classified as urban. The soil properties and characteristics of this unit vary. On site investigation is needed to determine the suitability for specific uses and the limitations affecting those uses (Reference B-4).

#### e. Hydrology

(1) There are no streams on the site. Surface drainage is toward the ocean and to a moat surrounding the casement walls.

(2) Tidal information for Key West is summarized in Table 3-2 (Reference B-5).

TABLE 3-2 TIDAL INFORMATION	
Tide	Height (feet)
Mean Higher High Water	1.8
Mean High Water	1.6
Mean Low Water	0.2
Extreme Low	-1.5

f. **Natural Resources**

A federally listed species, the roseate tern, is known to nest on the roofs of buildings of the Truman Annex. This area is immediately adjacent to Fort Taylor. Two state listed species have been observed at Fort Taylor (See document F-1 and Table 3-3).

TABLE 3-3 NATURAL AND CULTURAL RESOURCES		
RESOURCE CLASSIFICATION	TYPE	COMMENT
Wildlife	Roseate Tern	State Endangered Federally Listed
	Least Tern	State Threatened
	Osprey	Special Concern
Vegetation		None Identified
Historical	Fort Taylor	National Historic Landmark
Archeological	Various/Ordnance	See document E-3

g. **Historical/Cultural Resources**

Fort Taylor was listed in the National Register of Historic Places in 1971 and declared a National Historic Landmark in 1973. (Reference B-7).

4. HISTORICAL ORDNANCE USAGE ON-SITE

a. **Chronological Site Summary.**

(1) Construction of Fort Taylor commenced in 1845. The fort was designed as a trapezoid with three sides facing seaward, each 225 feet in length. The fourth side, 495 feet long, faced land and provided an entrance to the fort. The original structure had walls five feet thick and almost fifty feet high. The walls contained two tiers of guns in casements, and a third tier mounted on the barbette.

(2) The fort was built off shore and was completely surrounded by water. Except for the soldiers' barracks, which is probably supported by wood pilings, the structure rests on a bedrock of Key West Island Stone, a calcareous rock. Granite was used to construct the base of the fort and brick was used for the walls.

(3) During the Civil War, Fort Taylor and Key West remained under federal control. Confederate forces did not attempt to challenge Union forces at Fort Taylor.

(4) In 1870, the War Department withdrew the garrison from Fort Taylor, and converted the fort to caretaker status.

(5) In 1898, an Endicott period fort was built on the site. The upper tier of the fort was removed. The original casements were filled with sand. Civil War period ordnance material, both cannon and empty projectiles, were also buried within the walls. Two concrete casements were constructed on the site. One contained Battery Osceola, two 12 inch guns, and the other contained Battery Adair, four 3 inch guns. A number of other batteries were built on the current Navy property and are not discussed in this report. The fort was returned to a caretaker status in 1906.

(6) During World War I, the fort was manned. During the period between the World Wars, the fort was returned to a caretaker status, with use by the National Guard during summer training. During this period, the 3 inch guns of Battery Adair were removed.

(7) During World War II, the 12 inch guns of Battery Osceola were removed. A 90mm Anti Motor Torpedo Boat (AMTB) battery was located on the fort.

(8) In 1947, Fort Taylor was transferred from the Army to the Navy. The water surrounding the fort was filled in by the Navy. The landward side was filled-in in 1951. In about 1965 the remainder of the site was filled-in. During the time of Navy ownership, the site was used as a surplus property salvage yard.

(9) Between 1968 and 1976 a large quantity of the Civil War period ordnance material was recovered from the sand filled casements. Excavation was conducted by Mr. Howard England, a Department of the Navy civil servant, on a voluntary basis at no cost to the Navy.

(10) In 1971 Fort Taylor was designated as a National Historic Site and in 1973 it was designated as a National Historic Landmark. In 1976, the State of Florida acquired title to the site (Reference B-7).

(11) In 1989, a moat was excavated around the exterior walls. An number of fuzed Civil War era projectiles were recovered. These projectiles were destroyed by members of the 66th Explosive Ordnance Disposal (EOD) detachment (See document I-1).

**b. Ordnance Related Record Review.**

(1) Research efforts began with a thorough review of all reports, newspaper articles, historical documents and reference material gathered during the archival records search. During the review, an effort was made to focus on the area of potential OEW contamination as described in the Inventory Project Report (INPR) (Reference B-1).

(2) Many reference maps were obtained from the Cartographic and Architectural Branch of the National Archives. The following documents contained information useful to locations of ordnance contamination.

(a) The general plan of Fort Taylor (See document L-1) shows the contours of the ocean floor adjacent to Fort Taylor. The depth of the water was eight to ten feet, depending upon location. The slope of the ocean floor was less than five degrees.

(b) The plans and sections of the fort (See documents L-2 and L-3) shows four magazine in each corner of the Civil War era fort.

(c) A map showing the sectors of fire (See document L-4) indicates that the maximum range of the Civil War era artillery was four miles.

(d) Three sketches show the condition of the armament (See documents L-5, L-6 and L-7) at the fort just prior to its conversion to an Endicott period fort. Approximately 127 Civil War era cannons were mounted in the fort at that time.

(e) Two sketches show the condition of the armament (See documents L-8 and L-9) and the Endicott period casements. A note on the sketch states "All guns have been built into concrete, or sent to N.Y. Arsenal except 14, which lie where shown on sketch".

(3) A letter written just prior to World War II stated that a cumulative total of 75 rounds had been fired from the 12 inch guns at the fort (See Document F-2).

(4) A partial report by a board of officers stated that summer camp training for National Guardsmen and target practice occurred during the inter-war period. This document also listed the batteries active at the fort during this period (See Document F-3).

(5) A War Department letter directed that 2000 rounds of 155mm ammunition for a mobile gun battery be stored in the magazines of the batteries of Fort Taylor (See Document F-4).

(6) The report of completed work for Battery Adair gives the actual model number and serial numbers of the guns emplaced. It indicated that the 3 inch guns of this battery were dismantled by 1921 (See Document F-5).

(7) The report of completed work for Battery Osceola gives the actual model and serial numbers of the 12 inch guns emplaced (See Document F-6).

(8) A letter written in 1943 directed the removal of the 12 inch guns of Battery Osceola. The letter mentioned disposal of the ammunition. However, it did not indicate the actual disposition of the ammunition (See Document F-7).

(9) An undated map shows the range and field of fire of Battery Osceola. Based upon the fields of fire of other nearby batteries, the map appears to have been drawn just prior to World War II (See Document F-8).

(10) A newspaper article from 1895 stated that blasting caps were stored at the Civil War era fort (See Document H-1).

(11) In the War Department Annual Report for Fiscal Year 1899 (See Document H-2) contained the following information:

(a) A number of Civil War era guns were embedded in the concrete of Battery Osceola to serve the same purpose as pieces of random stone. No mention was made of the use of cannon balls and Parrot rifle projectile for the same purpose.

(b) Three submarine mine fields were planted off Fort Taylor in 1898. Two of the mine fields were exploded in place and the third was moved to shallow water.

(12) A historic photograph (See Document K-1) shows a 90mm gun emplaced on the north west corner of the fort. Also shown in this photograph is a salute cannon.

(13) Three historic photographs (See Documents K-2, K-3 and K-4) shows the condition of Fort Taylor when it was a salvage yard for the Navy. A variety of drums, containers and electrical equipment were stored on the parade ground (See document K-2). What appears to be pierced steel planking was used to store equipment outside the south wall of the fort (See document K-3). Savage material was stored in a haphazard manner in this area (See document K-4).

(14) An inventory of metallic artifacts was conducted by the Florida Bureau of Historic Research in 1993 (See Document E-3). This inventory shows that over 1,300

Civil War era projectiles have been recovered from Fort Taylor.

(15) Historical photographs (See Document K-5) of Parrot rifle projectiles being excavated appears in a book written by the man who accomplished the excavation.

### **c. Personnel Interviews**

(1) Efforts to locate individuals who had served or had first hand knowledge of Fort Taylor were minimally successful. Interviews with those people listed in Appendix A (Reference Sources) of this report were performed, but for the most part these people had no first hand knowledge of what went on at the site during the time it was a coast artillery fort.

(2) Document I-1 is a conversation record with the park manager of Fort Taylor. He stated that live ordnance was found in Area B south of Battery Osceola in 1989 (See plates 2 and 3). He also provided the assessment team with a number of historical photographs that suggested HTRW contamination on the site.

(3) Document I-2 is a conversation record with Mr. Howard England, the individual who excavated a large quantity of Civil War era ordnance from the casements, Area A (See plate 3), between 1968 and 1976. He is also a life long resident of Key West and a former Navy employee. He stated that during his excavations, he uncovered live Parrot shells. He also stated that Fort Taylor had a mining casement and submarine mines were planted off the coast of Key West during World War II. However, the mines were destroyed in place by command detonation. He stated that leaking electric transformers were stored outside the wall at Fort Taylor. He went overseas during World War II, but he lived in Key West for a portion of the war. He stated that he never heard the guns fire during the war.

(4) Document I-3 is a conversation record with an employee of the local office of the U. S. Fish and Wildlife Service. This office was contacted in that a probable impact area is currently under their jurisdiction. He stated that in his 17 years of experience, no artillery projectiles were found in this area.

## **5. SITE ELIGIBILITY**

### **a. Confirmed Formerly Used Defense Site**

(1) Former land usage by the War Department was confirmed for the entire site as summarized in section 4a of this report. The approximately 51 acre site was used as a

coast artillery fort by the US Army and as a salvage yard by the US Navy.

(2) By 1976 all acreage that had been owned by the Department of the Navy was relinquished. Today, no ownership or usage of any part of the former Fort Taylor remains with the Department of Defense (DOD) (see plate 4).

**b. Potential Formerly Used Defense Sites**

A portion of the Atlantic Ocean, 97,000 acres of water, that was not covered in the Finding and Determination of Eligibility dated 10 June 1991 (see document E-1) has been identified. This acreage has a potential for OEW contamination due to target firing of artillery and the presence of a submarine mine field. This acreage has been identified as Area D: Off Shore Ordnance Area. No other acreage with OEW potential ordnance usage was discovered during the site investigation or literature search for this facility.

TABLE 5-1 POTENTIAL FUDS SITES					
AREA	FORMER USAGE	CURRENT OWNER	CURRENT LAND USAGE	ACREAGE	COMMENTS
D	Off Shore Ordnance Area	Key West National Wildlife Refuge	Atlantic Ocean	97,000*	See Plates 3 and 5.
* Indicates approximate acreage					

**6. VISUAL SITE INSPECTION**

**a. General Procedures and Safety**

(1) The primary task of the site inspection was to assess OEW presence or potential due to use as an anti-aircraft artillery training area and possible demolition, burial or burning sites. On-site inspection was limited to non-intrusive methods in that subsurface sampling was not authorized nor permitted.

(2) Prior to the on-site visit, a thorough review of all available reports, historical documents and available reference material gathered during the archival search was reviewed to ensure awareness of potential ordnance usage and types.

(3) A site safety plan was developed and was utilized by the assessment team to assure safety from injury during the site inspection of the facility (Reference B-26).

A pre-inspection briefing was conducted which stressed that OEW should only be handled by military EOD personnel.

(4) On 6 December 1994, members of the assessment team traveled to the former Fort Taylor. An investigation of this real estate was conducted to determine the presence or absence of OEW.

(5) Real estate rights of entry were not obtained by the assessment team due to the willingness of the land owners and controllers to accommodate the assessment team. Owners and controllers were briefed on the non-intrusive nature of the inspection and the safety procedures used by the safety team.

**b. Area A: Casements**

(1) The Fort Taylor State Historic Site maintains a museum in the landward curtain. Several ordnance items that were recovered from the fort are on display. One of the items on display was a fuze for a Parrot rifle projectile (See photograph J-1 and plate 6).

(2) In another room, not open to the public, there is a large amount of recovered ordnance (See photographs J-2, J-3 and plate 6). The ordnance was gathered from various locations from the site. Most of the items are empty cannon balls, empty parrot rifle shells and solid parrot rifle projectiles. One projectile with a fuze was noted (See photograph J-4 and plate 6). Another projectile appeared to be a 3 inch armor piercing projectile. However, positive identification could not be made due to the heavy corrosion. Several empty cartridge cases are also stored in this room (See photograph J-5 and plate 6). Post Korean War era cartridge cases were also noted by the assessment team. These items were attributed to the use of Fort Taylor as a salvage yard by the Navy.

(3) The parade ground is open to the general public. No ordnance presence was noted other than recovered cannons on display (See photograph J-6 and plate 6).

(4) A portion of Battery Osceola is open to the general public (See photograph J-7 and plate 6). In the concrete casement, several civil war era cannons are partially exposed (See photographs J-8, J-9 and plate 6).

(5) Battery Adair and the north curtain are not open to the general public. No indication of ordnance presence was noted by the assessment team (See photographs J-10, J-11 and plate 6).

**c. Area B: Disposal Area**

(1) Live ordnance was discovered by Battery Osceola when a moat was dug around the fort in 1989 (See photograph J-12 and plate 6). The remainder of the land is flat with very little vegetation.

(2) On the outer edge of the area is a long berm (See photograph J-13 and plate 6). This is a suspected non-ordnance burial area.

(3) No ordnance presence was noted on the surface of this area by the assessment team.

**d. Area C: Remaining Lands**

(1) In the eastern portion of this area is a suspected non-ordnance burial area under the public rest room (See photograph J-14 and plate 6).

(2) There is a small picnic area and bathing beach on the southern portion of this area (See photographs J-15, J-16 and plate 6). The remainder of the area has a parking lot and an open area. The open area is flat with very little vegetation.

(3) No ordnance presence was noted on the surface of this area by the assessment team.

**e. Area D: Off Shore Ordnance Areas**

The off shore ordnance area is in the Atlantic Ocean and was not inspected by the assessment team.

**7. EVALUATION OF ORDNANCE PRESENCE**

**a. General Procedures.**

(1) Each sub-site was evaluated to determine confirmed, potential, or uncontaminated ordnance presence. Confirmed ordnance contamination is based on verifiable historical evidence or direct witness of ordnance items since site closure. Verifiable historical record evidence consists of ordnance items located on site and documented by local bomb squads, EOD teams, newspaper articles, correspondence, current findings, ect. Direct witness of ordnance items consists of the inspection team directly locating ordnance items by visual inspection. Additional field data is not needed to identify a confirmed site.

(2) Potential ordnance contamination is based on a lack of confirmed ordnance presence since site closure. Potential ordnance contamination is inferred from record.

Inference from historical records would include common practice in production, storage, usage or disposal, at that time, which could have allowed present day ordnance contamination. Potential ordnance continuation could also be based on indirect witness or from present day site features. Additional field data is needed to confirm potential ordnance sub-sites.

(3) Uncontaminated ordnance sub-sites are based on a lack of confirmed potential ordnance contamination. Additional field data is not needed to assess uncontaminated ordnance sub-sites.

**b. Area A: Casements**

(1) This area has potential ordnance potential OEW contamination. A former Navy employee stated that live Parrot rifle shells were recovered in this area. However, there is no documentation by an EOD team or a local bomb squad that these items were filled with black powder.

(2) Ordnance items were placed in the fort's walls because there was no market for scrap iron at the time the fort was converted to an Endicott period structure. The items were obsolete and the cost of transport to the mainland was probably higher the scrap value of the items.

(3) In that black powder is sensitive to shock, placing live rounds in the walls of the fort would increase the effect of any enemy round penetrating the walls of the fort. All of the exterior walls of this fort are brick masonry rather than concrete, which increases the probability of penetration by enemy projectiles. It is concluded that placing black powder filled projectiles in the walls was not an acceptable practice at the time the fort was converted. However, inadvertent placement of some live rounds in this area cannot be totally discounted.

**c. Area B: Disposal Area**

(1) This area has confirmed OEW contamination. Live ordnance had been recovered from this area. However, the location most likely to contain abandoned munitions is adjacent to the fort walls. This location has been excavated by the State of Florida.

(2) When the fort was converted, the simplest method of disposal of ready ammunition was to dump it in the ocean. A section of landward wall and the adjoining magazine was demolished to ground level near Battery Osceola. This location provided the easiest access from the interior of the fort to the ocean. This is the same location that live ordnance was excavated by the State of Florida.

(3) The 3 inch armor piercing projectile that was viewed by the assessment team was probably discarded into the ocean by the crew of Battery Adair. When this battery was abandoned, the guns mounts were thrown into the sea. It is unlikely that there was a wholesale disposal of munitions at this time. Large scale disposal is considered unlikely in that other 3 inch batteries were located in Key West until World War II.

**d. Area C: Remaining Lands**

This area is uncontaminated. No indication of OEW presence in the remaining portion of the former Fort Taylor was found during the record search or site inspection.

**e. Area D: Off Shore Ordnance Area**

(1) This area has potential OEW contamination. It was a target area for coast artillery guns and the location of a submarine mine field.

(2) Inert projectiles are the most likely item to be found in this area. However, the potential for high explosive rounds cannot be excluded.

(3) The presence of mines is considered highly unlikely. The mines were reportedly destroyed by command detonation. If a mine misfired, it could be located and recovered easily. The mine employed a buoy to mark its location to aid recovery. If the buoy became lost, the mine could be located by means of a cable connecting the mine to the mining casement.

**8. SITE ORDNANCE TECHNICAL DATA**

**a. End Item Technical Data**

(1) While no comprehensive list of the exact models of ammunition used at the former Fort Taylor could be located, the general fillers were black powder or inert warheads. No evidence exists that chemical warfare material was used at this site.

(2) Table 8-1 has been developed to establish a list of potential ordnance items and their fillers that could exist at surface or sub-surface levels within the former site. This table has been developed based on historical documentation and personal interviews. The model numbers used to delineate possible types are speculative and are based on common models that existed during the two world wars.

TABLE 8-1  
AMMUNITION USED AND EXPLOSIVE/CHEMICAL FILLER

ITEM	TYPE/MODEL	FILLER/WEIGHT	FUZE TYPE
Smooth Bore Cannon Balls	Shell	Black Powder	Borman or Paper Time
	Case Shot	Black Powder Lead Ball Matrix	Borman or Paper Time
	Solid Shot	N/A	N/A
Parrot Rifle Projectiles	Shell	Black Powder	Percussion or Time
	Case Shot	Black Powder Lead Ball Matrix	Percussion or Time
	Bolt (Solid)	N/A	N/A
3 inch	Shell, HE, M1915	Explosive D/ 0.48 lb.	Mk. V BD
	Shell, TP, Mk VII series	Sand Filled	N/A
12 inch	Shell, AP, M1912 series	Explosive D/ 59.73 lb.	Mk. X BD
	Shot, AP, M1913	Explosive D/ 19.47	Mk. X BD
	Shell, TP, M1911	Sand Filled	N/A

TABLE 8-1 (Continued)  
 AMMUNITION USED AND EXPLOSIVE/CHEMICAL FILLER

ITEM	TYPE/MODEL	FILLER/WEIGHT	FUZE TYPE
90 mm	Shell, TP, M58	Black Powder/ 0.56 lb.	M43A2 Inert
	Shell, HE, M71	TNT/ 2.04 lb.	M48 PD
1.457 inch	Shell, Subcaliber	Steel	N/A
Mine, Submarine	M3 series	TNT/ 300 to 500 lbs*	Command Detonated, Electric
Blasting Cap	Non-Electric	Mercury Fulminate/ 18 gr.*	N/A

\* Indicates assumed data

b. Chemical Data of Ordnance Fillers

Table 8-2 has been developed to provide information on the explosive/chemical compounds used in the ordnance cited in Table 8-1.

TABLE 8-2 SUMMARY OF SITE ORDNANCE FILLERS		
Explosive Material	Synonyms	Chemical Compounds
Black Powder 74% Potassium Nitrate 11% Sulfur 16% Charcoal	Salt Peter; Niter	$KNO_3$ S C
TNT	2,4,6 Trinitro- toluene	$C_6H_2CH_3(NO_2)_3$
Explosive D	Ammonium Picrate Yellow D	$C_6H_2ONH_4(NO_2)_3$
Mercury Fulminate	Fulminate of Mercury	$Hg(ONC)_2$

9. EVALUATION OF OTHER SITE INFORMATION

An HTRW project is suggested for the former Fort Taylor for the following reasons:

(1) Leaking electrical transformers were stored in or near the fort (See document I-2).

(2) Fort Taylor was used as a salvage yard. Drums that may have contained hazardous materials were stored in the fort (See document K-2).

(3) A long berm that may cover a burial area was noted by the assessment team (See document J-13).

(4) An asphalt plant may have been located on the property and a black liquid oozed up from the ground in 1990 (See document I-1).

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APPENDIX A  
REFERENCE SOURCES

**REFERENCE SOURCES**

The following organizations and personnel are acknowledged for their support.

Organizations	Name	Telephone	Nature of Support
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**GOVERNMENT SOURCES****FEDERAL AGENCIES****Department of Defense**

Defense Technical Center (DTIC) Cameron Station Alexandria, VA 22304-6145	Computer	(202) 274-7633	Automated Search No Information
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Defense Library on Disk (DLOD) Defense Technical Information Center Washington, DC 20310-6080	Computer	(703) 697-4658	Automated Search No Information
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Department of Defense Explosive Safety Board 2461 Eisenhower Ave Alexandria, VA	Computer	(703) 325-8624	Automated Search No Information
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**Army**

US Army Military History Institute Carlisle Barracks, Bldg. 22 Carlisle, PA 17013	Mr. John Stonaker	(717) 245-3611	No Information
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US Army Center of Military History 1099 14th Street, N.W. Washington, DC 20005-3402	Mr. Carter	(202) 504-5416	No Information
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**REFERENCE SOURCES**

(continued)

Organizations	Name	Telephone	Nature of Support
<b>GOVERNMENT SOURCES</b>			
<b>FEDERAL AGENCIES (continued)</b>			
<b>Department of Defense (continued)</b>			
<b>Army (continued)</b>			
U.S. Army Industrial Operations Command Rock Island Arsenal Rock Island Arsenal Museum Rock Island, IL	Mr. Daniel T. Whiteman Museum Director	(309) 793-5021	War Department Annual Reports (H-2)
U.S. Army Industrial Operations Command Rock Island Arsenal Rock Island, IL 61299	Dr. Herb LePore Historian	(309) 782-1272	No Information
U.S. Army Chemical and Biological Command Aberdeen PG, MD 21010-5401	Ms. Kathy Ciolfo	(410) 671-4430	No Information
US Army Logistics Management College Defense Logistics Studies Information Exchange Fort Lee, VA 23801-0010	Computer	(804) 734-4007	Automated Search No Information
Army Safety Management Information System (ASMIS) Fort Rucker, AL 36322	Computer	(205) 255-6485	No Information
US Army Chemical School Fisher Library Fort McClellan, AL 36205	Mr. Dick Pastorett	(205) 848-4414	No Information

**REFERENCE SOURCES**

(continued)

Organizations	Name	Telephone	Nature of Support
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**GOVERNMENT SOURCES**

**FEDERAL AGENCIES (continued)**

**Department of Defense (continued)**

**Army (continued)**

US Army Ordnance Museum Aberdeen Proving Ground Aberdeen, MD	Dr. William F. Atwater	(401) 278-3602	No Information
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US Army Corps of Engineers Office of History 7701 Telegraph Road Alexandria, VA 22310-3865	Dr. James Dunn	(703) 355-8172	No Information
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547th EOD Det. Fort Gillem, GA	SPC Doughty	(404) 363-5225	Referrals
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66th EOD Det. Cape Canaveral AFS, FL	1LT Lynn SGT Barrel	(407) 853-9951	No Information
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**Air Force**

AFHRA/ISR 600 Chennault Circle Maxwell AFB, AL 36112-6424	Mr. Archie DiFante	(205) 953 2447	No Information
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**Navy**

Naval Construction Battalion Center Civil Engineer Support Office Port Hueneme, CA 93043-5000	Ms. Arlene Cypher	(805) 982-5569	No Information
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Library NAS Key West Key West, FL 33040-5000	Ms. Betty Linsterand	(305) 292-2116	No Information
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**REFERENCE SOURCES**

(continued)

Organizations	Name	Telephone	Nature of Support
<b>GOVERNMENT SOURCES</b>			
<b>FEDERAL AGENCIES (continued)</b>			
<b>Department of Defense (continued)</b>			
<b>Navy (continued)</b>			
Naval Construction Battalion Center Historian Port Hueneme, CA 93043-5000	Dr. Vince Transano	(805) 982-5913	No Information
Navy Historical Yards Washington Navy Yard 901 M Street, SE Washington, DC 20374	Ms. Jeann Acres	(202) 433-3170	No Information
<b>National Archives and Record Administration</b>			
National Archives Military Reference Branch Washington, DC	Mr. Richard Peuser	(202) 501-5385	RG 407: No Information RG 153: No Information
National Archives Cartographic & Architectural Branch 8601 Adelphi Road College Park, MD 20740	Mr. Robert Richardson	(301) 713-7028	RG 77: Reference Maps (L-1, L-2, L-3, L-4, L-5, L-6)
National Archives Suitland Reference Branch 4205 Suitland Road Suitland, MD 20409	Ms. Rebecca Lentz Collier	(301) 713-7028	RG 77: F-3, F-4, F-5, F-6, F-7, F-8 RG 156: F-2 RG 338: F-9

**REFERENCE SOURCES**

(continued)

Organizations	Name	Telephone	Nature of Support
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**GOVERNMENT SOURCES**

**FEDERAL AGENCIES (continued)**

**National Archives and Record Administration (continued)**

National Archives National Personnel Records Center 9700 Page Avenue St. Louis, MO 63132	Mr. Wilson Sullivan	(314) 538-4085	No Information
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National Archives Records Administration Still Pictures Branch Washington, DC 5285 Port Royal Road Springfield, VA 22161	Mr. Adrienne Perkins	(202) 501-5455	No Information
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National Archives Still Photo Branch College Park, MD 20740-6001	Staff	(202) 501-5455	No Information
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National Archives Southeast Region 1557 St. Joseph Avenue East Point, GA 30344	Mr. David Hilkert	(404) 763-7477	No Information
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**Department of Agriculture**

Agricultural Stabilization and Conservation Service Aerial Photography Field Office 2222 West 2300 South Street Salt Lake City, UT 84130-0010	Ms. Sherrie Holyoak	(801) 975-3503	No Information
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**REFERENCE SOURCES**

(continued)

Organizations	Name	Telephone	Nature of Support
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**GOVERNMENT SOURCES****FEDERAL AGENCIES** (continued)**Department of Agriculture** (continued)

Soil Conservation Service 15600 SW 288 Street Suite 402 Homestead, FL 33033	Mr. Doug Ulmer	(305) 242-1218	Soil Survey (B-4)
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**Department of Interior**

National Park Service Southeast Regional Office 75 Spring Street, SW Atlanta, GA 30303	Mrs. Council	(404) 331-2638	No Information
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**Smithsonian Institute**

Smithsonian National Air and Space Museum Historical Research Division Washington, DC 20560	Mr. Paul McCuteon	(202) 357-3133	No Information
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**STATE AGENCIES**

Florida Game and Fresh Water Commission	Mr. Hank Smith	(407) 546-0905	List of Endangered Species (F-1)
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State Historical Preservation Office 500 South Bronough Street Tallahassee, FL 32399-0250	Mr. Derek Hemingway	(904) 487-2299	No Information
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Department of Environmental Protection 3900 Commonwealth Blvd. Tallahassee, FL 32399-3000	Mr. Pat Rose	(904) 922-4300	No Information
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**REFERENCE SOURCES**

(continued)

Organizations	Name	Telephone	Nature of Support
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**GOVERNMENT SOURCES**

**STATE AGENCIES** (continued)

Department of Environmental Regulation 2600 Blair Stone Road Tallahassee, FL 32399-2400	Staff	(904) 488-0890	Referrals
Department of Transportation Burns Building Tallahassee, FL 32301	Mr. Richard Long Mr. Bob Clay Mr. Bob Romig	(904) 488-8572 (904) 488-8444 (904) 488-0387	No Information
Florida State Archives 500 South Bronough Street Tallahassee, FL 32399-0250	Mr. James Helms	(904) 487-2073	No Information
Fort Zachary Taylor State Historic Site Key West, FL 33040	Mr. Buff Wiley	(305) 292-6850	Historic Photographs (K-1, K-2, K-3, K-4) Interview (I-1)
Florida Highway Patrol 3380 Overseas Highway Marathon, FL 33050	Mr. Ryan McIntyre	(305) 289-2300	No Information
Division of Historical Resources Gray Building Tallahassee, FL 32399-0250	Mr. Frank Keel	(904) 487-2333	No Information

**REFERENCE SOURCES**

(continued)

Organizations	Name	Telephone	Nature of Support
<b>GOVERNMENT SOURCES</b>			
<b>COUNTY AGENCIES</b>			
Monroe County Public Library 700 Fleming Street Key West, FL 33040	Mr. Thomas Hambright	(305) 294-8488	Newspaper Article (H-1)
Florida Keys Community College Library 5901 West Junior College Road Key West, FL 33040	Ms. Debbie Hopkins	(305) 296-9081	No Information
Monroe County Recorder's Office 500 Whitehead Street Key West, FL 33040	Staff	(305) 292-3540	Quit Claim Deed (G-1)
Monroe County Planning Department 500 Whitehead Street Key West, FL 33040	Mr. Gene Burr	(305) 292-8229	No Information
Monroe County Public Works Division 5100 College Road Key West, FL 33040	Staff	(305) 292-4560	No Information
Monroe County Appraisal Office 500 Whitehead Street Key West, FL 33040	Staff	(305) 292-3420	Real Estate Information

**REFERENCE SOURCES**

(continued)

Organizations	Name	Telephone	Nature of Support
<b>GOVERNMENT SOURCES</b>			
<b>CITY AGENCIES</b>			
Key West Police Department 525 Angela Street Key West, FL 33040	Staff	(305) 294-2515	No Information
Key West Clerk's Office Key West, FL 33040	Staff	(305) 292-8200	No Information
<b>NON-GOVERNMENT SOURCES</b>			
<b>NATIONAL AGENCIES</b>			
SIRSI Corporation 689 Discovery Drive Huntsville, AL 35806	Computer	(205) 992-9820	Automated Search
DIALOG Information Services Inc. Midwest Regional Office 75 East Wacker Drive Chicago, IL 60601	Computer	(312) 726-9206	Automated Search
On-line Computer Library Center 6565 Frantz Road Dublin, OH 43017	Computer	(800) 848-5878	Automated Search
<b>LOCAL AGENCIES</b>			
The Citizen (Newspaper) 340 North Side Drive Key West, FL 33040	Mr. Chris Doyle	(305) 294-6641	No Information
Resident 2801 Flagler Avenue Key West, FL 33040	Mr. Howard England Former Site Manager	(305) 296-3984	Interview (I-2)

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APPENDIX B  
REFERENCES AND ABSTRACTS

## APPENDIX B

### REFERENCES AND/OR ABSTRACTS

- B-1. U.S. Army Corps of Engineers, New England Division, "DERP-FUDS Inventory Project Report (INPR)", 12 August 1991 (E-1,E-2).
- B-2. White, Brooks, Statistical Abstract, Monroe County Florida, 1991.
- B-3. Hoffmeister, John E., Land from the Sea, 1974.
- B-4. Soil Conservation Service, Classification and Correlation of the Soils of Monroe County, Keys Area, Florida, January 1989.
- B-5. National Oceanic and Atmospheric Administration, Navigation Chart, "Sugarloaf Key to Key West", 11445, 16 April 1994.
- B-6. Florida Game and Fresh Water Fish Commission, Letter concerning endangered and threatened species, 10 January 1995 (F-1).
- B-7. Shepard Associates, "Historic Preservation Planning, Fort Zachary Taylor State Historic Site", 30 November 1989.
- B-8. U.S. Army Corps of Engineers, "General Plan of Fort Taylor", February 1869 (L-1).
- B-9. U.S. Army Corps of Engineers, "Plans and Sections of Fort Taylor, Lower Tier", May 1869 (L-2).
- B-10. U.S. Army Corps of Engineers, "Plans and Sections of Fort Taylor, 2nd Tier", May 1869 (L-3).
- B-11. Office of Chief on Engineers, "Sectors of Fire of Main Work and Exterior Batteries", June 1879 (L-4).
- B-12. U.S. Engineer Office, Florida District, "Sketch Showing Condition of Armament, Sheet No. 1", January 1879 (L-5).
- B-13. U.S. Engineer Office, Florida District, "Sketch Showing Condition of Armament, Sheet No. 2", January 1879 (L-6).
- B-14. U.S. Engineer Office, Florida District, "Sketch Showing Condition of Armament, Sheet No. 3", January 1879 (L-7).
- B-15. U.S. Engineer Office, St. Augustine, "Sketch Showing Condition of Armament, Sheet No. 2", December 1899 (L-8).

- B-16. U.S. Engineer Office, Key West, "Sketch Showing Condition of Armament, Sheet No. 1", December 1898 (L-9).
- B-17. Harbor Defenses of Key West, 'Total Rounds Fired', 19 April 1938 (F-2).
- B-18. Headquarters, Fourth Corps Area, Fort McPherson, GA, "Partial Report of Board", 7 July 1931. A board of officers discussed abandoning Fort Taylor and the West Martello Tower (F-3).
- B-19. The Adjutant General, 'Coast Defenses of Key West', 11th Indorcement, 7 July 1919 (F-4).
- B-20. Coast Defenses of Key West, "Report of Completed Work, Battery Adair", corrected to 20 September 1921 (F-5).
- B-21. Coast Defenses of Key West, "Report of Completed Work, Battery Osceola", corrected to 28 December 1943 (F-6).
- B-22. War Department General Staff, "Abandonment and Disposal of Guns and Carriages of Battery Osceola, Key West, Florida", 11 December 1943 (F-7)
- B-23. Office of the Chief of Engineers, Site Map, circa 1941 (F-8).
- B-24. Eastern Defense Command, Harbor Defenses of Key West, circa 1944 (F-9).
- B-25. Florida Times Union, "Dynamite Exploded While Seymor Was Handling It", 11 April 1895 (H-1).
- B-26. Annual Reports of the War Department, Fiscal Year Ending 30 June 1899, pages 892 and 898 (H-2).
- B-27. Florida Bureau of Historic Research, "Exposed Metal Artifacts at Fort Zachary Taylor", October 1993 (E-3).
- B-28. England, Howard S., Fort Zachary Taylor, A Sleeping Giant Awakens, 1977 (K-5)
- B-29. U.S. Naval School, Explosive Ordnance Disposal, Civil War Explosive Ordnance 1861-1865, 16 June 1972 (D-1, D-2, D-3, D-4, D-5, D-6, D-7).
- B-30. U.S. Naval School, Explosive Ordnance Disposal, Civil War Explosive Ordnance, 10 November 1960 (D-3).
- B-31. War Department, Ammunition Inspection Guide, TM 9-1904, 2 March 1944 (D-8).

B-32. War Department, Coast Artillery Ammunition, TM 4-205, 17 February 1940 (D-10).

B-33. Army Service Forces, Projectiles, Separate Loading, 10-in., 12-in. and 16 inch, for Harbor Defense and Railway, ORD 11 SNL P-3, 10 April 1945 (D-10).

B-34. Army Service Forces, Ammunition, Fixed, Including Subcaliber Ammunition, for Harbor Defense, Heavy Field and Railway Artillery, ORD 11 SNL P-6 Part 2, 10 June 1944 (D-11).

B-35. Green, Constance McLaughlin and Thomson, Harry C., The Ordnance Department: Planning Munitions for War, 1990 (D-12).

B-36. U.S. Army Corps of Engineers, Rock Island District, "Site Safety Plan for Ordnance and Explosive Waste", 25 June 1992.

B-37. Department of the Army, Military Explosives, 20 September 1984.

B-39. U.S. Army Corps of Engineers. Huntsville Division, "Archives Search Report Procedural Document", June 1994.

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APPENDIX C

GLOSSARY

## APPENDIX C

### GLOSSARY

AMTB	Anti-Motor Torpedo Boat
AP	Armor Piercing
AR	Army Regulation
BD	Building Demolition
BD/DR	Building Demolition/Debris Removal
CEHND	Corps of Engineers, Huntsville Division
CENCR	Corps of Engineers, North Central Division, Rock Island District
CESAJ	Corps of Engineers, South Atlantic Division, Jacksonville District
COE	Corps of Engineers
CON/HTRW	Containerized Hazardous, Toxic, and Radioactive Waste
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
EOD	Explosive Ordnance Disposal
FDE	Findings and Determination of Eligibility
FUDS	Formerly Used Defense Sites
HE	High Explosive
HTRW	Hazardous, Toxic and Radiological Waste
INPR	Inventory Project Report
IRP	Installation Restoration Program
MTB	Motor Torpedo Boat
OEW	Ordnance and Explosives Waste
PD	Point Detonating
RA	Regular Army
RG	Record Group
SAB	Same As Before
SMCAC-ES	Army Material Command Ammunition Center- Explosive Safety
TP	Target Practice
USA	U.S. Army
USACE	U.S. Army Corps of Engineers
USADACS	U.S. Army Defense Ammunition Center and School
USAEDH	U.S. Army Engineer Division, Huntsville
USATCES	U.S. Army Technical Center for Explosives Safety
UXO	Unexploded Ordnance

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APPENDIX D  
TEXTS/MANUALS

APPENDIX D  
TEXTS/MANUALS

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- D-1 Smooth Bore Shell (B-29).
- D-2 Smooth Bore Case Shot (B-29).
- D-3 Smooth Bore Sizes and Cross sections (B-29, B-30).
- D-4 Parrot Projectiles (B-29).
- D-5 Paper Time Fuzes (B-29).
- D-6 Borman Time Fuze (B-29).
- D-7 Parrot Percussion Fuze (B-29).
- D-8 3 Inch Shell, HE, M1915 and Fuze, BD, Mark V (B-31).
- D-9 90 mm Shell, Practice, M58, HE, M71 and Fuze, PD, M48 (B-31).
- D-10 12 Inch Projectiles and Fuze Mark X. (B-32, B-33).
- D-11 Shell, Fixed, Subcaliber, 1.457 Inch (B-34).
- D-12 Controlled Mine System and M3A1 Mine (B-35).



Figure 1. 8-Inch Mortar Shell.

Table 1. Mortar Diameters, Weights, and Wall Thickness.

DESIGNATION	DIAMETER (in)	WEIGHT (lb, shell)	THICKNESS (opp. fuze, in)
12 Pdr. (Coehorn)	4.5	8.5	.3
24 Pdr. (Coehorn)	5.7	17.5	.5
8 Inch	7.85	44.5	1.25
10 Inch	9.85	87.5	1.6
13 Inch	12.85	197	2.5
15 Inch	14.9	350	3 (approx.)
20 Inch	19.85	1000	Solid Shot

Note. Shells that are 8 inches and larger that were designed for Columbiads and Seacoast howitzers and Naval shells will be slightly thicker than stated in Table 1 and will be a great deal thicker at the fuze opening.

A radiograph of the mortar shell will not be included because of the simplicity of its design. Refer to Figure 4 for cross sectional views of mortars and comparable shells and Figure 6 for configurations prior to firing. Mortar ammunition was also issued in solid shot form.

See fuze Figures 130 and 131 to obtain information about the fuzes normally used with the mortar shells.

## B. SPHERICAL CASE SHOT



Projectiles similar to antipersonnel Civil War spherical case shot were introduced by French artillerymen during the 16th century. These were crude, rock filled devices which created little more than a nuisance effect. Lead balls were next employed as a filler but it was found that the force and heat of discharge often squeezed them into a hard cake. Colonel Shrapnel of the British army recognized the potential killing power of case shot and developed a lead ball hardened with antimony and zinc.

These were placed in the projectile cavity and the space between the balls was filled with melted sulphur which solidified around them forming a solid mass. A portion of the cavity was then partitioned off by a diaphragm of sheet iron and the bursting charge inserted. Communicating with this powder was a paper wrapped mealed composition time fuze which ignited from the cannon discharge flame. The projectile was first successfully used against the French in the Pennisular War.

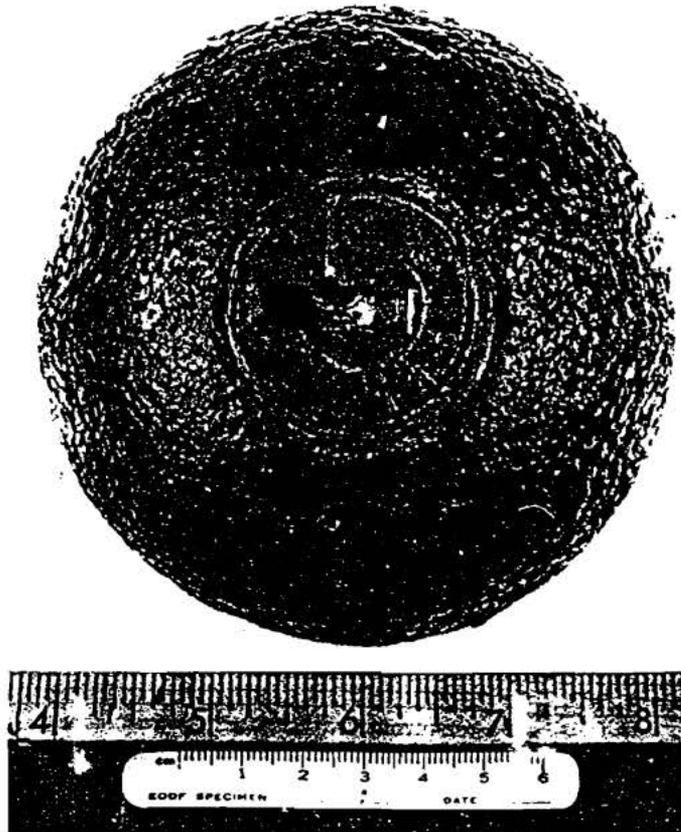
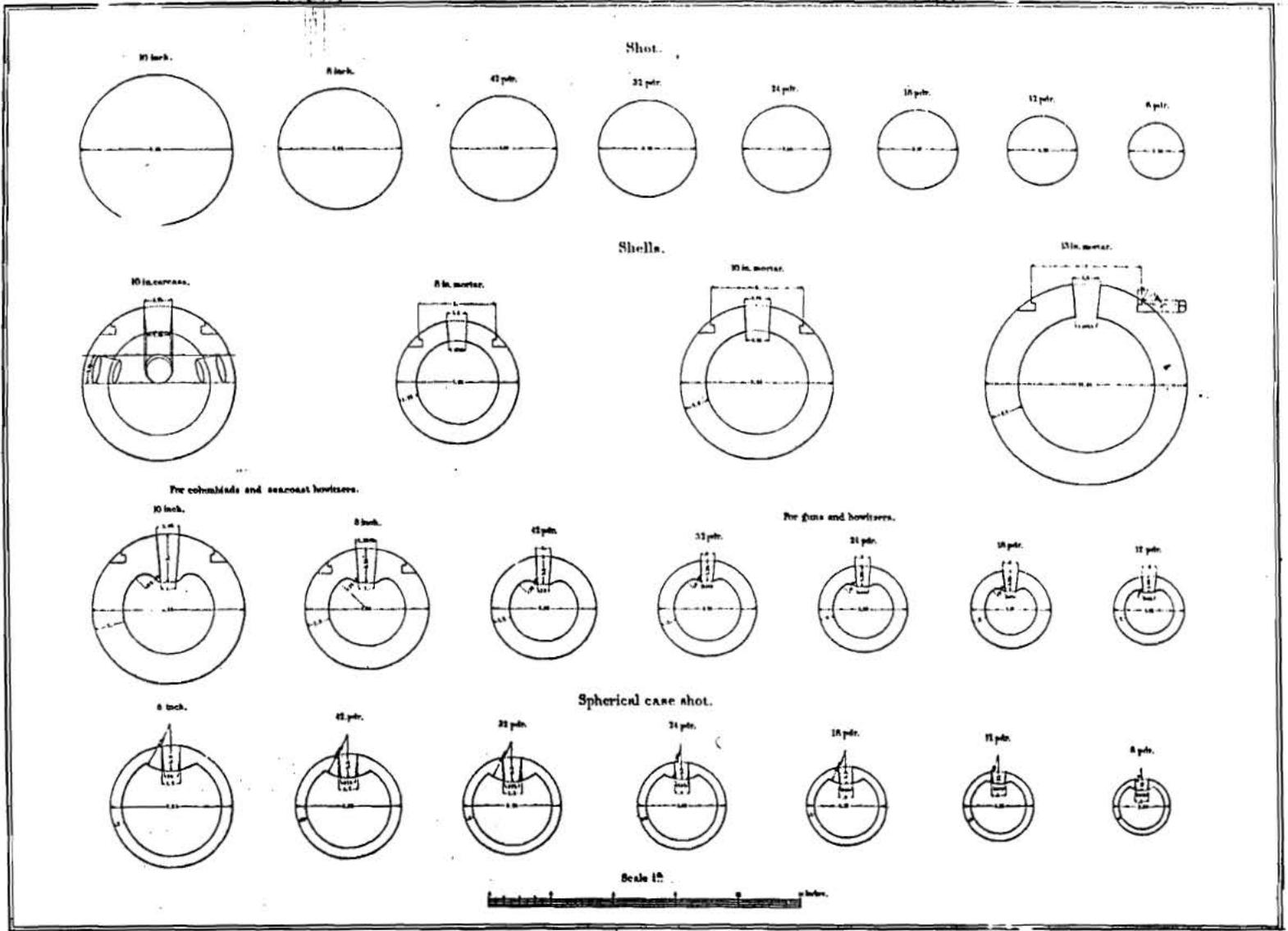


Figure 2. 12 Pdr. Case Shot.

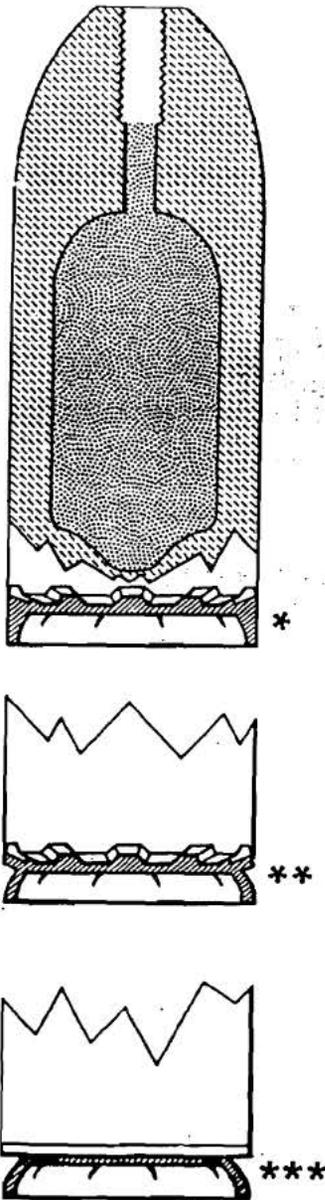
Figure 4. Solid Shot, Shell, and Case Shot. Sizes and cross sectional views.



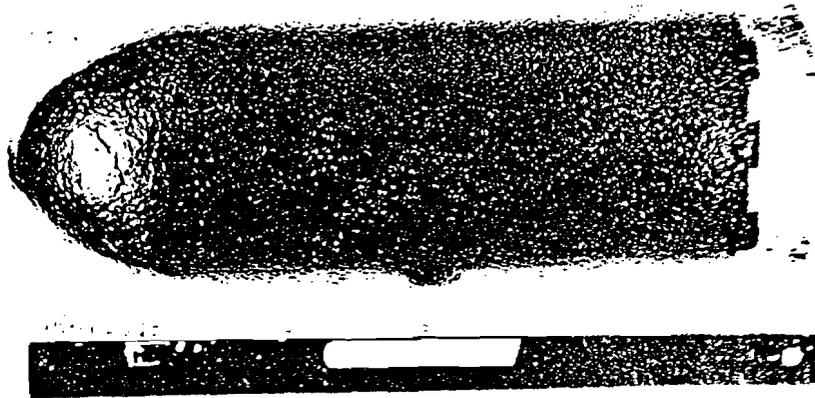
SMOOTH BORE PROJECTILE SIZES

<u>Designation</u>	<u>Diameter (in.)</u>	<u>Weight (Shell) (lb)</u>
<u>Mortar and Seacoast Projectiles</u>		
Coehorn (12 Pdr)	4.5	8.5
Coehorn (24 Pdr)	5.8	17.5
8 Inch	7.85	44.5
10 Inch	9.85	87.5
13 Inch	12.85	197
15 Inch	14.9	350
20 Inch	19.85	1000 (Solid)
<u>U.S. Naval Projectiles</u>		
12 Pdr	4.6	8.4
24 Pdr	5.75	17
32 Pdr	6.25	26.5
64 Pdr (8 Inch)	7.85	52.7
9 Inch	8.85	73.5
10 Inch	9.85	101.5
11 Inch	10.85	135.5
15 Inch	14.8	352
<u>U.S. Field and Siege Projectiles</u>		
6 Pdr	3.6	3.3
12 Pdr	4.5	8.4
18 Pdr	5.2	13.4
24 Pdr	5.7	17
32 Pdr	6.3	22.5
42 Pdr	6.8	31

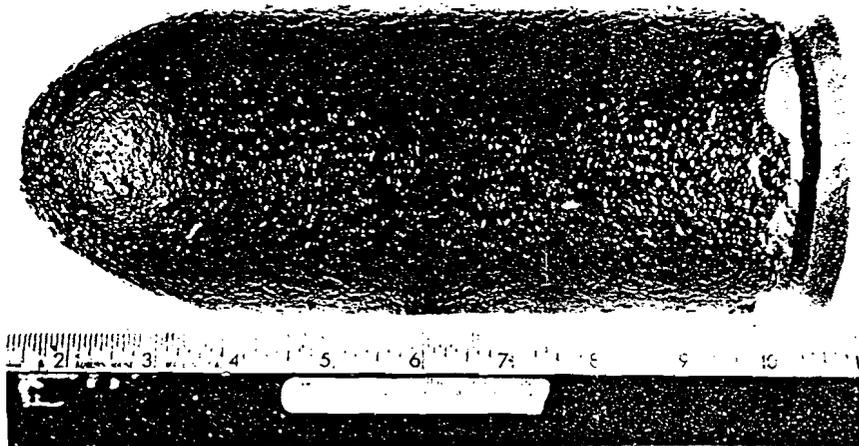
F. PARROTT



The Union Ordnance Department used only a few basic types of rifle ammunition to any extent throughout the war. Of these the Parrott systems were the most important. Similar to the Confederate Read projectiles, the two types are often confused when field recovered. Perhaps the three most commonly employed Parrott designs are shown in the line drawings at left. The projectile was issued in bolt, case shot, and shell and was composed of a cast-iron body having a large powder cavity and equipped with a threaded nose fuze well. A brass ring cast into a rabbet was formed around its base. At discharge the flame pressed against the bottom of the ring and underneath it, so as to cause expansion into the grooves of the gun. To prevent the ring from turning in the rabbet, the latter was recessed at several points of its circumference. These projectiles were fuzed with zinc or brass time fuze adapters, Bormann-time fuzes, and the Parrott percussion fuzes. Some models have been found with wrought iron sabots. Shells containing a bolt screwed into the base should be suspected to contain the incendiary mixture. Case shot type having brass or iron sabots and employing the zinc time fuze adapter should be assumed to have its bursting charge located in the rear of the cavity in a small tin cylinder which is linked to the fuze adapter by a metal tube. Figure 92 gives radiographic proof of this innovation and Figure 93 is a line drawing interpretation of the radiograph. The location of the bursting charge should point out the need of breaching all projectiles from the base rather than the normal side breaching that is familiar to most EOD teams.



*Figure 78. 4.2-Inch Parrott Shell (\*).*



*Figure 79. 3.5-Inch Parrott Case Shot (\*\*).*

## PART V

### FUZES

#### A. TIME FUZES

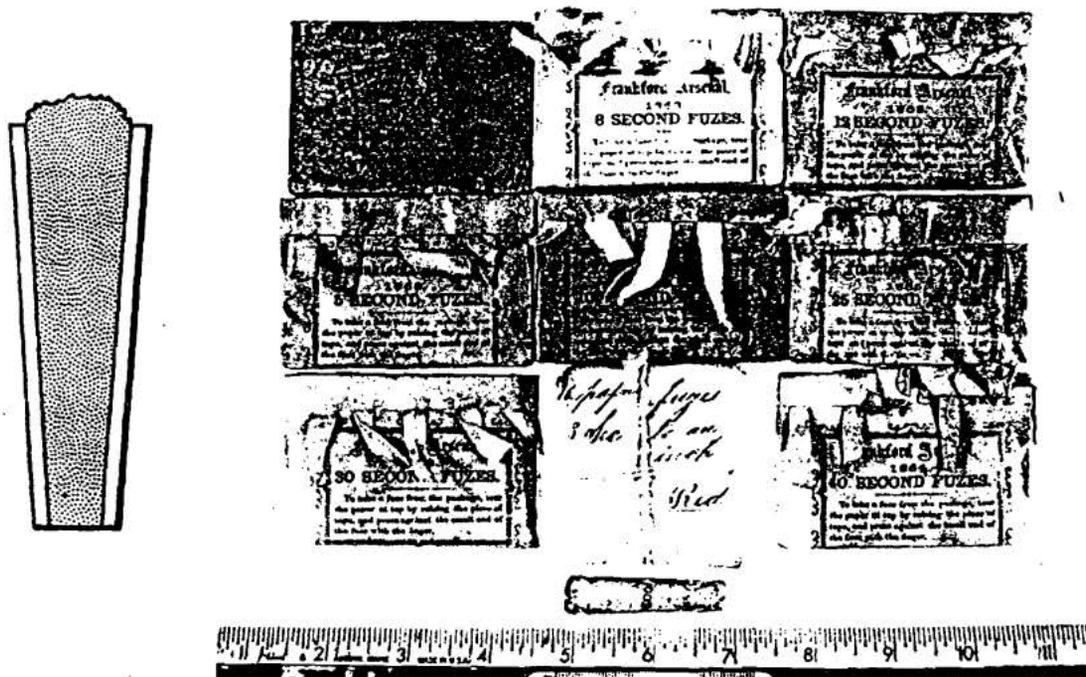


Figure 129. Assorted Paper Time Fuzes.

Fuzes are the means used to ignite the bursting charge of a hollow projectile at any desired moment of its flight. They may be classed according to their mode of operation, as time fuzes, percussion, combination, and concussion. The fuzes shown in Figure 129 are composed of a case of paper enclosing a column of burning composition, which is set on fire by the discharge flame of the gun, and which, after burning a certain time, communicates with the bursting charge of the projectile. Its successful operation depends on the certainty of ignition, the uniformity of burning, and the facility with which its flame communicates with the bursting charge.

The ingredients of all time fuze compositions are the same as for gunpowder, but the proportions are varied to suit the required rate of burning. Pure mealed powder gives the quickest composition, and the others are derived from it by the addition of nitre and sulphur in certain quantities.

#### 4. Seacoast Water Cap Fuze

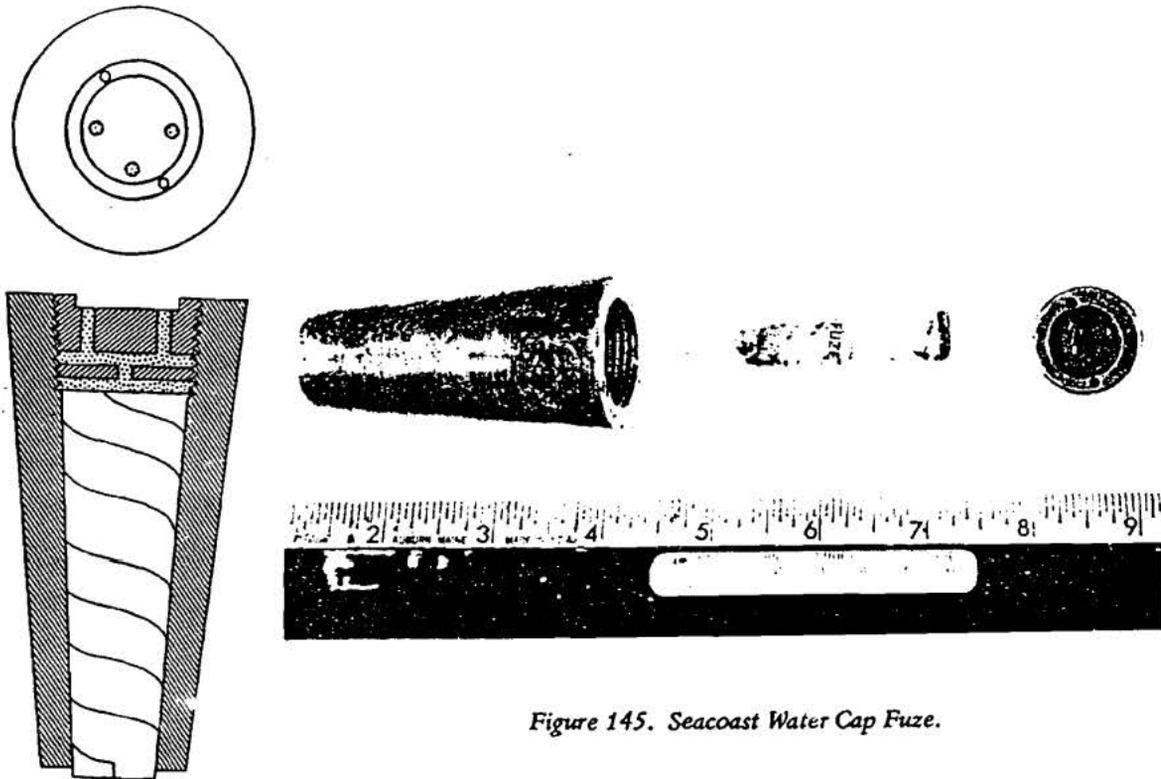


Figure 145. Seacoast Water Cap Fuze.

The Seacoast water cap fuze is principally distinguished from the mortar fuze by a metal water cap, constructed to prevent the burning composition from being extinguished when the projectile strikes against water. It is composed of a brass adapter which is driven firmly into the fuze hole of the projectile; a paper fuze inserted into the adapter, immediately before loading the piece; and a water cap screwed into the adapter after the paper time fuze has been inserted. The water cap is perforated with channels which is filled with mealed powder; the mealed powder communicates fire to the paper fuze, and the angles of the channel break the force of the water. The top of the cap has a recess which is filled with a priming of mealed powder, and is covered with a lead disk to prevent accidental ignition before loading. In firing over land, for the sake of economy, the brass adapter was replaced by the wooden adapter.

Using a flat trajectory of firing, the gunners using the water capped fuze, could skip their shells across the surface of the water without danger of having their time fuzes extinguished. The shell would strike the hull of the vessel, sink, and achieve an underwater blast.

## 5. Bormann-Time Fuze

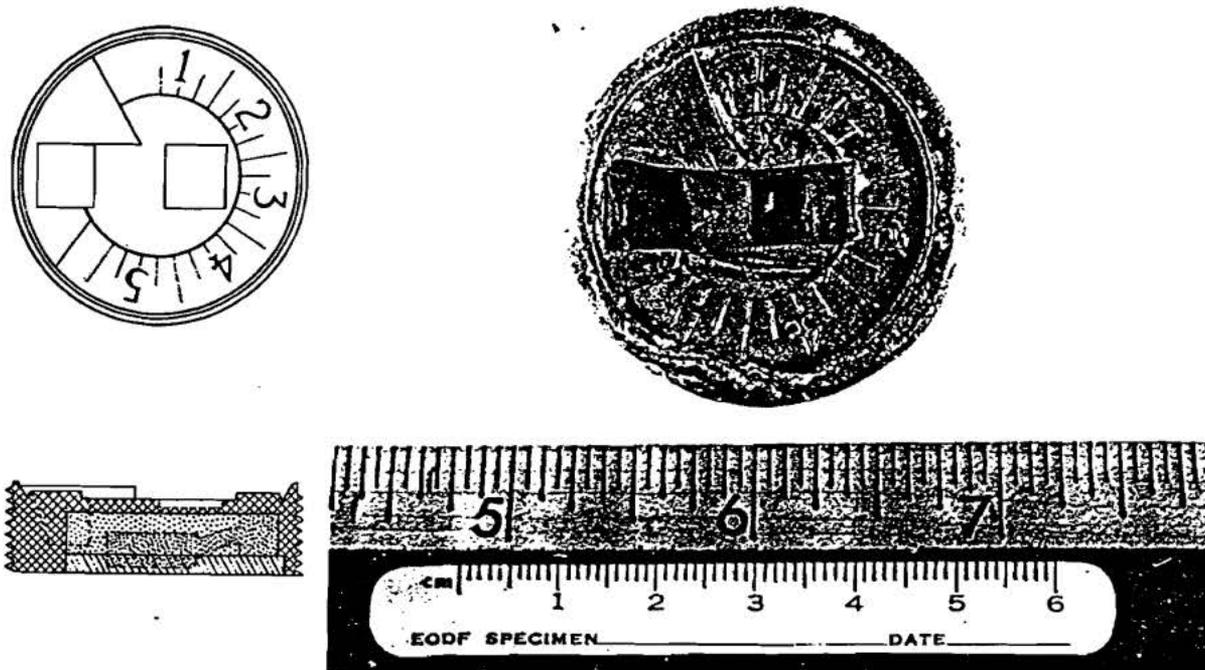


Figure 146. Bormann-Time Fuze.

The Bormann-Time fuze is identified by its lead alloy body with numbered time graduations from 1 to 5 seconds encircling the face of the fuze. This fuze is normally used with smoothbore projectiles although some have been noted in rifled shells, see Figure 86. It is 1 5/8 inches in diameter and 7/16-inch thick. Prior to use, the top of fuze case (over powder ring) is cut or pierced at desired time setting. Upon firing, propellant gases enter this cut and start black powder burning around time ring; after preset time, powder burns into central hole which in turn transmits the flame to the main charge.

It was one of the most popular smoothbore projectile fuzes in use during the Civil War. The fuze was used both by the Union and Confederates. Later in the war the Confederates replaced the Bormann with the paper time fuze fitted into their copper fuze adapter. Directly beneath all Bormann fuzes will be found a brass or steel plug with a small central hole to pass the flame. This plug is threaded into a reduced diameter hole and serves to support the center of the fuze from the forces of setback.

## 5. Parrott Percussion Fuze

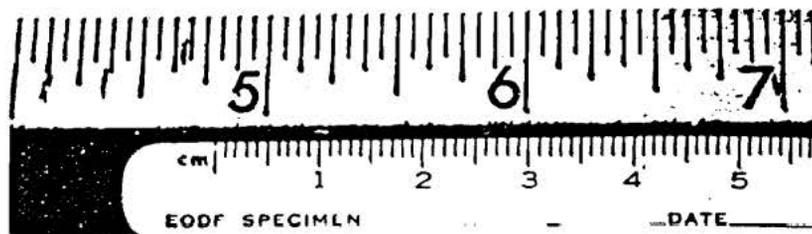
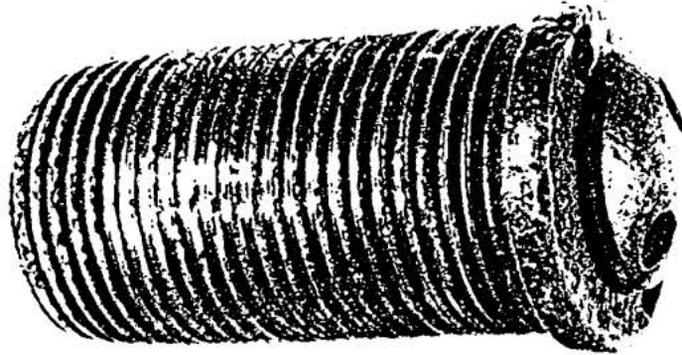
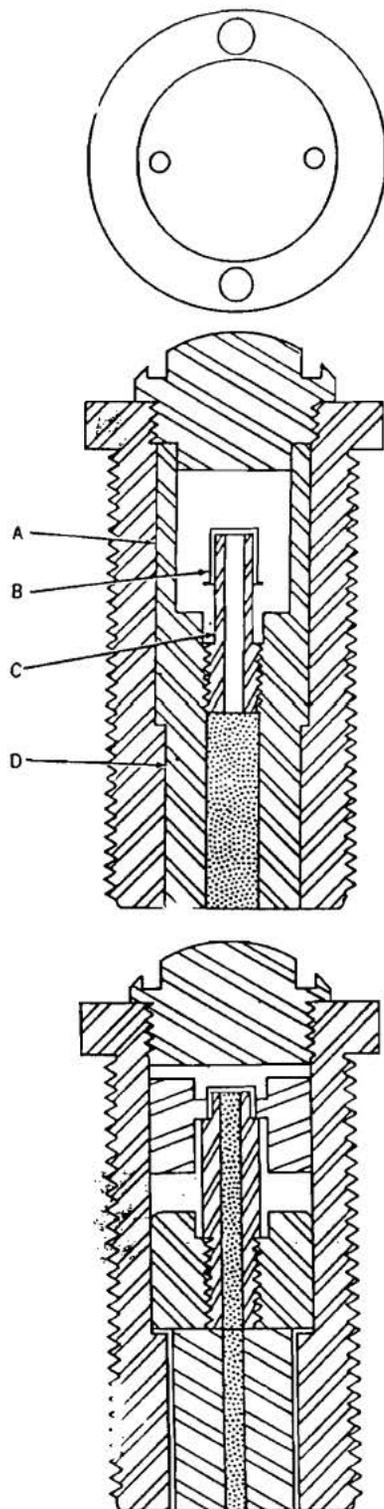


Figure 153. Parrott Percussion Fuze.

The Parrott Percussion fuze is identified by twin-spanner holes in anvil and fuze body and a slightly dome shaped anvil. It is made of a zinc material, and rarely found in good condition because of corrosion. Upon being fired, centrifugal force shears off the two leaves (A), freeing the plunger (D). Impact with the target carries the plunger forward, crushing the cap (B) against the anvil. The flash is transmitted through the nipple (C). The second line drawing illustrates the second model fuze. Its safety feature was a collar having two projections of soft metal. This collar was placed between the plunger and anvil with the projections shearing off on impact the forward motion of the plunger. The fuze is  $1 \frac{3}{8}$  inches in diameter and  $2 \frac{5}{8}$  inches in length. The safety devices often interfered with the plunger and caused duds.

## ARTILLERY AMMUNITION

**Propelling Charges.** 3-inch seacoast ammunition uses propelling charges of approximately 5 pounds of NH smokeless powder, and distance wads. Used in connection with the ROUND, shell, H.E., M1915, there is a black powder igniter pad placed on top of the propelling charge.

**Primers.** The primers used in complete rounds of 3-inch seacoast ammunition are identically the same as the primers used in 3-inch AA ammunition, namely, the M28A1, M28A2, and the M1B1A1.

### SHELL, Fixed, H.E., M1915.

**General.** This round of ammunition is a based-fuzed high-explosive round used for armor-piercing work. The round is standard for issue only at the present time, due to the fact that it is ineffective as an A.P. round.

**Projectile.** The shell used in the M1915 H.E. Round is of forged steel construction. It has a rather blunt nose (radius of ogive of 2 calibers) and a square base. The filler is  $\frac{1}{2}$  pound of explosive D. A steel base plate is assembled by means of lead calking wire. The shell has a rotating band of approximately 0.55 inch.

**Components.** The completed round consists of the M1915 Shell with an explosive D filler and a Mk. V Base-detonating Fuze, the shell being firmly assembled to the Mk. IA1 or Mk. IIA1 Cartridge Case with its propelling charge of NH powder, igniter pad of black powder, a distance wad, and an M28A1 300-grain Percussion Primer.

**Guns.** This round is fired from the M1902MI (same chamber as mobile mount, 3-inch AA) and the M1903 (same chamber as fixed mount, 3-inch AA) Guns

### SHELL, Fixed, H.E., M42.

**General.** This round replaces the M1915 H.E. Round. It is identical to the SHELL, fixed, H.E., for 3-inch AA guns, except for the fact that it is fuzed with the P.D. M48 Fuze rather than the M43 Mechanical Time Fuze. The complete round consists of the M42 Shell, M20 Booster, explosive filler of TNT, Mk. IM2 or Mk. IIM2 Cartridge Case, propelling charge of NH powder, distance wad, and the M28A1 Primer.

### PROJECTILE, Fixed, Target Practice, Mk. VIIA1.

**General.** This round has been designed as the practice round for training gun crews operating 3-inch seacoast guns.

**Projectile.** The Mk. VIIA1 Projectile is of cast iron construction with no fuze, booster, or H.E. filler.

**Components.** The complete round consists of the Mk. IIA1 Projectile, attached to a Mk. IM2 or Mk. IIM2 Cartridge Case with NH propelling charge, distance wad, and M28A1 Primer.

## AMMUNITION INSPECTION GUIDE

**FUZE, Base-detonating, Mk. V (Medium Caliber).** This fuze is used in the SHELL, H.E., M1915, in which nondelay action is required. The fuze, however, can be manufactured with a short delay of 0.05 second or a long delay of 0.15 second by merely adding a black powder pellet. It is a boresafe fuze, and loaded projectiles are issued with the fuze assembled in place.

*Description.* Illustration of the Mk. V Fuze presents a study of the fuze and its principal parts.

*Action.* When the gun is fired, no action takes place in the fuze while the projectile is in the weapon. After the projectile has left the muzzle of the gun, the centrifugal pins in the percussion plunger recede and the eccentrically weighted firing pin is swung into armed position by centrifugal force. Simultaneously with this arming of the percussion plunger by centrifugal force, the movable half of the split slider is forced outward against its spring, lining up the explosive train. A metal ball located in the stationary part of the slider drops into the space vacated by the movable part of the slider and prevents the fuze from disarming. On impact, the armed percussion plunger is driven forward, overcoming the resistance of the restraining spring. The firing pin strikes the percussion primer, creating a tiny flame which causes explosion of the detonator of lead azide and tetryl in the nondelay fuze, or ignites a delay train of black powder which burns for 0.05 second for the short delay, or 0.15 seconds for the long delay fuze. This in turn sets off a tetryl lead charge leading to the slider, and tetryl charges in the slider, which in turn function a tetryl lead charge leading from the slider. This, in turn, detonates the booster charge of tetryl. The explosive charge of the projectile is then detonated.

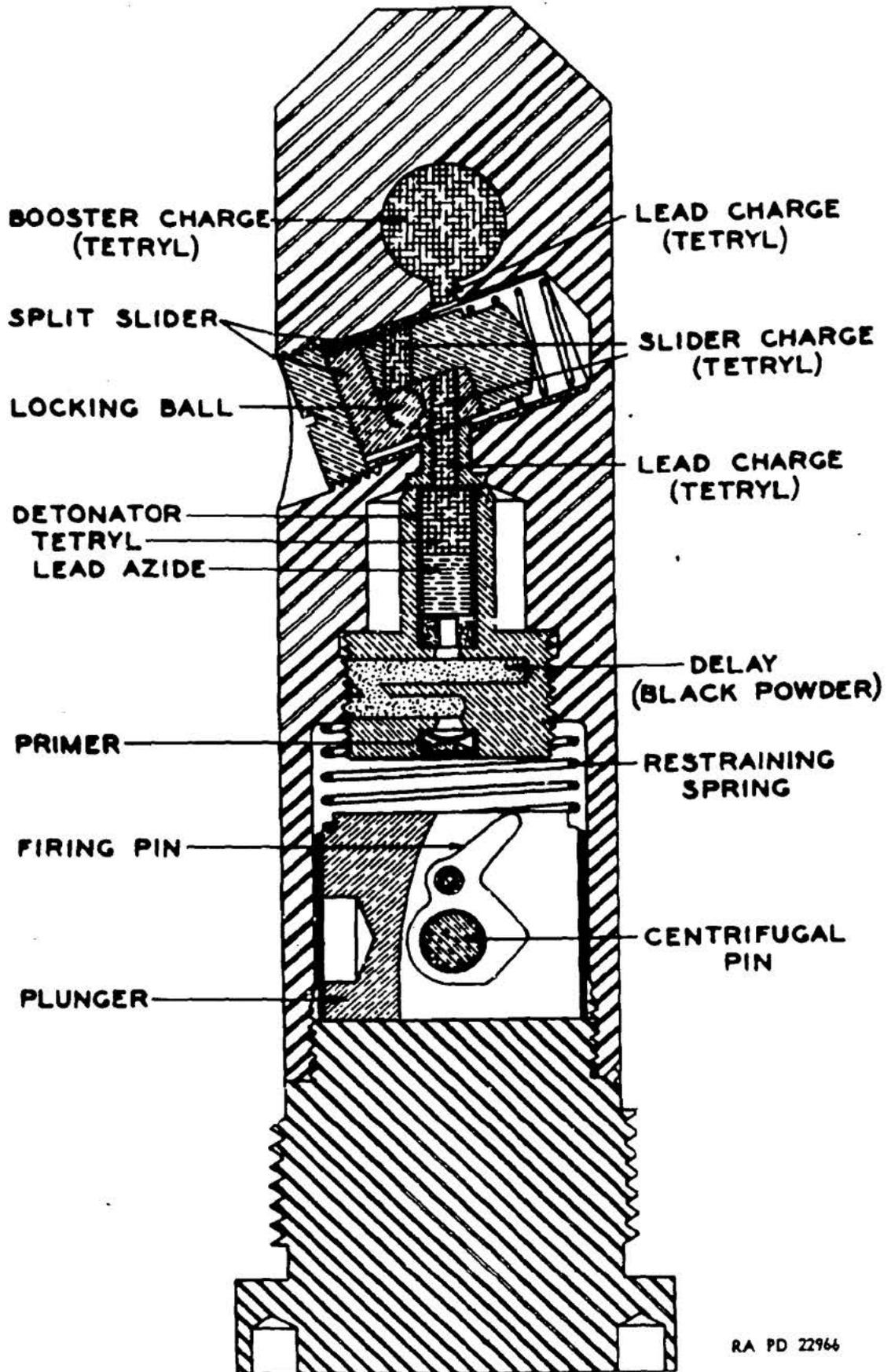
*Safety.* Bore safety is achieved by use of the split slider which prevents any action of the primer or detonator from being transmitted to the booster charge until the projectile has left the muzzle of the gun. The percussion plunger, also a safety feature, arms at a predetermined number of revolutions per minute. The restraining spring holds the firing pin off the primer and counteracts creep force.

**FUZE, Point-detonating, M48 and M48A1.** This fuze has been completely discussed in the chapter dealing with 75-mm gun ammunition.

**Boosters M20 and M20A1.** This booster, used in 3-inch seacoast H.E. shell, has been completely discussed in connection with 75-mm gun ammunition components.

**Cartridge Cases.** The cartridge cases used in conjunction with 3-inch seacoast ammunition are identical in every respect to those used on 3-inch AA rounds. They consist of the Mk. IA1, Mk. IIA1, Mk. IM2, and the Mk. IIM2.

ARTILLERY AMMUNITION



RA PD 22966

Figure 183 — FUZE, B.D., Mk. V  
455

## AMMUNITION INSPECTION GUIDE

high-explosive shell is a multipurpose projectile, being capable with the proper fuzes of giving above ground bursts, or bursts after penetration has occurred. It is, therefore, desirable to have a selectivity of action in the fuzes for artillery H.E. shells.

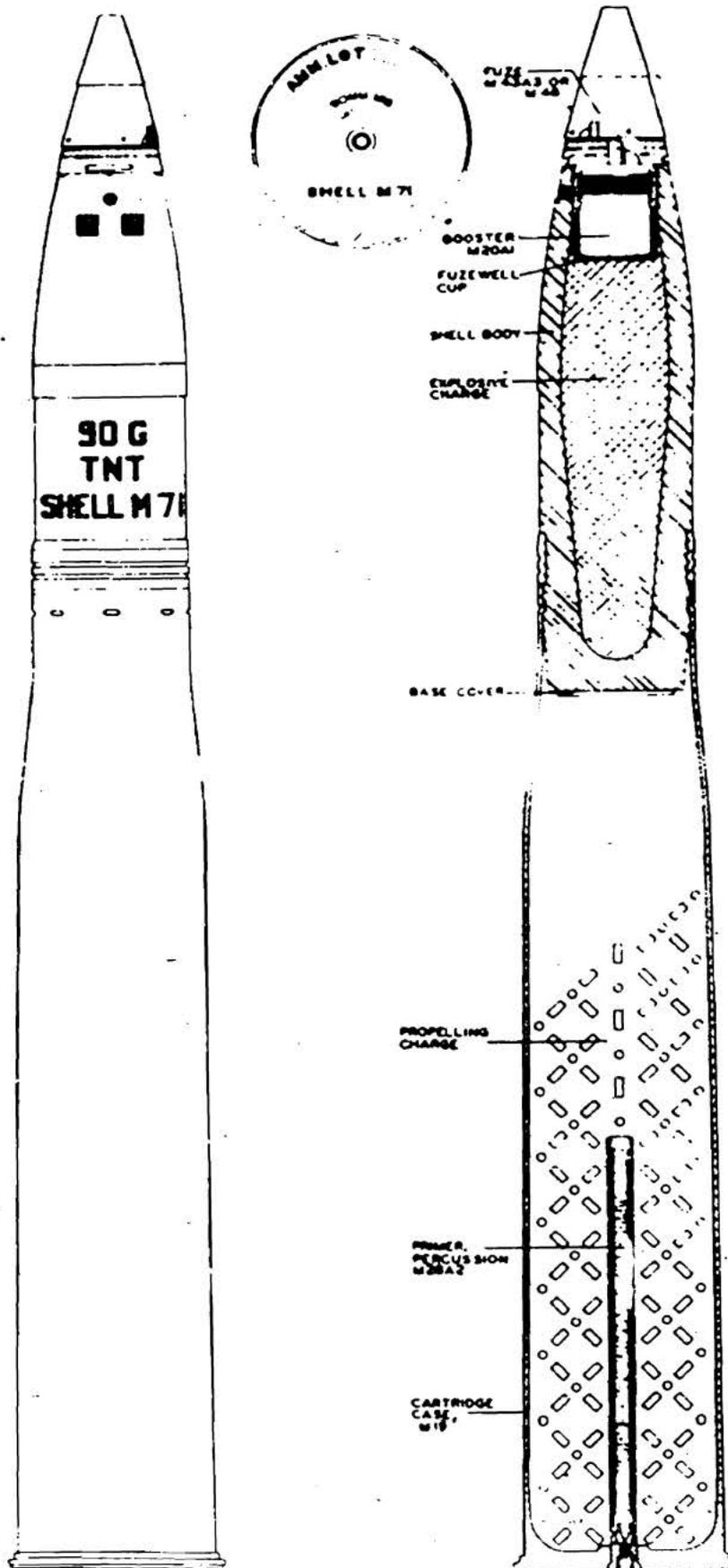
The M46 and M47 P.D. Fuzes together gave this selectivity of action but presented a supply problem in that both had to be supplied for the one projectile, one of them, of course, being unused. For these reasons, it has been deemed advisable to develop a fuze with selective action for artillery high-explosive rounds.

**P.D. Fuze M48, Selective, Superquick or Short Delay.** This fuze may be set at will to give superquick functioning on impact, or to function with a 0.05-second delay after impact. It is of the new type with standard weight of 1.41 pounds, standard streamlined contour, and standard location of the center of gravity. Bore safety is obtained in conjunction with the M20 or M20A1 Boosters.

*Description.* The fuze consists of a head which carries the superquick element; a body which carries the delay element; setting device and threads assembling the fuze to the booster; a flash tube which forms a channel for the superquick detonation and holds the head in its proper position; an aluminium ogive which continues the contour of the projectile ogive; and a delay plunger assembly.

*Setting.* As issued by the Ordnance Department, this fuze is set for superquick action. It is readily set and reset for either superquick or delay action by a setting sleeve which for superquick action permits the interrupter to move to its armed position, or which for delay action retains the interrupter in its unarmed position during flight. The setting sleeve is a cylindrical piece of brass with a slotted head and a central hole slightly larger than the diameter of the spring. The cylindrical piece contains a wide slot into which is fitted the spring and cup. Both the superquick and delay elements function on impact but, with a superquick setting, the faster action operates before the delay action, while with a delay setting, the superquick action is stopped at the interrupter. Where superquick action is desired, the setting sleeve is turned so that the screwdriver slot is in line with "S. Q." stamped on the ogive (slot parallel to longitudinal axis of fuze). When the slot is in this position, the setting sleeve is turned so that only the spring cup is in contact with the interrupter, thus permitting centrifugal force to move the interrupter and spring cup outward against the action of the interrupter spring. For delay action, the screwdriver slot in the setting sleeve is turned so as to be in line with the word "DELAY" stamped on the ogive (slot parallel to transverse axis of fuze). In this position, one of the legs at either side of the slotted portion of the setting sleeve overlaps the eccentrically located interrupter. The interrupter is thus retained in its unarmed or safe position during firing or flight.

### AMMUNITION INSPECTION GUIDE



D-9

Figure 184 — SHELL, H.E., 90-mm, M71

RA PD 22967

## ARTILLERY AMMUNITION

**Cartridge Case.** The case used on all 90-mm ammunition is the M19 or M19B1 (steel). This case is usually of drawn brass, and is about  $23\frac{5}{8}$  inches long. The case has an extracting flange on the head which acts to stop the round when it is loaded into the weapon, and also to eject the case after firing. The metal near the mouth of the case is comparatively thin and soft, so that the pressure of the propelling charge gases expands it tightly against the walls of the chamber, thus preventing the leakage of any gases past the cartridge case.

**Propelling Charge.** The propellant charge for 90-mm ammunition consists of approximately 7 pounds of NH smokeless powder poured loosely in the cartridge case.

**Primer.** The primer used in all complete rounds is the M28-series of 300-grain percussion type of cannon primer.

### SHELL, FIXED, PRACTICE, M58.

**General.** This complete round was originally developed as the High-explosive Round M58. Due to the thin body walls, prematures resulted. As a result, the filler was washed out and a substitute filler of sand and a black powder spotting charge was substituted. The round, thus, has been designated a practice round.

**Projectile.** The projectile is of steel construction. It is streamlined, with a boat-tail base. The fuze continues the exterior streamline of the projectile. The shell has a steel base plate welded to its base.

**Components.** A complete round of M58 Practice Ammunition consists of the following: An M58 Projectile with 2.11 pounds of inert filler and 0.56 pound black powder spotting charge in pellet form; an M20 Booster and an M43A2 Fuze; and an M19 Cartridge Case with a propellant charge of NH smokeless powder.

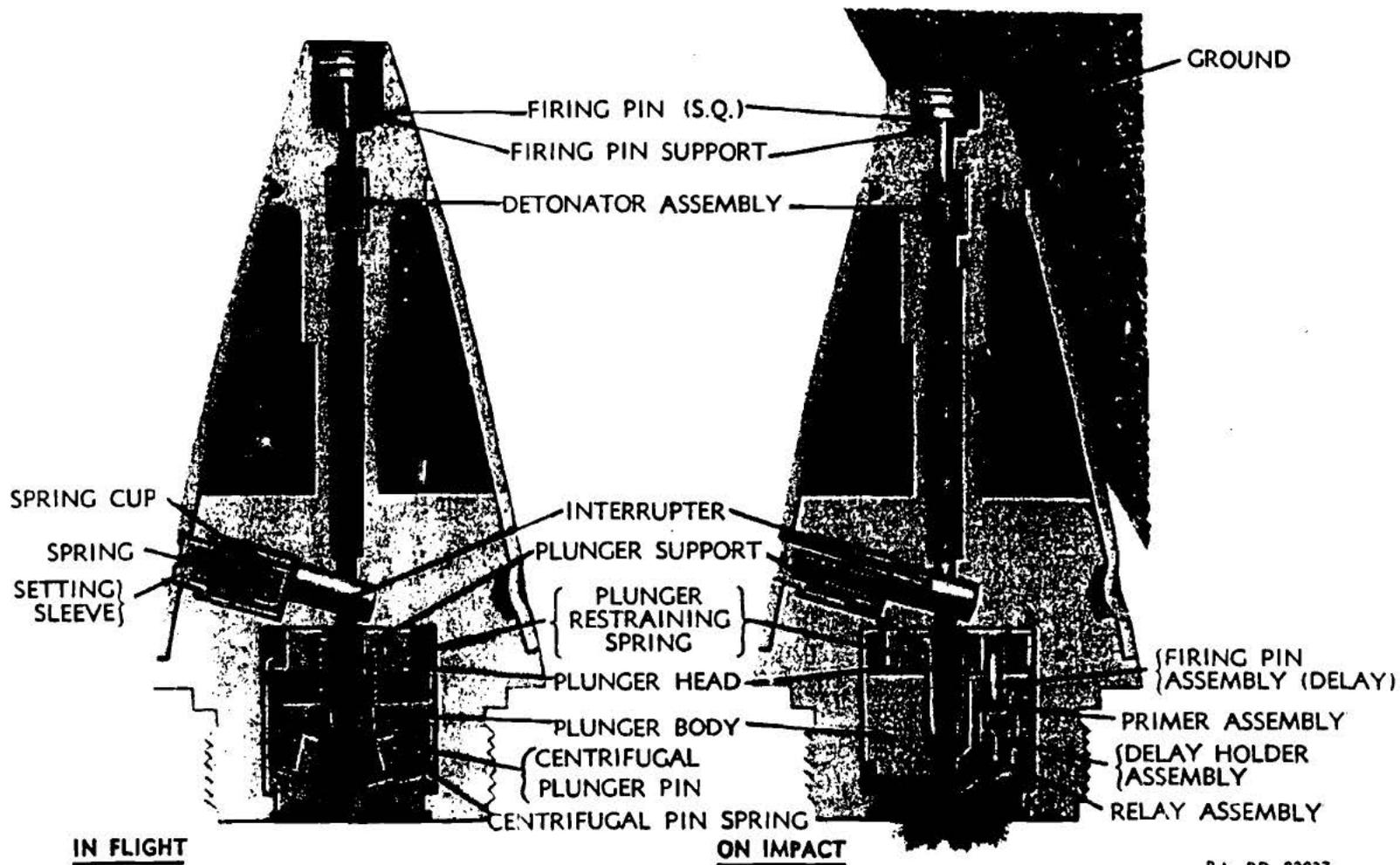
**Guns.** This complete round is fired from all models of the M1 Guns.

### SHELL, FIXED, H.E., M71.

**General.** The M71 Shell was developed to replace the M58. The walls are made thicker to overcome the prematuring factor. In all other respects (outwardly) the shell is identical to the M58.

**Projectile.** The M71 Shell is streamlined, with a boat-tail base and a steel base plate. The fuze continues the streamline of the projectile. It is of forged steel construction.

**Components.** The filler for this round is 2.04 pounds of cast TNT, which is detonated by the M20A1 Booster used in conjunction with the M43-series mechanical time fuze for AA work, and the P.D. M48 or M48A1 for firing against ground targets. The loaded and fuzed projectile is assembled to an M19 Cartridge Case containing approxi-



RA PD 22937

**Figure 152 — FUZE, P.D., M48 — Delay Functioning**

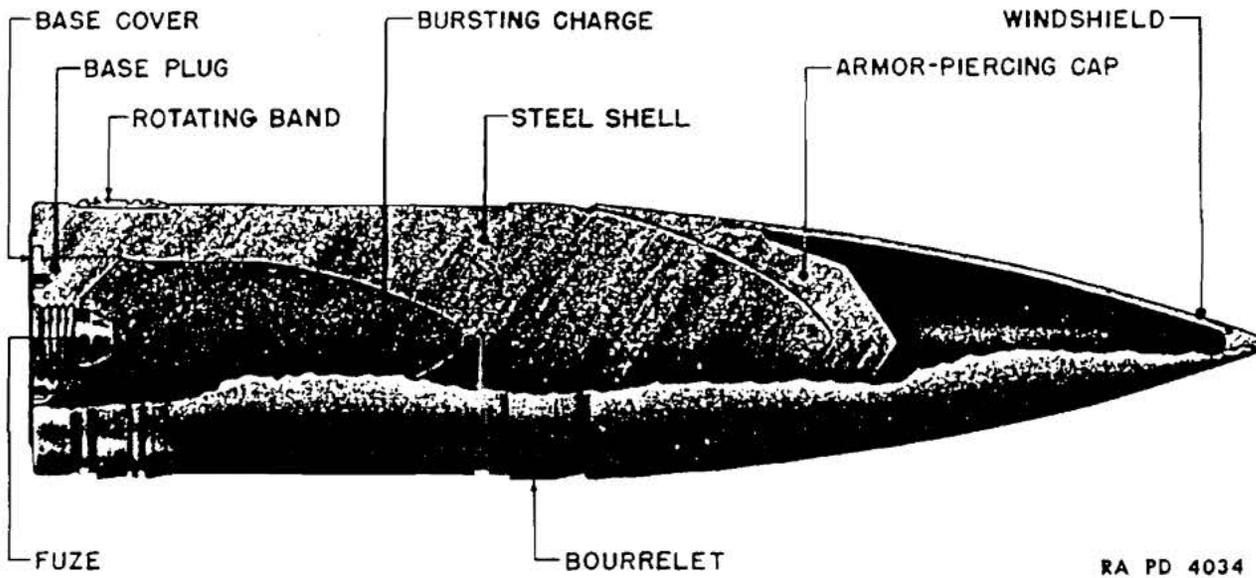
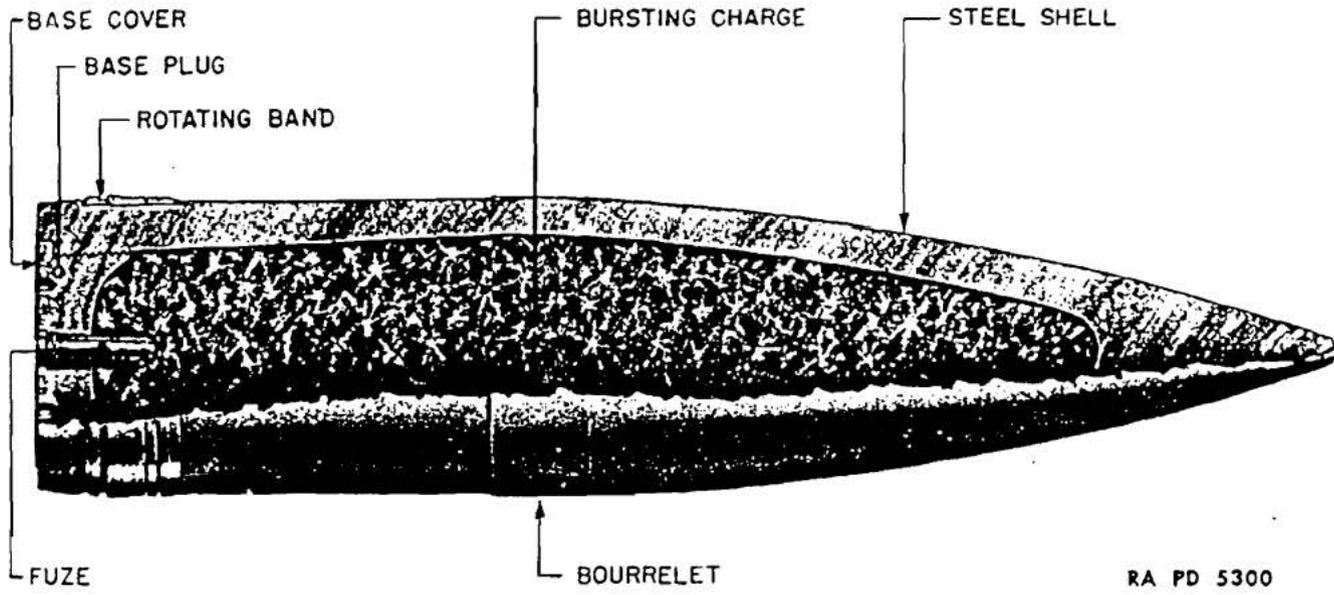
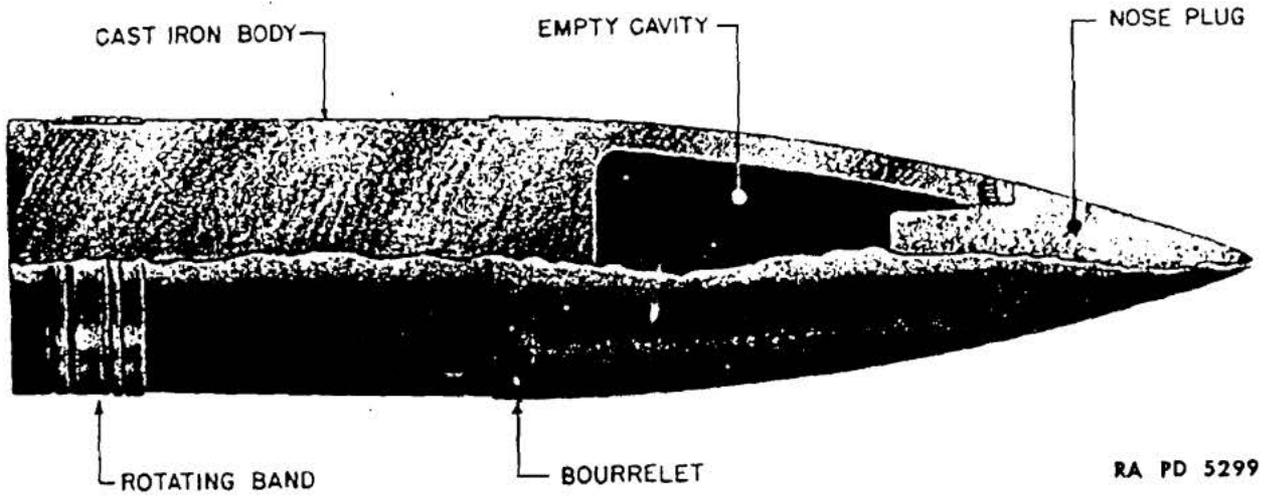


Figure 1 - Projectile, armor-piercing



**Figure 3 – Projectile, high-explosive, base fuzed**



*Figure 5 – Projectile, target practice*

(2) *Nondelay* fuzes designed to burst the projectile on a hard surface before complete penetration or ricochet.

(3) *Superquick* fuzes designed to produce a burst immediately upon impact before any penetration occurs, thus giving a maximum surface effect. They are used against light material targets, barbed wire, personnel, and in chemical shell to scatter the chemical entirely above ground.

(4) *Supersensitive* fuzes designed to burst the projectile promptly on impact against a very light target such as an airplane wing.

**33. Base detonating fuzes.**—The base detonating fuzes used in the Coast Artillery Corps are the Mk. X and the medium caliber, Mk. V. Only the Mk. X will be discussed in detail.

*a. Mk. X.*—(1) *Use.*—This is the standard delay fuze for major caliber armor-piercing and deck-piercing projectiles. The fuze is bore-safe and detonator-safe, and future issues of loaded armor-piercing projectiles will have the fuze assembled in place. The plunger and rotor of this fuze arm at 1,300 revolutions per minute, thus making it suitable for use in gun, howitzer, or mortar projectiles.

(2) *Description.*—Figure 13 shows the general details of the fuze and gives the names of the principal parts.

(3) *Action.*—In the bore of the gun, the fuze parts are acted upon by the forces resulting from linear acceleration (set-back) and by the centrifugal forces caused by rotation. The set-back force is greater than the centrifugal force and the rotor thus is locked in place in the fuze body. The fuze emerges from the bore of the gun still unarmed, no action having taken place. After the projectile has left the muzzle of the gun and linear deceleration begins, the set-back force ceases and the fuze is armed through the action of centrifugal force.

The firing pin in the plunger is normally held in the unarmed position by two pins and springs which, under the action of centrifugal force, move outward, away from the axis of the fuze, and unlock the firing pin which, also due to centrifugal force, rotates to the armed position. The rotor, containing the detonator, is also held in the unarmed or safe position by two pins and springs, which release the rotor, due to centrifugal force, in a similar manner to the way the plunger is armed. Centrifugal force also rotates the rotor into the armed position. The rotor stop pin serves to stop the rotor in the armed position. In the armed position of the rotor the rotor lock pin aligns with a hole provided in the fuze body and, due to centrifugal force, moves partly into this hole, thus locking the rotor in the armed position. The rotor lock-pin lock is provided as an additional lock and moves into its position either due to air retardation or "creep" in the projectile or else on impact.

AMMUNITION

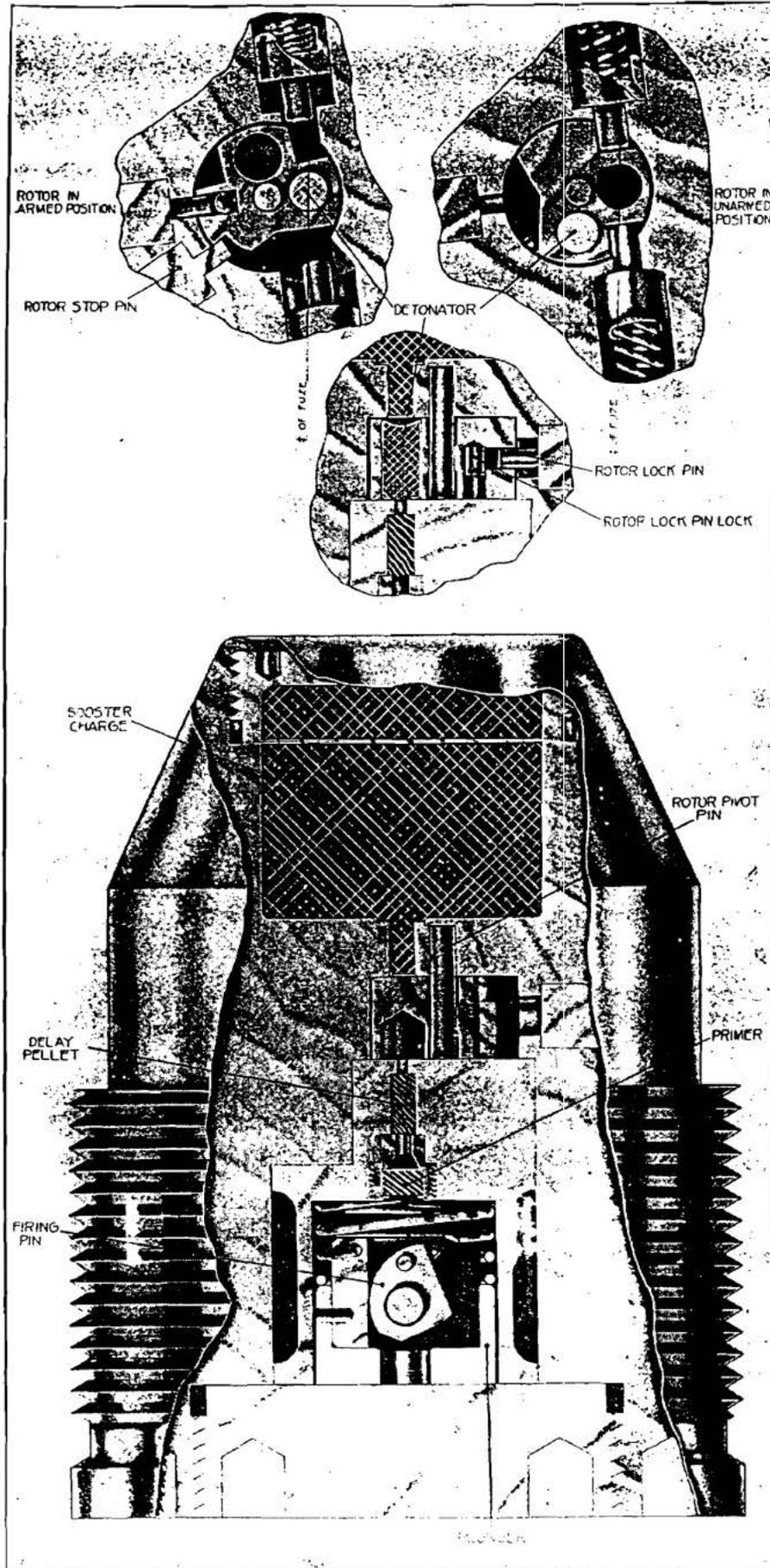


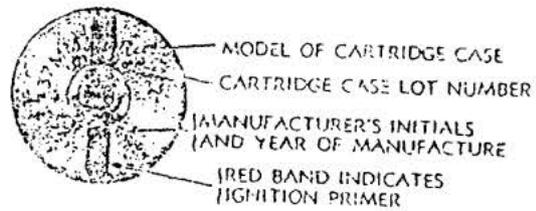
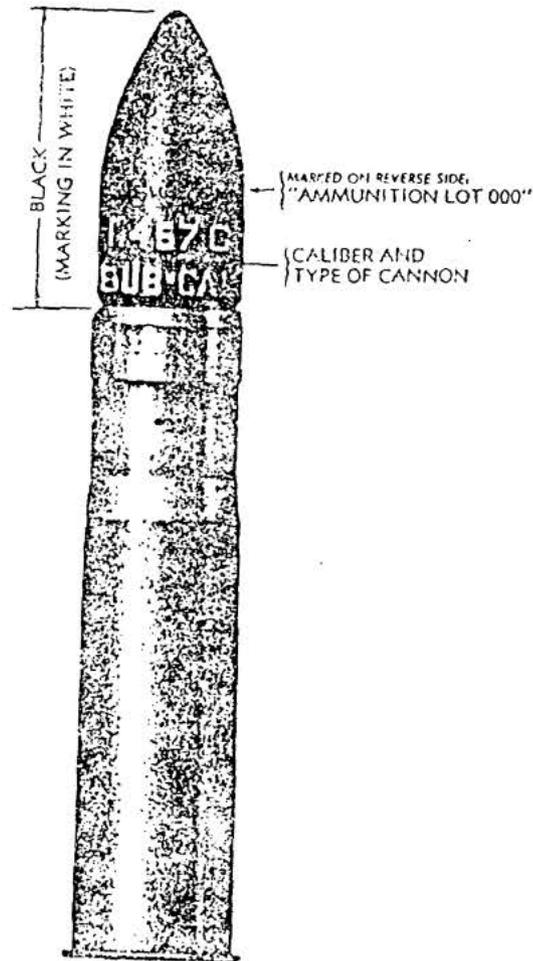
FIGURE 13. Base detonating fuze, MK. N.

ORD 11 SNL P-6  
PART 2



RA PD 23078

Plate 1 — CARTRIDGE, subcaliber, cal..30, M1925



RA PD 80907

Plate 2 — SHELL, fixed, subcaliber, 1.457"



CONTROLLED MINE SYSTEM AND THE M3A1 MINE

electrically selecting, testing, or firing any mine in the group it controlled. The buoyant mine cases, which were connected by wire rope and electrical cable to cast-iron anchors, contained from 300 to 500 pounds of granular TNT and housed a firing device that was actuated by the impact of a vessel. When a ship struck a buoyant mine, a signal appeared on the mine control panel in the casemate ashore and the mine could then be fired by closing the proper firing switch. The shore installations consisted of the mine casemate, a storehouse, a loading room, a cable tank for storage of cable, a mine wharf and derricks, trackage or roads, a group commander's station, base end stations, a plotting room, and cable terminal huts.<sup>60</sup>

The greatest advantage of the M3 system over European systems was in firing single mines rather than whole groups. This method left small gaps of less than 300 feet in a line of mines, instead of 500 yards or more.<sup>61</sup> Most British harbors used the loop

system, consisting of a loop of electric cable in which a current set up by a passing steel ship would be carried to shore by a "tail" cable. The loop enclosed a row of moored mines, the sinkers of which were also connected to the shore by the tail cable. All mines in a group had to be fired simultaneously, leaving a large gap in the defenses.<sup>62</sup> The Germans did not employ controlled mines until after the raids at Dieppe on 19 August 1942 and at St. Nazaire on 27 March 1943 had demonstrated the weakness of net and boom defenses. Thereafter, they converted offensive magnetic needle mines into defensive mines, connecting them to a shore station by cable. The short-

<sup>60</sup> (1) Catalogue of Standard Ord Items, II, 231-54. (2) Morland King, *Submarine Mines*, Record of Army Ord R&D, September 1945 (hereafter cited as *Sub Mines*), p. 22. OHP.

<sup>61</sup> Rpt. Col H. C. Reuter, *A Summary of Historical Information Pertaining to Controlled Submarine Mining*, 5 Sep 49 (hereafter cited as *Reuter Rpt*), filed at Submarine Mine Depot, Fort Monroe, Va.

<sup>62</sup> J. S. Cowie, *Mines, Minelayers and Minelaying* (London, 1949), pp. 103-05, 138.

ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

APPENDIX E  
REPORTS/STUDIES

APPENDIX E  
REPORTS/STUDIES

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- E-2. DERP FUDS INPR (Site No. I04FL022700) Project Summary  
Sheets (B-1).
- E-3. Exposed Metal Artifacts at Fort Zachary Taylor (B-27).
- E-4. Map Showing Room Numbers at Fort Taylor (B-7).

7 April 1995

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM  
FORMERLY USED DEFENSE SITES  
FINDINGS AND DETERMINATION OF ELIGIBILITY  
FORT ZACHARY TAYLOR  
SITE NO. I04FLO22700

FINDINGS OF FACT

1. Fort Zachary Taylor originally was comprised of 72.23 acres of public domain lands (fee) which was transferred in 1845 to the War Department for construction of a harbor defense site. In 1943, the United States acquired an additional 6.61 acres in fee by condemnation. Between 1909 and 1940, the Department of the Army filled 21.43 acres of submerged lands in or around the original reservation. The entire 100.27 acres acquired was transferred from the Department of War to the Department of the Navy between 1943 and 1947. The Department of the Navy filled additional acreage of submerged lands in or around the original reservation. The state of Florida filed a Disclaimer to title to those filled lands totaling 78.22 acres on 1 July 1968, 63.76 acres of which were within the boundaries of Fort Taylor. The entire Fort Taylor site after acquisition and filling comprised 164.03 acres, more or less.

2. On the old Fort Taylor site, the Department of the Army and Department of the Navy constructed approximately 86 buildings including warehouses, housing units, office buildings, water towers, fuel storage facilities, parking areas, administration buildings, and antennas. The old Fort Zachary Taylor, built in the late 1800's, was also located on this property.

3. Of the total of 164.03 acres acquired and filled for the Fort Taylor site, approximately 112.71 acres are still utilized and under the control of the Department of the Navy. Therefore, this 112.71 acres known as Truman Annex is not eligible for the Defense Environmental Restoration Program - Formerly Used Defense Sites established under 10 USC 2701, et seq. The other 51.32 acres were declared excess by the Department of the Navy in the early 1970's. GSA assigned the 51.32 acres to the Secretary of the Interior. By quitclaim deed, dated 7 October 1976, the Secretary of the Interior conveyed 38.00 acres to the state of Florida for public park purposes. This deed contained restrictions on the use and also included the recapture clause in the event of a national emergency and a reverter clause for breach of the restrictions. By quitclaim deed, dated 21 November 1979, the Secretary of the Interior conveyed 13.32 acres to the state of Florida for public park purposes. This acreage contained the old Fort Zachary Taylor, and the deed also contained restrictions including the recapture clause in the event of national emergency and the reverter clause for breach of restrictions. The state of Florida now operates a park and recreation area on the 51.32 acres.

SITE NO. I04FL022700

DETERMINATION

Based on the foregoing Findings of Fact, the site has been determined to be formerly used by the Department of Defense. It is therefore eligible for the Defense Environmental Restoration Program - Formerly Used Defense Sites established under 10 USC 2701, et seq.

10 June 91

DATE

for K. H. K. Soeke LTC EW.

JOHN F. SOEKE  
Major General, USA  
Commanding

SITE SURVEY SUMMARY SHEET  
FOR  
DERP FUDS SITE NO. I04FL022700  
FORT ZACHARY TAYLOR  
27 FEBRUARY 1991

SITE NAME: Fort Zachary Taylor.

LOCATION: Key West, Florida (see attachment 1).

HISTORY: The original property was acquired in 1845 for the War Department to construct a harbor defense site for Key West. Subsequent acquisition, construction, and filling by the Department of the Army and the Department of the Navy brought the facility to its present acreage. This facility was a harbor defense site through the Civil War and the Spanish American War. It was transferred to the state of Florida in 1979.

SITE VISIT: A site visit was conducted by James McAdams, CESAJ-PD-EE, on 16 May 1989. He spoke with Mr. Jeffrey Di Maggio, Park Manager for the Fort Zachary Taylor State Historic Site. At that time Mr. McAdams performed a visual survey of all the excavations that contained unexploded ordnance. In the excavated areas there were large stacks of ordnance that appeared to be in good condition. Additionally, representatives of the state were in the process of restoring shells that had been judged to be harmless by ordnance experts from the U.S. Naval Station Key West.

CATEGORY OF HAZARD: OEW.

PROJECT DESCRIPTION: It is proposed that a feasibility report for the removal of piles of unexploded ordnance be initiated by Huntsville Division. The Fort Taylor site is in the process of being renovated by the state of Florida, and as part of that problem massive amounts of old large calibre shells from the Civil War are being excavated. These shells frequently contain igniters or fuses that would enable the shells to explode.

AVAILABLE STUDIES AND REPORTS: Fort Zachary Taylor National Historic Landmark Condition Assessment Report, 1989; and Historic Preservation Planning Ft. Zachary Taylor State Historic Site, Division of Recreation and Parks, Bureau of Construction, 30 November 1989 (all reports on file within the Jacksonville District Office).

PA PO:: Mr. James J. McAdams (904) 791-2117.

**EXPOSED METAL ARTIFACTS AT FORT ZACHARY TAYLOR,  
KEY WEST, FLORIDA  
OCTOBER 1993**

**Introduction**

Fort Zachary Taylor played a key role in the military history of Key West. In addition to being a classic example of the early nineteenth century "second system" of defense, it exhibits evidence of reuse and alteration through time. The walls of Fort Taylor, and the artifacts contained within them, provide an invaluable archaeological record of changes in military strategy and technology over a period of approximately 150 years.

Partly as a result of this long period of occupation, and also because of its location in a salt air environment, the fort presents a number of cultural resource management challenges. Prior to the fort's acquisition by the State of Florida, a significant amount of informal excavation was conducted in the casemates of the early 19th century portion of the site. During the Spanish American War, these casemates, originally dating to the 1840s, had been filled with sand and an undetermined number of artifacts dating primarily to the Civil War.

After the state acquired the fort in 1976, it was recognized that no provision had been made to stabilize or preserve the thousands of metal artifacts that had been uncovered and exposed to the corrosive salt air environment of Key West. Despite the fact that on-site excavation was halted in the 1970s, large quantities of ordnance remained exposed at the fort. Although treatment tanks were installed at the site, no long term comprehensive treatment plan has yet been devised for dealing with the exposed artifacts.

This inventory represents a preliminary step in the development of such a plan.

On October 17, 18, and 19, 1993, an inventory of exposed metal objects at the site was conducted by Herb Bump and Henry Baker of the Florida Bureau of Archaeological Research. They were assisted in this effort by Frank Ofeldt, Lirida Cain, and the park manager, Buff Wiley. The following list is a room-by-room summary of the artifacts encountered in the course of this survey. Room numbers correspond to those on the attached map of the fort (Appendix A). Photographs of selected portions of the site are included in Appendix B.

**The Inventory**

The Endicott Period Rooms—rooms 101 through 115—contain overhead iron rails. Most of the rails are badly rusted. Many have fallen to the floor along with portions of the concrete ceiling. Dripping water, together with evidence of fallen concrete and heavy sections of loosened metal rail, attest to the fact that this portion of the fort is extremely dangerous. Visitors are not allowed in this section of the fort.

Location    Comments/Artifacts

Room 101	Tool board for generator components (Endicott Period) mounted on west wall
102	modern lobster/crab traps
103	modern storage area. Overhead rails in this area are in poor condition, dangerous

Location Comments/Artifacts

Room 104 Endicott shell elevator removed, space is empty except for four mounts on floor

- 105 Artifact storage/modern storage (signs). Artifacts:  
 25- Parrot rifle shells (P.R.S.), 4.25" x 12" (30 lb. fragmentation)  
 140- P.R.S., 4.125" x 11 (30 lb solid)  
 2- P.R.S., 6.25" x 15.5" (100 lb.)  
 1- P.R.S., 6.25 x 13 (100 lb. solid)  
 1- P.R.S., 6.25 x 13 (flat nosed, 100 lb. solid)  
 2- recoil stops for 4" rails  
 1- Westinghouse elec. distribution device for shell elevator (removed from #104) and door  
 8- 1.5" hexagonal bars 44" long  
 3- 1.5" round bars 44" long  
 1- early high amp electrical box (copper) 12" x 6" x 3.5"  
 2- (wagon?) wood spoke wheels 16 spokes, approx. 51" dia., 10" hubs O.D., for 2.25" axle, no rims or tires  
 2- brass door hinges 23" x 4" (4 bolt holes)  
 1- 25" x 65" heavy wooden barracks? door, 1900s? window hardware  
 4- heavy wooden doors  
 2- 12" dia. recoil wheel, 9 spike holes, 2.125" axle dia. 4.75" thick  
 1- 12" dia. recoil wheel, 2" axle, 2" thick, 7 spike holes, lower carriage wheels  
 2- 20.5" dia., 6.25" axles, 7" thick, 4.5" rim, 6 spike holes  
 1- I-beam assembly wheel 15" dia., 3" thick at rim, 7 spike holes  
 1- 18" dia., 2.75" thick, 8 spike holes  
 2- 16" dia., 2.5" thick  
 4- 7.5" dia. 2.25" thick  
 1- 9" dia. x 2.5" thick w/mount bracket  
 1- 8" dia. x 2.5" thick w/mount bracket  
 4- trunion caps for 4.5" gun, 3" wide  
 1- recoil stop for 5.5" rail  
 2- brackets 18.5" overall, 5.75" wide x 14" centerline on hole  
 1- pin 2" o.d. x 13.5" long, flared head  
 1- pin 13" long x 2" dia.  
 2- plates 7" x 5.125" x .875"- 4 holes for .625" bolts  
 1- pin w/4-hole fitting adjustment screw for recoil stop  
 1- cover for barbette mount
- 106 7- cannonballs, 31" circumf.  
 1- lower carriage wheel, 16" dia., 1.75" shaft, 2.5" thick  
 1- rail, 70" long x 3" high, 2.5" base (like narrow gauge rr rail, 1.5" width  
 1- lower carriage wheel assembly, 12" x 3.5" w/ brackets. Brackets=24.25", holes (2)  
 1- L.C.W. assembly, 10" dia x 3" thick, bracket=21"  
 1- turning spike, 48" long  
 3- recoil stop for 11" I-beam (1 broken)  
 1- with adjustment screw  
 1- L.C.W. assembly, 16" dia. x 19.5" across brackets  
 2- 6.25" x 13" parrot shells
- 107 Overhead horseshoe-shaped monorail in good condition with straight pieces, each side partially loosened.  
 1- pick axe head, 25" long

Location Comments/Artifacts

## Room 107,

- Cont.
- 1- upper carriage for 10" gun partially disassembled
  - 1- left 10" cheek plate for 10" gun intact, rt. disassembled
  - 1 traverse track, 47" across, 2.125" wide, 1.625" thick
  - 2 traverse tracks, 51" arc (48" inside), 5" wide, .875" thick; most of these parts may go together?
  - 2- carriage pivots, 59" x 5.25" wide x 1.125" thick. Center hole dia. = 4" (1.75" thick at hole) 6 bolt holes on each end (3" o.c.)
  - 1- center pivot tongue 52" long, 4" dia. hole in distal end, 10" wide (2 bolt holes, 8" apart, for carriage attachment at proximal end)
  - 1- pivot? 74" long, 4" hole in 1 end, 2.5" hole in other w/ dog leg bend (21" from small hole)
  - 1- plate 43" x 11" w/ 12 holes .5" thick tapers on ends
  - 1- front center transom for carriage, 33" w x 17" h at extremes: 7" high in center.
  - 1- pivot bracket? 22" long (L-shaped), 10" h, 8" across front where pivot is, hole= 2.5" dia.
  - 1- rod, 24" long, 1.5" dia
  - 1- wheel assembly, 19" dia., w/brackets, ea. approx. 21" (turned 90 degrees)
  - 1- wheel assembly, 16" dia., w/brackets
  - 1- center pivot plate 27" x 36" w/ 3.5" hole inside bracket bolted on 24.75" long x 6" wide
  - 1- 28" long bracket x 6" w/7 rivets attaching 23" bracket to it
  - 1- window shutter, standard size 6"w x 6"h x 11"l. pivot thickness = 1.75"

- 108 Locked--modern storage
- 109 Empty space where shell elevator has been removed--now filled w/lobster & crab traps
- 110 Lobster/crab traps (overhead railing in good condition)
- 111 modern lobster/crab traps
- 112 Locked
- 113 Modern storage--no historic artifacts
- 114 Empty. 2 cement-filled barrels (no staves) used as fascines?
- 115 Empty.\*
- 116 Door wedged/nailed shut
- 117 Door wedged/nailed shut
- 118 Door wedged/nailed shut
- 119 Door wedged/nailed shut
- 120 Door wedged/nailed shut

\*Rooms 115 through 123 are empty, according to park manager Buff Wiley.

Location    Comments/Artifacts  
 Rm 121    Door wedged/nailed shut

122        Stair landing (empty)

123        Wedged/nailed shut

124        Stair landing (empty)

125        Modern storage

Casemates

#1, 2, 3    filled with sand & rubble to within 3 or 4 feet of ceiling

#4        full of sand up to within 3' of ceiling (viewed by peeking from #5)

#4A       70% full of sand (viewed from above)

#5        2/3rds full of sand and rubble

#5A       approx. 3 to 4 feet of sand on floor

#6        1/4 full of sand, rest empty

#7        2/3rds full of sand

#8        full of sand

#9        1/2 full of sand

#10       1/2 full of sand (according to Frank Ofeldt)

#11       full

#12       60% full

#13       10% full of sand (nearly empty) w/ boiler remains. 4 pivot arms similar to #14. cistern open and full of sand. 8" cannon ball in surface--stack of 8" cannonballs 24" high w/ 6 partially exposed. Center pivot pin from gun mount, 33" long, 3" dia., flared end.

3- 10" cannonballs partially exposed

1- 8" cannonball

2- 10" cannonballs

1- steel shutter

17- iron pieces 36" x 5" narrowing to 1.75" on ends. Curved on one side, 2" thick on ends

25- misc. iron brackets and fasteners/pins

1- lower carriage wheel assembly 20" dia., 5" thick

1- recoil stop for 4"? rail

Location Comments/Artifacts

#14 10% full of sand. Boiler fragments. 16" manifold connected w/6" elbow. At least 6, 10" cannonballs partially buried in sand in corner. Contains pivot connecting arm = 75" long, 4" hole in 1 end, 2" hole in other; 7/8" thick dog leg 18" from small hole. Cannister shot 8" (dia) 11" long

## Casemate

#15 full of sand

#16 full of sand

#17 full of sand

#18 Filled with rubble to within 3 or 4 feet of ceiling

#19 Same as above

#20 Same as above

#20A Same as above

#20B filled to within 3' or 4' of ceiling with sand and rubble

#21 80% full of sand, no artifacts visible

#22 25% full of sand and rubble. Also:  
 2- vent fittings 23" x 36" x 14" deep  
 1- broken elevation system base, 16" x 7" base  
 7- 30 lb. parrot shells visible  
 1- lower carriage wheel bracket

#23 Empty-cistern full w/10" cannonball visible. From #23 can see tube from cannon in the concrete face of Battery Adair and granite sill. Cistern filled to within 1 foot of top.  
 - 1- 5-foot pivot arm, 7" wide x 5' long, protrudes from under Totten embrasure

#24 through #30 are filled solid with sand

#31 through #37 are empty

#38 1861 - 10" Rodman.

#39 Empty

#40 Empty

#41 Endicott shell lift

## Cannons on parade ground

Inside N wall,  
 W. to E.

1- 300lb. Parrott rifle

Location Comments/Artifacts  
Cannons on parade ground, Cont.

Inside N wall,  
W. to E.

- 1- 1844 10" Columbiad
- 1- 1844 8" Columbiad
- 1- 1861 10" Rodman

Center of  
parade 1841 8" siege mortar

Artifacts on top deck

Cannons--

W. to E., along 2nd tier, North wall

- 1861 - 10" Rodman
- 1844 - 10" Columbiad
- 1861 - 10" Rodman
- 1861 - 10" Rodman

Top Deck, between #7 and #8

- 1- 1.5" diam. pin w/2" eye in concrete face of Endicott battery; similar ring opposite casemate #9 w/ shackle attached to ring
- 2- two tubes (cannon barrels) imbedded in Endicott concrete between casemates 9 and 10. Cannon carriage components & traverses in concrete between 10 and 11--imprint of where cannon was removed.
- opposite casemate #11 in Endicott concrete
  - 1- tube (cannon barrel)
- opposite casemate #12
  - 2 more tubes
- opposite #13-
  - 1 tube
- Pin and ring (6" I.D. 9" O.D.) opposite casemate #14

Artifacts on top of casemates #20 and #21:

- misc. traverse rails, various sizes, shapes, lengths
- 1- 4" dia pivot pin, 10" high, 22" base, 4 bolts (2.75" inch extends on other side of base)
- 1- pivot arm 70" long, 4" hole on end
- 9- 1/2 shutters
- 8- shutter supports
- 8- shutter components

Rooms along East Side of Fort

Rooms 53, 54  
& 55 Empty

- 56
  - 2- upper carriages for 5" guns (complete)
  - 2- upper carriages for 10" guns (complete)
  - 1- left cheek for 10" gun
  - 2- upper carriages for 6" guns (poor condition)

Location Comments/Artifacts

Rm 56, Cont.

- 2- center pivots 43" x 18" with 4" holes, wheels missing. 1 not salvageable, 1 fair
- 2- I-beams, 1= 171.5" long, 1= 191.75" long
- 1- lower carriage (1 rear wheel missing), 51" wide x 152" long. Outer sides consist of dual I-beams 9" high, 5/8" web, 5 1/4" base. 8 spike holes. Rear wheel 18" diam., 3 1/2" thick, bracket 24.5"; Front wheel 11" dia, 3.5" thick, 24.5" bracket 6 spike holes
- 2- window facings

58 Empty

60 Modern storage (tanks)

Room 62 Laboratory (tanks). Starting in SW corner moving north along west wall:

- 380 (approx.) 8" hollow cannonballs
- 10- 10" coated/painted solid balls
- 3- lower carriage wheels, 19" dia., 22" bracket assemblies
- 3- front lower carriage wheels, 10" dia w/ brackets
- 1- 18" dia carriage wheel, 18" dia, 2" thick
- 1- 16" dia iron cook pot
- 1- WWII shell casing, poor condition
- assorted modern metal fragments
- 2- 1.75" wide x 17" long strap iron w/ 4 bolt holes
- 2- 15" cannonballs

North of fireplace

- 240- 4" x 12" parrot rifle shells (fragmentation)
- 456- 4" x 9.5" flat ended rifle shells (solid)
- 76- untreated 10" cannonballs
- 1- 30 gal garbage can of 1.5" cannister shot
- 2- 30 gal garbage cans of 2" cannister shot
- 1- iron wheel, 21" dia, 3" thick w/ eccentric offset for Pitman arm? 2" inside dia (possibly small locomotive wheel--offset 7" O.C. from central axle)
- 3- metal cistern covers, 21.5" x 21.5"
- 1- center transom for carriage, 36.75" x 10"
- 1- metal hook & eye 26" long, 4" I.D. on ring, 3" hook, 1" round stock
- 1- upper carriage wheel, 12' O.D., 5" thick, 2" shaft, 9 spike holes
- 13- buckets of 4" shot, ea. bucket 12" at top, 11" high & 11" dia at bottom. All poor condition, prob. 30 per bucket.
- 18- buckets of assorted metal objects
- 11- 16" x 6" parrot rifle shells
- 2- 13" x 6" parrot rifle shells
- 13?- 13" x 6" flat ended parrot rifle shells (solid)
- 4- carriage wheel brackets
- 1- possible WWI hook, 7" o.d., 2.25" I.D.,
- 1- elevation ratchet system- 16" x 7" base, 16.5" high. Lever=17.75" long. (1.75" x 2.625" head on lever)
- 1- center lower gun carriage transom, 37" x 10.25"
- 1- transom, 43" x 11". 12 boltholes (similar to one in casemate #13)
- 1- pile of large cannonball frags. 32" x 32" x 12" high

Location Comments/Artifacts

## North of fireplace, Cont.

- 1- assortment of tools and fittings, including wrenches, pick head, large shackle & pin, (1.5" dia shackle, 11" long spring), approx. 50 items
- 1- table top, 30" x 60" approx. same # of items as listed above
- 133- 4" x 12" parrot rifle shells
- 10- 4" x 10" parrot rifle shells
- 1- cast iron cover plate, 26" x 41" x .5"
- # 1- large broken wrench, 36" long for 7" nut

## Starting at NE corner, moving south:

Pile of assorted large parts and fittings, including misc. carriage wheels and brackets, 1- 100 lb. hemispherical counterweight with eye attached, tripod points for lifting, 6' x 4' x 2' high=total pile size (generally poor condition)

- Tank #11
- 18- 4" x 13" parrot shells
  - 1- 16" x 6" parrot shell
  - 20- 6" cannonballs
  - 6- 8" cannonballs
  - 1- 10" cannonball
  - 1- carriage support cross member, 67" long
  - 2- recoil stops for 4" beams
  - 1- 1.5" square stock x 33" long
  - 1- 1.5" square stock rod with 90 degree turn on each end, ea 26" long

## Tank #10

- 21- 4" x 9.25" parrot shells
- 21- 8" cannonballs
- 1- tube 48.5" long, trunion = 3" x 3" (off center unusual muzzle 3.5" bore? o.d. at breech=9" breech to end of cascabel = 8"
- 1- tube, 34.5" long, 2.5" trunion/bore, o.d. at breech 8" off center trunion
- 1- metal container on rollers, 23" x 21" x 6" contains modern tools and fittings

## Tank #7

- 3- parrot rifle shells 4" x 16"
- 4- rear carriage wheels (2 w/brackets), 18" dia., 2.75" thick
- 1- cap cover for 6" shaft 4" wide
- 2- carriage wheels, 1= 9" x 3", 1= 8"x 2.25", 1.5" shaft
- 1- 12" long narrow gauge rail, 2.75" long, 1.75" top rail
- 1- UID bracket w/fasteners & yoke, 17" square

## Tank #8 Empty

Tank #2 27- 4" x 12" parrot rifle shells

- Tank #1 27- 4" x 12" parrot rifle shells
- 4- carriage wheel brackets, 9.5" x 7.5"
  - 1- metal band 22" dia, 4.5" wide (circular)
  - 1- carriage wheel, 8" x 2.5"

SE corner: 1- pile, approx. 3' x 10' x 16", assorted metal items apparently removed from moat, including carriage wheels, window shutters & fittings, shell casings (20th c), parts of chain hoist, brass cartridges, broken kettle approx. 16" dia

## Museum

- 4- 10" fragmentation shells (hollow)

Location Comments/Artifacts

## Museum, Cont.

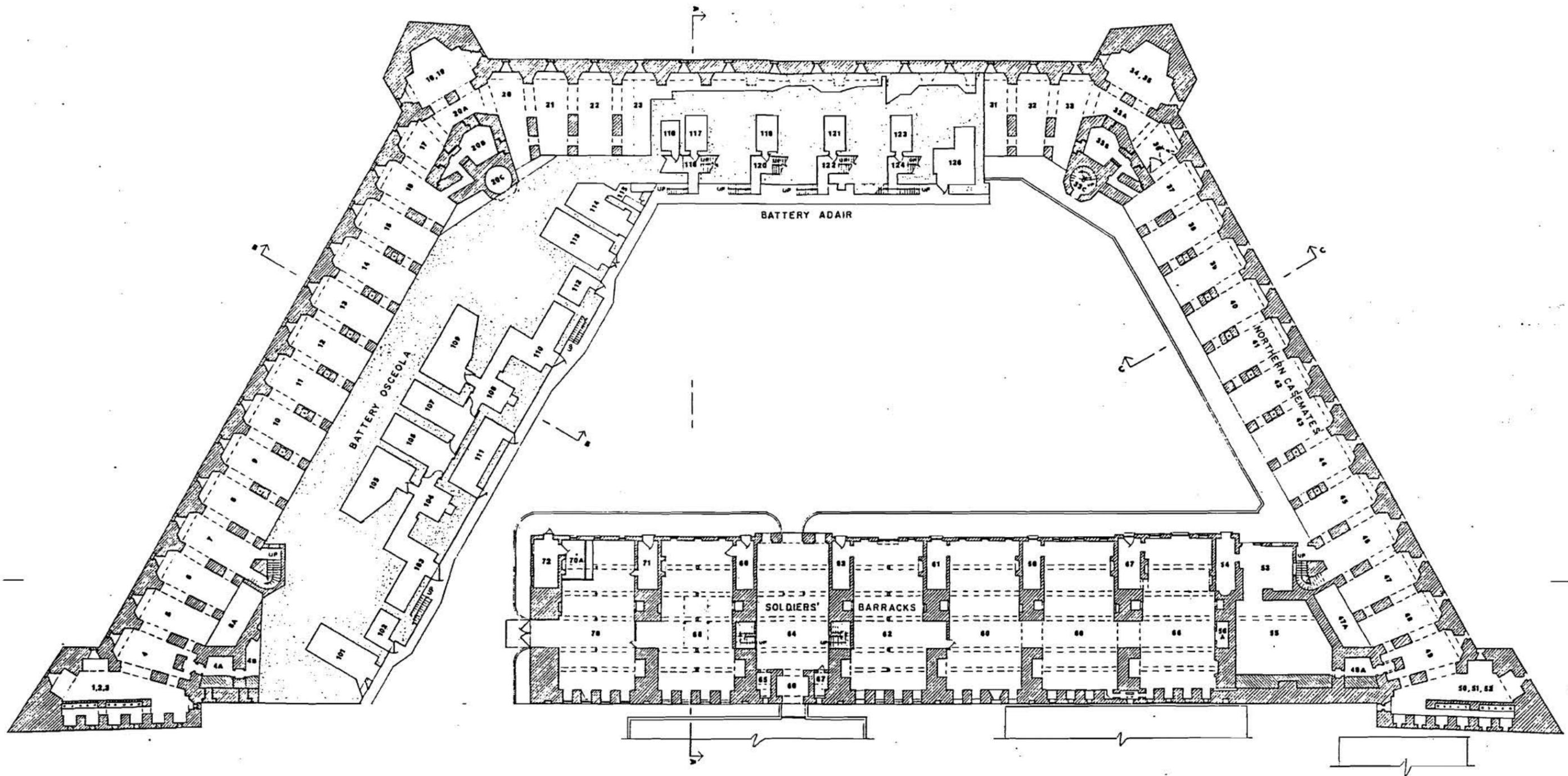
- 1- 6" x 16" = 100 lb Parrot rifle shells
- 1- solid
- 1- 30 lb. 4" x 13" parrot rifle shells
- 1- solid 4" x 10" parrot rifle shells
- model of 1861 desalination plant
- 79- 30 lb. parrot shells- frag.
- 20- 8" mortar shells, fragmentation
- 15- 100 lb. solid parrot shells
- 1 frag. 100 lb. parrot shells

Other materials are included in exhibits or donated from sources outside the fort.

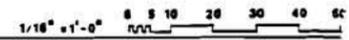
**Concluding Remarks**

This inventory addresses only the artifacts that were exposed and visible as of October 1993. It should be noted that a number of the casemates are filled or partially filled with sand. In addition, each of the casemates has a large cistern under it. Most of the cisterns have never been excavated.

It is reasonable to assume that the unexcavated cisterns and casemates contain artifacts that far outnumber the exposed items enumerated above.



FIRST TIER PLAN  
 FORT ZACHARY TAYLOR STATE HISTORIC SITE



ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

APPENDIX F

LETTERS/MEMORANDUMS/MISCELLANEOUS ITEMS

APPENDIX F

LETTERS/MEMORANDUMS/MISCELLANEOUS ITEMS

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- F-3. Partial Report of Board (B-18).
- F-4. Coast Defenses of Key West (B-19).
- F-5. Report of Completed Work, Battery Adair (B-20).
- F-6. Report of Completed Work, Battery Osceola (B-21).
- F-7. Abandonment and Disposal of Guns and Carriages of Battery Osceola, Key West, Florida (B-22)
- F-8. Site Map, circa 1941 (B-23).
- F-9. Harbor Defenses of Key West, circa 1944 (B-24).



## FLORIDA GAME AND FRESH WATER FISH COMMISSION

JOE MARLIN HILLIARD  
Clewiston

J. BEN ROWE  
Gainesville

JULIE K. MORRIS  
Sarasota

QUINTON L. HEDGEPEETH, DDS  
Miami

MRS. GILBERT W. HUMPHREY  
Miccosukee

ALLAN L. EGBERT, Ph.D., Executive Director  
WILLIAM C. SUMNER, Assistant Executive Director

EVERGLADES REGION  
551 North Military Trail  
West Palm Beach, FL 33415  
(407) 640-6100

January 10, 1995

Tom Meekma  
USATCES  
Attn: SMCAC-ESL  
Savanna, IL 61074-9639

Dear Mr. Meekma:

This responds to your 16 December inquiry regarding the potential occurrence of threatened and endangered species within Fort Zachary Taylor in Monroe County, USAR Naval Range Clearance Project-Vero Beach in Indian River County and the Palm Beach International Airport (formerly the Palm Beach AFB) in Palm Beach County.

As for wildlife species over which this agency has jurisdiction, our database contains records of least terns (*Sterna antillarum*), roseate terns (*Sterna dougalli*) and ospreys (*Pandion haliaetus*) within the Fort Zachary Taylor site. For more information on this site please check with Hank Smith, Florida Park Service, Department of Environmental Protection, 13798 S.E. Federal Hwy, Hope Sound, FL 33455, 407/546-0005.

Our database contained no records of listed species in your Vero Beach site. However, check with Beth Morford, Department of Environmental Protection-Division of Marine Resources, Office of Protected Species, 19100 S.E. Federal Hwy, Tequesta, FL 33469, 407/575-5408 for occurrence records of sea turtles in the area of concern.

The Palm Beach Airport Site was found to contain records of limpkins (*Aramus guarana*) and least terns. Limpkins are a state-listed Species of Special Concern. This information was taken from the results of the Breeding Bird Atlas Project. This study documented the presence of breeding birds within atlas blocks throughout the state. Atlas blocks correspond to one sixth of a standard 7.5 minute topographic map. The airport takes up approximately 25% of the block in which these species were recorded.



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Tom Meekma-Page 2

Please note, however, that our database is not necessarily inclusive of all listed species which may occur in a given area. For various reasons, occurrence records for some species are not necessarily included in our database on a site-specific basis. Moreover, some species which are accounted for in the database may occur in areas we are unaware of. Only through systematic field surveys could such data be factored in with respect to your specific request.

Thank you for consulting us in this matter. As for occurrence records for listed plants and plant communities of concern, the appropriate contact would be the Florida Natural Areas Inventory, 1018 Thomasville Road, Suite 200C, Tallahassee, FL 32303, 904/224-8207.

Sincerely,

Ricardo Zambrano  
Nongame Wildlife Biologist

WLD 4-2-5  
cc: Mark Robson  
Woody Darden  
Henry Smith, FDEP

F-1

O.O. 333.4/4291  
333-Key West

2nd Ind.

Ordnance Office, 4th Corps Area, P.O. Bldg., Atlanta, Ga., April 15, 1938.  
TQ; Ordnance Officer, H. D. of Key West, Key West, Fla.

1. It is requested that rounds fired from each gun of the fixed armament, the A.A. guns, and the 155 mm guns be obtained from the local gun books or emplacement books and furnished for inclusion in the report herewith.

2. Gun numbers and cumulative number of rounds fired from each should be shown in the report.

Incl. n/c.

E. D. MacMorland,  
Major, O.D., O.O.

3rd Ind.

Ordnance Office, H. D. of Key West Barracks, Fla. Apr. 19, 1938. To: Ordnance Officer, Hq. 4th C.A.P.O. Bldg., Atlanta, Ga.

Forwarded herewith record total number of rounds fired from each gun fixed and mobile in these Harbor Defenses:

BATTERY SEMINOLE 12" MORTARS	GUN NO.	MODEL	TOTAL RDS FIRED	CARR.NO.	MOD.
Pit "A"	44	1890AI	109	101	1896
Pit "A"	40	1890MI	116	102	
Pit "B"	26	1890MI	132	132	1896
Pit "B"	24	1890MI	129	131	1896
BATTERY OSCEOLA 12" GUN, TACT. # 1.	23	1888MI	36	11	1892
TACT. # 2.	39	188MI $\frac{1}{2}$	39	10	1892
BATTERY DELEON 10" D.C. TACT. # 1.	46	1888MI	71	55	1896
TACT. # 2.	65	1888MI	75	42	1896
TACT. # 3.	64	1888MI	71	39	1896

F-2

					CASE NO.	MOD
	34	1912	28		40	1896
BATTERY MOUNTED P.M. TACT. # 1.	37	1903	28		45	1903
	34	1903	22		46	1903
BATTERY MOUNTED P.M. TACT. # 1.	33	1903	5 PROOF FIRED ONLY		74	1903
	34	1903	5 PROOF FIRED ONLY		75	1903
188 M/M	358	1918M	42		312	1918
188 M/M	452	1918M	11		11	1918
188 M/M	440	1918M	67		311	1918
188 M/M	571	1918M	21		240	1918
3" A.A. M1917A2 (FIXED MOUNT)	52	1917A2	5 PROOF FIRED ONLY		52	1917
3" A.A. M1917A2 (FIXED MOUNT)	53	1917A2	5 PROOF FIRED ONLY		57	1917
3" A.A. MOBILE MT. M1918	121	1918	480		14	1918
3" A.A. MOBILE MT. M1918.	161	1918	540		79	1918

J. A. MacMillen,  
Major, 13th C. A., O.O.

Fort McPherson, Atlanta, Georgia,  
July 7, 1931.

Subject: Partial Report of Board.

To: Commanding General, 4th Corps Area,  
Fort McPherson, Atlanta, Georgia.

1. Herewith are the proceedings of a board of officers convened at Headquarters, Fourth Corps Area, Fort McPherson, Atlanta, Georgia, March 27, 1931, pursuant to the provisions of War Department letter (AG 600.12)(Misc. Div.), dated January 13, 1931, and par. 10, Special Orders No. 38, Headquarters, Fourth Corps Area, March 27, 1931, as amended by par. 4, Special Orders No. 73, Headquarters, Fourth Corps Area, June 3, 1931. Copy of this order as amended, hereto attached marked "A" and "B".

PRESENT

Brigadier General William S. McNeil, U.S.A. (June 8, 1931)  
Colonel Frank H. Burton, Quartermaster Corps (February 27, 1931).  
Major Philip S. Gage, Coast Artillery Corps (June 27, 1931).

The members of the board have inspected the posts of Key West Barracks and Fort Taylor on the dates above noted and the board submits its report as follows:

2. GENERAL:

a. The reservation of Key West Barracks is situated on the Island of Key West in Monroe County, Florida, and contains (including the graveyard) approximately 28 acres. It was purchased under authority of an Act of Congress approved March 2, 1853. The post is now garrisoned by a caretaking detachment of 2 officers and 27 enlisted men.

b. The reservation of Fort Taylor is situated at the western extremity of the city of Key West and contains an area of approximately 72 acres.

c. The following parcels of land are in reality adjuncts of Fort Taylor though not contiguous thereto:

(1) West Martello Tower (about 18 acres - now the site of a 3-inch battery).

(2) East Martello Tower (about 15 acres) (The Pan American Airways Inc. has been granted a revocable license to use this reservation for its purposes.).

d. At West Martello Tower and Fort Taylor is located all of the modern seacoast armament in the Harbor Defenses of Key West as follows:

<u>Battery</u>	<u>Guns</u>	<u>Cal.</u>	<u>Model Gun</u>	<u>Model Carriage</u>
WEST MARTELLO TOWER				
Imman	2	3" RF	M-1903	BC M-1903
FORT TAYLOR				
Seminole	4	12" Mortars	M-1890-MI	M-1890-MI
Osceola	2	12" R	M-1888-MI	BC M-1892
			M-1888-MII	BC M-1892
Deleon	4	10" R	M-1888-MI	DC M-1896
			3 M-1888-MI	DC M-1896
Ford	2	3" RF	M-1903	BC M-1903

e. Except during the period of the year when active work is going on at Fort Taylor, the garrison lives and is administered at Key West Barracks. When there is active work at Fort Taylor, such as, for example, preparing for and conducting target practices, summer camps, etc., such personnel as can, is quartered temporarily at Fort Taylor.

f. Attached hereto is a tabulated sheet marked "C", covering specifically the points called for by letter (AG 600.12)(12/17/30)(Misc.)C, dated January 13, 1931.

g. As noted in the tabulation referred to, the condition of all buildings at Key West Barracks and Fort Taylor, with one exception, is good though all the quarters at the latter place are of a "cottage" type of construction and unsuitable for continuous occupation throughout the year.

3. FINDINGS:

a. The board is unanimously of the opinion that, due to its well installed armament and the strategic location of Key West (Fort Taylor) it would be unwise to abandon Fort Taylor and West Martello Tower as military reservations. East Martello Tower could well be placed on a sales status or transferred to some other department of the Federal government.

b. The question then narrows to the advisability of abandoning Key West Barracks.

c. If this reservation were to be abandoned, suitable additional quarters would have to be erected at Fort Taylor to house the personnel now amply provided for at Key West Barracks. At least a building suitable for a detachment barracks, a good storehouse, and an headquarters building for the ordnance, artillery engineer, quartermaster, and medical offices, and at least two sets of officers quarters would have to be erected.

REPRODUCED AT THE NATIONAL ARCHIVES

War Department, A. G. O., July 7, 1919 - Through the Chief of Engineers and the Commanding General, Southeastern Department, Charleston, South Carolina, to the Commanding General, South Atlantic Coast Artillery District, Charleston, South Carolina.

1. The 2 - 6" guns and carriages of Battery De Kalb, Fort Taylor, Coast Defenses of Key West, will be dismounted and shipped with all accessories except ammunition, to Battery Chamberlain, Fort Winfield Scott, Coast Defenses of San Francisco.

2. For the defense of the Northwest Channel, a battery of 4 - 155 mm. G.P.F. guns will be supplied, to be stationed at Key West Barracks Florida, and to be placed when necessary in firing position at one of the three points, (1, 2 and 3), indicated on the inclosed blueprint.

3. The Chief of Ordnance and the Director of Purchase, Storage and Traffic, have been directed to supply to Key West Barracks, Fla., 4 - 155 mm. G.P.F. guns, complete with the equipment now prescribed therefor in existing equipment tables, to include 500 rounds of H. E. Shell (Mark IV - Star Point Detonating Fuse), per gun. The ammunition for this battery will be stored in the magazines of the batteries at Fort Taylor, Florida.

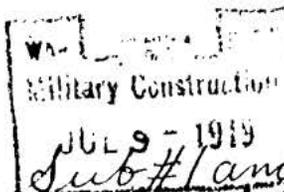
4. The Chief of Engineers will take the necessary steps to install the armament enumerated in paragraph (1) above, in the emplacements of Battery Chamberlain, Fort Winfield Scott, Coast Defenses of San Francisco. The exact cost of this installation will be furnished to this office in order that the necessary transfer of funds by the Navy Department may be requested.

By order of the Secretary of War:

*W. E. Cole*  
Adjutant General.

3 Incls.

~~CONFIDENTIAL~~  
Declassified per DOD Dir 5200.30  
20 Feb 94 *George Afalager*



add incls (F 2/2-3) accomp.

REPORT OF COMPLETED WORKS.  
SEACOAST FORTIFICATIONS.

BATTERY PLAN.

CORRECTED TO SEPT 1921

REPRODUCED AT THE NATIONAL ARCHIVES

COAST DEFENSES OF KEY WEST, FLORIDA

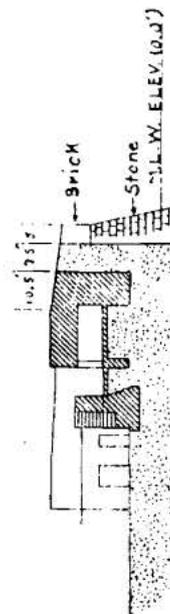
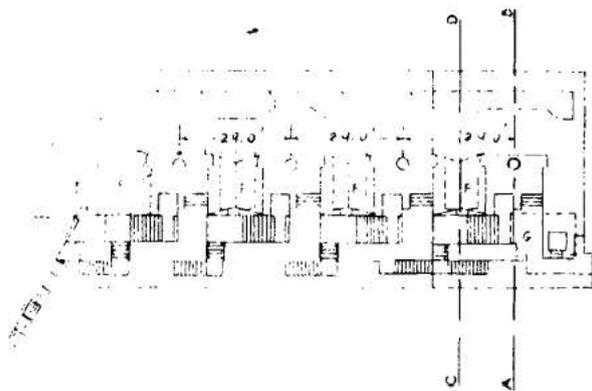
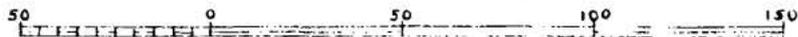
FORT TAYLOR.

BATTERY ADAIR.

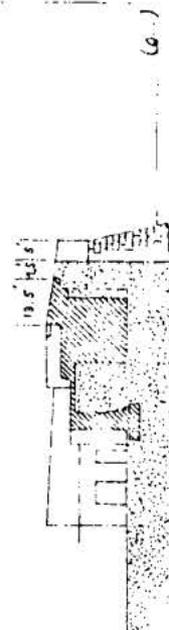
DISMOUNTED.

NO. OF GUNS 4, CALIBER - 3" CARRIAGE - BAR.

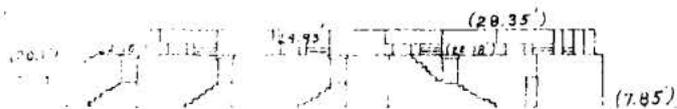
SCALE 1 IN = 50 FT.



SECTION A-A



SECTION B-B



REAR ELEVATION

BARRACKS  
MAGAZINE  
STORE ROOM

WATER TOWER  
CAMP

F-5

Battery abandoned.

COAST DEFENSES OF KEY WEST, FLA.

FORT TAYLOR BATTERY Admir No. of GUNS: 4 CALIBER 8"

	EMPLACEMENT NUMBER 1.	EMPLACEMENT NUMBER 2.	EMPLACEMENT NUMBER 3.	EMPLACEMENT NUMBER 4.
1-a. Azimuth.	140-38'-45"	340 - 10 - 00	340 - 10 - 00	340 - 10 - 00
b. Distance.	187.8'	29.0'	29.0'	29.0'
2-a Model of Gun.	1898 Guns 120	1898 Guns 42	1898 Guns 49	1898 Guns 49
b. " " Carriage	1898 Car. 120	1898 Car. 42	1898 Car. 49	1898 Car. 49
c. Type of " "	B. P.	B. P.	B. P.	B. P.
3- Elevations of.				
a. Gun trunnions (in battery)	29.01'	29.01'	29.01'	29.01'
b. Interior crest.	28.35'	28.35'	28.35'	28.35'
c. Loading platform.	24.93'	24.93'	24.93'	24.93'
4- Angle of depression.	5°	5°	5°	5°
5- Limiting azimuths of field of fire as determined by:	FROM.	TO.	FROM.	TO.
	0	0	0	0
	357-55	177-55	357-55	142-00
	357-55	177-55	357-55	142-00
	357-55	177-55	357-55	142-00
d. Position of Ordnance stops.	No stops Guns traverse through 360°.			

NOTES.

1. Azimuth and distance of emplacement No.2 are given with reference to No.1; of No.3, with reference to No.2, etc. Azimuth and distance of No.1, are given with reference to Emp. #1 Battery Osceola
3. Above plane of W. L. V.
- 5-c. Nature of obstacles: None.

2-c. Use one of following abbreviations or designations: Dis.; Nondis.; Alt. gun-lift; Turret Casemate; Ped.; B.P.

REPORT OF COMPLETED WORK  
SEACOAST FORTIFICATIONS

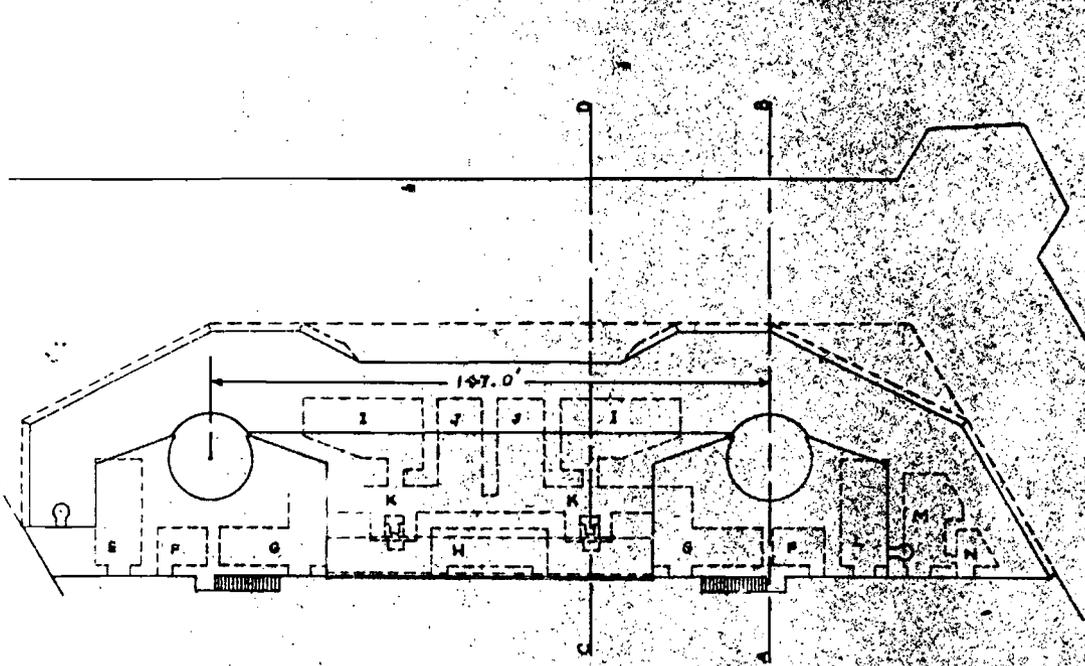
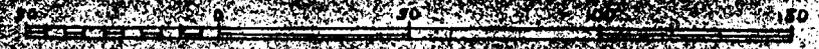
REPRODUCED AT THE NATIONAL ARCHIVES

BATTERY PLAN

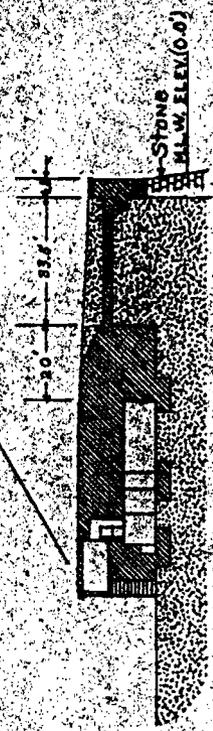
CORRECTED TO SEPT. 30, 1921

NO. OF GUNS 2 CALIBER 12 CARRIAGE NON DIS  
SCALE IN. 60 FT.

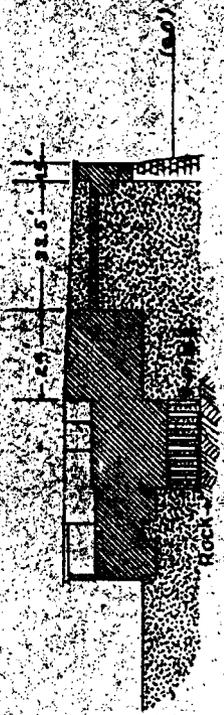
FORM 7



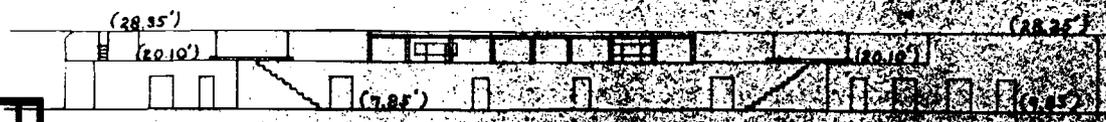
PLAN



SECTION ON C-D



SECTION ON A-B



REAR ELEVATION

E. ENGINE ROOM	12.5 x 28
F. STORE ROOM	10 x 13.5
G. SHOT ROOM	10 x 11 & 10 x 28
H. STOREROOM	10 x 30.5
J. MAGAZINE	16 x 31.5
I. SHELL ROOM	12 x 23
K. PASSAGEWAY	7 x 41
L. STORE ROOM	12.5 x 28
M. ENGINE ROOM	10 x 24.5
N. FAN MOTOR ROOM	8 x 10 IRREG

F-6

*Plotting Rm.*

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS  
(Gun and Mortar Batteries)

COAST DEFENSES OF... KEY WEST, FLA. ....  
FORT TAYLOR.....  
BATTERY... OSOROLA.....

Form 1 Corrected to September 30, 1921.

\* No. of guns 2 Caliber 12" Carriage Barbette

Battery commenced	June 1898	Sources of electric current	Power plant in room on right flank.
Battery completed	August 1899		
Date of transfer	Feb. 3, 1900	Max. kw. required for lights	4.4 K.W.
Material of construction	Concrete-sand	Max. kw. required for motors	10.6 K.W.
Portland or Rosendale cement	Both		
Cost to date of transfer	\$112,951.48		
Connected to water supply	* No	Present condition of battery	Very good
Connected to sewer	* No	Rooms wet or dry	Dry
Type of latrine	* None		
Type of data transmission	Range Boards	How ventilated	Doorways only (air spaces by 2-1/2" pipes).
Trunnion elevation in battery	33.35 ft.	Remarks-	A splinter-proof roof was added to the platform between the guns in May 1921 at a cost of \$2,900. Turned over to the Artillery on June 14, 1921.
Batter plane	M.L.W.Gulf		

\*Cisterns and sewerd latrine at old Fort Taylor available in immediate vicinity.  
ARMAMENT. A reserve power plant unit was installed in power room in June 1921 at a cost of \$ 686.29 Cost of engine set \$ 5,167.50

Displacement or mortar No.	Guns or mortars				Carriages						
	Cal.	length	model	Serial No.	Manufacturer	mounted	Type	model	Serial No.	Manufacturer	Motor
1	12"	439.92"	1888	23	Watervliet	Yes	Bar-		11	Morgan Engi-	
2	12"	439.92"	1888	39	Arsenal	Yes	bette	1892	10	neering Co.	No
3											
4											
5											
6											
7											
8											

HOISTS

Displacement number	Type	Delivery	Motor					Date of transfer	Remodeled for long point.	
			Serial No.	Maker	H.P.	Volts	RPM			Type of control
1	T-R	Back	80	General	7.5	110	800	Hand and Elec-	Invoiced to Ar- tillery Jan. 31, 1918.	Yes
2	T-R	Back	81	Electric	7.5	110	800	tric		Yes
3				Company						

\* Salvage of armament and accessory equipment directed by  
A.S.F. - 400, 93 (Key West) EM 73'215. Jan 12/28/93

Key West, 45.  
for artillery & repair  
at old Fort.

LM/ank  
Ext. 74003

11 December 1943.

MEMORANDUM FOR THE CHIEF OF ORDNANCE  
THE CHIEF SIGNAL OFFICER  
THE CHIEF OF ENGINEERS.

Subject: Abandonment and Disposal of Guns and Carriages of  
Battery Osceola, Key West, Florida.

1. This office has received "Disposition Form" from Operations Division, War Department General Staff, dated 4 December 1943, subject: "Abandonment and Disposal of Guns and Carriages of Battery Osceola, Key West, Florida," bearing file number AG G-OPD 400.74 (30 Nov. 43), requesting that necessary action be taken to dispose of the guns, carriages, ammunition and accessory equipment of:

Battery Osceola, Harbor Defense of Key West, Florida.

2. It is requested that the Chiefs of Technical Services addressed, arrange for the removal of such items and component parts pertaining to their respective services, as are desired to be retained for further use. The remainder will be scrapped and disposed of in accordance with regulations.

3. Copy of this memorandum is forwarded to Commanding General, Eastern Defense Command and the Commanding General Fourth Service Command, to apprise them of above action.

For the Commanding General:

D. H. HAUSEMAN,  
Colonel, Ordnance Dept.,  
Director, Readjustment Division.

CAMERON F. MACRAN,  
Major, A.U.S.  
Deputy Chief, Redistribution & Salvage Branch.

cc: CG, Eastern Defense Com.  
CG, Fourth Service Com.

COPY

SECRET

F-7



## THE HARBOR DEFENSES OF KEY WEST

The island of Key West is located at the western tip of the group which extends in a southerly direction from Cape Florida and constitutes the chain known as the Florida Keys. The name is a corruption of the early Spanish name "Cayo Iheso" or Island of Bones, and was, according to tradition, suggested to the Spanish by the great number of skeletons which were the only remains of a tribe of warring Indians, who, after being driven from the mainland by their enemies, fled successively from one island to the next until they were finally exterminated in a last stand at Key West.

Key West was ceded to the United States by Spain in the first part of the 19th Century, and the flag of the United States was first raised over the island on the 25th of March 1822, by Lieutenant M. G. Perry, USN, commanding the schooner "Shark". During the same year, Captain L. T. Patterson and Lieutenant Tuttle, USN, arrived with orders from the government to survey the coast and harbor and they were soon followed by various government vessels bringing stores and materials, and by the end of the year the island was a regularly constituted Naval Depot and Station under the command of Commodore Porter.

In February 1831, Major James M. Glessel arrived in command of two companies of Infantry. This led to the purchase of certain land in the northeastern section of the city which now constitutes Key West Barracks. A portion of what is now the Fort Taylor Reservation was purchased in 1845, and work on the fortifications commenced that same year. In October 1846, however, a disastrous hurricane washed away all that had been com-

pleted. Work was resumed almost immediately and Fort Taylor was so far completed as to be available for garrison purposes during the period 1861-1865.

Construction at Fort Taylor apparently progressed slowly and was still being carried on at the beginning of the 20th Century. Probably the greatest obstacle to the completion of the Harbor Defenses was the prevalence of yellow fever, the earliest record of which is 1850. From that time until 1900, epidemics were frequent, coming annually in varying degrees of seriousness. Work was halted innumerable times and the garrison evacuated during the periods of severity. In 1880, the garrison was abandoned for thirteen years, until 1893, at which time, Key West Barracks was reestablished and work at Fort Taylor resumed. In 1889, another epidemic occurred and most of the garrison again was evacuated. Of those who remained as caretakers, about sixty percent contracted the disease and died. (It is interesting to note that throughout this period, Sanitation Reports made by the Post Surgeon repeatedly stress the unsanitary conditions prevailing throughout Key West, referred to in many instances as "The dirtiest city in the United States.")

In 1897, two tracts of land of approximately 12 acres each were purchased. These are now known as the East and West Martello Reservations, and lie along the southern shore of the island about a mile and one-half apart. Located on them are the ruins of East and West Martello Towers, two old forts built long prior to that time, and named after a Spanish engineer, Martello, who designed them.

After the close of World War I, the Harbor Defenses were garrisoned by a small caretaking detail composed of Battery "E," of the 13th Coast Artillery, stationed at Key West Barracks. Fort Taylor was unoccupied

except during training periods for the Florida National Guard (265th Coast Artillery). A CCC Convalescent Center was established at the Fort in the 1930's, and was used until the summer of 1940. In the fall of 1940, Headquarters Battery, 1st Battalion, 13th Coast Artillery was activated at Key West and the strength of the garrison brought up to about 15 officers and 200 enlisted men.

At the time of Pearl Harbor, 07 December 1941, these Harbor Defenses named the following armaments:

Battery Osceola	2 - 12" Guns.
Battery Seminole	4 - 12" Mortars
Battery Ford	2 - 3" Guns. (BC)
Battery Inman	2 - 3" Guns. (BC)
Battery #5 (Tactical)	4 - 155mm, GPF, w/PM
Battery #AA1 (Tactical)	3 - 3" AA, fixed.

A Modernization Program for the Harbor Defenses was initiated but outside of repairs to existing installations no construction was commenced prior to the Declaration of War in December 1941. Immediately after war was declared, Battery C, 265th Coast Artillery was moved to Key West and in April 1942, the remainder of the 265th Coast Artillery relieved the units of the 13th Coast Artillery in Key West. During 1942, an extensive housing program for troops at Fort Taylor and East and West Martello was completed; the Fort Taylor Reservation was augmented by the purchase of additional land, and a tract of 85.8 acres (now known as the Salt Pond Reservation) near East Martello was purchased. Considerable construction on the Modernization Program was begun during this year.

In December 1942, the 265th Coast Artillery was relieved by the 50th Coast Artillery, a mobile 155mm Regiment, which was in turn relieved by the 31st Coast Artillery (MD) in April 1943. Work on the Modernization Program progressed steadily and was about 90 percent completed by 01 March

1944, when the reorganization of the Eastern Defense Command took place, and Temporary Harbor Defenses of Miami Beach, Fort Lauderdale and Tampa were placed under the control of the Harbor Defenses of Key West, which was now under the command of the Southeastern Sector of the Eastern Defense Command.

Shortly thereafter, a suitable structure having been completed at Fort Taylor, the Harbor Defense headquarters was moved from Key West Barracks to Fort Taylor, thus leaving Key West Barracks for use by the Service Command and unoccupied by Coast Artillery troops for the first time since its previously mentioned abandonment in 1893.

At the present time, the following armament is manned by these Harbor Defenses:

Battery #4	2 - 6" Guns (Const. #232)
	2 - 40mm Guns (Mobile)
Battery #5	2 - 90mm Guns (Fixed)
	2 - 37mm Guns (Mobile)
Battery #6	2 - 90mm Guns (Fixed)
	2 - 40 mm Guns (Mobile)
Battery Ford (Class C)	2 - 3" Guns, BC (W. Martello)
Battery Inman (Class C)	2 - 3" Guns, BC (Ft. Taylor)
Battery #231	2 - 6" Guns (Under Const.)
THD of Tampa	2 - 90mm Guns (Mobile)
	1 - 37mm Gun (Mobile)
THD of Miami	2 - 90mm Guns (Mobile)
	1 - 37mm Gun (Mobile)
THD of Fort Lauderdale	2 - 90mm Guns (Mobile)
	1 - 37mm Gun (Mobile)

ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

APPENDIX G  
REAL ESTATE DOCUMENTS

APPENDIX G  
REAL ESTATE DOCUMENTS

Table of Contents

G-1 Quit Claim Deed.

## QUITCLAIM DEED

THE UNITED STATES OF AMERICA, acting by and through the Secretary of the Interior, acting by and through the Southeast Regional Director, Bureau of Outdoor Recreation, under and pursuant to the power and authority contained in the provisions of the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended, and particularly as amended by Public Law 485, 91st Congress, and regulations and orders promulgated thereunder (hereinafter designated "Grantor"), for and in consideration of the perpetual use of the hereinafter described premises as and for public park and public recreation area purposes, by the State of Florida (hereinafter designated "Grantee"), does hereby release and quitclaim to Grantee, and to its successors and assigns, subject to the reservations, exceptions, restrictions, conditions and covenant hereinafter expressed and set forth, all Grantor's right, title and interest in and to the following described property, consisting of approximately 38 acres, located in Monroe County, Florida:

IN THE CITY OF KEY WEST, commencing at a point on the southeast corner of the center section at the mole at the Naval Station, the coordinates of which are N79,821.0 and E230,188.0 based on U.S. Coast and Geodetic Survey Mercator Grid Coordinate System which has for its zero coordinate a point at latitude 24°20'N, and 500,000 feet west of longitude 81°00'W; thence run south 10°00'W, a distance of 265.0 feet along the west property line of the Naval Station to the point of beginning; thence run south 10°00'W a distance of 2198.0 feet along the west property line of the Naval Station to a point; thence run south 80°00'E a distance of 965.0 feet along the south property line of the Naval Station to a point; thence N10°00'E a distance of 1045.0 feet to a point which is the intersection of the south and east walls of a structure known as "Fort Taylor;" thence ascending along the east wall of said structure to a point which is the intersection of its north and east walls; thence N38°00'W a distance of 870.0 feet more or less back to the point of beginning, containing 38.0 acres, more or less, and including the structure known as Fort Zachary Taylor.

This conveyance is made subject to any and all existing rights-of-way, easements and covenants and agreements affecting the above described premises, whether or not the same now appear of record.

To Have and to Hold the hereinbefore described property, subject to the reservations, exceptions, restrictions, conditions and covenants herein expressed and set forth unto the Grantee, its successors and assigns, forever.

Pursuant to authority contained in the Federal Property and Administrative Services Act of 1949, as amended, and applicable rules, regulations and orders promulgated thereunder, the General Services Administration determined the property to be surplus to the needs of the United States of America and assigned the property to the Department of the Interior for further conveyance to the State of Florida.

It is agreed and understood by and between the Grantor and Grantee, and the Grantee by its acceptance of this deed, does acknowledge its understanding of the agreement, and does covenant and agree for itself, and its successors and assigns, forever, as follows:

1. This property shall be used and maintained for the public purposes for which it was conveyed in perpetuity; the Grantee shall, prior to constructing a museum, stabilizing Fort Taylor, landscaping the grounds, or carrying out any other action resulting in a change in the character of the grounds or structures thereon (other than routine maintenance tasks), submit a complete program of utilization for such work to the Grantor for approval, which program and plan may be amended from time to time at the request of either the Grantor or Grantee, with the written concurrence of the other party, and such amendments shall be added to and become a part of the original application.

2. The Grantee shall, within 6 months of the date of the deed of conveyance, erect and maintain a permanent sign or marker near the point of principal access to the conveyed area indicating that the property is a park or recreation area and has been acquired from the Federal Government for use by the general public.

3. The property shall not be sold, leased, assigned, or otherwise disposed of except to another eligible governmental agency that the Secretary of the Interior agrees in writing can assure the continued use and maintenance of the property for public park or public recreational purposes subject to the same terms and conditions in the original instrument of conveyance. However, nothing in this provision shall preclude the Grantee from providing major related recreational facilities and services such as public tours, equipment rentals, etc., compatible with the approved application, through concession agreements entered into with third parties, provided prior concurrence to such agreements is obtained in writing from the Secretary of the Interior. It is understood that this requirement does not apply to concession agreements with private parties to provide normal sales items to the public.

4. From the date of this conveyance, the Grantee, its successors and assigns, shall submit biennial reports to the Secretary of the Interior, setting forth the use made of the property during the preceding two-year period, and other pertinent data establishing its continuous use for the purposes set forth above, for ten consecutive reports and as further determined by the Secretary of the Interior.

5. If at any time the United States of America shall determine that the premises herein conveyed, or any part thereof, are needed for the national defense, all right, title and interest

in and to said premises, or part thereof determined to be necessary to such national defense, shall revert to and become the property of the United States of America.

6. As part of the consideration for this Deed, the Grantee covenants and agrees for itself, its successors and assigns, that (1) the program for or in connection with which this Deed is made will be conducted in compliance with, and the Grantee, its successors and assigns, will comply with all requirements imposed by or pursuant to the regulations of the Department of the Interior in effect on the date of this Deed (43 C.F.R. Part 17) issued under the provisions of Title VI of the Civil Rights Act of 1964; (2) this covenant shall be subject in all respects to the provisions of said regulations; (3) the Grantee, its successors and assigns, will promptly take and continue to take such action as may be necessary to effectuate this covenant; (4) the United States shall have the right to seek judicial enforcement of this covenant, and (5) the Grantee, its successors and assigns, will (a) obtain from each other person (any legal entity, who, through contractual or other arrangements with the Grantee, its successor or assigns, is authorized to provide services or benefits under said program, a written agreement pursuant to which such other person shall, with respect to the services or benefits which he is authorized to provide, undertake for himself the same obligations as those imposed upon the Grantee, its successors and assigns, by this covenant, and (b) furnish a copy of such agreement to the Secretary of the Interior, or his successor; and that this covenant shall run with the land hereby conveyed, and shall in any event, without regard to technical classification or designation, legal or otherwise, be binding to the fullest extent permitted by law and equity for the benefit of, and in favor of the Grantor and enforceable by the Grantor against the Grantee, its successors and assigns, except that any money judgments against the Grantee shall be binding only to the extent granted by Florida law.

7. In the event there is a breach of any of the conditions and covenants herein contained by the Grantee, its successors and assigns, whether caused by the legal or other inability of the Grantee, its successors and assigns, to perform said conditions and covenants, or otherwise, all right, title and interest in and to the said premises shall revert to and become the property of the Grantor at its option, which in addition to all other remedies for such breach (except that any money judgments against the Grantee shall be binding only to the extent granted by Florida law) shall have the right of entry upon said premises, and the Grantee, its successors and assigns, shall forfeit all right, title and interest in said premises and in any and all of the tenements, hereditaments and appurtenances thereunto belonging; provided, however, that the failure of the Secretary of the Department of the Interior to require in any one or more instances complete performance of any of the conditions or covenants shall not be construed as a waiver or relinquishment of such future performance, but the obligation of the Grantee, its successors and assigns, with respect to such future performance, shall continue in full force and effect.

IN WITNESS WHEREOF, the Grantor has caused these presents to be executed in its name and on its behalf this the 7th day of OCTOBER, 1976.

UNITED STATES OF AMERICA  
Acting by and through the  
Secretary of the Interior

Through:

Robert M. Baker  
Southeast Regional Director  
Bureau of Outdoor Recreation

By:

Hugh L. Williams

WITNESSES:

William H. Jones  
William L. Johnson

STATE OF Georgia )  
COUNTY OF Fulton ) ss

On this 17th day of OCTOBER, 1976,  
before me, the subscriber, personally appeared ROY L. WATSON,  
Bureau of Outdoor Recreation, of the United States Department of  
the Interior, a governmental agency of the United States of  
America, and known to me to be the same person described in and  
who executed the foregoing instrument aforesaid, as the act and  
deed of the United States of America, for and on behalf of the  
Secretary of the Interior, duly designated, empowered and  
authorized so to do by said Secretary, and he acknowledged that  
he executed the foregoing instrument for and on behalf of the  
United States of America, for the purposes and uses therein  
described.

Raymond K. ...  
NOTARY PUBLIC

My Commission expires:  
Notary Public, Georgia, Sixth Term  
My Commission Expires Jan. 3, 1980

The foregoing conveyance is hereby accepted and the under-  
signed agrees, by this acceptance, to assume and be bound by all  
the obligations, conditions, covenants and agreements therein  
contained.

State of Florida, Board of Trustees  
of the Internal Improvement Trust  
Fund

By: Harmon W. Shields  
Executive Director  
Florida Department of Natural  
Resources

APPROVED AS TO  
FORM AND LEGALITY  
William H. Jones  
ATTORNEY-IN-FACT

216949

QUITCLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Interior, acting by and through the Southeast Regional Director, Heritage Conservation and Recreation Service, under and pursuant to the power and authority contained in the provisions of the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended, and particularly as amended by Public Law 485, 91st Congress, and regulations and orders promulgated thereunder (hereinafter designated "Grantor"), for and in consideration of the perpetual use of the hereinafter described premises for public park and public recreation purposes, by the State of Florida (hereinafter designated "Grantee"), does hereby release and quitclaim to Grantee, and to its successors and assigns, subject to the reservations, exceptions, restrictions, conditions and covenants hereinafter expressed and set forth, all Grantor's right, title and interest in and to the following described property, consisting of

approximately 1.32 acres, located in the County of ...  
 In the ... by ... remaining ...  
 of the center section of the ...  
 Station) ...  
 on N.E. ...  
 has for ...  
 100.00 ...  
 west ...  
 point ...  
 the south ...  
 10°00'00" ...  
 30 ...  
 distance of 1,045.0 feet, ...  
 of the south and east walls of the ...  
 "Fort Zachary Taylor", thence along the east wall of Fort Zachary Taylor for the following ...  
 100.0 feet, ...  
 direction a distance of 65.0 feet ...  
 thence continuing in a northeasterly direction a distance of 72.0 feet to the easterly corner of building ...  
 east a distance of 400.0 feet; thence south 15°00'00" east a distance of 400.0 feet; thence south 15°00'00" east a distance of 995.0 feet, more or less, to a point on the south boundary of Trusse Annex; thence north 90°00'00" west along the south boundary of Trusse Annex a distance of 450.0 feet, more or less, back to the Point of Beginning and containing 13.32 acres, more or less.

There are excepted from this conveyance and reserved to the Grantor, and its assigns, all oil, gas, and other minerals in, under and upon the lands herein conveyed, together with the rights to enter upon the land for the purpose of mining and removing the same.

This conveyance is made subject to any and all existing rights-of-way, easements and covenants and agreements affecting the above described premises, whether or not the same now appear of record.

FILED FOR RECORD

To Have and to Hold the hereinbefore described property, subject to the reservations, exceptions, restrictions, conditions and covenants herein expressed and set forth unto the Grantee, its successors and assigns, forever.

Pursuant to authority contained in the Federal Property and Administrative Services Act of 1949, as amended, and applicable rules, regulations and orders promulgated thereunder, the General Services Administration determined the property to be surplus to the needs of the United States of America and assigned the property to the Department of the Interior for further conveyance to the State of Florida.

It is agreed and understood by and between the Grantor and Grantee, and the Grantee by its authorized representative, that the Grantee acknowledges its receipt of the property as described herein and agrees for itself, its successors and assigns, to accept the same for the public

use of the State of Florida. The Grantee shall, within the time specified in the application, submit to the Secretary of the Interior a plan for the property, which plan may be amended from time to time at the request of either the Grantor or Grantee, with the written concurrence of the other party, and such amendments shall be added to and become a part of the original application.

The Grantor shall, within a reasonable time of the date of the deed of conveyance, erect and maintain a permanent sign or marker near the point of beginning of the conveyed area, indicating that the property is a public recreation area and has been received from the Federal Government for use by the general public.

The property shall not be sold, leased, assigned, or otherwise disposed of except to another eligible governmental agency that the Secretary of the Interior agrees in writing can assure the continued use and maintenance of the property for public park or public recreational purposes subject to the same terms and conditions in the original instrument of conveyance. However, nothing in this provision shall preclude the Grantee from providing related recreational facilities and services compatible with the approved application, through concession agreements entered into with third parties, provided prior concurrence to such agreements is obtained in writing from the Secretary of the Interior.

and assigns, shall submit biennial reports to the Secretary of the Interior, setting forth the use made of the property during the preceding two-year period, and other pertinent facts establishing its continuous use for the purposes set forth above, together with reports and as further determined by the Secretary of the Interior.

5. It is further the intent of the United States that any land that the grantees herein conveyed, or any part thereof, are needed for the national defense, all right, title and interest in and to said premises, or part thereof determined to be necessary to such national defense, shall revert to and become the property of the United States of America.

6. As part of the consideration for this deed, the Grantee covenants and agrees for itself, its successors and assigns, that (1) the program for such services with which this deed is made will be conducted in compliance with and the Grantee, its successors and assigns, will comply with all requirements imposed by or pursuant to the regulations of the Department of the Interior in effect on the date of this deed (43 C.F.R. Part 17) issued under the provisions of Title VI of the Civil Rights Act of 1964; (2) this covenant shall be subject in all respects to the provisions of said regulations; (3) the Grantee, its successors and assigns, will promptly take and continue to take such action as may be necessary to effectuate this covenant; (4) the United States shall have the right to seek judicial enforcement of this covenant, and (5) the Grantee, its successors and assigns, shall (a) obtain from each other person (any legal entity) who, through contractual or other arrangements with the Grantee, its successors or assigns, is authorized to provide services or benefits under said program, a written agreement pursuant to which such other person shall, with respect to the services or benefits which he is authorized to provide, undertake for himself the same obligations as those imposed upon the Grantee, its successors and assigns, by this covenant, and (b) furnish a copy of such agreement to the Secretary of the Interior, or his successor; and that this covenant shall run with the land hereby conveyed, and shall in any event, without regard to technical classification or designation, legal or otherwise, be binding to the fullest extent permitted by law and equity for the benefit of,

and in favor of the Grantor and enforceable by the Grantor against the Grantee, its successors and assigns.

7. The Grantor and the Grantee agree that the Grantee is prohibited from developing the property herein conveyed in any manner which is incompatible with Executive Order 11644, relating to Floodplain Management, and Executive Order 11990, relating to Protection of Wetlands. The Grantor and the Grantee agree that this prohibition is irrevocable, and the Grantee agrees to include in any subsequent transfer an identical irrevocable prohibition.

8. The Grantee agrees to comply with the requirements of Public Law 94-142 (20 USC 1701-1707), the Education of All Handicapped Children Act of 1975, as amended by Public Law 95-204 of 1978 (20 USC 1717-1719) to assure that development of facilities on conveyed property for public use and recreation purposes are accessible to physically handicapped, and, further agrees in accordance with Section 504 of the Rehabilitation Act of 1973 (29 USC 794), that no otherwise qualified handicapped individual shall solely by reason of his handicap be excluded from the participation in, be denied benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

9. Grantee shall be on the lookout for archeological artifacts during its construction activities and shall take appropriate action should any artifacts be discovered.

10. In the event there is a breach of any of the conditions and covenants herein contained by the Grantee, its successors and assigns, whether caused by the legal or other inability of the Grantee, its successors and assigns, to perform said conditions and covenants, or otherwise, all right, title and interest in and to the said premises shall revert to and become the property of the Grantor at its option, which in addition to all other remedies for such breach shall have the right of entry upon said premises, and the Grantee, its successors and assigns, shall forfeit all right, title and interest in said premises and in any and all of the tenements, hereditaments and appurtenances thereunto belonging; provided, however, that the failure of the Secretary of the Department of the Interior to require in any one or more instances

G-1

815-1689

complete performance of any of the conditions or covenants shall not be construed as a waiver or fulfillment of such conditions or covenants, but the obligations of the grantor, its successors and assigns in respect to such conditions and covenants shall continue in full force and effect.

IN WITNESS WHEREOF, the Grantor has caused these presents to be executed in its name and on its behalf this the 21 day of November 1977.

UNITED STATES OF AMERICA  
acting by and through the  
Secretary of the Interior

Through:

Robert G. [unclear]  
[unclear]

David James  
Klein Reams

STATE OF Georgia  
COUNTY OF Fulton ) ss

On this 21 day of November, 1977 before me, the subscriber, personally appeared W. Thomas [unclear], Director, Wildlife Conservation and Recreation Service, of the United States Department of the Interior, a governmental agency of the United States of America, and known to me to be the true person whose name and who executed the foregoing instrument above, as the Secretary of the United States of America, for and on behalf of the Secretary of the Interior, duly designated, empowered and authorized as such by said Secretary, and he acknowledged that he executed the foregoing instrument for and on behalf of the United States of America, for the purposes and uses therein described.

Robert G. [unclear]  
NOTARY PUBLIC



My commission expires:  
1-3-80

The foregoing conveyance is hereby accepted and the undersigned agrees, by this acceptance, to assume and be bound by all the obligations, conditions, covenants and agreements therein contained.

By [Signature]  
Executive Director  
Department of Natural Resources

STATE OF FLORIDA )  
COUNTY OF LEON ) ss



on this 9th day of January 1979 before me, the undersigned Notary Public, personally appeared [Name] known to me to be the person whose name is subscribed to the foregoing instrument, and being by me duly sworn, said person and me that he is the Executive Director of the Department of Natural Resources, that he is duly designated, appointed and authorized by the Executive Board of the State of Florida Department of Natural Resources to execute the foregoing acceptance and sign his name thereto, and that he signed his name thereto and acknowledges that he executed the foregoing instrument for and on behalf of the State of Florida for the purposes and uses therein described.

Mary N. Salcom  
NOTARY PUBLIC



My Commission expires:  
State Public, State of Florida  
My Commission Expires 12/31/80  
Notary for America No. 8 County 10-10

Page 6 of Quitclaim Deed executed by the United States of America on November 21, 1979, conveying 13.32 acres in Monroe County, Florida.

ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

APPENDIX H  
NEWSPAPERS/JOURNALS

APPENDIX H

NEWSPAPERS/JOURNALS

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- H-1. Dynamite Exploded While Seymor Was Handling It (B-25).
- H-2. Annual Reports of the War Department, Fiscal Year  
Ending 30 June 1899, pages 892 and 898 (B-26).

## DYNAMITE

EXPLODED WHILE SEYMOUR WAS  
HANDLING IT.

Crazed With Pain, He Ran and  
Leaped into the Bay—His Inju-  
ries Probably Fatal.

KEY WEST, Fla., April 10.—Ordnance Sergeant Seymour, in charge of Ft. Taylor, was terribly injured, today, by an explosion. He was engaged in assorting condemned munitions of war, when a dynamite fuse exploded. Crazed with pain, he ran and jumped off the breakwater into the bay and would have been drowned had he not been rescued by parties who witnessed the occurrence. Sergeant Seymour was taken to the hospital at the garrison on a stretcher by a detail of soldiers, and at present is resting easy, though it is thought his injuries will prove fatal.

*Money statements.*

## .FOR CONTRACT WORK AND SUPERVISION.

July 1, 1898, balance unexpended.....	\$127, 959. 92
June 30, 1899, amount expended during fiscal year .....	58, 108. 61
July 1, 1899, balance unexpended.....	69, 851. 28
July 1, 1899, outstanding liabilities.....	\$3, 701. 79
July 1, 1899, amount covered by uncompleted contracts .....	63, 611. 79
	<u>67, 313. 58</u>
July 1, 1899, balance available .....	2, 537. 70

## FOR EXPENSES OF OFFICE, ENGINEERING, AND SUPERVISION.

July 1, 1898, balance unexpended.....	\$853. 96
July 15, 1898, allotted .....	4, 000. 00
	<u>4, 853. 96</u>
June 30, 1899, amount expended during fiscal year .....	4, 853. 96

*Contract in force during the fiscal year.*

Name of contractor.	Contract.	Date of approved.	Date of beginning work.	Date of expiration.
Venable Construction Co.....	Gun and mortar batteries.	Mar. 27, 1897	Mar. 23, 1897	a Apr. 25, 1899

a Extended until further orders by the Secretary of War April 27, 1899.

*Emplacements for two 12-inch breech-loading rifles.*—These emplacements, which are for barbette nondisappearing guns, are patterned after the typical emplacements for 12-inch disappearing guns, with certain changes made necessary by the difference in the mounts and by the peculiarities of the site.

In all of the concrete of this work broken brick was used in place of broken stone. This broken brick was obtained from a nearby fort of old type which is being torn down. The material fed to the crusher consisted of brick and fragments of the coral concrete which formed the filling of the walls of the old fort. A No. 4 Gates crusher was used to crush the brick. It was furnished with conveyor and revolving screen and discharged upon the concrete mixing platform.

Siliceous sand (brought from Pensacola) was used in the concrete of the gun bases and in the Portland mortar (2 to 3 inches thick), with which all weather faces are finished.

In the remainder of the concrete two kinds of sand were used, sometimes separately, sometimes mixed together, viz, coral sand from the beach nearby, and a "sand" obtained from the crushing of bricks, mortar, and concrete from the old work, being the part of the crushed materials that came through the  $\frac{3}{4}$ -inch holes of the revolving screen.

A number of the guns that formed the armament of the old work, viz, 30-pounder, 100-pounder, and 300-pounder Parrotts, 8-inch Columbiads, and 10-inch Rodmans, were embedded in the concrete of the new work, to serve the same purpose as pieces of random stone.

The concrete mixer used was a Cockburn continuous mixer. It was never pushed to the limit of its capacity, although on several days 120 cubic yards of concrete were placed in nine hours' work.

The appliance used for depositing concrete in the work was a traveling crane. The site was too contracted to furnish room for the towers

cables in the cable tank. The reels of cable were taken up from the shoal water, where they had been placed in the fall of 1898, and were permanently stored in the cable tank.

Two thousand six hundred and sixty dollars was allotted June 9, 1899, for the preservation and repair of fortifications, to be available during the fiscal year 1900, and applicable to the following works: Gun battery, \$500; mortar battery, \$250; operation of electric-light plant, \$500; Fort Taylor, including Martello towers, \$900; 12-inch battery, \$250; four 15-pounder emplacements, \$200, and 4.7 inch battery, \$60.

One thousand dollars was allotted June 15, 1899, from the appropriation of March 3, 1899, to be available for the fiscal year 1900, and applicable to the work of overhauling, cleaning, and storing away of torpedo material.

*Money statements.*

FORT TAYLOR, FLA.

July 1, 1898, balance available.....	\$917. 49
July 19, 1898, allotted .....	700. 00
	<hr/>
	1,617. 49
June 30, 1899, amount expended during fiscal year.....	1,398. 32
	<hr/>
July 1, 1899, balance unexpended .....	219. 17
July 1, 1899, outstanding liabilities .....	219. 17

STORAGE OF TORPEDO MATERIAL.

January 14, 1899, allotted.....	100. 00
June 30, 1899, amount expended during fiscal year.....	100. 00

KEY WEST, FLA.

June 9, 1899, allotted .....	2,660. 00
July 1, 1899, balance unexpended and available .....	2,660. 00

CARE AND PRESERVATION OF TORPEDO MATERIAL.

June 15, 1899, allotted .....	1,000. 00
July 1, 1899, balance unexpended and available .....	1,000. 00

*Planting torpedoes.*—The work under this head was begun with funds allotted from the appropriation "National Defense," act of March 9, 1898. To June 30, 1898, the work done consisted in planting two grand groups, one for main line and one for purely judgment firing, and in setting up and operating nightly a 30-inch searchlight, and in patrolling the mine field.

In July, 1898, a third grand group (loaded for purely judgment firing) was planted, and the searchlight was operated nightly, the mine field patrolled, and mines maintained until July 19, 1898. Hostilities having ceased, the group loaded for main-line firing, which was an obstruction to commerce, was removed and mines stored in shallow water. The two remaining groups were exploded in place August 18. The group that had been removed to shallow water was exploded August 19 and 20. All torpedo material was then stored away.

The total amount allotted for this work was \$22,000.00.

*Money statement.*

July 1, 1898, balance unexpended.....	\$13,000. 00
June 30, 1899, amount expended during fiscal year .....	13,000. 00

ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

APPENDIX I

INTERVIEWS

APPENDIX I

INTERVIEWS

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- I-1 Interview with Mr. Buff Wiley
- I-2 Interview with Mr. Howard England
- I-3 Interview with Mr. Chester Eldard

CONVERSATION RECORD	TIME 0900	DATE 6 December 1994
---------------------	--------------	-------------------------

TYPE

VISIT

CONFERENCE

TELEPHONE  
INCOMING  
 OUTGOING

NAME OF PERSON CONTACT WITH Mr. Buff Wiley Park Manager	ORGANIZATION Fort Taylor Historic Site	TELEPHONE NO. (305) 292-6850
---	--	---------------------------------

SUBJECT Fort Taylor

SUMMARY Mr. Ofslager and Mr. Patterson met Mr. Wiley at Fort Taylor. Mr. Wiley is the current park manager of the Fort Taylor State Historic Site. Mr. Wiley provided the following information to the assessment team:

The land surrounding the fort was formed in 1960-1962 from borrow from the main ship channel.

A moat was dug around the fort in 1989. One half of the fill obtained from the moat was used for beach stabilization. The other half of the fill was used by the contractor for other sites in the Key West area. A quantity of live ordnance was uncovered on the south side of the fort near Battery Osceola. A 3 inch gun mount was recovered at the west wall. No accidents occurred during the excavation. The moat was not completed due to concerns regarding live ordnance.

Mr. Wiley discussed the possibility of HTRW contamination at Fort Taylor. He provided the assessment team with copies of photographs of Fort Taylor when it was a Navy salvage yard. One of these photographs showed old drums stored on the parade ground. He stated the he remembered seeing a photograph that showed transformers being stored at the fort. He said that an asphalt plant was once located on the grounds. He said that a black liquid oozed up from the ground in the area of the parking lot in 1990. He suspected burial sites under the rest room and under a berm adjacent to the parking lot.

Mr. Wiley provided the assessment team with copies of two reports as well as an inventory of artifacts prepared by state of Florida archeologists.

ACTION REQUIRED

ACTION TAKEN

NAME OF PERSON DOCUMENTING CONVERSATION George Ofslager	ORGANIZATION CENCR-ED-DN	TELEPHONE NUMBER (309) 794-5811
SIGNATURE <i>George Ofslager</i>	TITLE QA Spec (Ammo)	DATE 6 DEC 94

CONVERSATION RECORD	TIME 1100	DATE 8 December 1994
---------------------	--------------	-------------------------

TYPE

VISIT                       CONFERENCE

	TELEPHONE
	INCOMING
<input checked="" type="checkbox"/>	OUTGOING

NAME OF PERSON CONTACT WITH Mr. Howard England	ORGANIZATION	TELEPHONE NO.
---	--------------	---------------

SUBJECT Fort Taylor

SUMMARY Spoke to Mr. Howard England, a life long resident of Key West Florida. He excavated Fort Taylor in the 1970s. He also has studied the history of Fort Taylor and wrote a book on the subject. He provided the following information.

He had not read or heard anything to indicate that the guns at Fort Taylor during World War I. The National Guard fired the guns in the inter-war years, but this ended in 1941.

There was an earth covered mining casement on the covering face of the fort. The mines in the water were connected to the casement by electrical cables. He described the control panel as a series of switches that could detonate each mine individually. He was not sure when the mining casement was demolished. At the end of the war, the mining casement was demolished.

The 12 inch guns were removed during World War II and sent to England for coast defense.

During World War II there were five batteries of 90mm guns at Key West. One of these batteries was located on Fort Taylor. Other batteries were located on Smathers Beach and on current Navy Property.

The Army turned the property over to the Navy in 1947. The Navy used it as a salvage yard. When asked if transformers were stored in the fort, he said no, because they were leaking, they were stored outside.

When he excavated the fort, he found documentation of what was stored in each room. However, when he did the actual excavation, he found that the documentation was incorrect.

(continued on the back of this page)

ACTION REQUIRED

ACTION TAKEN

NAME OF PERSON DOCUMENTING CONVERSATION George Ofslager	ORGANIZATION CENCR-ED-DN	TELEPHONE NUMBER (309) 794-5811
SIGNATURE <i>George Ofslager</i>	TITLE QA Spec (Ammo)	DATE 8 DEC 94

He said that he found documentation that the Army tried to sell the guns and cannon as scrap. However, there were no buyers. The post commander was told to do anything he wanted with the ordnance.

I asked him if any live ordnance was found during the excavations and he said yes. He said he found a live parrot shell and when the park dug the moat, they found 8 inch cannon balls with the round.

I asked him if the guns were fired in World War II. He said that he was in the service in the South Pacific during most of that time. However, during the time that he was in Key West in World War II, He never heard the guns fire.

CONVERSATION RECORD	TIME 1100	DATE 8 December 1994
---------------------	--------------	-------------------------

TYPE		
<input type="checkbox"/> VISIT	<input type="checkbox"/> CONFERENCE	<input type="checkbox"/> TELEPHONE
		<input type="checkbox"/> INCOMING
		<input checked="" type="checkbox"/> OUTGOING

NAME OF PERSON CONTACT WITH Mr. Chester Eldard	ORGANIZATION U.S. Fish and Wildlife Service	TELEPHONE NO. (305) 872-2239
---	---	---------------------------------

SUBJECT Fort Taylor

SUMMARY I spoke to Mr. Chester Eldard at the U.S. Fish and Wildlife Service at Big Pine Key. He had worked for the Fish and Wildlife Service for the past 17 years.

He explained that employees regularly went into such areas as Mule Key, Woman key and the Marquesas Keys. In that period of time, there were no reports of ordnance in the area. The only ordnance that he could remember was a Navy Mine found near Big Pine Key.

ACTION REQUIRED

ACTION TAKEN

NAME OF PERSON DOCUMENTING CONVERSATION George Ofslager	ORGANIZATION CENCR-ED-DN	TELEPHONE NUMBER (309) 794-5811
SIGNATURE	TITLE QA Spec (Ammo)	DATE 8 DEC 94

ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

APPENDIX J

PRESENT SITE PHOTOGRAPHS

APPENDIX J  
PRESENT SITE PHOTOGRAPHS

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J-7	Looking South at Exterior of Battery Osceola
J-8	Cannons Embedded in Casement
J-9	Cannon Embedded in Casement
J-10	Looking West at Battery Adair
J-11	Looking North at North Curtain
J-12	Looking South at Moat Where Ordnance was Recovered
J-13	Looking South at Berm
J-14	Looking North at Rest Room
J-15	Looking South at Picnic Area
J-16	Looking South at Beach



J-1 Ordnance Items on Display in Museum



J-2 Cannon Balls



J-3 Parrot Rifle Shells



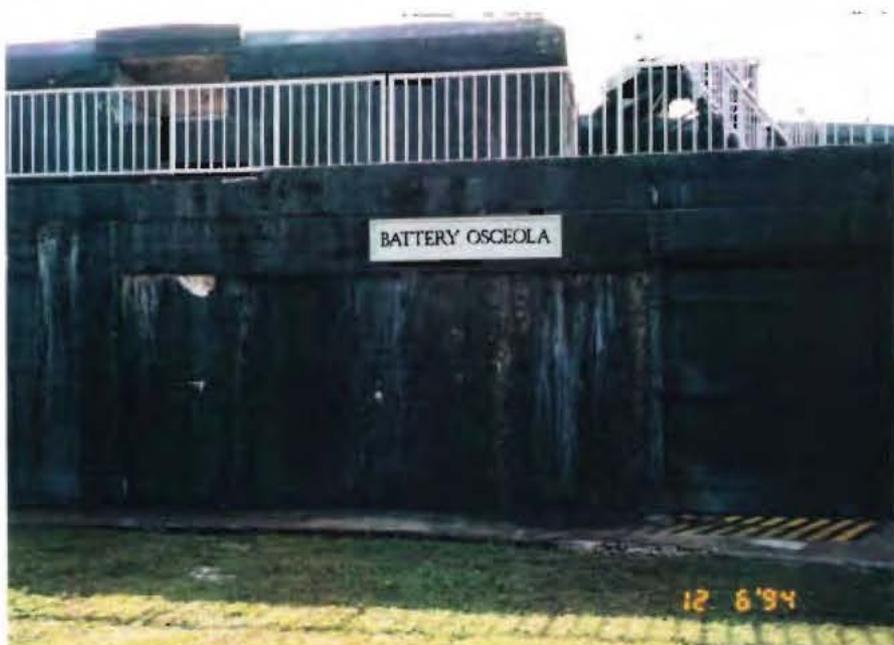
J-4 Fuzed Projectile



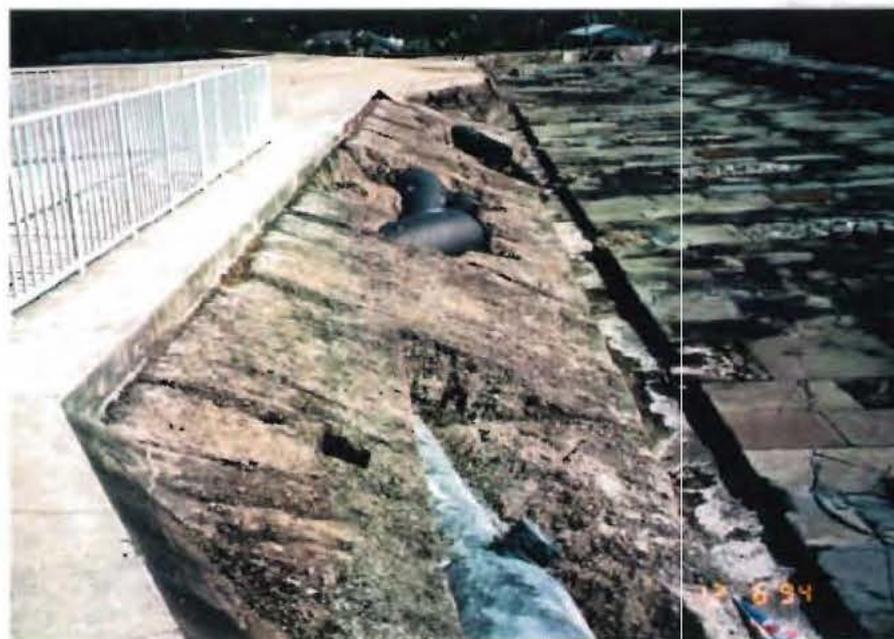
J-5 Cartridge Cases



J-6 Looking North at Parade Ground



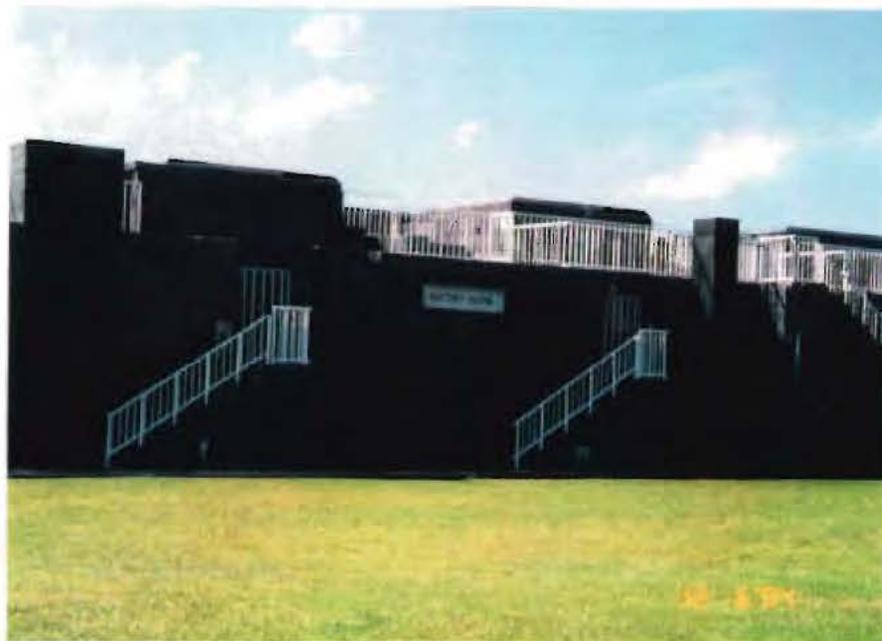
J-7 Looking South at Exterior of Battery Osceola



J-8 Cannons Embedded in Casement



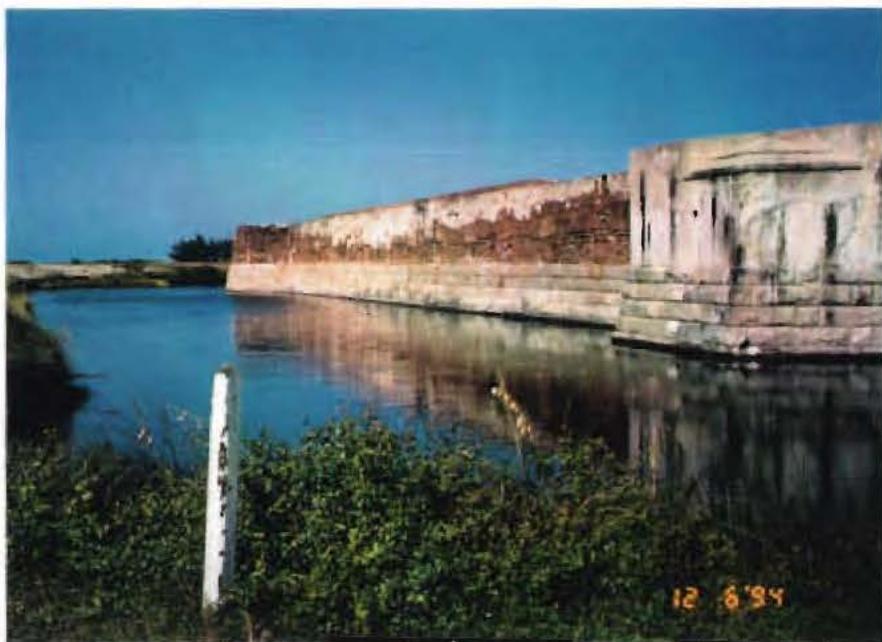
J-9 Cannon Embedded in Casement



J-10 Looking West at Battery Adair



J-11 Looking North at North Curtain



J-12 Looking South at Moat Where Ordnance Was Recovered



J-13 Looking South At Berm



J-14 Looking North at Rest Room



J-15 Looking South At Picnic Areas



J-16 Looking South at Beach

ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

APPENDIX K  
HISTORICAL PHOTOGRAPHS

APPENDIX K  
HISTORICAL PHOTOGRAPHS

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- K-1. 90mm gun (circa 1944)
- K-2. Fort Taylor Parade Ground (1971)
- K-3. Aerial View of Fort Taylor (1969).
- K-4. South Wall of Fort Taylor (circa 1971).
- K-5. Parrot Rifle Projectiles.

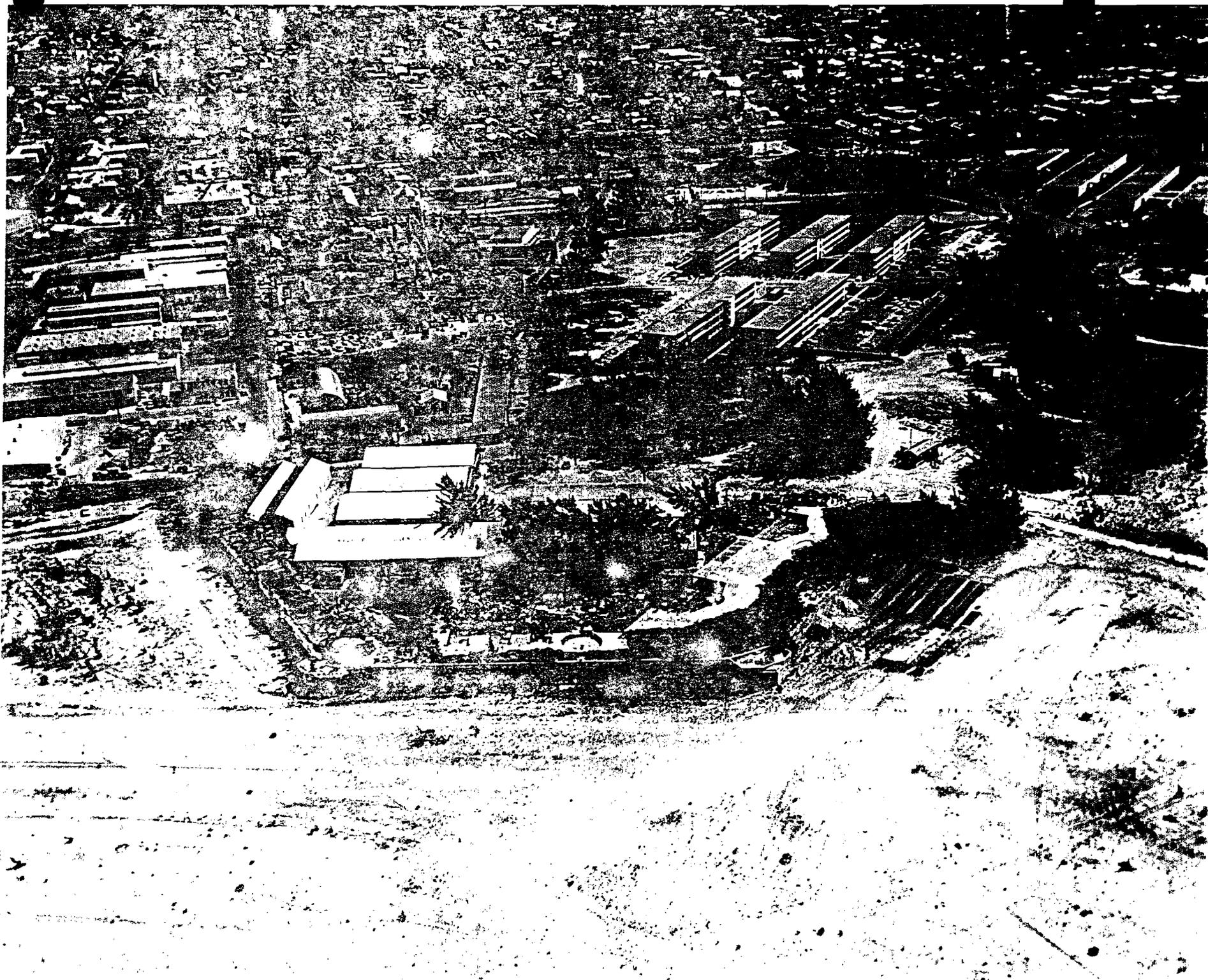
K-1





K-2

Ft. Taylor's Parade Ground as it appeared in  
1971.



K-3

K-3

AERIALS

PHOTOGRAPHIC LABORATORY  
U.S. NAVAL AIR STATION KEY WEST, FLA  
33040

EAV 01741-10-69 2 OCT 1969

AERIAL VIEW OF OLD FORT ZACHARY TAYLOR  
LOCATED AT NAVAL STATION KEY WEST, FLA

RELEASED.....

OFFICIAL U.S. NAVY PHOTOGRAPH BY  
PH 3 CLAS COOK, USN

PROPERTY OF FORT TAYLOR





K-4



30 PDR.  
PROJECTILES  
FOR PARROTT  
RIFLE (Solid)



30 PDR.  
SHELLS FOR  
PARROTT RIFLE



30 PDR &  
100 PDR  
PARROTT  
PROJECTILES

ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER 104FL022701

APPENDIX L

REFERENCE MAPS/DRAWINGS

APPENDIX L  
REFERENCE MAPS/DRAWINGS

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- L-8. Sketch Showing Condition of Armament, Sheet No. 2, December 1899 (B-15).
- L-9. Sketch Showing Condition of Armament, Sheet No. 1, December 1898 (B-16).

# GENERAL PLAN OF FORT TAYLOR KEY WEST FLORIDA

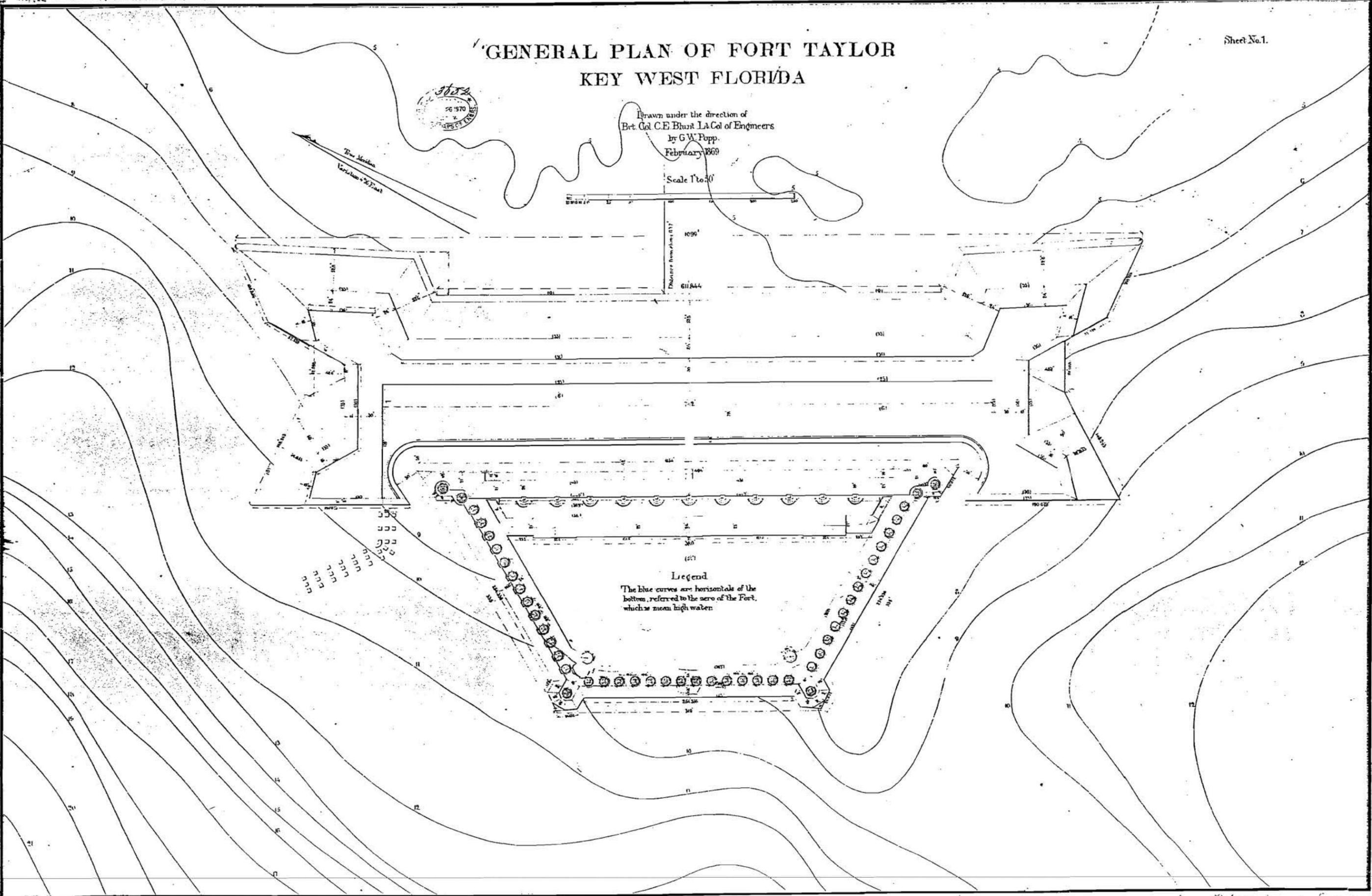


Drawn under the direction of  
Brig. Gen. C.E. Hunt Lt. Col. of Engineers  
by G.W. Popp.  
February 1869

Scale 1 to 30'



The Meridian  
Variation 2 1/2 East



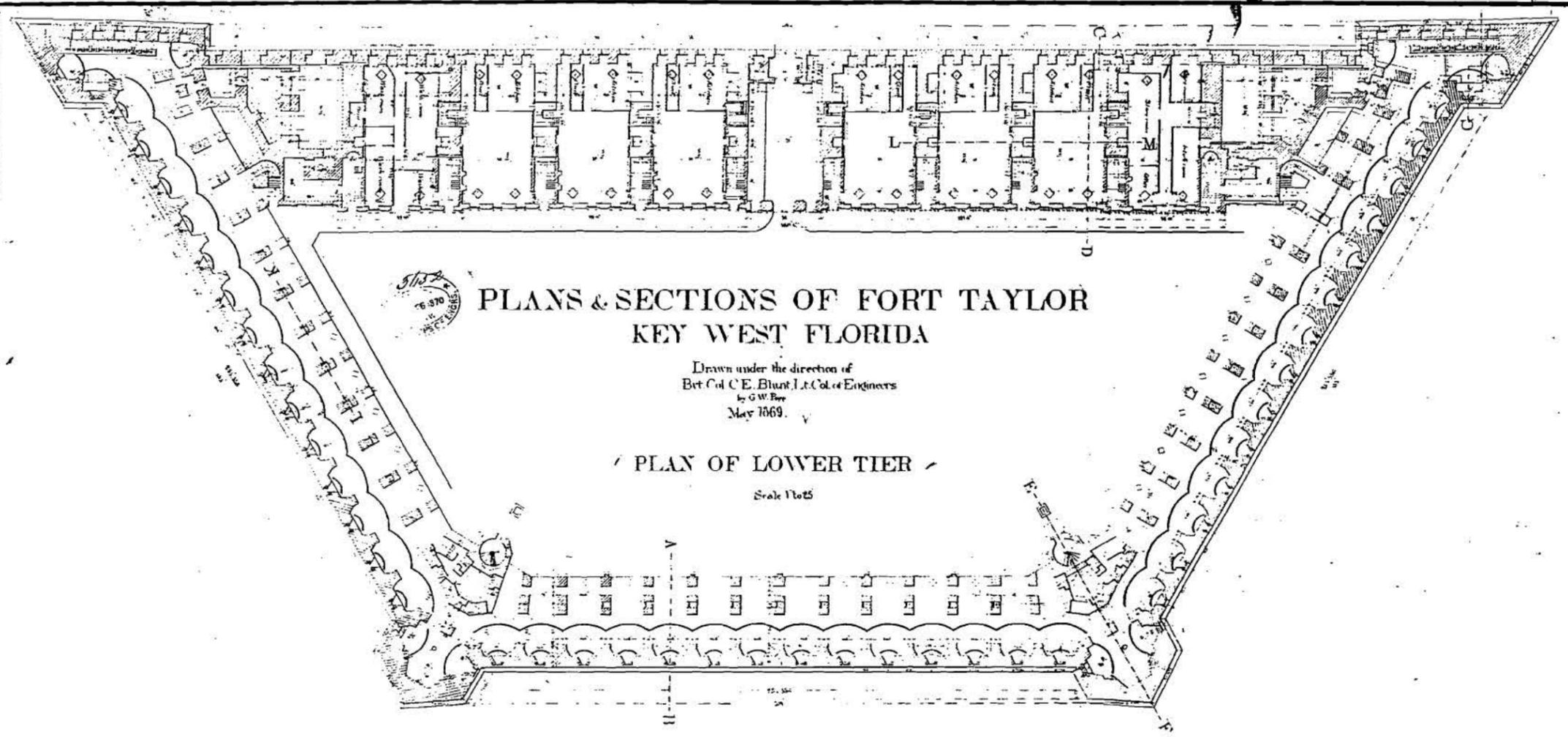
Legend  
The blue curves are horizontal of the  
bottom, referred to the zero of the Fort,  
which mean high water.

PLANS & SECTIONS OF FORT TAYLOR  
KEY WEST FLORIDA

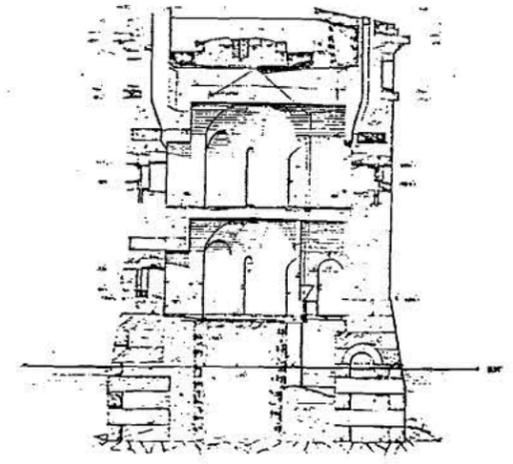
Drawn under the direction of  
Brig. Gen. C. E. Blunt, U. S. Col. of Engineers  
by G. W. Fox  
May 1869.

PLAN OF LOWER TIER

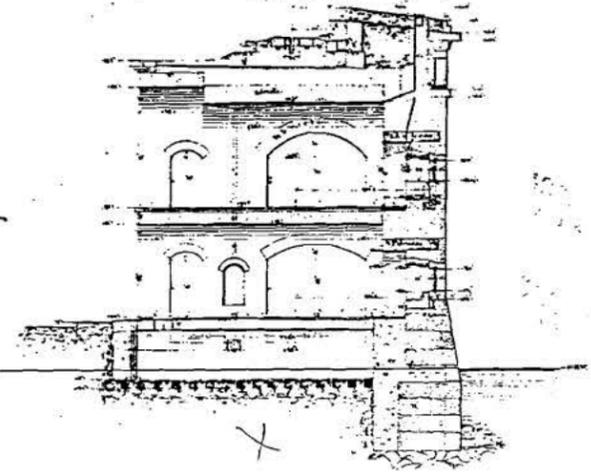
Scale 1 to 25



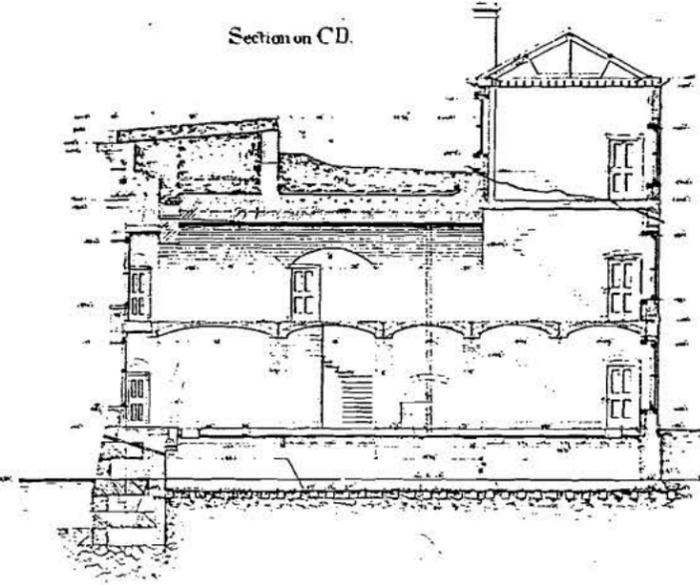
Section on GH.



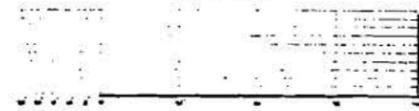
Section on AB



Section on CD.



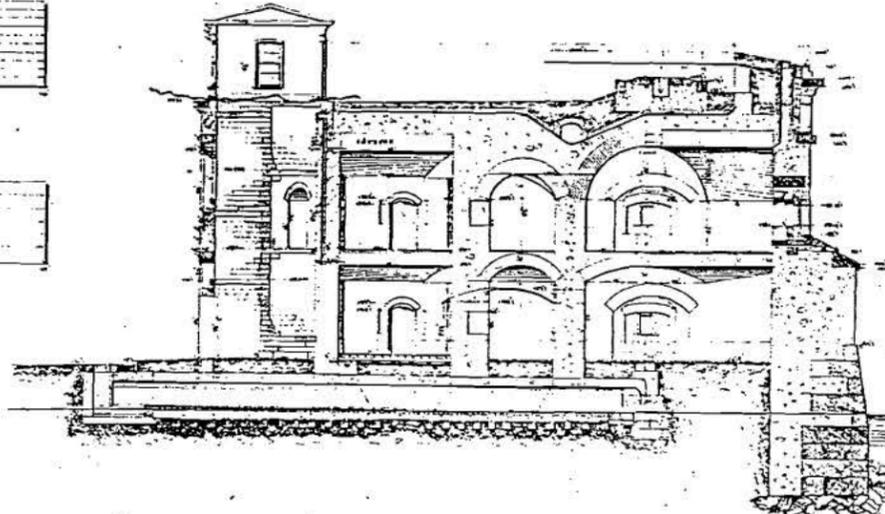
Scale 1 to 25



Scale 1 to 10

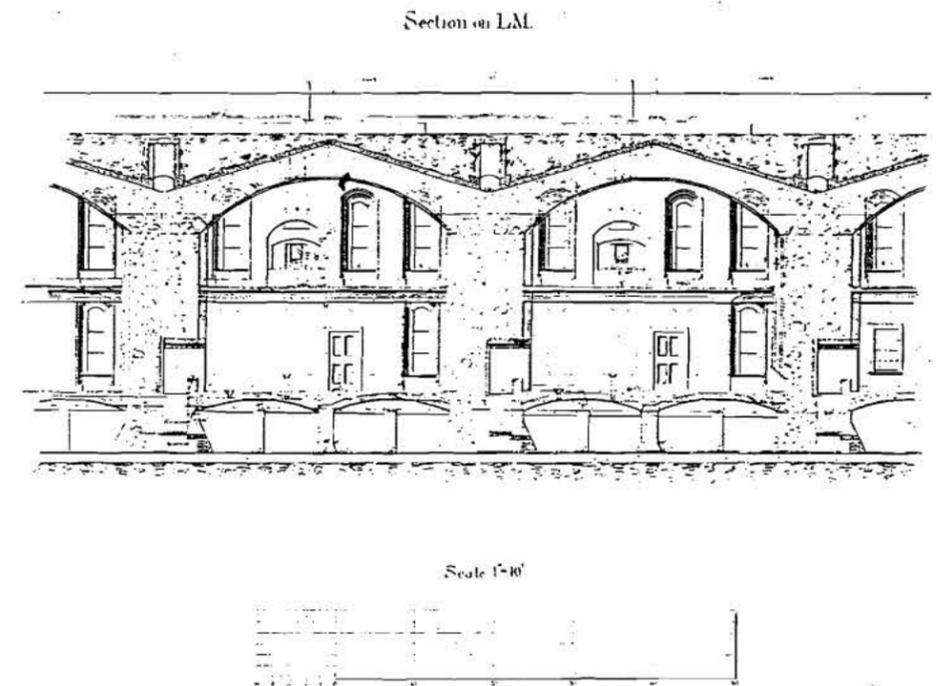
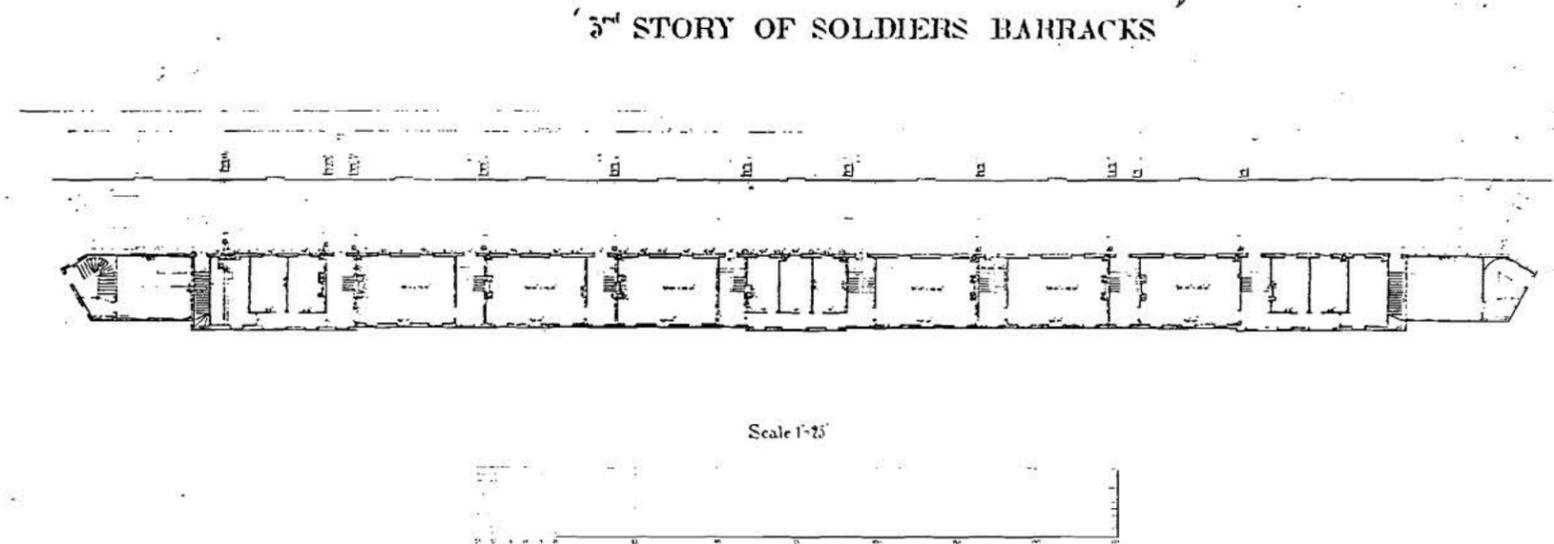
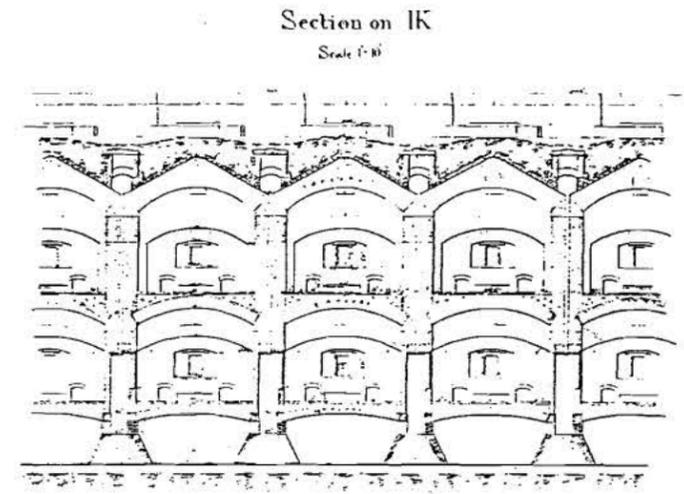
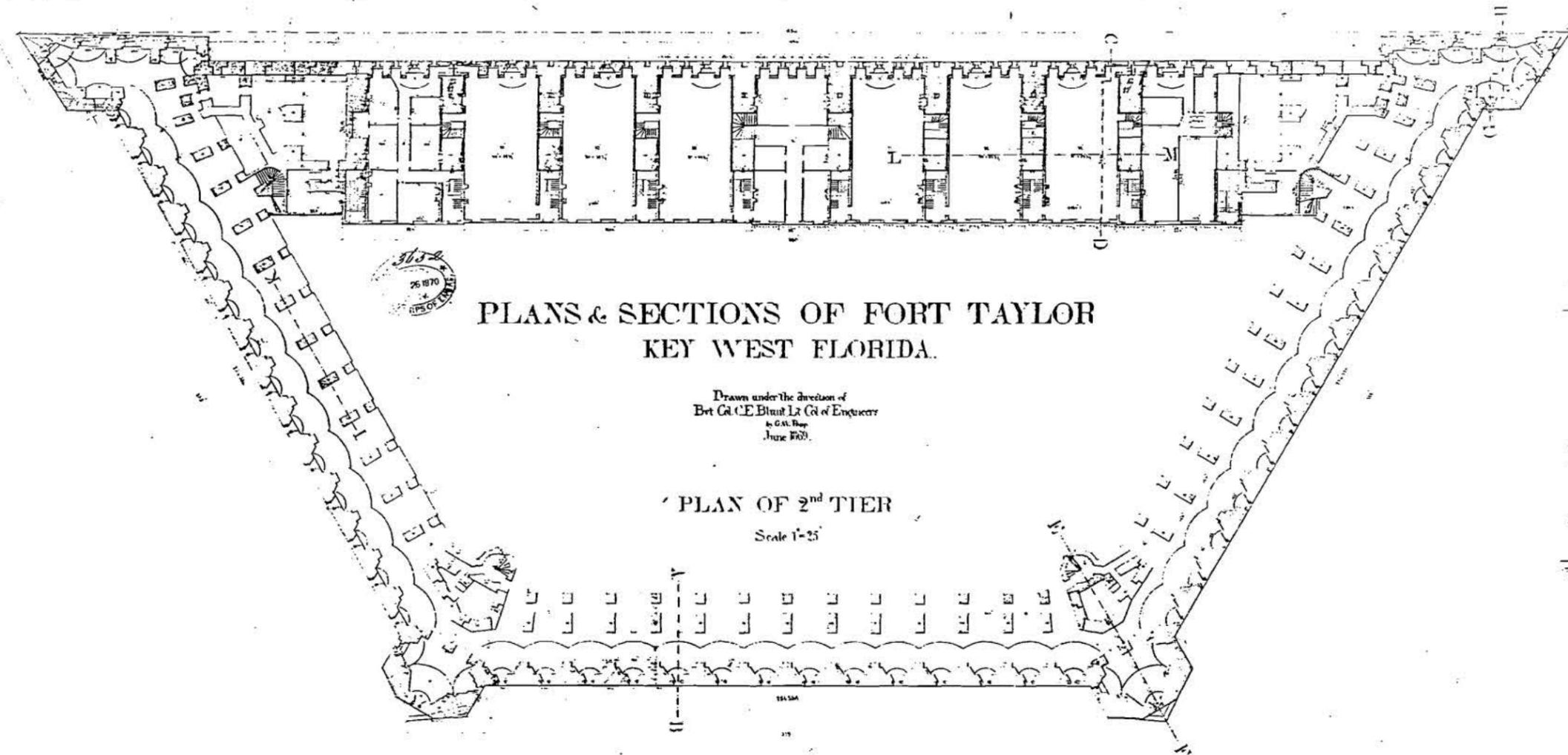


Section on EF



76-166

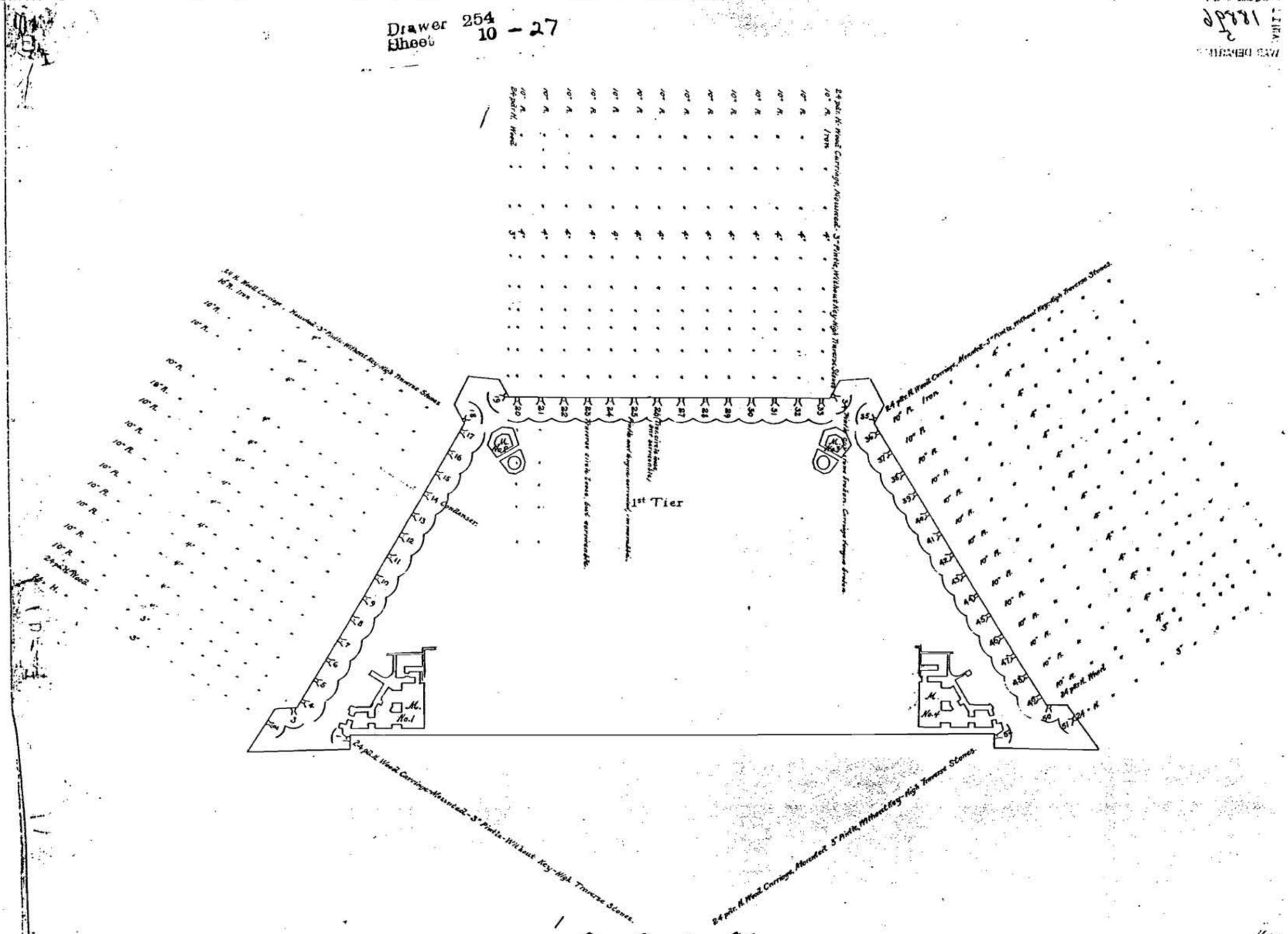
The drawing for the  
Circuit Court, Sept. 12





1897  
254  
10-27

Drawer 254  
Sheet 10 - 27



**Fort Taylor, Fla.**  
**Sketch showing condition of Armament.**  
**Sheet No. 1. - 5'**  
 Scale 50' = 1"

*General Remarks:*  
 All pintles and carriage tongues in casemates are very much corroded, especially in the lower tier (M.1) All emplacements in the fort are ready except Nos. 133 and 140, which were of recent, new entirely rotted. With exceptions noted, the guns, carriages, pile stones, and traverse circles are serviceable.  
 M = engine

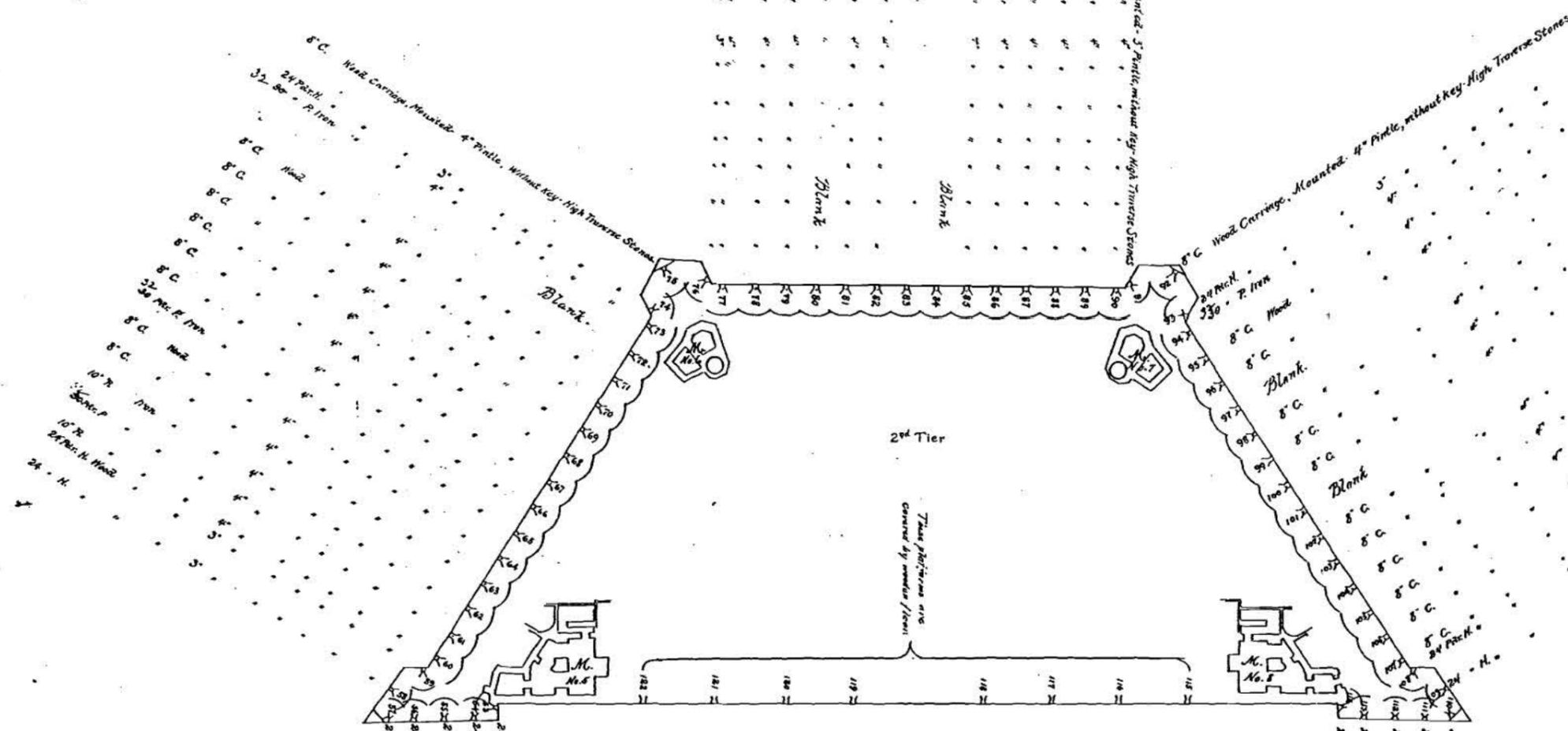
United States Engineer Office.  
 Florida District.

St. Augustine, Fla., *Jan 8, 1897*  
 Chief of Engineers, U. S. Army, with  
*A. H. S. [Signature]*  
 Lt. Colonel, Corps of Eng'rs, U. S. A.

U. S. Eng'rs  
 Drawing  
 Change 10  
 Drawer 254  
 Sheet 10-27  
**L-5**

1898  
18881

Drawer 254  
Sheet 10-28



Fort Taylor, Fla.  
Sketch showing condition of Armament.  
Sheet No. 2.

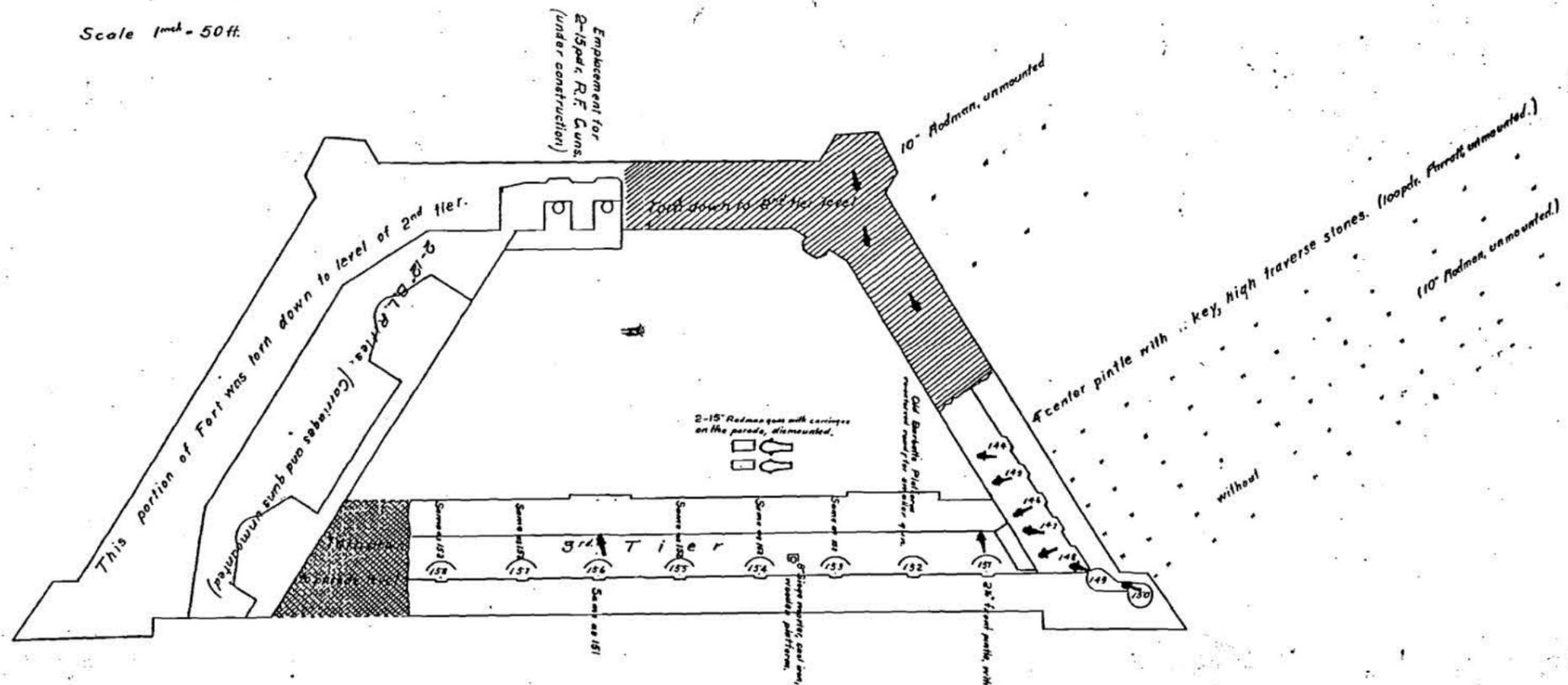
Scale 50'-1"  
United States Engineer Office,  
Florida District.  
St. Augustine, Fla., Jan. 8, 1897.  
Sent to the Chief of Engis U. S. Army, with  
letter of date.  
W. H. Benjamin  
Lt. Colonel, Corps of Engis, U. S. A.

Note.  
The 14 platforms carried on the armament report, under the heading "Platforms originally constructed with 4 in. pinaks, but with an eccentric pinak traverse circle" are Nos. 72, 80, 83, 84, 97, 101, 115, 116, 117, 118, 119, 120, 121, and 122.



Sheet No. 2.  
 Sketch showing condition of Armament  
 at  
 Fort Taylor, Fla.

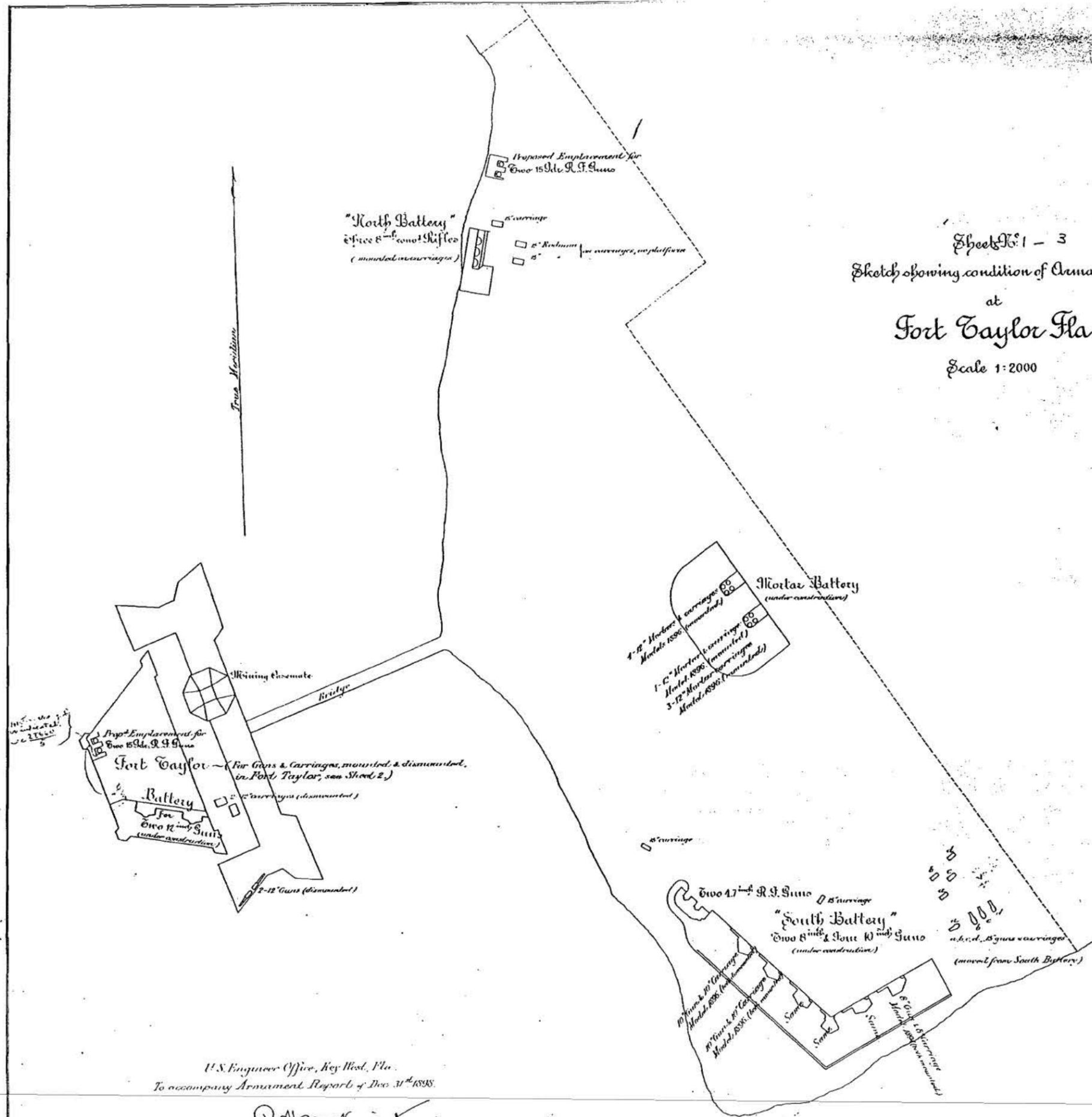
Scale 1 inch = 50 ft.



**NOTES:**  
 All guns and carriages have been dismantled.  
 All carriages have been dismantled except 2-15"  
 All guns have been built into concrete, or sent to  
 the N.Y. Arsenal except 14, which lie where shown  
 on sketch.

U.S. Engineer Office, St. Augustine Fla.  
 To accompany Armament Report of Dec. 31, 1899.  
*C. M. Kinstry*  
 Capt. Corps of Engineers, U.S.A.

Sheet No. 1 - 3  
 Sketch showing condition of Armament  
 at  
 Fort Taylor Fla.,  
 Scale 1:2000



U.S. Engineer Office, Key West, Fla.  
 To accompany Armament Report of Dec. 31<sup>st</sup> 1898.  
 C. McKinstry  
 Capt. Corps of Engs.

ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

**APPENDIX M**

**ARCHIVE SEARCH REPORT CORRESPONDENCE**

14 May 1996  
Mr. Ofslager/sf/6024

MEMORANDUM FOR Commander, U.S. Army Corps of Engineers  
Engineering and Support Center, Huntsville,  
ATTN: CEHND-OE-AI (Mardis), P.O. Box 1600,  
Huntsville, AL 35807-4301

Subject: Ordnance and Explosive (OE) Archives Search Report for  
the Former Fort Taylor, Key West, Florida, Project Number  
I04FL022701

1. References:

a. Memorandum, CEHNC-OE-PM, 24 January 1996, subject:  
Results of Technical Advisory Group (TAG), Review of Archives  
Search Reports (ASR), Revision of Fact Sheets and Risk Assessment  
Code (RAC), Forms for Defense Environmental Restoration Program-  
Formerly Used Defense Sites (DERP-FUDS), Project No. C03VA001501,  
I04FL0220701, and D01RI033803.

b. Draft Archives Search Report, dated March 1995.

2. The purpose of this memorandum is to transmit revised pages  
for the subject report.

3. As a result of a TAG review and comments (reference 1a), a  
change to the report (reference 1b) is required. Page for page  
changes are at enclosure.

4. With these changes posted, subject report should now be  
considered final. Further distribution of this report may now be  
made as needed.

CENCR-ED-DO  
SUBJECT: Ordnance and Explosive (OE) Archives Search Report for  
the Former Fort Taylor, Key West, Florida, Project Number  
I04FL022701

5. The POC for this office is Mr. George Ofslager, CENCR-ED-DO,  
telephone (309) 794-6024.

FOR THE COMMANDER

ORIGINAL SIGNED BY  
GARY LOSS

Encl (3 cys)

ROBERT W. KELLEY, P.E.  
Chief, Engineering Division

CF (w/encl):

CENCD-PE-ED-TE (Warda) (1 copy)

Commander  
U.S. Army Corps of Engineers  
ATTN: CEMP-RF (Coppola)  
Pulaski Building, 20 Massachusetts Avenue NW  
Washington DC 20313-1000  
(2 copies)

Commander  
U.S. Army Defense Ammunition  
Center and School  
ATTN: SMCAC-ES  
Savanna, Illinois 61074-9639  
(3 copies)

Commander  
U.S. Army Health Clinic  
ATTN: HSXZ-RIA (Platt)  
Rock Island Arsenal  
Rock Island, Illinois 61201  
(1 copy)

Commander  
U.S. Army Corps of Engineers  
Jacksonville District  
ATTN: CESAJ-PD-EE (Acosta)  
PO Box 4970  
Jacksonville, FL 32232-0019  
(1 copy)

CENCR-ED-DO  
SUBJECT: Ordnance and Explosive (OE) Archives Search Report  
for the Former Fort Taylor, Key West, Florida, Project  
Number I04FL022701

CF:  
~~ED-DO~~ (HOLMES/6513TAYL.DOC)  
ED-DM (DIST. FILE)

ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORMER FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

1. Archives Search Report for the former Fort Taylor, Key West, Florida, Project Number I04FL022701, dated March 1995 is changed as follows:

**Conclusions and Recommendations**

*Remove pages*

*Insert pages*

Project Fact Sheets

Project Fact Sheets

**Findings**

*Remove pages*

*Insert pages*

Appendix E/  
Table of Contents

Appendix E/  
Table of Contents

None

E-4

2. Changed pages are indicated by the date of the change, 7 April 1995, in the lower right hand corner of the page.

**RESTORATION INFORMATION MANAGEMENT SYSTEM  
FORMERLY USED DEFENSE SITES (FUDS)  
PROJECT FACT SHEET  
TAG REVIEW DATE: 9 AUGUST 1995  
SECOND TAG REVIEW: 2 MAY 1996  
SECOND TAG REVIEW DATE: 16 JANUARY 2001**

**1. SITE NAME:** Fort Taylor

**SITE NUMBER:** I04FL022700

**LOCATION:**  
City: Key West  
County: Monroe  
State: Florida

**PROJECT NUMBER:** I04FL022701

**CATEGORY:** OE

**INPR RAC:** 2

**ASR RAC:** 3

**OE-CX RAC:** 2

**2. POC's:**

**GEOGRAPHIC DISTRICT:**

Name: Robert Bridgers  
Office: CESAJ-DP  
Phone: (904)232-3085

**GEOGRAPHIC DIVISION:**

Name: Sharon Taylor  
Office: CESAD-PM-M  
Phone: (404)562-5212

**HEADQUARTERS:**

Name: Sara Goodwin  
Office: CEMP-RF  
Phone: (202)761-5223

**ASR/INPR TEAM:**

Name: Richard L. Pike  
Office: CEHNC-OE-CX  
Phone: (256)895-1559

**3. SITE DESCRIPTION:** The site, 51 acres of state park, is used as a historic site and beach. Winters and summers are warm. Hurricanes are common. The former Fort Taylor occupies a point on the extreme west portion of the City of Key West. The predominate vegetation is grass. The shoreline is sandy with a beach. The offshore ordnance area is in the Atlantic Ocean. Water Depths of these areas exceed 25 feet.

4. **SITE HISTORY:** Construction of Fort Taylor commenced in 1845. The fort was built offshore and was completely surrounded by water. In 1898, an Endicott period fort was built on the site. The original casements were filled with sand. Civil War period ordnance materials, both cannon and empty projectiles, were also buried within the walls. In 1947, Fort Taylor was transferred from the Army to the Navy. The Navy filled in the water surrounding the fort. In 1989, a moat was excavated around the exterior walls. A number of fuzed Civil War era projectiles were recovered.

5. **PROJECT DESCRIPTION:**

**AREA "A"**

Size Acres: 3  
Former Use: Casements  
Present Use: Historic Site  
Probable End Use: Historic Site  
Ordnance Presence: Potential  
Types: Black powder filled projectiles within walls of fort

**AREA "B"**

Size Acres: 7  
Former Use: Disposal Area  
Present Use: Moat and Adjacent Area  
Probable End Use: Moat and Adjacent Area  
Ordnance Presence: Confirmed  
Types: Black powder filled projectiles, Fulminate caps

**AREA "C"**

Size Acres: 41  
Former Use: Remaining Lands  
Present Use: Beach and Park  
Probable End Use: Beach and Park  
Ordnance Presence: None

**AREA "D"**

Size Acres: 97,000  
Former Use: Offshore Ordnance Area (**Ineligible**)  
Present Use: Ocean  
Probable End Use: Ocean  
Ordnance Presence: Potential  
Types: Large caliber explosive shells

6. **CURRENT STATUS:** The Archives Search Report (ASR) was completed by the Rock Island District in March 1995.

7. **STRATEGY:** Area A - RAC 2 EE/CA; Area B - RAC 3 EE/CA  
Area C & D - RAC 5 NDAI

8. **ISSUES AND CONCERNS:** The Huntsville Center Technical Advisory Group (TAG) met and discussed this ASR again on 16 January 2001 and decided to change this site to a RAC 2 EE/CA because it was felt that the regulators/stakeholders would not agree with the determination of RAC 5 NDAI. Using the latest revision of the RAC Worksheet the RAC scores would change from 3 and 2 to 2 and 3 respectively.

(1) **Area "A."** This area consists of the casements created by the Endicott period additions wherein armaments were incorporated into the works. Imbedded cannons are confirmed and black powder projectiles are suspected. As long as the projectiles, if they exist, are encompassed by the casements proper, they are not available for public disturbance. The propagation potential for black powder is almost nonexistent; therefore, sympathetic detonations are unlikely to occur. While ordnance is known to be on-site, including some in rooms sealed from the public, the ordnance items present are considered historic artifacts and the fort is listed in the National Register of Historic Places and declared a National Historic Landmark in 1973. Because of the historic designation, remediation has not been allowed. Future efforts are planned by the State of Florida to stabilize the wall of the fort, and this activity, when scheduled, will provide the opportunity for OE removal if discovered. Removal actions will have to accommodate the State's concern for the preservation of this material. The state should be advised to maintain UXO personnel on standby to support the construction activities.

(2) **Area "B."** This area consists of an eight-foot deep moat around three sides of the fort. A number of fuzed Civil War era projectiles were recovered from this area when the excavation for the moat occurred in 1989. The excavation activities were conducted to bedrock; therefore, it is reasonable that all such OE was recovered by these activities. If excavation of the moat should be expanded beyond its present configuration, there is a danger that OE may be encountered.

(3) **Area "C."** This area consists of the 41 acres of beach and park that encompasses three sides of the fort and runs north to south. No indication of OE presence was found during the record search or site inspection.

(4) **Area "D."** This area consists of 97,000 acres of offshore impact area for large caliber explosive shells. IAW EC-200-3-7, 30 September 1999, DERP-FUDS Program Manual, "Offshore ordnance properties beyond 100 yards of mean high tides are not eligible except in special cases where a public exposure pathway exists." Area D meets this criteria.

9. **SCHEDULE SUMMARY:**

Phase	Original Start	Scheduled Start	Actual Start	Original Complete	Scheduled Complete	Actual Complete
EE/CA						

**RESTORATION INFORMATION MANAGEMENT SYSTEM  
FORMERLY USED DEFENSE SITES (FUDS)  
PROJECT FACT SHEET  
REVISION 1: 7 APRIL 1995  
TAG REVIEW DATE: 9 AUGUST 1995**

**1. SITE NAME:** Fort Taylor

**SITE NUMBER:** I04FL022700

**LOCATION:**

City: Key West  
County: Monroe  
State: Florida

**PROJECT NUMBER:** I04FL022701

**CATEGORY:** OE

**ASR RAC:** 3

**INPR RAC:** 2

**2. POC'S:**

**TECHNICAL MANAGER:**  
Name: Karl Blankinship  
Office: CEHND-OE-DG  
Phone: (205) 895-1548

**GEO DISTRICT POC:**  
Name: Robert Bridgers  
Office: CESAJ-DP  
Phone: (904) 232-30854

**GEO DIVISION POC:**  
Name: Sharon Ernst  
Office: CESAD-PM-M  
Phone: (404) 331-2495

**HEADQUARTERS POC:**  
Name: James K. Coppola  
Office: CEMP-RF  
Phone: (202) 504-4992

**SUPPORT DISTRICT (ASR) POC:**  
Name: George Ofslager  
Office: CENCR-ED-DO  
Phone: (309) 794-6024

**3. SITE DESCRIPTION:** The site, 51 acres of state park, is used as a historic site and beach. Winters and summers are warm. Hurricanes are common. The former Fort Taylor occupies a point on the extreme west portion of the City of Key West. The predominate vegetation is grass. The shoreline is sandy with a beach. The off shore ordnance area is in the Atlantic Ocean. Water Depths of these areas exceed 25 feet.

**4. SITE HISTORY:** Construction of Fort Taylor commenced in 1845. The fort was built off shore and was completely surrounded by water. In 1898, an Endicott period fort was built on the site. The original casements were filled with sand. Civil War period ordnance material, both cannon and empty projectiles, were also buried within the walls. In 1947, Fort Taylor was transferred from the Army to the Navy. The water surrounding the fort was filled in by the Navy. In 1989, a moat was excavated around the exterior walls. A number of fuzed Civil War era projectiles were recovered. These projectiles were destroyed by members of the 66th Explosive Ordnance Disposal (EOD) detachment.

**5. PROJECT DESCRIPTION:**

AREA "A"

Size Acres: 3 acres  
Former Usage: Casements  
Present Usage: Historic Site  
Probable End Usage: Historic Site  
Ordnance Presence: Potential  
Types: Black powder filled projectiles  
Density: Unknown  
Ordnance Depth: Within walls of fort  
ASR Recommends: EE/CA

AREA "B"

Size Acres: 7 acres  
Former Usage: Disposal Area  
Present Usage: Moat and Adjacent Area  
Probable End Usage: Moat and Adjacent Area  
Ordnance Presence: Confirmed  
Types: Black powder filled projectile, Fulminate caps  
Density: Unknown  
Ordnance Depth: 8 feet  
ASR Recommends: EE/CA

## AREA "C"

Size Acres: 41 acres  
Former Usage: Remaining Lands  
Present Usage: Beach and Park  
Probable End Usage: Beach and Park  
Ordnance Presence: Uncontaminated  
ASR Recommends: No Further Action

## AREA "D"

Size Acres: 97,000 acres  
Former Usage: Off shore ordnance area  
Present Usage: Ocean  
Probable End Usage: Ocean  
Ordnance Presence: Potential  
Types: Large caliber explosive shells  
Density: Unknown  
Ordnance Depth: Unknown  
ASR Recommends: No Further Action

**6.0 CURRENT STATUS:** The ASR was completed by the Rock Island District in March 1995. The areas of concern mentioned in the ASR are not supported by reasonable evidence to indicate that further action is justified. Therefore, no scope of work preparation is required.

## 7. STRATEGY:

Area "A." This area consists of the casements created by the Endicott period additions wherein armaments were incorporated into the works. Imbedded cannon are confirmed and black powder projectiles are suspected. As long as the projectiles, if they exist, are encompassed by the casements proper, they are not available for public disturbance. The propagation potential for black powder is almost non-existent; therefore, sympathy detonations are unlikely to occur.

The State of Florida has declared this a historic site and all projectiles as artifacts. Future efforts are planned by the State of Florida to stabilize the wall of the fort, and this activity, when scheduled, will provide the opportunity for OE removal if discovered. Removal actions will have to accommodate the states concern for the preservation of this material. The action recommended at this time is to provide a letter to the Geographical District transmitting the fact sheet, and referencing the ASR, with strong recommendations to notify the state of the potential hazard anticipated during construction activities. As a minimum, the state should be advised to maintain UXO personnel on stand by the support the construction activities.

Area "B." This area consists of an eight foot deep moat around three sides of the fort. A number of fuzed Civil War era projectiles were recovered from this area when the excavation for the moat occurred in 1989. The excavation activities were conducted to bedrock; therefore, it is reasonable that all such OE was recovered by these activities. The action recommended at this time is that the state be advised by letter that is excavation of the moat should be expanded beyond its present configuration, there is a danger that OE may be encountered.

Area "C." This area consists of the 41 acres of beach and park that encompasses three sides of the fort and runs north to south. No indication of OE presence was found during the record search or site inspection. No further action is recommended in this area.

Area "D." This area consists of 97,000 acres of off-shore impact area for large caliber explosive shells. Most of the ammunition in this area is in water 50-400' deep. In accordance with USACE memorandum, subject: Defense Policy Environmental Restoration Program (DERP) - Site Eligibility Policy Clarification for Ordnance and Explosive Waste (OEW), The action recommended at this time is that the geographical district view this area as being off limits for dredging and that this area be annotated on all maps off limits for dredging and that this area be annotated on all maps available to the public to warn of the potential danger. The geographical district should review all transport mechanism for possible migration potential to the beach areas.

**8. ISSUES AND CONCERNS:** There are endangered or threatened wildlife species in the area, and the current owner of Area "D" is the Key West National Wildlife Refuge. Cultural resources were noted during the archives search and the site inspection. The potential ordnance present is considered as historic artifacts and the fort is listed in the National Register of Historic places and declared a National Historic Landmark in 1973.

The no further action recommendation will be presented to the TAG for decisions/resolution. The only remaining issues/concern is the potential for exposure of OE in the casements when the State of Florida begins to stabilize the wall. Elements of the 66th EOD Detachment can respond to discovered imbeds and assist the State of Florida in its recovery process.

**9. SCHEDULE SUMMARY:**

Phase	Orig. Start	Sch. Start	Actual Start	Orig. Comp	Sch. Comp	Actual Comp
NOFA	N/A	N/A	N/A	N/A	N/A	N/A

## 10. FUNDING/BUDGET SUMMARY

Year	Phase	Exec FOA	In-House Required	Contract Required	Funds Obligated
N/A	N/A	N/A	N/A	N/A	N/A

Author: DANIEL J HOLMES at CCPO11  
Date: 12/6/96 3:48 PM  
Priority: Normal  
TO: Danny R Mardis at NCDHUB, parsonss@smtp.hnd.usace.army.mil at NCRMAIL  
CC: GEORGE C OFSLAGER, MARY JO CIVIS, DANIEL J HOLMES  
Subject: ASR for Ft.Taylor, I04FLO22701

References:

1. ASR dated Mar 95
2. NCR revisions to ref 1 dated 6 May 96
3. HNC TAG comments dated 21 Jun 96
4. NCR responses to ref 3 dated 16 Jul 96

Ref 3 provided responses via a HNC revised fact sheet. Since we no longer make fact sheet revisions, the following items are intended to reflect the substance of the suggested changes of ref 3.

A summary of ref 1, with ref 2 revisions, is as follows:

Area	Description	OE presence	RAC	Recommended Action
A	Casements	potential	3	EECA
B	Disp Area	confirmed	4	EECA
C	Rem lands	uncontam	5	NOFA
D	Off shore	potential	5	NOFA

It appears that ref 3 agrees with all of the above except perhaps the recommended action for areas A and B.

We agree that a conventional EECA is not appropriate. It appeared (at the time) that some recommended action was necessary (and certainly not a RA). It was understood at the time that recommending an EECA would allow this site to remain on the active FUDS list and yet provide the flexibility to structure an EECA (or something like it) to fit the project.

When the State proceeds with some form of site investigation, it appears the first step would be to fully investigate the safety hazards and develop plans accordingly. This would appear to be a form of an EECA (i.e., gather site data, develop alternatives, recommend an action).

In summary, it appears the only change that ref 1 requires would be to change the wording of EECA to something else. Ref 1 does consistently point out that the entire fort is a historic property and must be handled as such.

Recommend HNC approve ref 1 with ref 2 revisions as submitted.

or...

Please furnish specific language on a comment form referenced to the specific portion of the report to ensure concise changes are made.

Thanks.

Dan Holmes

TM: George Ofslager

ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORMER FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

ATTACHMENTS

RISK ASSESSMENT PROCEDURES FOR  
 ORDNANCE AND EXPLOSIVE WASTE (OEW) SITES

Site Name	<u>Fort Taylor</u>	Rater's Name	<u>George Ofslager</u>
Site Location	<u>Key West, FL</u>	Phone No.	<u>309-794-5811</u>
DERP Project #	<u>I04FL022701 (Area A)</u>	Organization	<u>CENCR-ED-DN</u>
Date Completed	<u>9 March 1995</u>	RAC Score	<u>3</u>

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, **hazard severity and hazard probability**. Personnel involved in visits to potential OEW sites should view the CEHND video tape entitled "A Life Threatening Encounter: OEW."

Part 1. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPES OF ORDNANCE  
 (Circle all values that apply)

A. Conventional Ordnance and Ammunition	VALUE
Medium/Large Caliber (20 mm and larger)	<u>10</u>
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	6
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1
Conventional Ordnance and Ammunition (Select the largest single value)	<u>10</u>

What evidence do you have regarding conventional OEW? Past History  
of Explosive Projectiles

B. Pyrotechnics. (For munitions not described above)

VALUE

Munition (Container) Containing  
White Phosphorous or other  
Pyrophoric Material (i.e.,  
Spontaneously Flammable) 10

Munition Containing a Flame  
or Incendiary Material (i.e. Napalm,  
Triethylaluminum Metal Incendiaries) 6

Flares, Signals, Simulators, Screening  
Smoke (other than WP) 4

Pyrotechnics (Select the largest single value) 0

What evidence do you have regarding pyrotechnics? \_\_\_\_\_

C. Bulk High Explosives (Not an integral part of convention ordnance;  
uncontainerized.)

VALUE

Primary or Initiating Explosive  
(Lead Styphnate, Lead Azide,  
Nitroglycerin, Mercury Azide,  
Mercury Fulminate, Tetracene, etc.) 10

Demolition Charges 10

Secondary Explosives  
(PETN, Composition A, B, C,  
Tetryl, TNT, RDX, HMX, HBX,  
Black Powder, etc). 8

Military Dynamite 6

Less Sensitive Explosives  
(Ammonium Nitrate, Explosive D, etc). 3

High Explosives (Select the largest single value) 0

What evidence do you have regarding bulk explosives? \_\_\_\_\_

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or  
other conventional ordnance; uncontainerized)

VALUE

Solid or Liquid Propellants 6

Propellants 0

What evidence do you have regarding propellants? \_\_\_\_\_

E. Chemical Warfare Material and Radiological Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification Sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear)	5
Chemical and Radiological (Select the largest single value)	<u>0</u>
What evidence do you have of chemical/radiological OEW?	_____

=====

TOTAL HAZARD SEVERITY VALUE 10  
 (Sum of Largest Values for A through E--Maximum of 61).  
**Apply this value to Table 1 to determine Hazard Severity Category.**

TABLE 1

HAZARD SEVERITY\*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and greater
CRITICAL	II	11 to 20
MARGINAL	III	5 to 10
NEGLIGIBLE	IV	1 to 4
**NONE		0

\* Apply Hazard Severity Category to Table 3.

\*\* If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other related factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF CONTAMINATION  
(Circle all values that apply)

A. Locations of OEW Hazards

	VALUE
On the surface	5
Within Tanks, Pipes, Vessels or Other confined locations	4
Inside walls, ceilings, or other parts of Buildings or Structures	3
Subsurface	2
Location (Select the single largest value)	<u>3</u>
What evidence do you have regarding location of OEW? <u>excavations have found rounds inside casement walls.</u>	<u>Past</u>

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 miles	3
1.0 miles to 2.0 miles	2
Over 2 miles	1
Distance (Select the single largest value)	<u>5</u>
What are the nearest inhabited structures? <u>public beach.</u>	<u>Portion of site is a</u>

C. Number of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0
Number of Buildings (Select the single largest value)	<u>5</u>
Narrative	<u>26+ buildings within 2 mile radius.</u>

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	5
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0
Types of Buildings (Select the largest single value)	<u>5</u>
Describe types of buildings in the area.	<u>Numerous residential structures within 2 mile radius.</u>

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	5
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (of any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated Site	1
a 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility, or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitor, locked entrance, or controlled roadway access to the facility).	0
Accessibility (Select the single largest value)	<u>3</u>
Describe the site accessibility. <u>Parts of casement were explosive may be present are fenced off or under lock and key</u>	

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Example would be excessive soil erosion by beaches or streams, increasing land development that could reduce distance from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5
None Anticipated	0
Site Dynamics (Select largest value)	<u>5</u>
Describe the site dynamics. <u>State park may have to stabilize walls.</u>	

=====  
Total Hazard Probability Value  
(Sum of Largest Values for A through F--Maximum of 30) 26

Apply this value to Hazard Probability Table 2 to determine  
Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY\*

-----

Description	Level	Hazard Probability Value
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

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\* Apply Hazard Probability Level to Table 3.

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RISK ASSESSMENT PROCEDURES FOR  
 ORDNANCE AND EXPLOSIVE WASTE (OEW) SITES

Site Name	<u>Fort Taylor</u>	Rater's Name	<u>George Ofslager</u>
Site Location	<u>Key West, FL</u>	Phone No.	<u>309-794-5811</u>
DERP Project #	<u>I04FL022701 (Area B)</u>	Organization	<u>CENCR-ED-DN</u>
Date Completed	<u>9 March 1995</u>	RAC Score	<u>4</u>

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, **hazard severity and hazard probability**. Personnel involved in visits to potential OEW sites should view the CEHND video tape entitled "A Life Threatening Encounter: OEW."

Part 1. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPES OF ORDNANCE  
 (Circle all values that apply)

A. Conventional Ordnance and Ammunition	VALUE
Medium/Large Caliber (20 mm and larger)	<u>10</u>
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	<u>6</u>
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1
Conventional Ordnance and Ammunition (Select the largest single value)	<u>10</u>

What evidence do you have regarding conventional OEW? Past Recovery  
of Explosive Projectiles

B. Pyrotechnics. (For munitions not described above)

	VALUE
Munition (Container) Containing White Phosphorous or other Pyrophoric Material (i.e., Spontaneously Flammable)	10
Munition Containing a Flame or Incendiary Material (i.e. Napalm, Triethylaluminum Metal Incendiaries)	6
Flares, Signals, Simulators, Screening Smoke (other than WP)	4
	<u>0</u>

What evidence do you have regarding pyrotechnics? \_\_\_\_\_  
\_\_\_\_\_

C. Bulk High Explosives (Not an integral part of convention ordnance;  
uncontainerized.)

	VALUE
Primary or Initiating Explosive (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10
Demolition Charges	10
Secondary Explosives (PETN, Composition A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc).	8
Military Dynamite	6
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc).	3
High Explosives (Select the largest single value)	<u>0</u>

What evidence do you have regarding bulk explosives? \_\_\_\_\_  
\_\_\_\_\_

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or  
other conventional ordnance; uncontainerized)

	VALUE
Solid or Liquid Propellants	6
Propellants	<u>0</u>

What evidence do you have regarding propellants? \_\_\_\_\_  
\_\_\_\_\_

E. Chemical Warfare Material and Radiological Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification Sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear)	5
Chemical and Radiological (Select the largest single value)	<u>0</u>
What evidence do you have of chemical/radiological OEW?	_____

=====

TOTAL HAZARD SEVERITY VALUE 10  
 (Sum of Largest Values for A through E--Maximum of 61).  
**Apply this value to Table 1 to determine Hazard Severity Category.**

TABLE 1

HAZARD SEVERITY\*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and greater
CRITICAL	II	11 to 20
MARGINAL	III	5 to 10
NEGLIGIBLE	IV	1 to 4
**NONE		0

\* Apply Hazard Severity Category to Table 3.

\*\* If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other related factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF CONTAMINATION  
(Circle all values that apply)

A. Locations of OEW Hazards

	VALUE
On the surface	5
Within Tanks, Pipes, Vessels or Other confined locations	4
Inside walls, ceilings, or other parts of Buildings or Structures	3
Subsurface	2
Location (Select the single largest value)	<u>2</u>
What evidence do you have regarding location of OEW? <u>excavations have found rounds subsurface.</u>	<u>Past</u>

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 miles	3
1.0 miles to 2.0 miles	2
Over 2 miles	1
Distance (Select the single largest value)	<u>5</u>
What are the nearest inhabited structures? <u>portion of site is a public beach.</u>	

C. Number of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0
Number of Buildings (Select the single largest value)	<u>5</u>
Narrative <u>26+ buildings within 2 mile radius.</u>	

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	5
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0
Types of Buildings (Select the largest single value)	<u>5</u>
Describe types of buildings in the area. <u>Numerous residential structures within within 2 mile radius.</u>	

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	5
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (of any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated Site	1
a 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility, or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitor, locked entrance, or controlled roadway access to the facility).	0
Accessibility (Select the single largest value)	<u>0</u>
Describe the site accessibility. <u>Digging by public prohibited in State Park. Park patrolled by attendants.</u>	

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Example would be excessive soil erosion by beaches or streams, increasing land development that could reduce distance from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5
None Anticipated	0
Site Dynamics (Select largest value)	<u>0</u>
Describe the site dynamics. <u>Area not expected to change.</u>	

=====  
Total Hazard Probability Value  
(Sum of Largest Values for A through F--Maximum of 30) 17

Apply this value to Hazard Probability Table 2 to determine  
Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY\*

Description	Level	Hazard Probability Value
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

\* Apply Hazard Probability Level to Table 3.



RISK ASSESSMENT PROCEDURES FOR  
 ORDNANCE AND EXPLOSIVE WASTE (OEW) SITES

Site Name	<u>Fort Taylor</u>	Rater's Name	<u>George Ofslager</u>
Site Location	<u>Key West, FL</u>	Phone No.	<u>309-794-5811</u>
DERP Project #	<u>I04FL022701 (Area C)</u>	Organization	<u>CENCR-ED-DN</u>
Date Completed	<u>9 March 1995</u>	RAC Score	<u>5</u>

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, **hazard severity and hazard probability**. Personnel involved in visits to potential OEW sites should view the CEHND video tape entitled "A Life Threatening Encounter: OEW."

Part 1. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPES OF ORDNANCE  
 (Circle all values that apply)

A. Conventional Ordnance and Ammunition	VALUE
Medium/Large Caliber (20 mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	6
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1
Conventional Ordnance and Ammunition (Select the largest single value)	<u>0</u>

What evidence do you have regarding conventional OEW? No evidence  
 of any OEW

B. Pyrotechnics. (For munitions not described above)

	VALUE
Munition (Container) Containing White Phosphorous or other Pyrophoric Material (i.e., Spontaneously Flammable)	10
Munition Containing a Flame or Incendiary Material (i.e. Napalm, Triethylaluminum Metal Incendiaries)	6
Flares, Signals, Simulators, Screening Smoke (other than WP)	4
Pyrotechnics (Select the largest single value)	<u>0</u>
What evidence do you have regarding pyrotechnics?	_____

C. Bulk High Explosives (Not an integral part of convention ordnance;  
uncontainerized.)

	VALUE
Primary or Initiating Explosive (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10
Demolition Charges	10
Secondary Explosives (PETN, Composition A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc).	8
Military Dynamite	6
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc).	3
High Explosives (Select the largest single value)	<u>0</u>
What evidence do you have regarding bulk explosives?	_____

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or  
other conventional ordnance; uncontainerized)

	VALUE
Solid or Liquid Propellants	6
Propellants	<u>0</u>
What evidence do you have regarding propellants?	_____

E. Chemical Warfare Material and Radiological Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification Sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear)	5
Chemical and Radiological (Select the largest single value)	<u>0</u>
What evidence do you have of chemical/radiological OEW?	_____

=====

TOTAL HAZARD SEVERITY VALUE 0  
 (Sum of Largest Values for A through E--Maximum of 61).  
**Apply this value to Table 1 to determine Hazard Severity Category.**

TABLE 1

HAZARD SEVERITY\*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and greater
CRITICAL	II	11 to 20
MARGINAL	III	5 to 10
NEGLIGIBLE	IV	1 to 4
<b>**NONE</b>		0

\* Apply Hazard Severity Category to Table 3.

\*\* If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other related factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF CONTAMINATION  
(Circle all values that apply)

A. Locations of OEW Hazards

	VALUE
On the surface	5
Within Tanks, Pipes, Vessels or Other confined locations	4
Inside walls, ceilings, or other parts of Buildings or Structures	3
Subsurface	2
Location (Select the single largest value)	_____
What evidence do you have regarding location of OEW?	_____
_____	

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 miles	3
1.0 miles to 2.0 miles	2
Over 2 miles	1
Distance (Select the single largest value)	_____
What are the nearest inhabited structures?	_____
_____	

C. Number of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0
Number of Buildings (Select the single largest value)	_____
Narrative _____	_____

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	5
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0
Types of Buildings (Select the largest single value)	_____
Describe types of buildings in the area. _____	_____

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	5
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (of any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated Site	1
a 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility, or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitor, locked entrance, or controlled roadway access to the facility).	0
Accessibility (Select the single largest value)	_____
Describe the site accessibility.	_____
_____	

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Example would be excessive soil erosion by beaches or streams, increasing land development that could reduce distance from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5
None Anticipated	0
Site Dynamics (Select largest value)	_____
Describe the site dynamics.	_____
_____	

=====  
Total Hazard Probability Value  
(Sum of Largest Values for A through F--Maximum of 30) \_\_\_\_\_

**Apply this value to Hazard Probability Table 2 to determine  
Hazard Probability Level.**

TABLE 2

HAZARD PROBABILITY\*

Description	Level	Hazard Probability Value
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

\* Apply Hazard Probability Level to Table 3.



RISK ASSESSMENT PROCEDURES FOR  
 ORDNANCE AND EXPLOSIVE WASTE (OEW) SITES

Site Name	<u>Fort Taylor</u>	Rater's Name	<u>George Ofslager</u>
Site Location	<u>Key West, FL</u>	Phone No.	<u>309-794-5811</u>
DERP Project #	<u>I04FL022701 (Area D)</u>	Organization	<u>CENCR-ED-DN</u>
Date Completed	<u>9 March 1995</u>	RAC Score	<u>5</u>

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, **hazard severity and hazard probability**. Personnel involved in visits to potential OEW sites should view the CEHND video tape entitled "A Life Threatening Encounter: OEW."

Part 1. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPES OF ORDNANCE  
 (Circle all values that apply)

A. Conventional Ordnance and Ammunition	VALUE
Medium/Large Caliber (20 mm and larger)	<u>10</u>
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursterns	6
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1
Conventional Ordnance and Ammunition ( <u>Select the largest single value</u> )	<u>10</u>

What evidence do you have regarding conventional OEW? Area was target area for large caliber guns prior to 1947.

B. Pyrotechnics. (For munitions not described above)

VALUE

Munition (Container) Containing  
White Phosphorous or other  
Pyrophoric Material (i.e.,  
Spontaneously Flammable) 10

Munition Containing a Flame  
or Incendiary Material (i.e. Napalm,  
Triethylaluminum Metal Incendiaries) 6

Flares, Signals, Simulators, Screening  
Smoke (other than WP) 4

Pyrotechnics (Select the largest single value) 0

What evidence do you have regarding pyrotechnics? \_\_\_\_\_

C. Bulk High Explosives (Not an integral part of convention ordnance;  
uncontainerized.)

VALUE

Primary or Initiating Explosive  
(Lead Styphnate, Lead Azide,  
Nitroglycerin, Mercury Azide,  
Mercury Fulminate, Tetracene, etc.) 10

Demolition Charges 10

Secondary Explosives 8  
(PETN, Composition A, B, C,  
Tetryl, TNT, RDX, HMX, HBX,  
Black Powder, etc).

Military Dynamite 6

Less Sensitive Explosives 3  
(Ammonium Nitrate, Explosive D, etc).

High Explosives (Select the largest single value) 0

What evidence do you have regarding bulk explosives? \_\_\_\_\_

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or  
other conventional ordnance; uncontainerized)

VALUE

Solid or Liquid Propellants 6

Propellants 0

What evidence do you have regarding propellants? \_\_\_\_\_

E. Chemical Warfare Material and Radiological Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification Sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear)	5
Chemical and Radiological (Select the largest single value)	<u>0</u>
What evidence do you have of chemical/radiological OEW?	_____

=====

TOTAL HAZARD SEVERITY VALUE 10  
 (Sum of Largest Values for A through E--Maximum of 61).  
**Apply this value to Table 1 to determine Hazard Severity Category.**

TABLE 1  
HAZARD SEVERITY\*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and greater
CRITICAL	II	11 to 20
MARGINAL	III	5 to 10
NEGLIGIBLE	IV	1 to 4
**NONE		0

\* Apply Hazard Severity Category to Table 3.

\*\* If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other related factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF CONTAMINATION  
(Circle all values that apply)

A. Locations of OEW Hazards

	VALUE
On the surface	5
Within Tanks, Pipes, Vessels or Other confined locations	4
Inside walls, ceilings, or other parts of Buildings or Structures	3
Subsurface	2
Location (Select the single largest value)	<u>2</u>
What evidence do you have regarding location of OEW? <u>bottom of Atlantic Ocean.</u>	<u>OEW on the</u>

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 miles	3
1.0 miles to 2.0 miles	2
Over 2 miles	1
Distance (Select the single largest value)	<u>1</u>
What are the nearest inhabited structures? <u>City of Key West</u>	

C. Number of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0
Number of Buildings (Select the single largest value)	<u>0</u>
Narrative _____	

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	5
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0
Types of Buildings (Select the largest single value)	<u>0</u>
Describe types of buildings in the area. _____	

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	5
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (of any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated Site	(1)
a 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility, or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitor, locked entrance, or controlled roadway access to the facility).	0
Accessibility (Select the single largest value)	<u>1</u>
Describe the site accessibility.	<u>Area is on the bottom of Atlantic Ocean.</u>

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Example would be excessive soil erosion by beaches or streams, increasing land development that could reduce distance from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5
None Anticipated	(0)
Site Dynamics (Select largest value)	<u>0</u>
Describe the site dynamics.	<u>Area is stable.</u>

=====  
Total Hazard Probability Value  
(Sum of Largest Values for A through F--Maximum of 30)

4

Apply this value to Hazard Probability Table 2 to determine  
Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY\*

Description	Level	Hazard Probability Value
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

\* Apply Hazard Probability Level to Table 3.



ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
FORT TAYLOR  
KEY WEST, FLORIDA  
PROJECT NUMBER I04FL022701

APPENDIX N

REPORT DISTRIBUTION LIST

**APPENDIX N**

REPORT DISTRIBUTION LIST

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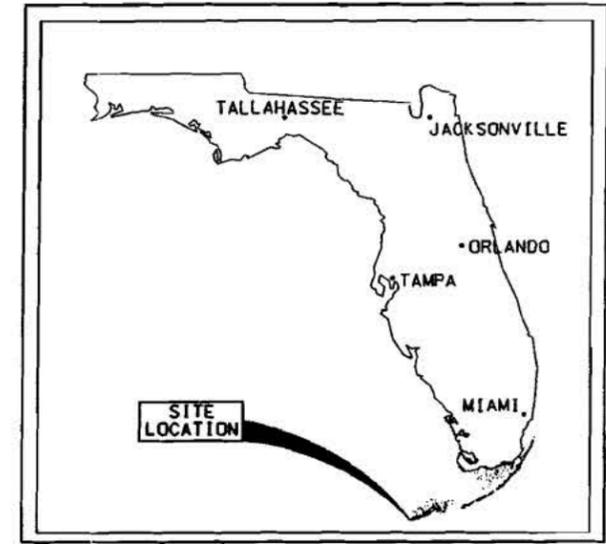
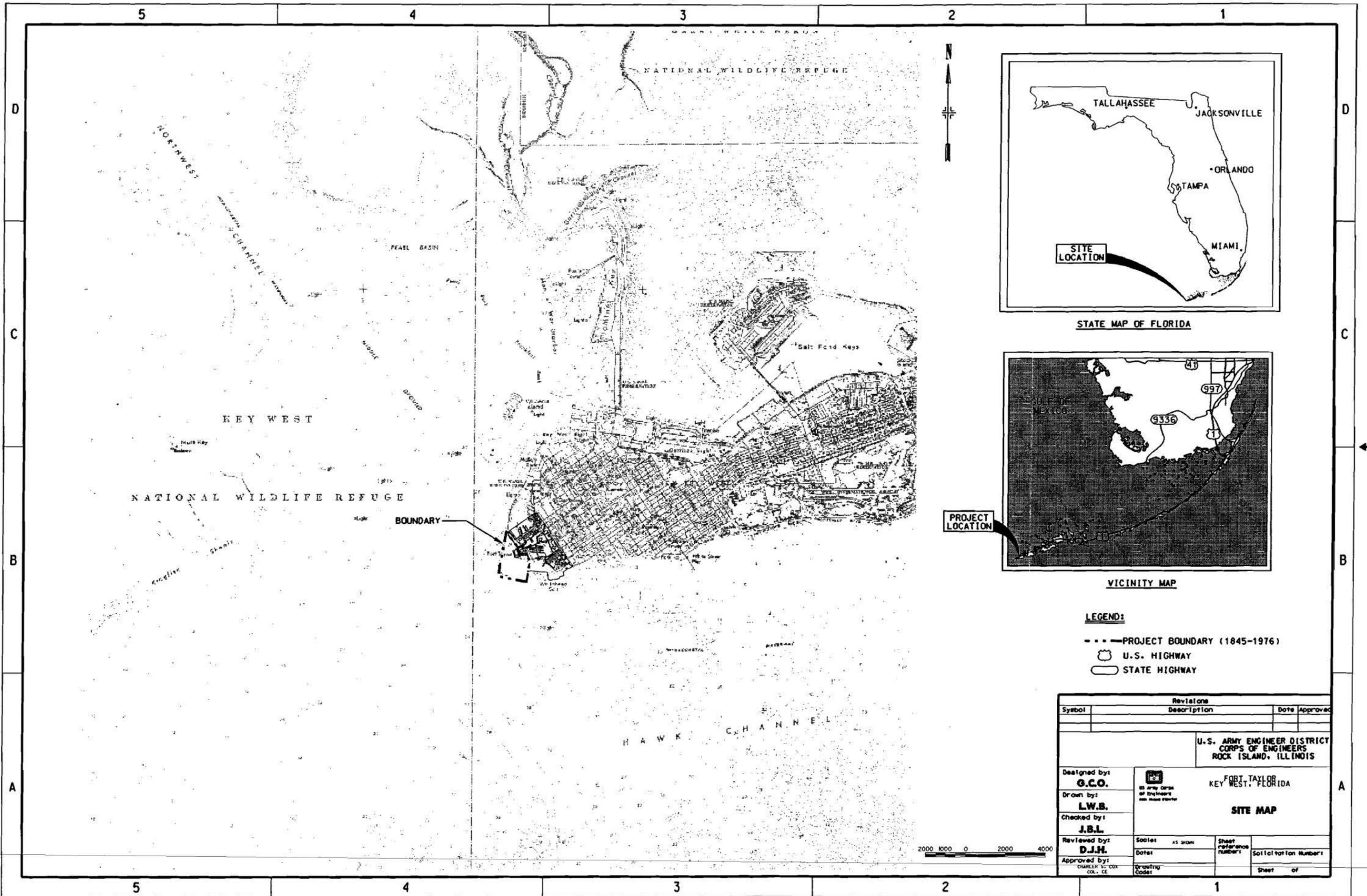
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-ED-D	-	-	1
-ED-DN	-	3	-
-SO	-	-	1
-ED-G	-	-	1
-ED-H	-	-	1
-PD	-	-	1
-RE	-	-	1

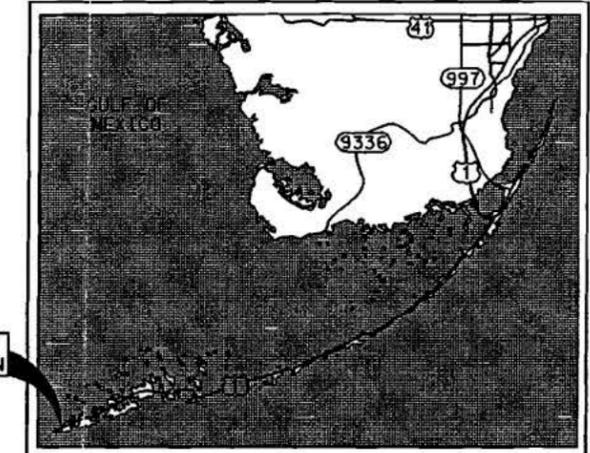
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ORDNANCE AND EXPLOSIVE WASTE  
ARCHIVES SEARCH REPORT  
FOR  
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PROJECT NUMBER I04FL022701

REPORT PLATES



STATE MAP OF FLORIDA



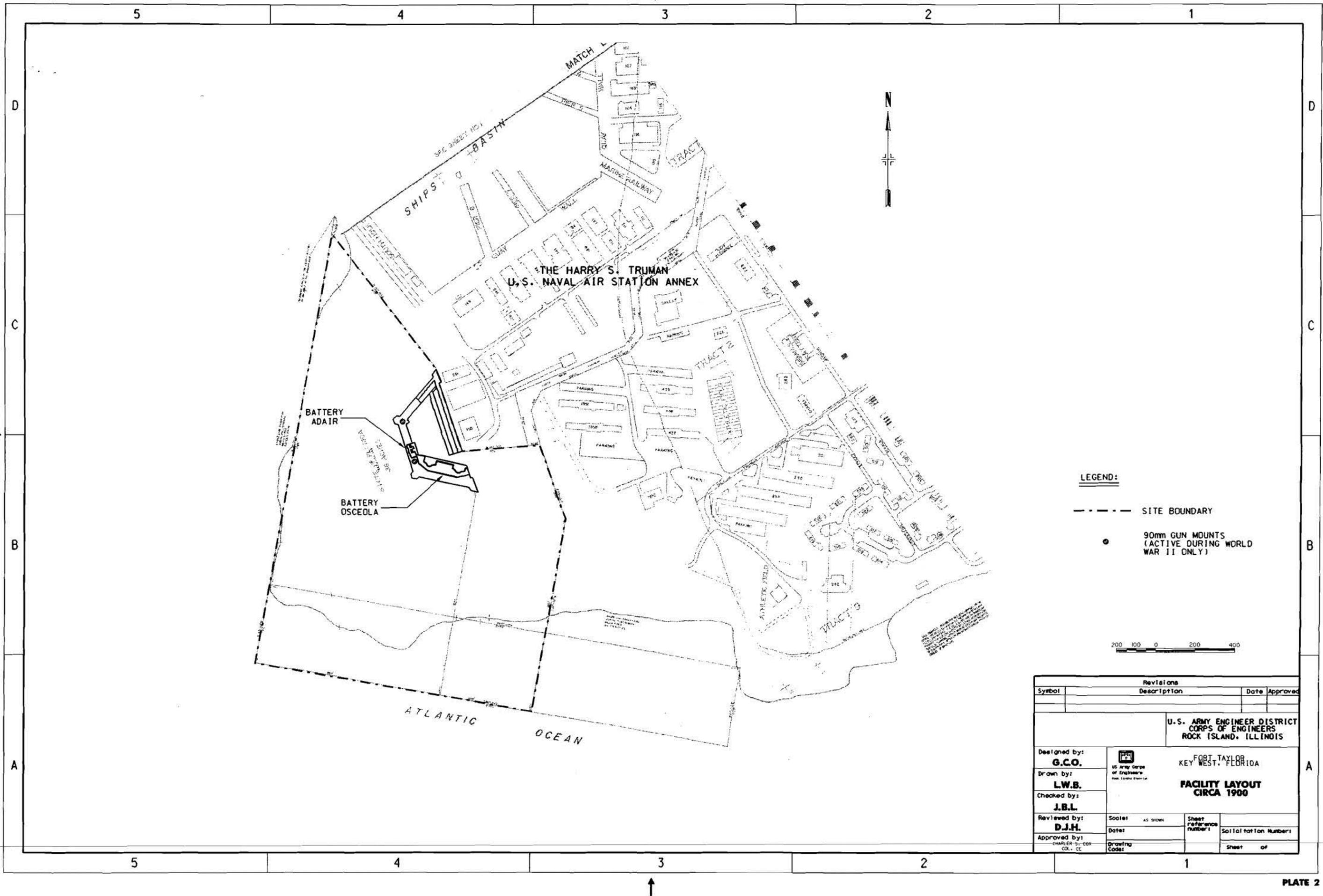
VICINITY MAP

**LEGEND:**

- - - PROJECT BOUNDARY (1845-1976)
- ⬡ U.S. HIGHWAY
- ▭ STATE HIGHWAY



Revisions			
Symbol	Description	Date	Approved
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS ROCK ISLAND, ILLINOIS			
Designed by: <b>G.C.O.</b>	 U.S. ARMY CORPS OF ENGINEERS FOR THIS PROJECT  <b>FORT TAYLOR</b> <b>KEY WEST, FLORIDA</b>  <b>SITE MAP</b>		
Drawn by: <b>L.W.B.</b>			
Checked by: <b>J.B.L.</b>			
Reviewed by: <b>D.J.H.</b>			
Approved by: CHARLES T. COX COL., CE	Scales: AS SHOWN	Sheet reference number:	Solicitation Number:
Drawing Code:			Sheet of

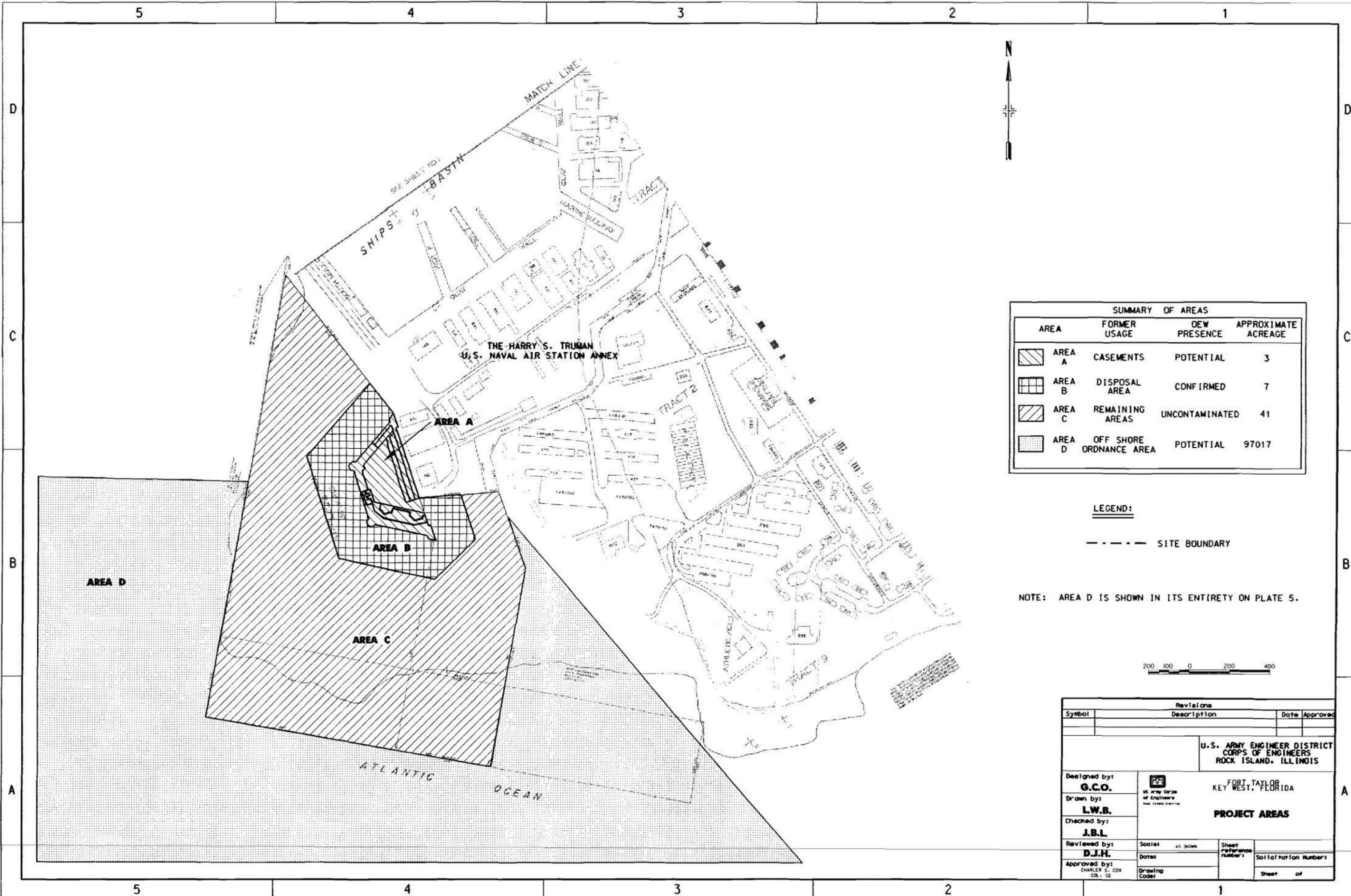


**LEGEND:**

- SITE BOUNDARY
- 90mm GUN MOUNTS (ACTIVE DURING WORLD WAR II ONLY)



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Drawn by: <b>L.W.B.</b>		<b>FACILITY LAYOUT CIRCA 1900</b>		
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**SUMMARY OF AREAS**

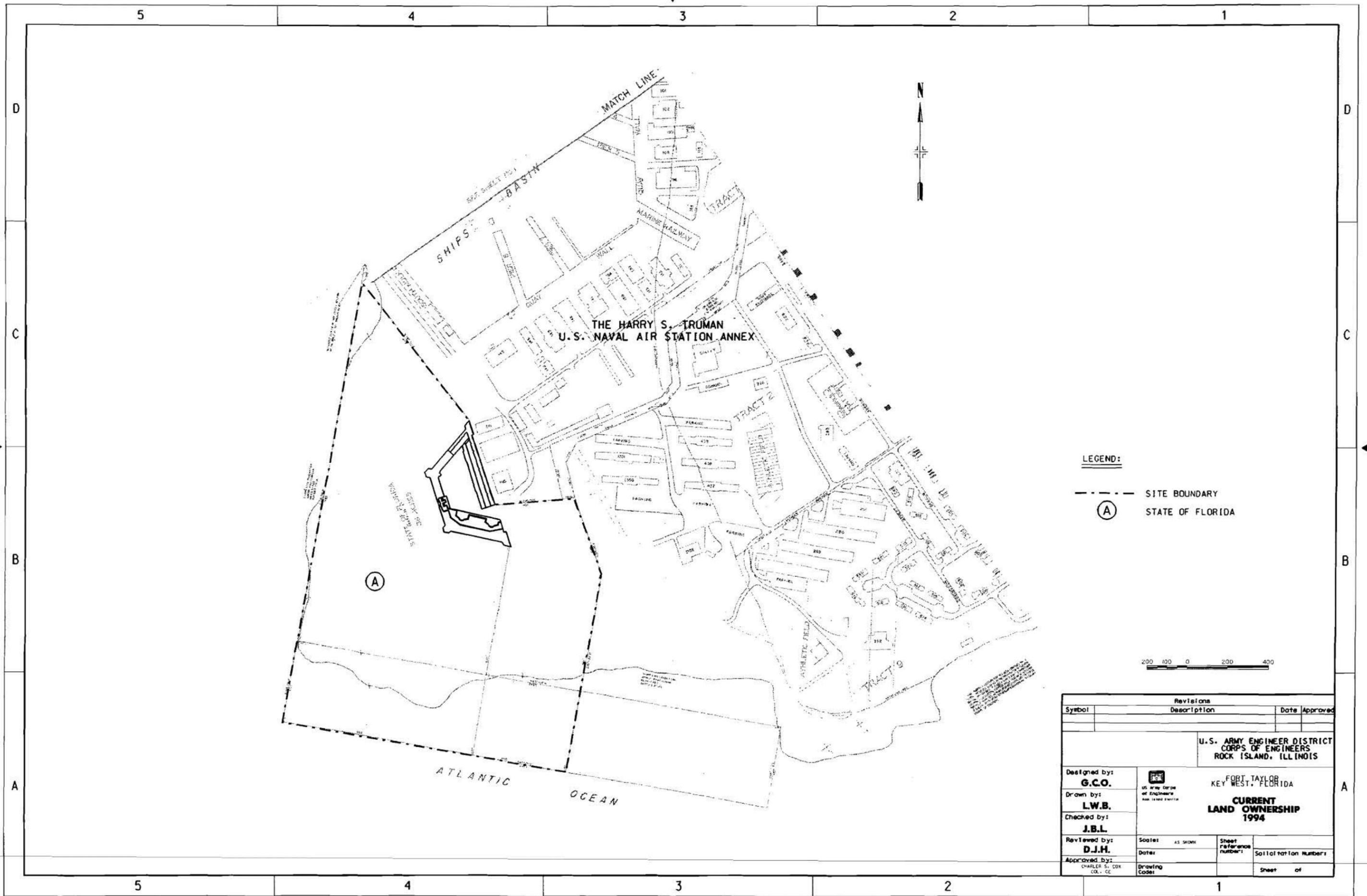
AREA	FORMER USAGE	DEW PRESENCE	APPROXIMATE ACREAGE
AREA A	CASEMENTS	POTENTIAL	3
AREA B	DISPOSAL AREA	CONFIRMED	7
AREA C	REMAINING AREAS	UNCONTAMINATED	41
AREA D	OFF SHORE ORDNANCE AREA	POTENTIAL	97017

**LEGEND:**  
 - - - - - SITE BOUNDARY

NOTE: AREA D IS SHOWN IN ITS ENTIRETY ON PLATE 5.



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Approved by: CHARLES S. COX COL. CE	Date:	Drawing Code:	Sheet of



**LEGEND:**

- SITE BOUNDARY
- (A) STATE OF FLORIDA



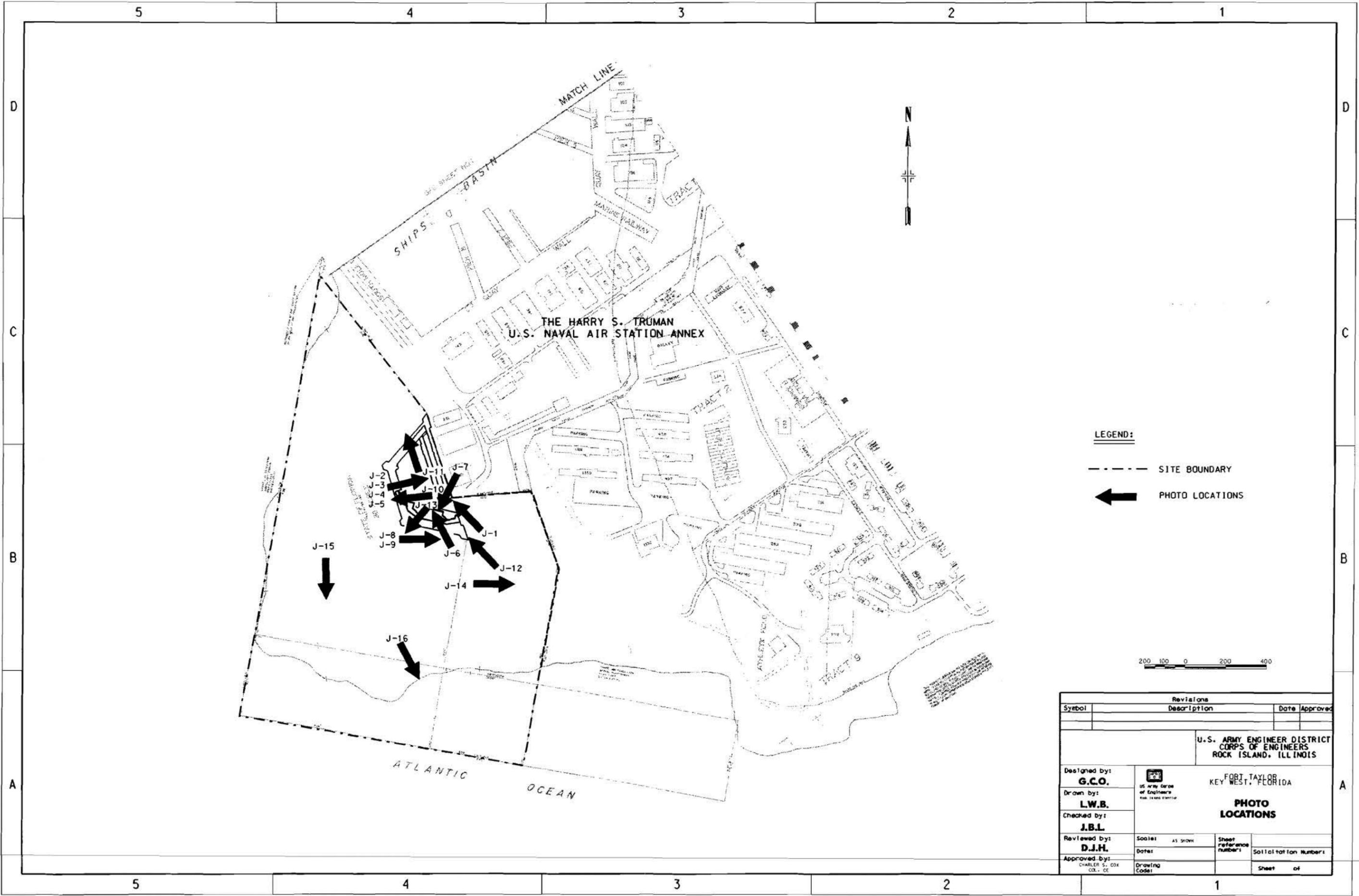
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NOTE: SEE PLATE 3 FOR AREAS A-B. AND C.



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