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

Fort Flagler State Park

Jefferson County, Washington
Project Number F10WA031602

April 2005

RESTORATION INFORMATION MANAGEMENT SYSTEM
FORMERLY USED DEFENSE SITES
PROJECT FACT SHEET
SEPTEMBER 2003
TAG REVIEW: 5 MAY 2004

1. SITE NAME: FORT FLAGLER STATE PARK

SITE NUMBER: F10WA031600

LOCATION:

CITY:
COUNTY: JEFFERSON
STATE: WASHINGTON

PROJECT NUMBER: F10WA031602

CATEGORY: MMRP

INPR RAC:

ASR RAC: 3

TAG RAC: 2

2. **POC's:**

GEOGRAPHIC DISTRICT:
Name: Jonathon Maas
Office: CENWS-PM-EM
Phone: 206-764-6475

GEOGRAPHIC DIVISION:
Name: David Nusz
Office: CENWD-MT-MH
Phone: 402-697-2503

HEADQUARTERS:
Name: Dale Moeller
Office: CEMP-RF
Phone: 202-761-4694

ASR/INPR TEAM:
Name: Bradford McCowan
Office: CEHNC-OE-CX
Phone: 256-895-1174

ASR SUPPORT DISTRICT:
Name: George Ofslager
Office: CEMVR-ED-DO
Phone: 309-794-5502

ASR TECHNICAL REVIEWER:
Name: Daniel Linehan
Office: SJMAC-ESM
Phone: 918-420-8867

3. **SITE DESCRIPTION:**

a. Fort Flagler is located on Marrowstone Island, Jefferson County, Washington, two and a half miles north of Port Townsend. It consisted of 809 acres that were identified as fortifications and training land. The batteries are still present and in good repair. The original cantonment buildings are used as lodging for park guests. The target butt for the rifle range is present but in disrepair.

b. Fort Flagler occupies a peninsula bordered by Puget Sound, Port Townsend Bay, Admiralty Inlet, and Kilisut Harbor. The shoreline consists of beaches and steep-sided bluffs. A mixed evergreen / deciduous forest covers most of the site.

c. No evidence of MEC was noted by the assessment team during the site inspection.

d. Based on the INPR and Site visits, a Time Critical Removal Action was conducted in March 1992. MEC treated included 2.36 Rockets and live training hand grenade.

4. **SITE HISTORY:**

a. Originally the site was an unimproved military reservation set aside from the public domain in 1866. The first coastal defense batteries were constructed in 1897. From 1900 to 1946 the installation was used as a coastal defense installation. In 1950, all harbor defenses around Puget Sound were abolished. The installation was used for amphibious training and maneuvers.

b. The original site grew from 550 acres to 809 acres by withdrawal, purchase and condemnation. In 1953, Ft Flagler was closed and considered excess to the needs of DOD. All the land was transferred to the State of Washington (used as a State Park) with the exception of 4 acres owned and operated by the USGS as an experimental station.

5. **PROJECT DESCRIPTION:**

Area A:

Size: 25.5 acres
Former Usage: Rocket Range
Present Usage: State Park
Possible End Use: Same
OE Presence:
Confirmed: No
Potential: No
ASR Recommends: RAC 5 NDAI
HNC Safety: RAC 5

Area B:

Size: 15.0 acres
Former Usage: Rifle Range
Present Usage: State Park
Possible End Use: Same
OE Presence:
Confirmed: No
Potential: No
ASR Recommends: RAC 5 NDAI
HNC Safety: RAC 5

Area C:

Size: 31.0 acres
Former Usage: Transition Range
Present Usage: State Park
Possible End Use: Same
OE Presence:
Confirmed: No
Potential: No
ASR Recommends: RAC 5 NDAI
HNC Safety: RAC 5 (5)

Area D:

Size: 1.0 acres
Former Usage: Disposal Site
Present Usage: State Park
Possible End Use: Same
OE Presence:
Confirmed: Yes
Type: Small Arms Cartridges
Potential: Yes
Type: Small Arms Cartridges

ASR Recommends: RAC 3 EE/CA
HNC Safety: No Recommendation

Area E:

Size: 737.0 acres
Former Usage: Remaining Lands
Present Usage: Sate Park; USGS Station
Possible End Use: Same
OE Presence:
Confirmed: NO
Potential: No
ASR Recommends: RAC 5 NDAI
HNC Safety: RAC 5

Area F:

Size: 18,686.0 acres
Former Usage: Offshore Ordnance Area
Present Usage: Open Water
Possible End Use: Same
OE Presence:
Confirmed: No
Potential: Yes
Type: Artillery projectiles
ASR Recommends: RAC 5 NDAI
HNC Safety: No Recommendation

6. **Current Status:**

The Archives Search Report for Ft. Flagler State Park was completed by the U.S. Army Corps of Engineers, Rock Island District in September 2003.

7. **STRATEGY:**

RI/FS

8. **ISSUES AND CONCERNS:**

a. Based on the investigation of historical records reviewed, the results of the site survey and interviews, there is no evidence of CWM being stored or used at this site.

b. Other than occasional transient bald eagles, there are no known protected species on this site. An on-site inspection by the appropriate federal and state personnel may be necessary to verify the presence, absence or location of listed species, or natural communities.

c. The RAC scores are based on using the revised form dated 29 October 2003. Isolation is no longer used as a factor.

d. **The Huntsville Center Technical Advisory Group met and evaluated this ASR on 5 May 2004. The consensus was RAC 2, RI/FS for Area A; RAC 3, RI/FS for Area D; and RAC 5, NDAI for Areas B, C, E, F. No public exposure pathway exists in Area F.**

9. **SCHEDULE SUMMARY:**

Phase	Orig. Start	Sch. Start	Actual Start	Orig. Comp.	Sch. Comp.	Actual Comp.

10. **FUNDING/BUDGET SUMMARY:**

Year	Phase	EXEC FOA	IN House Required	Contract Required	Funds Obligated

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

RAC FORMS

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 29 October 2003)

Property Name:	Ft. Flagler State Park	Rater's Name:	Dan Linehan
Property Location:	Jefferson County, WA	Phone Number:	918-420-8867
DERP Project #:	F10WA031602	Organization:	SJMAC-ESM
Property Type:	Coastal Defense / Maneuver Rocket Range (Area A)	Date Completed:	5 April 2004
Score:	2		

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMR hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

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

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	VALUE	
Projectiles, explosive (20 millimeter and larger)	10	☐
Bombs, explosive	10	☐
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☒
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuses, boosters, bursters	6	☐
Practice ordnance (w/ spotting charges, other than bombs)	4	☒
Small arms, complete round (.50 cal or less)	1	☐
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☐
Conventional ordnance and ammunition (enter largest single value checked)		10

What evidence do you have regarding conventional unexploded ordnance? A removal action was performed on this range in 1992 see Table 2-2 for MEC recovered from the range. Both practice and high explosive 2.36" rockets were located and removed. This range also contains expended small arms projectiles.

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4☐
Pyrotechnics (enter the single largest value checked)	0

What evidence do you have regarding pyrotechnics? None

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; un-containerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3☐
Bulk Explosives (HE) (enter the single largest value checked)	0

What evidence do you have regarding bulk explosives? None

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

	VALUE
Solid or liquid propellants	6☐
Bulk Propellants (select 6 or 0)	0

What evidence do you have regarding bulk propellants? None

E. Recovered Chemical Warfare Materiel (RCWM), Weaponized Industrial Chemicals and Radiological Materiel:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25☐
Chemical Agent Identification Sets	20☐
Radiological Materiel (If rad waste is identified please call the HTRW–CX at 402-697-2555)	15☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10☐
Riot Control Agents (vomiting, tear)	5☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? None

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TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, maximum of 61) 10
Apply this value to Table 1 to determine Hazard Severity Category

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Property Name:
Project Number:
Property Type:

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.
**If hazard severity value is 0, complete Part II of this form. Then 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 rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DOD) site.

AREA, EXTENT, ACCESSIBILITY OF OE HAZARD (Check all that apply)

A. Locations of OE hazards:

	VALUE
On the surface	5 ☐
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒
Location (enter the single largest value checked)	2

What evidence do you have regarding the location of OE? Any MEC would be subsurface.

Property Name:
Project Number:
Property Type:

B. Distance to nearest inhabited location/structure likely to be at risk from OE hazard (road, park, playground, building, etc.).

	VALUE
Less than 1,250 feet	5☒
1,250 feet to 0.5 mile	4☐
0.5 mile to 1.0 mile	3☐
1.0 mile to 2.0 Miles	2☐
Over 2 miles	1☐
Distance (enter the single largest value checked)	5

What are the nearest inhabited structures/buildings? Picnic Tables, State Park Buildings, Camp Sites.

C. Number(s) of building(s) within a 2-mile radius measured from the OE hazard area, not the installation boundary.

	VALUE
26 and over	5☒
16 to 25	4☐
11 to 16	3☐
6 to 10	2☐
1 to 5	1☐
0	0☐
Number of buildings (enter the single largest value checked)	5

Narrative: There are well over 26 buildings within a two mile radius.

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

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5☒
Industrial, warehouse, etc.	4☐
Agricultural, forestry, etc.	3☐
Detention, correctional	2☐
No buildings	0☐
Types of buildings (enter the single largest value checked)	5

Describe the types of buildings: Private residences, State Park Buildings.

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

	VALUE
No barrier nor 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 (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☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0☐
Accessibility (enter the single largest value checked)	5

Describe the site accessibility: There is no barrier.

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

	VALUE
Expected	5 ☐
Not anticipated	0 ☒
Site Dynamics (enter the single largest value checked)	0

Describe the site dynamics: None expected.

TOTAL HAZARD PROBABILITY VALUE 22
(Sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY
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.

Part III - Risk Assessment. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☐	2 ☒	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

None (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4	Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMR projects and the process to be followed for project execution.
RAC 5	Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

PART IV - Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

This RAC form applies to the rocket range that was remediated by Seattle District in 1992.During the clearance all hazardous material was removed from this range. This included both HE and practice rockets. This range also appears to have been used as a transition range for small arms; expended small arms projectiles are likely to be subsurface.

Property Name:
Project Number:
Property Type:

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 29 October 2003)

Property Name:	Ft. Flagler State Park	Rater's Name:	Dan Linehan
Property Location:	Jefferson County, WA	Phone Number:	918-420-8867
DERP Project #:	F10WA031602	Organization:	SJMAC-ESM
Property Type:	Coastal Defense / Manuever; Rifle Range (Area B), Transition Range (Area C)	Date Completed:	5 April 2004
Score:	5		

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMR hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

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

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	VALUE	
Projectiles, explosive (20 millimeter and larger)	10	☐
Bombs, explosive	10	☐
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☐
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuses, boosters, bursters	6	☐
Practice ordnance (w/ spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☐
Small arms, expended (.50 cal or less)	0	☒
Practice ordnance (w/o spotting charges)	0	☒
Conventional ordnance and ammunition (enter largest single value checked)		0

What evidence do you have regarding conventional unexploded ordnance? The post contained small arms ranges.

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4☐
Pyrotechnics (enter the single largest value checked)	0

What evidence do you have regarding pyrotechnics? None

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; un-containerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3☐
Bulk Explosives (HE)(enter the single largest value checked)	0

What evidence do you have regarding bulk explosives? None

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

	VALUE
Solid or liquid propellants	6☐
Bulk Propellants (select 6 or 0)	0

What evidence do you have regarding bulk propellants? None

E. Recovered Chemical Warfare Materiel (RCWM), Weaponized Industrial Chemicals and Radiological Materiel:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25☐
Chemical Agent Identification Sets	20☐
Radiological Materiel (If rad waste is identified please call the HTRW–CX at 402-697-2555)	15☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10☐
Riot Control Agents (vomiting, tear)	5☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? None

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TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, maximum of 61) 0
Apply this value to Table 1 to determine Hazard Severity Category

---

Property Name:
Project Number:
Property Type:

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☐	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☒	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.
**If hazard severity value is 0, complete Part II of this form. Then 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 rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DOD) site.

AREA, EXTENT, ACCESSIBILITY OF OE HAZARD (Check all that apply)

A. Locations of OE hazards:

	VALUE
On the surface	5 ☐
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒
Location (enter the single largest value checked)	2

What evidence do you have regarding the location of OE? Any OE is subsurface.

Property Name:
Project Number:
Property Type:

B. Distance to nearest inhabited location/structure likely to be at risk from OE hazard (road, park, playground, building, etc.).

	VALUE
Less than 1,250 feet	5☒
1,250 feet to 0.5 mile	4☐
0.5 mile to 1.0 mile	3☐
1.0 mile to 2.0 Miles	2☐
Over 2 miles	1☐
Distance (enter the single largest value checked)	5

What are the nearest inhabited structures/buildings? Picnic Tables, State Park Buildings, Camp Sites.

C. Number(s) of building(s) within a 2-mile radius measured from the OE hazard area, not the installation boundary.

	VALUE
26 and over	5☒
16 to 25	4☐
11 to 16	3☐
6 to 10	2☐
1 to 5	1☐
0	0☐
Number of buildings (enter the single largest value checked)	5

Narrative: There are well over 26 buildings within a two mile radius.

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

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5☒
Industrial, warehouse, etc.	4☐
Agricultural, forestry, etc.	3☐
Detention, correctional	2☐
No buildings	0☐
Types of buildings (enter the single largest value checked)	5

Describe the types of buildings: Private residences, State Park Buildings.

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

	VALUE
No barrier nor 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 (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☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0☐
Accessibility (enter the single largest value checked)	5

Describe the site accessibility: There is no barrier.

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

	VALUE
Expected	5☐
Not anticipated	0☒
Site Dynamics (enter the single largest value checked)	0

Describe the site dynamics: None expected.

TOTAL HAZARD PROBABILITY VALUE 22
(Sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY
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.

Part III - Risk Assessment. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☐	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

None (V) = RAC 5 ☒

RISK ASSESSMENT CODE (RAC)

RAC 1-4	Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMR projects and the process to be followed for project execution.
RAC 5	Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

PART IV - Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.
This RAC form applies to the small arms ranges at Ft Flagler; expended small arms projectiles are likely to be subsurface.

Property Name:
Project Number:
Property Type:

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 29 October 2003)

Property Name:	Ft. Flagler State Park	Rater's Name:	Dan Linehan
Property Location:	Jefferson County, WA	Phone Number:	918-420-8867
DERP Project #:	F10WA031602	Organization:	SJMAC-ESM
Property Type:	Coastal Defense / Manuever; Disposal Site (Area D)	Date Completed:	5 April 2004
Score:	3		

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMR hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

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

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	VALUE	
Projectiles, explosive (20 millimeter and larger)	10	☐
Bombs, explosive	10	☐
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☐
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuses, boosters, bursters	6	☐
Practice ordnance (w/ spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☒
Small arms, expended (.50 cal or less)	0	☐
Practice ordnance (w/o spotting charges)	0	☐
Conventional ordnance and ammunition (enter largest single value checked)		1

What evidence do you have regarding conventional unexploded ordnance? Complete .30 caliber cartridges have been found in this area.

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4☐
Pyrotechnics (enter the single largest value checked)	0

What evidence do you have regarding pyrotechnics? None

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; un-containerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3☐
Bulk Explosives (HE) (enter the single largest value checked)	0

What evidence do you have regarding bulk explosives? None

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

	VALUE
Solid or liquid propellants	6☐
Bulk Propellants (select 6 or 0)	0

What evidence do you have regarding bulk propellants? None

E. Recovered Chemical Warfare Materiel (RCWM), Weaponized Industrial Chemicals and Radiological Materiel:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25☐
Chemical Agent Identification Sets	20☐
Radiological Materiel (If rad waste is identified please call the HTRW–CX at 402-697-2555)	15☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10☐
Riot Control Agents (vomiting, tear)	5☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? None

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TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, maximum of 61) 1
Apply this value to Table 1 to determine Hazard Severity Category

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Property Name:
Project Number:
Property Type:

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☐	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☒	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.
**If hazard severity value is 0, complete Part II of this form. Then 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 rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DOD) site.

AREA, EXTENT, ACCESSIBILITY OF OE HAZARD (Check all that apply)

A. Locations of OE hazards:

	VALUE
On the surface	5 ☐
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒
Location (enter the single largest value checked)	2

What evidence do you have regarding the location of OE? Any OE is subsurface.

Property Name:
Project Number:
Property Type:

B. Distance to nearest inhabited location/structure likely to be at risk from OE hazard (road, park, playground, building, etc.).

	VALUE
Less than 1,250 feet	5☒
1,250 feet to 0.5 mile	4☐
0.5 mile to 1.0 mile	3☐
1.0 mile to 2.0 Miles	2☐
Over 2 miles	1☐
Distance (enter the single largest value checked)	5

What are the nearest inhabited structures/buildings? Picnic Tables, State Park Buildings, Camp Sites.

C. Number(s) of building(s) within a 2-mile radius measured from the OE hazard area, not the installation boundary.

	VALUE
26 and over	5☒
16 to 25	4☐
11 to 16	3☐
6 to 10	2☐
1 to 5	1☐
0	0☐
Number of buildings (enter the single largest value checked)	5

Narrative: There are well over 26 buildings within a two mile radius.

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

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5☒
Industrial, warehouse, etc.	4☐
Agricultural, forestry, etc.	3☐
Detention, correctional	2☐
No buildings	0☐
Types of buildings (enter the single largest value checked)	5

Describe the types of buildings: Private residences, State Park Buildings.

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

	VALUE
No barrier nor 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 (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☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0☐
Accessibility (enter the single largest value checked)	5

Describe the site accessibility: There is no barrier.

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

	VALUE
Expected	5☒
Not anticipated	0☐
Site Dynamics (enter the single largest value checked)	5

Describe the site dynamics: Wave action could uncover more munitions.

TOTAL HAZARD PROBABILITY VALUE 27
(Sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY
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.

Part III - Risk Assessment. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☐	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☒	4 ☐	4 ☐	4 ☐	4 ☐

None (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMR projects and the process to be followed for project execution.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

PART IV - Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.
This area is a disposal site located on the beach at Ft Flagler State Park. Individuals have gathered artifacts from the fort in the past. There was an instance when a park volunteer found two 5-round clips of .30 caliber ammunition.

Property Name:
Project Number:
Property Type:

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 29 October 2003)

Property Name:	Ft. Flagler State Park	Rater's Name:	Dan Linehan
Property Location:	Jefferson County, WA	Phone Number:	918-420-8867
DERP Project #:	F10WA031602	Organization:	SJMAC-ESM
Property Type:	Coastal Defense / Manuever; Remaining Land (Area E)	Date Completed:	5 April 2004
Score:	5		

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMR hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

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

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	VALUE
Projectiles, explosive (20 millimeter and larger)	10 ☐
Bombs, explosive	10 ☐
Grenades, hand or rifle, explosive	10 ☐
Landmine, explosive	10 ☐
Rockets, guided missile, explosive	10 ☐
Other Explosive item not previously stated	10 ☐
Bomb, practice (w/spotting charge)	6 ☐
Detonators, blasting caps, fuses, boosters, bursters	6 ☐
Practice ordnance (w/ spotting charges, other than bombs)	4 ☐
Small arms, complete round (.50 cal or less)	1 ☐
Small arms, expended (.50 cal or less)	0 ☐
Practice ordnance (w/o spotting charges)	0 ☐
Conventional ordnance and ammunition (enter largest single value checked)	0

What evidence do you have regarding conventional unexploded ordnance? None

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4☐
Pyrotechnics (enter the single largest value checked)	0

What evidence do you have regarding pyrotechnics? None

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; un-containerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3☐
Bulk Explosives (HE) (enter the single largest value checked)	0

What evidence do you have regarding bulk explosives? None

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

	VALUE
Solid or liquid propellants	6☐
Bulk Propellants (select 6 or 0)	0

What evidence do you have regarding bulk propellants? None

E. Recovered Chemical Warfare Materiel (RCWM), Weaponized Industrial Chemicals and Radiological Materiel:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25☐
Chemical Agent Identification Sets	20☐
Radiological Materiel (If rad waste is identified please call the HTRW–CX at 402-697-2555)	15☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10☐
Riot Control Agents (vomiting, tear)	5☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? None

---

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, maximum of 61) 0
Apply this value to Table 1 to determine Hazard Severity Category

---

Property Name:
Project Number:
Property Type:

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☐	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☒	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.
**If hazard severity value is 0, complete Part II of this form. Then 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 rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DOD) site.

AREA, EXTENT, ACCESSIBILITY OF OE HAZARD (Check all that apply)

A. Locations of OE hazards:

	VALUE
On the surface	5☐
Within tanks, pipes, vessels, or other confined areas	4☐
Inside walls, ceilings, or other building/structure	3☐
Subsurface	2☒
Location (enter the single largest value checked)	2

What evidence do you have regarding the location of OE? Any OE is subsurface.

B. Distance to nearest inhabited location/structure likely to be at risk from OE hazard (road, park, playground, building, etc.).

	VALUE
Less than 1,250 feet	5☒
1,250 feet to 0.5 mile	4☐
0.5 mile to 1.0 mile	3☐
1.0 mile to 2.0 Miles	2☐
Over 2 miles	1☐
Distance (enter the single largest value checked)	5

What are the nearest inhabited structures/buildings? Picnic Tables, State Park Buildings, Camp Sites.

C. Number(s) of building(s) within a 2-mile radius measured from the OE hazard area, not the installation boundary.

	VALUE
26 and over	5☒
16 to 25	4☐
11 to 16	3☐
6 to 10	2☐
1 to 5	1☐
0	0☐
Number of buildings (enter the single largest value checked)	5

Narrative: There are well over 26 buildings within a two mile radius.

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

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5☒
Industrial, warehouse, etc.	4☐
Agricultural, forestry, etc.	3☐
Detention, correctional	2☐
No buildings	0☐
Types of buildings (enter the single largest value checked)	5

Describe the types of buildings: Private residences, State Park Buildings.

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

	VALUE
No barrier nor 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 (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☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0☐
Accessibility (enter the single largest value checked)	5

Describe the site accessibility: There is no barrier.

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

	VALUE
Expected	5☐
Not anticipated	0☒
Site Dynamics (enter the single largest value checked)	0

Describe the site dynamics: None expected.

TOTAL HAZARD PROBABILITY VALUE 22
(Sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY
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.

Part III - Risk Assessment. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☐	2 ☐	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

None (V) = RAC 5 ☒

RISK ASSESSMENT CODE (RAC)

RAC 1-4	Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMR projects and the process to be followed for project execution.
RAC 5	Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

PART IV - Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.
This RAC form applies to the remaining land of Ft Flagler. There is no evidence that any OE existed in this area.

Property Name:
Project Number:
Property Type:

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 29 October 2003)

Property Name:	Ft. Flagler State Park	Rater's Name:	Dan Linehan
Property Location:	Jefferson County, WA	Phone Number:	918-420-8867
DERP Project #:	F10WA031602	Organization:	SJMAC-ESM
Property Type:	Coastal Defense / Manuever; Offshore Ordnance Area (Area F)	Date Completed:	5 April 2004
Score:	3		

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMR hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

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

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	VALUE	
Projectiles, explosive (20 millimeter and larger)	10	☒
Bombs, explosive	10	☐
Grenades, hand or rifle, explosive	10	☐
Landmine, explosive	10	☐
Rockets, guided missile, explosive	10	☐
Other Explosive item not previously stated	10	☐
Bomb, practice (w/spotting charge)	6	☐
Detonators, blasting caps, fuses, boosters, bursters	6	☐
Practice ordnance (w/ spotting charges, other than bombs)	4	☐
Small arms, complete round (.50 cal or less)	1	☐
Small arms, expended (.50 cal or less)	0	☐
Practice ordnance (w/o spotting charges)	0	☐
Conventional ordnance and ammunition (enter largest single value checked)		10

What evidence do you have regarding conventional unexploded ordnance? Coastal Artillery and AAA may have fired explosive, proof, and practice projectiles into the Puget Sound.

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4☐
Pyrotechnics (enter the single largest value checked)	0

What evidence do you have regarding pyrotechnics? None

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; un-containerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3☐
Bulk Explosives (HE) (enter the single largest value checked)	0

What evidence do you have regarding bulk explosives? None

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

	VALUE
Solid or liquid propellants	6☐
Bulk Propellants (select 6 or 0)	0

What evidence do you have regarding bulk propellants? None

E. Recovered Chemical Warfare Materiel (RCWM), Weaponized Industrial Chemicals and Radiological Materiel:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25☐
Chemical Agent Identification Sets	20☐
Radiological Materiel (If rad waste is identified please call the HTRW–CX at 402-697-2555)	15☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10☐
Riot Control Agents (vomiting, tear)	5☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? None

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TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, maximum of 61) 10
Apply this value to Table 1 to determine Hazard Severity Category

---

Property Name:
Project Number:
Property Type:

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.
**If hazard severity value is 0, complete Part II of this form. Then 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 rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DOD) site.

AREA, EXTENT, ACCESSIBILITY OF OE HAZARD (Check all that apply)

A. Locations of OE hazards:

	VALUE
On the surface	5 ☐
Within tanks, pipes, vessels, or other confined areas	4 ☐
Inside walls, ceilings, or other building/structure	3 ☐
Subsurface	2 ☒
Location (enter the single largest value checked)	2

What evidence do you have regarding the location of OE? Any OE is subsurface.

Property Name:
Project Number:
Property Type:

B. Distance to nearest inhabited location/structure likely to be at risk from OE hazard (road, park, playground, building, etc.).

	VALUE
Less than 1,250 feet	5☐
1,250 feet to 0.5 mile	4☐
0.5 mile to 1.0 mile	3☐
1.0 mile to 2.0 Miles	2☐
Over 2 miles	1☐
Distance (enter the single largest value checked)	_____

What are the nearest inhabited structures/buildings? The RAC Form supplied with the ASR was incomplete.

C. Number(s) of building(s) within a 2-mile radius measured from the OE hazard area, not the installation boundary.

	VALUE
26 and over	5☐
16 to 25	4☐
11 to 16	3☐
6 to 10	2☐
1 to 5	1☐
0	0☐
Number of buildings (enter the single largest value checked)	_____

Narrative: The RAC Form supplied with the ASR was incomplete.

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

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5☐
Industrial, warehouse, etc.	4☐
Agricultural, forestry, etc.	3☐
Detention, correctional	2☐
No buildings	0☐
Types of buildings (enter the single largest value checked)	____

Describe the types of buildings: The RAC Form supplied with the ASR was incomplete.

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

	VALUE
No barrier nor 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 (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☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0☐
Accessibility (enter the single largest value checked)	5

Describe the site accessibility: There is no barrier.

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

	VALUE
Expected	5☐
Not anticipated	0☒
Site Dynamics (enter the single largest value checked)	0

Describe the site dynamics: None expected.

TOTAL HAZARD PROBABILITY VALUE 19
(Sum of largest values for A through F (maximum of 30). Apply this value to Hazard Probability Table 2 to determine the Hazard Probability Level.

TABLE 2
HAZARD PROBABILITY*

DESCRIPTION VALUE	LEVEL	HAZARD PROBABILITY
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.

Part III - Risk Assessment. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☐	2 ☐	3 ☒	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

None (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4	Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMR projects and the process to be followed for project execution.
RAC 5	Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

PART IV - Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.
This area scores a RAC 3 if it is determined to qualify as a "public exposure pathway". Otherwise, a RAC 5 is appropriate since it is current policy that tidal water more than 100 yards from the shoreline will not be remediated. The probability score was transcribed from the original RAC form.

Property Name:
Project Number:
Property Type:

EXECUTIVE SUMMARY

This report presents a historical records search and site inspection for the presence of ordnance and explosives (OE) located at Fort Flagler. The investigation was performed under the authority of the Defense Environmental Restoration Program for Formerly Used Defense Sites. The investigation identified one small parcel of land, one acre, which was used as a disposal site and contains a small amount of unexpended small arms cartridges.

Fort Flagler is located on Marrowstone Island and is surrounded on three sides by salt water. The shoreline has steep-sided bluffs and the maximum elevation is 140 feet. A mixed evergreen/deciduous forest covers most of the site. The site is currently used as a state park with a small portion used as a USGS experimental station. Other than occasional transient bald eagles, there are no known protected species on this site.

Originally, this site was an unimproved military reservation consisting of 550 acres of land set aside from the public domain in 1866. Construction of the first coastal defense batteries did not begin until 1897 and the first troops arrived in 1899. As construction progressed, addition land was acquired by withdrawal, purchase and condemnation until the original reservation had grown to a size of 809 acres.

From 1900 to 1946 the site was used as a costal defense installation. Over time a number of different calibers of artillery were present. About the time construction began at the fort, the Treasury Department began construction of a lighthouse located on the northeast shore of the installation. During the Second World War the Navy operated an underwater listening station, but the fort remained primarily a coast artillery installation. In 1950, all harbor defenses around Puget Sound were abolished. The post was used for amphibious training and maneuvers after the coast artillery weapons were removed.

In 1953, Fort Flagler was closed and considered excess to the needs of the Department of Defense. The Treasury Department retained the land containing the lighthouse and the rest of the property was eventually transferred to the State of Washington for use as a state park. During the transfer process, it was noted that a particular parcel (Area A: Rocket Range of this report) contained unexploded tank rockets. Unsuccessful attempts were made in the 1950s to retrieve these rockets. This parcel was the subject of a 1992 removal action.

The assessment team visited Fort Flagler in July 2003. After reviewing historical documents and interviewing knowledgeable individuals, a visual inspection of the site was made. The assessment team concluded that a small parcel contained discarded small arms cartridges (Area D: Disposal Area).

The Huntsville Center Technical Advisory Group (TAG) evaluated this project in May 2004. The TAG concluded that a Remedial Investigation and Feasibility Study (RI/FS) was warranted for the Rocket Range and Disposal Area. The TAG also concluded that No DoD Action was Indicated (NDAI) for the rest of the property.

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
for
FORMERLY USED DEFENSE SITES

ORDNANCE AND EXPLOSIVES ARCHIVES SEARCH REPORT FOR FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

April 2005

Prepared For
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ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

ACKNOWLEDGMENT

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ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

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ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

1. INTRODUCTION

a. **Authority, Subject and Purpose**

(1) This report presents the findings of a historical records search and site inspection for the presence of ordnance and explosives (OE) located at Fort Flagler. This site is located in Jefferson County, Washington (see plate 1 for general location map). The investigation was performed under the authority of the Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS).

(2) The investigation focused on 809 acres that were identified as fortifications and training land. The site was used as a coastal defense site and cantonment from 1903 to 1946 and as a site for amphibious warfare training from 1950 to 1953.

(3) The purpose of this investigation was to characterize the site for potential OE presence, to include conventional ammunition and chemical warfare materiel (CWM). The investigation was conducted by experienced ordnance experts through thorough evaluation of historical records, interviews, and on-site visual inspection results.

b. **Scope**

(1) This report presents the site history, site description, real estate ownership information, and confirmed ordnance presence (prior to and after site closure), based on available records, interviews, site inspections, and analyses. The analyses provide a complete evaluation of all information to assess current day potential ordnance presence, where actual ordnance presence has not been confirmed.

(2) For the purpose of this report, OE presence consists of live ammunition, ammunition components, CWM or explosives which have been lost, abandoned, discarded, buried, fired, or thrown from demolition pits or burning pads. These items were either manufactured, purchased, stored, used, and/or disposed of by the War Department or the Department of Defense. Such ammunition/components are no longer under accountable record control of any DOD organization or activity.

(3) Expended small arms ammunition (caliber .50 or smaller) is not considered OE presence. OE further includes "explosive soil" which refers to any mixture in soil, sands,

clays, etc., such that the mixture itself is explosive. Generally, 10 percent or more by weight of secondary explosives in a soil mixture is considered explosive soil.

2. PREVIOUS INVESTIGATIONS

a. Corps of Engineers Documents

(1) A Preliminary Assessment of Eligibility (PAE) for Fort Flagler was conducted under DERP-FUDS by the U.S. Army Corps of Engineers, Seattle District. The Finding and Determination of Eligibility (FDE), dated 7 June 1991, concluded that the site had been formerly used by the War Department (see document E-1). Not included in the site are four acres of land that were transfer to the Navy when Fort Flagler closed. Those four acres are located on Indian Island, immediately west of Fort Flagler, and are part of an ammunition depot that is still under the jurisdiction of the Department of the Navy.

(2) The PAE concluded that an OE project was an eligible category under the DERP-FUDS program at this site. This was based upon the fact that at the time of site closure, a parcel of land was known to contain unexploded ordnance (UXO). The OE project was assigned DERP-FUDS Project Number F10WA031602 and that project is the principal subject of this report (see documents E-2, E-3 and Table 2-1).

(3) The only other project approved for this site is a Containerized Hazardous, Toxic, and Radioactive Waste (CON/HTRW) project. This project entailed removing 13 unused underground fuel storage tanks (see document E-4 and Table 2-1).

TABLE 2-1
DERP-FUDS PRELIMINARY ASSESSMENT PROJECTS

Project Number	DERP Category	Present Phase	Comments	Location
F10WA031602	OE	SI	Ordnance and Explosives Presence	Entire Site 813 Acres (See Plate 1)
	HTRW		None Recommended	
F10WA031601	CON/HTRW	Complete	13 underground fuel tanks	See document E-4
	BD/DR		None Recommended	

(4) The parcel of land that was known to have contained UXO was remediated in 1992. The closure report for this area noted that that anti-tank rockets with explosive warhead and live fuzes as well as a live practice grenade were found during this clearance. OE items recovered during this clearance are summarized in Table 2-2 on page 3 (see document E-5).

b. **Other Reports**

No other investigations pertinent to this site were located.

TABLE 2-2
MUNITION ITEMS RECOVERD IN 1992 CLEARANCE

Item	Quantity	Item	Quantity
Expended 2.36-inch rocket motors (inert)	172	Live training hand grenade	1
2.36-inch rockets with explosive warheads	3	Bangalore torpedo metal parts (inert)	1
2.36-inch rockets with live fuzes	2	Practice anti-tank mines (inert)	12
Expended 3.5-inch rocket motors	2	Expended caliber .30 cartridge cases (inert)	16

3. SITE DESCRIPTION

a. **Existing Land Usage**

The site is currently used as a state park with a small portion used as a USGS experimental station.

TABLE 3-1
CURRENT LAND OWNERS AND USAGE

AREA	FORMER USAGE	CURRENT OWNER	CURRENT USAGE	ACREAGE (see note)	COMMENTS
A	Rocket Range	State of Washington	State Park	16	See Plates 2, 4 and 5
B	Rifle Range	State of Washington	State Park	15	See Plates 2, 4 and 5
		USGS	Experimental Station		
C	Transition Range	State of Washington	State Park	31	See Plates 2, 4 and 5
D	Disposal Site	State of Washington	State Park	1	See Plates 2, 4 and 5
E	Remaining Lands	State of Washington	State Park	746	See Plates 2, 4 and 5
		USGS	Experimental Station		
Note: approximate acreage			TOTAL	809	

b. **Climatic Data**

(1) The climate is a mid-latitude, west coast marine type with comparatively cool, dry summers and mild but wet and cloudy winters. The Olympic Mountains and the extension of the Coastal Range on Vancouver Island shield this area from winter storms moving inland from over the ocean. This belt in the "rain shadow" of the Olympic Mountains is the driest area in western Washington. The average annual precipitation is about 18 inches. Measurable precipitation is recorded on three to five days each month in summer and on 17 to 22 days in winter.

(2) Another factor which distinguishes this belt from other localities in the Puget Sound region is the rate of rainfall. This area frequently receives drizzle or light rain while other localities are experiencing light to moderate rainfall. Snowfall is light in the lower elevations adjacent to the water, increasing with distance from the water and rise in terrain. This area is considered to receive slightly more sunshine and have less cloudiness than other localities in Puget Sound; however, the difference is not in proportion to the decrease in precipitation. During the latter half of the summer and early fall, fog banks from over the ocean and Strait of Juan de Fuca result in considerable fog and morning cloudiness in the lower elevations.

(3) The average July maximum temperature ranges from 65° F near the water to 70° or 75° F inland, and the minimum temperature is near 50°F. Maximum temperatures seldom exceed 90° F. In January, maximum temperatures are in the 40's and minimums in the lower 30's. Minimum temperatures between -50 and -8° F have been recorded; however, the minimum temperature seldom drops below 15° to 20°F. The coldest weather is usually associated with an outbreak of cold air from the interior of Canada. The average date of the last freezing temperature in the spring ranges from the latter half of March. The first freezing temperature in the fall is about the first of November (reference B-4).

c. **Topography**

The site is located on Marrowstone Island and is surrounded on three sides by salt water. The shoreline has steep-sided bluffs and the maximum elevation is 140 feet. A mixed evergreen/deciduous forest covers most of the site.

d. **Geology and Soils**

(1) The parent materials are of glacial origin resulting from the Vashon Glacier system of 12,000 to 15,000 years ago. The glacier moved through the mountains of Western Canada, bringing great quantities of medium and coarse-textured gravelly materials from as far away as 500 miles. The glacier not only brought material within and on top of its ice mass, but it also shoved great quantities of ground up material ahead of it. As this immense glacier merged with the Olympic Glacier, along the flanks of the northern and western Olympic Mountains, it built up a maximum thickness of about 3,000 feet. This great weight of ice resting on the thick layers of glacial material that it

shoved ahead and than ran over, compressed and hardened it to form a thick, very compact, weakly cemented glacial till.

(2) There are three types of soil on the site: coastal beaches, Whidbey gravelly sandy loam and Dick loamy sand. The Whidbey loam is a well drained that has a very slowly permeable cemented layer at a depth of 20 to 40 inches. The Dick sand is somewhat excessively drained (reference B-5).

e. **Hydrology**

There are no streams or surface water on the site. Drinking water is supplied to the park by municipal water supply. There are no wells on the site, but immediately south of the park private well are present. The depth of these wells range from 58 to 125 feet (reference B-6).

f. **Natural Resources**

Other than occasional transient bald eagles, there are no known protected species on this site.

g. **Historic and Cultural Resources**

Fort Flagler is listed on both the National Register of Historic Places and on the Washington Heritage Register. An archeological site has been identified on the site, but its location in such that it will not likely to be disturbed by any future project. Should a project be contemplated, information may be requested from the Office of Archaeology and Historic Preservation in Olympia, Washington.

4. HISTORICAL SITE SUMMARY

a. **Chronological Site Summary**

(1) Originally, this site was an unimproved military reservation consisting of 550 acres of land set aside from the public domain in 1866. Construction of the first coastal defense batteries did not begin until 1897 and the first troops arrived in 1899. As construction progressed, addition land was acquired by withdrawal, purchase and condemnation until the parcel known original reservation had grown to a size of 809 acres (see documents E-6, E-7, G-1 and G-2). Eventually another four acres were acquired for a water line and observation station, but these acres are not within the scope of this report as they are located on a Navy ammunition depot on Indian Island, which is immediately west of the original reservation.

(2) From 1900 to 1946 the site was used as a costal defense installation. Over time a number of different calibers of artillery were present. The dates of these different armaments are summarized in Table 4-1 and their locations are shown on plate 2. About

the time construction began at the fort, the Treasury Department began construction of a lighthouse located on the northeast shore of the installation (reference B-31).

(3) During the Second World War the Navy operated an underwater listening station (see document E-17), but the fort remained primarily a coast artillery installation. In 1950, all harbor defenses around Puget Sound were abolished (see document E-25). The post was used for amphibious training and maneuvers after the coast artillery weapons were removed.

(4) In 1953, Fort Flagler was closed and considered excess to the needs of the Department of Defense (see documents E-26 and E-27). The Treasury Department retained the land containing the lighthouse and the rest of the property was eventually transferred to the State of Washington for use as a state park. During the transfer process, it was noted that a particular parcel contained unexploded tank rockets. Unsuccessful attempts were made in the 1950s to retrieve these rockets (see documents E-28 through E-32). This parcel was remediated by the 1992 removal action.

b. **Historic Military Munitions Usage**

(1) Research efforts began with a thorough review of all reports, 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 OE presence as described in the Inventory Project Report (INPR) (reference B-1).

(2) Some of the sources that were checked in the search for any OE presence included:

(a) National Archives
(b) Military History Institute
(c) U.S. Army Center for Military History
(d) Explosive Ordnance Disposal (EOD) Units
(e) Local historical societies, libraries and museums.

For a complete list of sources checked, see Appendix A and Appendix B, sections II.

TABLE 4-1
ARTILLERY PRESENT AT FORT FLAGLER

Battery	Number of Guns	Armament	Nominal Range (yards)	Dates Guns Present	Documents and References
Bankhead	8[1]	12-inch Mortar, M1890 MI	9,387	1902-1942	E-7, E-8, E-9, B-13
Wilhelm	2	12-inch Rifle, M1888 MII	17,400	1898-1942	E-7, E-10, B-13
Rawlins	2	10-inch Rifle, M1888 MII	16,400	1889-1918	E-7, E-11, B-13
Revere	2	10-inch Rifle, M1888 MII	16,400	1899-1941	E-7, E-12, E-13, B-13
Calwell	4	6-inch Rapid Fire, M1903	14,600	1904-1918	E-7, E-14, E-15, B-13
Gratten	2	6-inch Rapid Fire M1903	14,600	1905-1918	E-7, E-16, E-17, B-13
Lee	2	5-inch Rapid Fire, M1897	13,000[3]	1901-1918	E-7, E-18, E-19
Downs	2	3-inch, M1903	11,100	1905-1946	E-7, E-20, B-13
Wansboro	2	3-inch, M1903	11,100	1906-1946	E-7, E-21, B-13
Anti-Torpedo Boat Battery	2	90-mm, M1	19,560	1943-1944	E-7, E-22, B-27
Anti-Aircraft Artillery Battery	2 (3)[2]	3-inch, M1917M1A2	13,200	1920-1946	E-7, E-23, E-24, B-30

[1] Battery reduced to four mortars in 1921
[2] Increased from 2 to 3 guns in 1937; relocated to vicinity of Battery Rawlins in1943
[3]Estimate

(3) The different calibers of artillery present at Fort Flagler are summarized in Table 4-1. It is known that some of these guns were proof fired and fired during training.

(a) A newspaper article noted that some of the guns were proof fired in 1900 (see document E-33).

(b) Another newspaper article had a photograph of one of the large caliber guns being fired during training. It is believed that the particular battery was Battery Wilhelm (see document E-34).

(c) When Battery Revere was abandoned, it was decided to retain the gun tubes for testing purpose at another installation. As a result, the report of completed works was annotated with the number of projectiles fired from each tube; a total of 205 10-inch projectiles were fired from this battery (see document E-12).

(4) When the installation was first built, a rifle range was built near the lighthouse in the northeast portion of the installation (see document G-3). The butt to this range was torn down in 1932 to salvage to lead and copper from the expended bullets (see document E-35). A new range was built in essentially the same location during World War II (see documents E-36 and G-5).

(5) A pistol range and two transition ranges were also built on the post. The pistol range was built near the rifle range and one to the transition ranges was built on the southeastern portion of the installation (see documents E-36, E-37 and G-6).

(6) In addition to the above mentioned weapons, four mobile 37-mm anti-aircraft guns and 12 caliber .50 machineguns were known to have been on post during the Second World War (see document E-7).

c. **Other Potential Areas of Environmental Interest**

During the preparation of this report, no other environmental hazards were noted other than those already addresses by the Seattle District.

d. **Map Analysis**

(1) The locations of all the batteries listed in Table 4-1 as well as the rifle and one of the transition ranges were found on maps of the installation (see documents G-3 through G-6). The following locations were not found on any map: the pistol range, one of the transition ranges and the emplacements for the 37-mm and caliber .50 guns.

(2) It was noted that Battery Wansboro was converted into gas chambers sometime after the 3-inch guns were removed (see document G-6). Also two training areas were located west of the transition range and the cantonment area.

e. **Aerial Photo Interpretation**

(1) A 1943 aerial photograph of Fort Flagler (see document F-1) was examined. The post was heavily wooded during the Second World War, so there were few places for a transition range. There was a large cleared area at the northwest portion of the post, the same location as the 1992 clearance conducted by Seattle District. As expended caliber .30 cartridges were found during the clearance (see table 2-2), this is the most likely location of this range. The photograph shows that a road leads to this area from the cantonment area and that the area if fairly denuded of vegetation in 1943.

(2) The pistol range and the emplacements for 37-mm and caliber .50 guns are too small to see in this photograph. As a result, the location of these features became an objective of the site inspection. As most of the installation was heavily wooded, the batteries that were abandoned prior to World War II were the most logical location for the 37-mm and caliber .50 guns.

f. **Interviews**

(1) Interviews with those people listed in Appendix A (Reference Sources) of this report were performed, but for the most part these people had no knowledge of the site and none were knowledgeable of the armament of the fort. Interviews were also conducted with a number of former servicemen who had been stationed at Fort Flagler in the 1950s. All but one of these individuals was unaware of any OE or ranges at the post; one individual remembered firing at the rifle range (see documents H-1 through H-4).

(2) The assessment team met the park manager at his office on Fort Flagler. He said that he had been at the park for five years and he was aware of the removal action at the rocket range. When asked if any he knew of any OE discovered at the park, he showed the team two five round clips of caliber .30 rifle ammunition. The cartridges were severely corroded and as a result the head stamps were illegible. He said that a park volunteer had found them on the beach near the quartermaster dock. He said that the particular area where the cartridges were found might have been a refuse site as a variety of objects had been found there over the years. He said that other than the rifle cartridges no other OE had been discovered in the park.

5. SITE ELIGIBILITY

a. **Confirmed Formerly Used Defense Sites**

Former land usage by the War Department and Department of Defense was confirmed for the site as summarized in section 2a of this report. The 809 acres addressed by this report were used as a coastal defense site and cantonment from 1903 to 1946 and as a site for amphibious warfare training from 1950 to 1953. All acreage that is the subject of this report was relinquished by the Department of Defense. Today, no ownership of any part of the site remains with the Department of Defense.

b. **Additional Confirmed Formerly Used Defense Site Acreage**

It is clear from historical documents that Puget Sound was used as an impact area for coast artillery projectiles and possibly for AAA projectiles. Based upon the assumptions that the artillery did not fire over land not controlled by the War Department and the impact area was centered on the main shipping channel; it was determined that the likely Off Shore Ordnance Area, Area F, was determined to consist of 18,686 acres of water (see plate 3). It is believe that no explosive projectile landed within a mile of the shoreline. It is current DoD policy that tidal water more than 100 yards from the shoreline will not be remediated.

c. **Potential Formerly Used Defense Sites**

All acreage for this site was covered in the Finding and Determination of Eligibility. No other acreage with potential ordnance usage was discovered during this site investigation or literature search for this facility.

6. VISUAL SITE INSPECTION

a. **General Procedures and Safety**

(1) The primary task of the site inspection team was to assess OE presence or potential due to use as a maneuver 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 (see document I-1). A pre-inspection briefing was conducted which stressed that OE should only be handled by military EOD personnel.

b. **Site Inspection Synopsis**

(1) The assessment team conducted the visual inspection of the former Fort Flagler during the period of 10 through 15 July 2003. An inspection report that was prepared by the team in included in Appendix J. The photographs taken by the team are presented in Appendix K and the photograph locations as well as the path taken by the team are on plate 6.

(2) The team found that Fort Flagler State Park is extremely well maintained. Many of the original cantonment buildings are used as lodging for park guests. There is also a museum and interruptive center in the former cantonment area. The batteries are in good condition and interpretive placards are posted at most of the batteries.

(3) The assessment team was unable to located the position of the pistol range or the mobile 37-mm AAA. It is believed that the pistol range was located adjacent to the rifle range and used a sea cliff as a backstop. The team also believes that the 37-mm AAA was located in the vicinity of Batteries Revere and Wilhelm.

(4) No evidence of OE was noted by the assessment team during the inspection. Prior to leaving the site, the assessment team concluded that there is no evidence of any possibility of any OE remaining on this site other than a small amount of discarded small arms cartridges that may be present on the beach by the old Quarter Master wharf.

7. SITE OE/CWM TECHNICAL DATA

Table 8-1 has been developed to establish a list of typical ordnance items that may have been present on the site. Inert items have not been included in this table. This table is for reference purposes only and should not be contrasted as currently being present at Fort Flagler.

TABLE 7-1
AMMUNITION USED AND EXPLOSIVE/CHEMICAL FILLERS

Item	Type	Filler, Weight	Fuze, Type
3-inch Gun M1903	HE, M1915	Explosive D, 0.48 lbs	Mk V, BD
3-inch Gun M1917M1A2	HE, Mk I	TNT, 1.72 lbs	Mk II, Time
	HE, Mk IX	TNT, .91 lbs	Mk II, Time
	Shrapnel, Mk I	Black Powder, 0.17 lbs	Mk II, Time
5-inch Gun M1897	HE, Mk II	TNT, 6.96 lbs	Mk IIA, PD
6-inch Gun M1903	AP, M1911	Explosive D, 4.53 lbs	Mk V, BD
	HE, Mk II	TNT, 13.69 lbs	Mk IV, PD

TABLE 7-1 (continued)
AMMUNITION USED AND EXPLOSIVE/CHEMICAL FILLERS

Item	Type	Filler, Weight	Fuze, Type
10-inch Gun M1888 MII	AP, M III	Explosive D, 43.34 lbs	Mk III, BD
12-inch Gun M1888 MII	AP, Mk I	Explosive D, 33.61 lbs	M1908, Delay
12-inch Seacoast Mortar, M1890 MI	HE, Mk VI	Explosive D, 86.40 lbs	Mk V, BD
37-mm Gun M1A1	HE, M54	Tetryl, 0.10 lbs	M56, PD
90-mm Gun M1	HE, M71	TNT, 2.04 lbs	M43A4, MT M51A4, PD
2.36-inch Rocket	HEAT, M6 series	Pentolite, .47 lbs TNT, .013 lbs	M400, BD
3.5-inch Rocket	HEAT, M28A2	Comp B, 1.88 lbs	M404 series, BD

8. EVALUATION OF ORDNANCE HAZARDS

a. General Procedures

(1) Each sub-site was evaluated to determine confirmed, potential, or lack of ordnance presence.

(2) Confirmed ordnance and explosives (OE) presence is based on verifiable historical record evidence or direct witness of OE items (with explosive components and/or inert debris/fragments) since site closure. Additional field data are not needed to identify a confirmed site.

(a) Verifiable historical record evidence is based on OE items actually seen on site since site closure and authenticated by: historical records (Archive Records, Preliminary Assessment Reports, Site Investigation Reports), local fire departments and law enforcement agencies/bombs squads, military Explosive Ordnance Disposal (EOD) Units, newspaper articles, photographs, or maps.

(b) Direct witness of OE items consists of the site inspection team(s) and other credible witnesses as determined by the ASR Research Team Leader (landowners, workers on-site, soldiers who served there, etc.) verifying that they have seen OE presence on the surface or subsurface since site closure.

(3) Potential ordnance and explosives (OE) presence is based on a lack of confirmed OE presence. Potential OE presence is inferred from records, present day site features, non-verifiable direct witness, or indirect witness. Additional field data are needed to confirm potential OE sites.

(a) Inference from historical records is based on no OE items actually seen on site since site closure and would include documentation (records, aerial photographs, maps) indicating possible OE presence derived from common practice in production, storage, use, or disposal at that time and from records indicating known OE usage.

(b) Inference from present day site features would be the indication of possible OE presence from such obvious features as target circles, depressions, mounds/backstops, OB/OD areas/pits, etc.

(c) Indirect witness would be people who have stated that they have heard of OE presence on-site (hear-say evidence).

(4) Sub-sites with no ordnance presence are based on a lack of confirmed or potential ordnance presence. Additional field data are not needed to assess uncontaminated ordnance sub-sites.

b. **Area A: Rocket Range**

This area is considered have **potential OE presence**. This area was the subject of a removal action in 1992. The Huntsville Center Technical Advisory Group concluded that OE may remain in this area even though the removal action was completed and there is nor reason to believe and any OE remains in the area.

c. **Area B: Rifle Range**

This area is considered have **no OE presence**. This area was used as a rifle and pistol range and was unsuitable for any weapon other than small arms. The range contains only expended small arms projectiles, which is not considered to be OE.

d. **Area C: Transition Range**

This area is considered have **no OE presence**. This area was used as a rifle range and was unsuitable for any weapon other than small arms. The range contains only expended small arms projectiles, which is not considered to be OE.

e. **Area D: Disposal Site**

This area is considered have **confirmed OE presence**. It appears that unwanted supplies were tossed from the Quarter Master wharf onto the beach. Among the items that were tossed were a small amount of small arms cartridges. A park volunteer discovered some of the cartridges while looking for artifacts.

f. **Area F: Off Shore Ordnance Area**

This area is considered have **potential OE presence**. It is clear that this area was used as an artillery impact area. However, it is unknown if the projectiles were strictly inert or whether explosive projectiles were used.

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JEFFERSON COUNTY, WASHINGTON
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Appendix A

Reference Sources and Records Reviewed

Reference Sources (Government)			
Organizations	Name	Telephone	Nature of Support
FEDERAL AGENCIES			
Department of Defense			
Secure STINET 8725 John J. Kingman Road Suite 0944 Fort Belvoir, VA 22060-6218	Computer Search (STINET and DTIC)	(703) 767-8228 (703) 427-8274	No Information
Department of Defense Explosives Safety Board (DDESB) 2461 Eisenhower Avenue Alexandria, VA 22331-0600	Computer Search	(703) 325-1369	No Information
Army			
HQ, USACE-Office of History Humphreys Engineer Center Attn: CEHO-ZA 7701 Telegraph Rd Alexandria, VA 22310	Staff	(703) 428-6554	See Appendix B, Section II, Parts A and B
JMC Historical Office Attn: AMSJM-PA (History) Bldg. 390 Rock Island, IL 61299	George Eaton	(309) 782-1450	No Information
MANSCEN Library 597 Engineer Loop Bldg 3202, Suite 200 Ft Leonard Wood, MO 65473-8928	Dr. Wright Base Historian	(573) 563-4109 DSN 676-4109	No Information

Reference Sources (Government)

Organizations	Name	Telephone	Nature of Support
Army (continued)			
U.S. Army Military History Institute Reference Library 22 Ashburn Drive Carlisle Barracks Carlisle, PA 17013-5008	Louise Friend	(717) 245-3103 DSN 242-3103	No Information
Rock Island Arsenal Museum ATTN: SIORI-CFS-M Building 60 Rock Island, IL 61299-5000	Chris Leinicke	(309) 794-5021	No Information
U.S. Army Military History Institute Archives 22 Ashburn Drive Carlisle Barracks Carlisle, PA 17013-5008	David Keough	(717) 245-3189 DSN 242-3189	No Information
U.S. Army Military History Institute Photo Archives 22 Ashburn Drive Carlisle Barracks Carlisle, PA 17013-5008	Mike Winey	(717) 245-3434 DSN 242-3434	No Information
U.S. Army Ordnance Museum Aberdeen Blvd. Bldg. 2601 Aberdeen PG, MD 21005-5201	Dr. Atwater	(410) 278-3602	No Information

Reference Sources (Government)

Organizations	Name	Telephone	Nature of Support
Army (continued)			
U.S. Army SBCCOM Attn: AMSSB-SCI-H 5232 Fleming Rd Aberdeen PG, MD 21010	Kathleen Ciolfi	(410) 436-4430 DSN 584-4430	No Information
U.S. Army Center of Military History 103 Third Avenue Fort McNair Washington, DC 20319-5058			
USACE Seattle District 4735 E. Marginal Way S. Seattle, WA 98134-2385	Claire Wilson Real Estate Division	(206) 764-6088	Background information
USACE Seattle District 4735 E. Marginal Way S. Seattle, WA 98134-2385	Jonathan Maas	(206) 764-6745	Background information
707th Ordnance Company (EOD) Building 6180 Fort Lewis, WA 98433	Staff	(253) 967-5507	No Information
53d Ordnance Company (EOD) Building 275 Yakima, WA 98910	Staff	(509) 577-3376	No Information

Reference Sources (Government)

Organizations	Name	Telephone	Nature of Support
Air Force			
Air Force Historical Research Agency (AFHRA) Information Systems Division 600 Chennault Circle Bldg 1405 Maxwell AFB, AL 36112-6424	Sheila Roten (IRIS) Essie Roberts (IRIS microfiche)	(334) 953-6884 (334) 953-2439 DSN 493-2439	No Information
Air Force Historical Research Agency (AFHRA) Research Division 600 Chennault Circle Bldg 1405 Maxwell AFB, AL 36112-6424	Joe Caver	(334) 953-5834 DSN 493-5834	No Information
Air University Library 600 Chennault Circle Bldg 1405 Maxwell AFB, AL 36112-6424	Reference Services	(334) 953-2888 DSN 493-2888	No Information
Navy			
Marine Corps Historical Center Washington Navy Yard 901 M St., SE Washington, DC 20374-5040	Staff	(202) 433-3447 DSN 288-3447	See Appendix B, Section II, Parts A and B
Naval Construction Battalion Center (NCBC) NAVFAC Historian Office CB Logistics Center, Code 09 (Bldg 99) 4111 San Pedro St. Port Hueneme, CA 93043	Carol Marsh	(805) 982-5563 DSN 551-5563	No Information

Reference Sources (Government)			
Organizations	Name	Telephone	Nature of Support
Navy (continued) Naval Construction Battalion Center (NCBC) Technical Information Center Attn: Code 72 1100 23rd Ave Port Hueneme, CA 93043	Brian Thompson	(805) 982-1124 DSN 551-1124	No Information
Naval Historical Center Washington Navy Yard Naval Aviation History Branch 901 M St., SE Washington, DC 20374-5060	Staff	(202) 433-4407 DSN 288-4407	See Appendix B, Section II, Parts A and B
Naval Historical Center Washington Navy Yard Operational Archives 901 M St., SE Washington, DC 20374-5060	Staff	(202) 433-2833 DSN 288-2833	See Appendix B, Section II, Parts A and B
U.S. Naval War College Archives 686 Cushing Rd Newport, RI 02841-1207	Dr. Evelyn Cherpack	(401) 841-2435	No information
U.S. Naval War College Library 686 Cushing Rd Newport, RI 02841-1207	Alice Juda Maggie Rauch	(401) 841-4551	No information
U.S. Naval War College Museum 686 Cushing Rd Newport, RI 02841-1207	Tony Nicolosi Bob Cembrola	(401) 841-4052	No information

Reference Sources (Government)			
Organizations	Name	Telephone	Nature of Support
National Archives and Records Administration			
NARA-Archives II (Cartographic & Architectural Branch) 8601 Adelphi Rd College Park, MD 20740	Staff	(301) 713-7040	See Appendix B, Section II, Parts A and B
NARA-Archives I (Old Military and Civil Textual Division) Pennsylvania Ave. & 7th St., NW Washington, DC 20408	Staff	(202) 208-1903 (202) 208-0370 (202) 219-6273	See Appendix B, Section II, Parts A and B
NARA-Archives II (Motion Picture, Sound, and Video Branch) 8601 Adelphi Rd College Park, MD 20740	Staff	(301) 713-7060	See Appendix B, Section II, Parts A and B
NARA-Archives II (Still Picture Branch) 8601 Adelphi Rd College Park, MD 20740	Staff	(301) 713-6660	See Appendix B, Section II, Parts A and B
NARA-Archives II (Textual Reference Branch) 8601 Adelphi Rd College Park, MD 20740	Staff	(301) 713-7250	See Appendix B, Section II, Parts A and B

Reference Sources (Government)

Organizations	Name	Telephone	Nature of Support
National Archives and Records Administration (continued)			
Washington National Records Center 4205 Suitland Rd Suitland, MD 20746-8001	Staff	(301) 457-7190	See Appendix B, Section II, Parts A and B
NARA-Pacific Alaska Region (Seattle) 6125 Sand Point Way, NE Seattle, WA 98115	Staff	(206) 526-6501	See Appendix B, Section III, Parts A and B
Department of Agriculture			
Natural Resource Conservation Service Jefferson County Soil and Water Conservation District 205 West Parison Street Hadlock, WA 98339	Al Lathem	(360) 385-4105	Soil Survey
Consolidated Farm Service Agency Suite C 528 91st Avenue, NW Everett, WA 98205	Staff	(425) 334-2828	No Information
Department of Commerce			
NOAA National Climatic Data Center Federal Building, Room 305 Ashville, NC 28801	Staff	(704) 271-4272	Climatic Data
United States Congress			
Library of Congress Geography And Map Division Washington, DC 20536	Staff	(202) 707-5522	See Appendix B Section II Parts A and B

Reference Sources (Government)			
Organizations	Name	Telephone	Nature of Support
Congress (continued) Library of Congress Prints and Photographs Division Washington, DC 20536	Staff	(202) 707-6394	See Appendix B Section II Parts A and B
State Agencies Office of Archaeology and Historic Preservation 1063 S Capitol Way, Suite 106 Olympia, WA 98501	Dr. Allyson Brooks SHPO	(360) 586-3064	No Information
Fort Flagler State Park 10541 Flagler Road Nordland, WA 98358-9656	Mike Zimmerman	(360) 385-1259	Interview
Local Agencies Jefferson County Assessor Courthouse Port Townsend, WA 98368	Staff	(360) 385-9105	Real estate information
Jefferson County Library 620 Cedar Avenue Port Hadlock, WA 98339	Staff	(360) 385-6544	Background Information
Jefferson County Sheriff 81 Elkins Road Port Hadlock, WA 98339	Staff	(360) 385-3831	No Information
Port Townsend Library 1220 Lawrence Street Port Townsend, WA 98368	Staff	(360) 385-5805	Background Information

Reference Sources
(Non-Government)

Organizations	Name	Telephone	Nature of Support
National Agencies			
Council on America's Past 518 Why Worry Lane Phoenix, AZ 85021	Heliogram Publication	(800) 396-4693	No Information
Online Computer Library Center 6565 Frantz Road Dublin, OH 43017-3395	Computer Search (OCLC)	(800) 848-5878	No Information
Coast Defense Study Group, Inc. 1560 Somerville Rd Bel Air, MD 21015	Publication		No Information
Local Agencies			
Jefferson County Historical Society 540 Water Street Port Townsend, WA 98368	Staff	(360)385-1003	No Information
Puget Sound Coast Artillery Museum 200 Battery Way Port Townsend, WA 98368	Staff	(360) 385-0373	Background information

Reference Sources
(Non-Government)

Organizations	Name	Telephone	Nature of Support
Individuals			
Kenneth J Jones, 29620 Whipple Drive Delmar, MD 21875		(410) 727-5709	Interview
Kaye B. Leiby 67 3rd Avenue Lehighton, PA 18235		(610) 377-4259	Interview
Fred Erickson 2144 Portside Psge Palm Harbor, FL 34685		(727) 789-4628	Interview
Benjamin Randall 201 Apple Vly Lagrange, IN 46761		(260) 463-3415	Interview

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Appendix B

References and Abstracts

APPENDIX B

REFERENCES AND ABSTRACTS

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SECTION I References and Abstracts

SECTION II National Capitol Region Archive Search References

Part A: Positive Reports
Part B: Negative Reports

SECTION III Regional Archive Search References

Part A: Positive Reports
Part B: Negative Reports

APPENDIX B

REFERENCES AND/OR ABSTRACTS

Cited References

B-1. U.S. Army Corps of Engineers, Seattle District, DERP-FUDS Inventory Project Report (INPR) for Site No. F10WA031600, Fort Flagler State Park, Jefferson County, Washington, 7 June 1991 (E-1, E-2, E-3 and E-4).

B-2. Climate of Washington, National Oceanic and Atmospheric Administration, June 1982

B-3. U.S. Army Corps of Engineers, Seattle District, Closure Report for Former Fort Flagler, Marrowstone Island, Washington, 31 January, 1996 (E-5).

B-4. Climate of Washington, National Oceanic and Atmospheric Administration, June 1982.

B-5. Soil Conservation Service, Soil Survey of Jefferson County Area, Washington, August 1975.

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B-7. War Department, Military Reservations, Washington, MIL RES WASH, 8 May 1942. Office of the Chief of Engineers, Office of History, Historical Documents Collection (E-6).

B-8. Fort Record Book for Fort Flagler, 1901-1942, NARA, Pacific NW Region, RG 392 Box 1, Entry 288 (E-7).

B-9. Office of the Chief of the Quarter Master Corps, Real estate map of Fort Flagler, October 1913, Seattle District project files (G-1).

B-10. U.S. Army Corps of Engineers, Seattle District, Real estate map of Fort Flagler, 22 April 1954, Seattle District project files (G-2).

B-11. Data sheet for Battery Bankhead, circa 1902. NARA II, RG 77, Entery1007, Box 121 (E-8).

B-12. Report of Completed Works-Battery Bankhead, 1 May 1932. NARA II, RG 77, Entery1007, Box 119 (E-9).

B-13. Office of the Chief of Ordnances, United States Army Cannon, Carriages and Projectiles, O.O. No. 1676, 15 January, 1924.

B-14. Report of Completed Works-Battery Wilhelm, February 1930. NARA II, RG 77, Entery1007, Box 119 (E-10).

B-15. Report of Completed Works-Battery Rawlins, 1 May 1933. NARA II, RG 77, Entery1007, Box 119 (E-11).

B-16. Report of Completed Works-Battery Revere, 1 May 1933. NARA II, RG 77, Entery1007, Box 119 (E-12).

B-17. Report of Completed Works-Battery Revere, 11 April 1941. NARA II, RG 77, Entery1007, Box 119 (E-13).

B-18. Data sheet for Battery Calwell, circa 1904. NARA II, RG 77, Entery1007, Box 121 (E-14).

B-19. Report of Completed Works-Battery Calwell, August 1921. NARA II, RG 77, Entery1007, Box 121 (E-15).

B-20. Data sheet for Battery Grattan, circa 1905. NARA II, RG 77, Entery1007, Box 121 (E-16).

B-21. Report of Completed Works-Battery Grattan, 1 September 1942. NARA II, RG 77, Entery1007, Box 119 (E-17).

B-22. Data sheet for Battery Lee, circa 1905. NARA II, RG 77, Entery1007, Box 121 (E-18).

B-23 . Report of Completed Works-Battery Lee, 1 May 1933. NARA II, RG 77, Entery1007, Box 119 (E-19).

B-24 . Report of Completed Works-Battery Downes, 1 May 1933. NARA II, RG 77, Entery1007, Box 119 (E-20).

B-25 . Report of Completed Works-Battery Wainsboro, 1 May 1933. NARA II, RG 77, Entery1007, Box 119 (E-21).

B-26 . Report of Completed Works-AMTB, 25 March 1944. NARA II, RG 77, Entery1007, Box 119 (E-22).

B-27. Department of the Army, Artillery Materiel and Associated Equipment, TM 9-2300, 3 May 1949.

B-28 . Report of Completed Works-AAA Battery, 1 December 1939. NARA II, RG 77, Entery1007, Box 119 (E-23).

B-29 . Report of Completed Works- AAA Battery, 14 June 1943. NARA II, RG 77, Entery1007, Box 119 (E-24).

B-30. Office of the Chief of Ordnance, Ordnance Data, 1 December 1918.

B-31. National Park Service, Inventory of Historic Light Stations, Washington Lighthouses, http://www.cr.nps.gov/maritime/light/marrow.htm.

B-32. Historical Data Card for the Harbor Defenses of Puget Sound, circa 1950. U.S. Army Center for Military History (E-25).

B-33. Department of the Army, General Orders, GO 52, 22 June 1953. U.S. Army Center for Military History (E-26).

B-34. Report of Excess Property, 22 April 1954. Seattle District project files (E-27, E-37).

B-35. Fort Worden, "Condition of Ranges at Fort Worden, Washington, and Sub-posts", 18 May 1953. Seattle District project files (E-28).

B-36. Seattle District, "Certificate of Reconnaissance", 2 April 1954. Seattle District project files (E-29).

B-37. Seattle District, "Certificate of Decontamination", 16 June 1954. Seattle District project files (E-30).

B-38. North Pacific Division, "Decontamination of Land at Fort Flagler, Washington", 28 June 1957. Seattle District project files (E-31).

B-39. 170th Ord Det (ED), "Statement of Clearance", 3 August 1959. Seattle District project files (E-32).

B-40. "Fort Casey's Guns Tested", Seattle Post Intelligencer, 14 September 1901. Jefferson County Historical Society (E-33).

B-41. Photograph of gun being fired at Fort Flagler, Leader, 1 September 1999. Jefferson County Historical Society (E-34).

B-42. Map of Fort Flagler, 1921. NARA II, RG 77, Entry 1007, Box 121 (G-3).

B-43. Map of Fort Flagler, 1936. NARA II, RG 77, Entry 1007, Box 121 (G-4).

B-44. Lands Suitable for Ranges, 1937. NARA II, RG 77, Entry 106B, Box 1013 (E-35).

B-45. Ranges built at Fort Flagler, 15 September 1941. NARA II, RG 77, Entry 106B, Box 775 (E-36).

B-46. Installation Map of Fort Flagler, 1952. Seattle District project files (G-5, G-6).

B-47. U.S. Army Corps of Engineers, Rock Island District, "Site Safety Plan for Ordnance and Explosive Waste", 25 June 1992 with appendix A-304 dated 23 April 2003 (I-1).

B-48. Office of the Chief of Ordnance, Complete Round Charts, O.O. 5981, 1930, 1947 (Table 7-1).

B-49. Ordnance Ammunition Command, Complete Round Charts, 1959 (Table 7-1).

B-50. War Department, 3-Inch Seacoast Gun Materiel, TM 9-421, 10 October 1942 (D-1).

B-51. Ordnance Department, Ammunition for 3-Inch Anti-Aircraft Guns, O.O.2019, 1919 (D-2).

B-52. Ordnance Department, 6-Inch R.F. Gun, Armstrong, 1903 (D-3)

B-53. War Department, Coast Artillery Ammunition, TM 4-205, 17 February 1940 (D-4)

B-54. War Department, 90-mm Guns M1 and M1A1, TM 9-370, July 1947 (D-5).

B-55. War Department, Artillery Ammunition, TM 9-1901, 29 June 1944 (Table 7-1, D-6).

B-56. War Department, Small Arms, Light Field Mortars, and 20-mm Aircraft Guns, TM 9-2200, 11 October 1943 (D-7, D-9).

B-57. Department of the Army, Rockets, Rocket Systems, Rocket Fuzes, Rocket Motors, 1 December 1981 (D-8).

B-58. Aerial Photograph, 1943. Seattle District project files (F-1).

References Not Cited

B-59. Berhow, Mark A., American Seacoast Defenses, Coast Defense Study Group Press, 1999.

B-60. Tschappat, William H., Text Book of Ordnance and Gunnery, 1917.

B-61. War Department, Seacoast Artillery Target Practice, TM 4-235, 1 January 1944

B-62. U.S. Army Corps of Engineers, Huntsville Division, "Management Plan for Ordnance and Explosive Waste (OEW) Mandatory Center of Expertise (MCX) and Design Center" CEHND 1105-3-9, 19 August 1992.

B-62. U.S. Army Corps of Engineers, Rock Island District, "CENCR Management Plan for Ordnance and Explosive Waste Investigations", dated 20 July 1992, with revisions dated 10 March 1995 and 23 June 1995.

SECTION II
NATIONAL CAPITAL REGION ARCHIVES FINDINGS
PART A
POSITIVE FINDINGS

FORT FLAGLER STATE PARK, WA

Also Researched Under: Fort Flagler Military Reservation, WA; Harbor Defenses of Puget Sound, WA; and Marrowstone Point Lighthouse, WA; and Jefferson County, WA

NARA - ARCHIVES I
WASHINGTON, DC

RG 77 (Records of the Office of the Chief of Engineers)

Entry 220: Coast Defenses, Fortifications File, 1898 - 1920
Box 4
General Map, Fort Flagler, Marrowstone Point, 23 April 1915

Entry 220: Coast Defenses, Fortifications File, 1898 - 1920
Box 4
Ledger Entry, Puget Sound, Fort Flagler, Batteries James Calwell and Lee

Entry 220: Coast Defenses, Fortifications File, 1898 - 1920
Box 4
Ledger Entry, Puget Sound, Fort Flagler, Battery Bankhead

Entry 220: Coast Defenses, Fortifications File, 1898 - 1920
Box 4
Ledger Entry, Puget Sound, Fort Flagler, Battery John Rawlins and Battery Wilhelm

Entry 220: Coast Defenses, Fortifications File, 1898 - 1920
Box 4
Ledger Entry, Puget Sound, Fort Flagler, Battery Paul Revere, Battery Edward Downes

Entry 220: Coast Defenses, Fortifications File, 1898 - 1920
Box 4
Ledger Entry, Puget Sound, Fort Flagler, Battery Thomas Wansboro and Battery John Grattan

Entry 220: Coast Defenses, Fortifications File, 1898 - 1920
Box 4
Map, Fort Flagler, Marrowstone Point, Puget Sound, 7 May 1921

Entry 220: Coast Defenses, Fortifications File, 1898 - 1920
Box 4
Summary, Guns to Remain at the Coast Defenses of Puget Sound, After Those Listed for Withdrawal for Use Abroad, etc., Have Been Removed, Including Fort Flagler

NARA - ARCHIVES II - TEXTUAL BRANCH
COLLEGE PARK, MD

RG 77 (Records of the Office of the Chief of Engineers)

Entry 106B:General Correspondence, 1918 - 1945
Box 775
Report, Target Range Data, Fort Flagler, Washington, 15 September 1941

Entry 106B:General Correspondence, 1918 - 1945
Box 1013
War Department Lands Suitable for Use as Target Ranges in an Emergency, Fort Flagler, California, 1 January 1937

Entry 106B:General Correspondence, 1918 - 1945
Box 1014
Table, Shooting Galleries and Ranges, Including Fort Flagler

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery Wilhelm, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery Downes, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery Lee, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery Wansboro, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery Rawlins, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery Calwell, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery Wilhelm, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery Anti-Motor Torpedo, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Datum Fort Casey, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Ant-Aircraft Batteries, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery Grattan, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery Revere, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
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Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery Wilhelm, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery Grattan, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Battery James Calwell, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Fire Control Structures, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Anti-Aircraft Installations, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 119
Report of Completed Works - Seacoast Fortifications, Harbor Defenses of Puget Sound, Searchlight Structures, Fort Flagler, Washington, Corrected to February 1930

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Data Sheets, Coast Defenses of Puget Sound, Fort Flagler, Battery Calwell

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Data Sheets, Coast Defenses of Puget Sound, Fort Flagler, Battery Downes

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Data Sheets, Coast Defenses of Puget Sound, Fort Flagler, Battery Lee

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Data Sheets, Coast Defenses of Puget Sound, Fort Flagler, Battery Grattan

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Data Sheets, Coast Defenses of Puget Sound, Fort Flagler, Battery Revere

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Data Sheets, Coast Defenses of Puget Sound, Fort Flagler, Battery Wansboro

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Data Sheets, Coast Defenses of Puget Sound, Fort Flagler, Battery Wilhelm

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Data Sheets, Coast Defenses of Puget Sound, Fort Flagler, Battery Bankhead

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
General Map, Coast Defenses of Puget Sound, Fort Flagler, Marrowstone Point, Showing Batteries Bankhead, Wilhelm, Rawlins, Revere, Grattan, Calwell, Les, Downes, and Wansboro, Corrected Through 22 May 1936

Entry 1007: Harbor Defense Files, (Geographic), Classified, 1918 - 1945
Box 121
General Map, Fort Flagler, Marrowstone, Puget Sound, Showing Batteries Bankhead, Wilhelm, Rawlins, Revere, Grattan, Calwell, Lee, Downes, and Wansboro

Entry 1007: Harbor Defense Files, (Geographic), Classified, 1918 - 1945
Box 121
Map, Entrances to Puget Sound, 7 May 1921

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Box 121
Map, Fort Flagler, Marrowstone Point, Puget Sound, Washington State, Showing Batteries Grattan and Wansborg, Correct Through 22 May 1936

Entry 1007: Harbor Defense Files, (Geographic), Classified, 1918 - 1945
Box 121
Map, Fort Flagler, Marrowstone, Puget Sound, Showing Batteries Grattan and Wansboro, 7 May 1921

Entry 1007: Harbor Defense Files, (Geographic), Classified, 1918 - 1945
Box 121
Report of Completed Works - Seacoast Fortifications (Batter Plan), Fort Flagler, Coast Defenses of Puget Sound

Entry 1007: Harbor Defense Files, (Geographic), Classified, 1918 - 1945
Box 121
Report of Completed Works - Seacoast Fortifications (Gun and Mortar Batteries), Coast Defenses of Puget Sound, Fort Flagler, Battery Lee, Corrected to August 1921

Entry 1007: Harbor Defense Files, (Geographic), Classified, 1918 - 1945
Box 121
Report of Completed Works - Seacoast Fortifications (Gun and Mortar Batteries), Coast Defenses of Puget Sound, Fort Flagler, Battery Wansboro, Corrected to August 1921

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Report of Completed Works - Seacoast Fortifications (Gun and Mortar Batteries), Coast Defenses of Puget Sound, Fort Flagler, Battery Downes, Corrected to August 1921

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Report of Completed Works - Seacoast Fortifications (Gun and Mortar Batteries), Coast Defenses of Puget Sound, Fort Flagler, Battery Grattan, Corrected to August 1921

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Report of Completed Works - Seacoast Fortifications (Gun and Mortar Batteries), Coast Defenses of Puget Sound, Fort Flagler, Battery Calwell, Corrected to August 1921

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Report of Completed Works - Seacoast Fortifications (Gun and Mortar Batteries), Coast Defenses of Puget Sound, Fort Flagler, Battery Rawlins, Corrected to August 1921

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Report of Completed Works - Seacoast Fortifications (Gun and Mortar Batteries), Coast Defenses of Puget Sound, Fort Flagler, Battery Revere, Corrected to August 1921

Entry 1007: Harbor Defense Files,(Geographic), Classified, 1918 - 1945
Box 121
Report of Completed Works - Seacoast Fortifications (Gun and Mortar Batteries), Coast Defenses of Puget Sound, Fort Flagler, Battery Bankhead, Corrected to August 1921

RG 330 (Records of the Office of the Secretary of Defense)

Entry 11: Inventories of Military Real Property, 1954 - 1957
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Inventory of Military Real Property - Installation Summary, Fort Flagler, Jefferson County, Washington, 1956

Entry 11: Inventories of Military Real Property, 1954 - 1957
Box

Inventory of Military Real Property - Installation Summary, Fort Flagler, Jefferson County, Washington, 1955

RG 407 (Records of the Adjutant General's Office, 1917 -)

Entry 37A: Central Decimal File, 1917 - 1925
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Correspondence Relative to Transfer of Old Engineer Wharf at Fort Flagler to Quartermaster Corps, 24 August 1918

Entry 37A: Central Decimal File, 1917 - 1925
Box 1175

Letter Relative to Reconstruction of Fort Flagler Quartermaster Wharf, 29 October 1919

Entry 37H: Central Decimal File, 1926 - 1939
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Communication Relative to Repair of Fire-Damaged Dock at Fort Flagler to Facilitate Handling of Post Armament and Equipment in Connection with Harbor Defenses of Puget Sound, 7 September 1939

Entry 37H: Central Decimal File, 1926 - 1939
Box 3006

Endorsements Relative to Real Property Disposal, Fort Flagler, Washington, 27 July - 6 August, 1936

Entry 366: Special Projects, Harbor Defense, 1929 - 1948
Box 10

Annexes to Harbor Defense Project, Harbor Defenses of Puget Sound, Including Seacoast Guns and Anti-Aircraft Defense, 1949

NARA - ARCHIVES II - CARTOGRAPHIC BRANCH
COLLEGE PARK, MD

RG 77 (Records of the Office of the Chief of Engineers)

Fortifications File
Drawer 257
Sheet 16-1
Map, Emplacements for 2-12" and 4-10" Guns, Marrowstone Point, Washington, 31 December 1890

Fortifications File
Drawer 257
Sheet 16-13
Armament Report, Year Ending 31 December 1902, Fort Flagler, Washington

Fortifications File
Drawer 92
Sheet 105-2
Oversized Map, Chinook Point, Washington, 10 April 1899

U.S. ARMY - CENTER OF MILITARY HISTORY
WASHINGTON, DC

Historical Document Collection

Historical Data Cards
Historical Data Card, Harbor Defenses of Puget Sound

Military Forts, Posts, Camps, Stations, Etc.
228.01 Permanent
General Orders Relative to Discontinuation of Fort Flagler, 22 June 1953

U.S. ARMY CORPS OF ENGINEERS - OFFICE OF HISTORY
ALEXANDRIA, VA

Historical Document Collection

Book of Military Reservations
Military Reservations, Fort Flagler, Real Estate Data

Book of Military Reservations
Military Reservations, Fort Flagler, Real Estate Data

Real Estate Records
1504-07 Washington
Box 13

Realty Control File Summary (Land Acquisitions and Disposals Subsequent to 1 July 1940), Fort Flagler, Washington, Including Site Data

SECTION II
NATIONAL CAPITAL REGION ARCHIVES FINDINGS
PART B
NEGATIVE FINDINGS

FORT FLAGLER STATE PARK, WA

Also Researched Under: Fort Flagler Military Reservation, WA; Harbor Defenses of Puget Sound, WA; and Marrowstone Point Lighthouse, WA; and Jefferson County, WA

LIBRARY OF CONGRESS - GEOGRAPHY AND MAP DIVISION
WASHINGTON, DC

Sanborn Map Collection

LIBRARY OF CONGRESS - PRINTS AND PHOTOGRAPHS DIVISION
WASHINGTON, DC

HABS/HAER
Subject Catalogues
Videodisk Collection

NARA - ARCHIVES I
WASHINGTON, DC

RG 49 (Records of the Bureau of Land Management)
Entry: Land Entry Papers

RG 77 (Record of the Office of the Chief of Engineers)
Entry: DeGrange Index
Entry 18: Letters Received, 1822 - 1866
Entry 20: Letters and Papers Received, 1834 - 1866
Entry 30: Letters Sent, 1866 - 1877
Entry 33: Letters Received, 1866 - 1867
Entry 36: Letters Received ("A" File), November 1867 - November 1870
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Entry 64: Letters Received, 1871 - 1886
Entry 73: Letters Sent, 1886 - 1889
Entry 76: Letters Received Relating to Fortifications, 1886 - 1887
Entry 96: General Correspondence, 1890 - 1892
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Entry 171: Land Papers, 1794 - 1916

RG 92 (Records of the Office of the Quartermaster General)
Entry 89: General Correspondence, 1890 - 1914
Entry 167: Reports of Annual Inspections of Buildings, 1800 - 1904
Entry 174: Specifications, Contracts, and Other Papers Relating to Construction at Various Installations, 1900 - 1926
Entry 176: Reports of "Progress on Public Buildings, Etc," 1907 - 1910
Entry 225: QM Consolidated Correspondence File, 1794 - 1890
Entry 287: General Correspondence, 1919 - 1925
Entry 1058: Annual Reports of Construction and Repair Division, 1903 - 1915
Entry 1067: Detailed Copies of "Historical Record of Buildings" at Various Posts, 1905
Entry 1068: Historical Records of Buildings at Various Posts and Correspondence Relating to the Submission of these Records, 1905
Entry 1213: Narrative Histories of Posts, Camps, and Stations, 1890

RG 94 (Records of the Adjutant General's Office, 1780s - 1917)
Entry 1: Letters Sent, 1800 - 1889
Entry 2: Letters Sent, 1874 - 1877
Entry 4: Reports to the Secretary of War, 1825 - 1870
Entry 12: Letters Received, 1805 - 1859
Entry 21: Maps and Sketches of Early Posts and Harbors, 1811 - 1855
Entry 25: Document File, 1890 - 1917
Entry 464: Reservations File, Early 1800s - 1916

RG 153 (Records of the Office of the Judge Advocate General)
Entry: Reservations File, 1800 - 1950

RG 177 (Records of the Chiefs of Arms)
Entry 2: Office of the Chief of Coast Artillery, Record Cards, 1902 - 1917

RG 393 (Records of the U.S. Army Continental Commands, 1821 - 1920)
Entry: Part II - Polyonymous Successions of Command, 1861 - 1870
Entry: Part III - Geographic Districts and Sub - Districts

Entry: Part IV - Military Installations
Entry: Part V - Record of Posts

NARA - ARCHIVES II - TEXTUAL BRANCH
COLLEGE PARK, MD

RG 16 (Records of the Department of Agriculture)
Entry 17: General Correspondence of the Office of the Secretary of Agriculture, 1906 - 1965

RG 18 (Records of the Army Air Force)
Entry 1: Security Classified Decimal File, 1945 - October 1948
Entry 2: Unclassified Decimal File, June 1944 - 1946
Entry 169: Correspondence Relating to Camps, 1917 - 1938
Entry 170: Correspondence Relating to Forts, 1917 - 1938
Entry 292: Unclassified Central Decimal Files, October 1942 - 1944
Entry 294: Security Classified Decimal File, October 1942 - 1944
Entry 296: Correspondence Relating to Camps and Forts, 1939 - 1942

RG 30 (Records of the Bureau of Public Roads)
Entry 54: Highway Traffic Advisory Committee to the Defense Department, 1941 - 1945

RG 48 (Records of the Department of the Interior)
Entry 349A: Central Classified Files, 1907 - 1936
Entry 349B: Central Classified Files, 1937 - 1953

RG 51 (Records of the Office of Management and Budget)
Entry 149A: War Projects Unit, General Files, 1940 - 1945

RG 57 (Records of the United States Geological Survey)
Entry 27: Correspondence and Related Records, 1906 - 1945

RG 69 (Records of the Public Works Administration)
Entry: Central Decimal Files, 1935 - 1944

RG 77 (Records of the Office of the Chief of Engineers)
- Accession 52 - 0259
- Accession 52 - 0323
- Accession 53 - 0325
- Accession 56 - 0398
- Accession 62 - 1472
- Entry 391: Construction Completion Reports, 1917 - 1943
- Entry 393: "Historical Records of Buildings" and "Record of Equipment and Condition of Buildings at Active Army Posts, 1905 - 1942
- Entry 394: "Historical Records of Buildings at Abandoned Army Posts, 1905 - 1924
- Entry 396: Record of Equipment and Condition of Buildings, 1905 - 1936
- Entry 398: Annual Reports on Construction, Maintenance, and Repair at Posts, 1924 - 1938
- Entry 1006: Harbor Defense File, Decimal, Classified, 1918 - 1945
- Entry 1008: Harbor Defense File, Decimal, 1918 - 1945
- Entry 1009: Harbor Defense File (Geographic), Unclassified 1918 - 1945
- Entry 1011: Security Classified Subject Files, 1940 - 1945

RG 92 (Records of the Office of the Quartermaster General)
- Entry 1891: General Correspondence (Geographic File), 1922 - 1935
- Entry 1892: Classified Geographic File, 1936 - 1945
- Entry 1892A: General Correspondence (Geographic File), 1936 - 1945
- Entry 1974: Construction Completion Reports, 1917 - 1919
- Entry 1975: Construction Completion Reports, 1917 - 1938
- Entry 1998: Real Estate Records, 1917 - 1922

RG 107 (Records of the Office of the Secretary of War)
- Entry 102: Project Decimal Files, 1943 - 1946
- Entry 158: Special Assistant for Construction - MJ Madigan, General Correspondence, 1940 - 1945
- Entry 159: Special Assistant for Construction - MJ Madigan, Projects, 1940 - 1945

RG 111 (Records of the Office of the Chief Signal Officer)
- Entry 1036B: Historical Files, 1908 - 1962

RG 112 (Records of the Office of the Surgeon General)
Entry 31: Geographic Series, 1938 - 1946

RG 156 (Records of the Office of the Chief of Ordnance)
Entry 36: General Correspondence, 1915 - 1941
Entry 39: Confidential Correspondence, 1917 - 1940
Entry 1049: Unclassified General Correspondence, 1949 - 1954
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Entry 1056: Secret General Correspondence, 1949 - 1954
Entry 1120: Military Construction, Army Project Files, 1955 - 1957

RG 159 (Records of the Office of the Inspector General)
Entry 26: General Correspondence, 1939 - 1947

RG 160 (Records of the Army Service Forces)
Entry 25: Director of Plans and Operations, Liaison and Control Branch, Subject File, 1942 - 1944
Entry 27: Command Installations Branch, Correspondence File, 1942 - 1946
Entry 138: Readjustment Division, Central Decimal Files, 1943 - 1944
Entry 139: Readjustment Division, Central Decimal Files, 1943 - 1946

RG 162 (Records of the Federal Works Agency)
Entry 21: Records of the War Public Works Program, 1941 - 1949

RG 165 (Records of War Department General and Special Staffs)
Entry 257: Security Classified Correspondence and Maps Relating to Harbor and Coastal Defense Installations, 1914 - 1946
Entry 484C: Legislative and Liaison Division, Card Files and Approved WPA National Defense Projects, 1941 - 1942
Entry 484D: Federal Works Agency Project Files, 1940 - 1942
Entry 484E: Security Classified Federal Works Agency Project Files, 1942 - 1945

RG 168 (Records of the National Guard Bureau)
Entry: Army - NGB Decimal File, 1922 - 1962

RG 175 (Records of the Chemical Warfare Service)
Entry 1: Central Correspondence Files, 1918 - October 1942
Entry 1A: Records of The Office of the Chief Chemical Officer, 1946 - 1954
Entry 2: General Correspondence, 1918 - 1940
Entry 4: General Correspondence, 1918 - 1942
Entry 7: Records of the Office of the Chief Chemical Officer, 1948 - 1960

RG 218 (Records of the Joint Chiefs of Staff)
Entry: Series 1942 - 1959 (Geographic File)

RG 225 (Records of Joint Army and Navy Boards and Committees)
Entry 4: General Correspondence, 1922 - 1946
Entry 4A: Army and Navy Munition Board Central Files, 1922 - 1941
Entry 5: Security Classified General Correspondence, 1922 - 1945

RG 269 (General Records of the General Services Administration)
Entry 62: Real Property Disposal Case Files

RG 270 (Records of the War Assets Administration)
Entry 3: Office of War Information Subject Files, 1946 - 1949
Entry 8: Records of the Real Property Review Board, 1946 - 1949
Entry 9: Subject File of the Central Office of Real Property, 1946 - 1949

RG 291 (Records of the Federal Property Resources Service)
Entry 5: Real Property Disposal Case Files

RG 319 (Records of the Army Staff)
Entry 47: Army Intelligence Project Decimal File, 1941 - 1945

RG 334 (Records of Interservice Agencies)
Entry 15: Armed Forces Explosives Safety Board

RG 336 (Records of the Office of the Chief of Transportation)
Entry: Historical Program Files, 1940 - 1950

NARA - ARCHIVES II - CARTOGRAPHIC BRANCH
COLLEGE PARK, MD

RG 18 (Records of the Army Air Corps)
RG 30 (Records of the Bureau of Public Roads)
RG 92 (Records of the Office of the Quartermaster General)
RG 145 (Records of the Agricultural Stabilization and Conservation Service)
RG 370 (Records of the National Oceanic and Atmospheric Administration)
RG 373 (Records of the Defense Intelligence Agency)

NARA - ARCHIVES II - MOTION PICTURE, SOUND, AND VIDEO BRANCH
COLLEGE PARK, MD

RG 69 (Records of the Work Projects Administration)
RG 111 (Records of the Office of the Chief Signal Officer)
RG 200 (National Archives Gift Collection)
RG 335 (Records of the Office of the Secretary of the Army)

NARA - ARCHIVES II - STILL PICTURES BRANCH
COLLEGE PARK, MD

RG 18 (Records of the Army Air Force)
RG 30 (Records of the Bureau of Public Roads)
RG 77 (Records of the Office of the Chief of Engineers)
RG 92 (Records of the Office of the Quartermaster General)
RG 111 (Records of the Office of the Chief Signal Officer)
RG 156 (Records of the Office of the Chief of Ordnance)
RG 165 (Records of the War Department General and Special Staffs)

U.S. ARMY CENTER OF MILITARY HISTORY
WASHINGTON, DC

Historical Document Collection
WW II Posts, Camps, and Stations

U.S. ARMY CORPS OF ENGINEERS - OFFICE OF HISTORY
ALEXANDRIA, VA

Dale Floyd Collection
Coast Defense Study Newsletter
Image Collections

RG 337 (Records of Headquarters Army Ground Forces)
Entry 1: Army Field Forces. Headquarters, Chief of Staff, Combat Arms Advisory Group, Inspection Reports, 1948 - 1964
Entry 29A: Troop Training Division, Maneuvers, Special Projects, Subject Correspondence File, March 1942 - 1944
Entry 30: G3 Section Inspection Reports
Entry 55: General Correspondence, 1942 - 1945
Entry 55A: Project Decimal File, March 1942 - 1947
Entry 56: Adjutant General Section, Communications and Records Division, Decimal File, 1951 - 1952
Entry 57: General Headquarters, U.S. Army, General Correspondence, 1940 - 1942
Entry 57A: General Headquarters, U.S. Army, 1940 - 1942, Projects

RG 338 (Records of the U. S. Army Commands, 1942 -)
Entry: Unit Histories, 1940 - 1947
Entry 24: Western Defense Command, Central Correspondence, 1942 - 1946

RG 394 (Records of U.S. Army Continental Commands, 1920 - 1942)
Entry: Field Installations
Entry 271: 9th Corps Area: Correspondence Relating to Coastal Defense, 1920 - 1939
Entry 272: 9th Corps Area: Correspondence Relating to Harbor Defense Projects, 1922 - 1940
Entry 298: 9th Corps Area: Historical Reports Pertaining to Post Planning, 1899 - 1943

RG 407 (Records of the Adjutant General's Office, 1917 -)
Entry: 1940 - 1952 Army - AG Project Decimal File, Unclassified
Entry 360: 1903 - 1950 Army - AG Project Decimal File, Formerly Classified
Entry 427: WW II Operations Reports, 1940 - 1948

RG 429 (Records of the Organizations in the Executive Office of the President)
Entry 12: Central Real Property Surveys
Entry 17: Records Relating to Property and Installation Surveys, 1978 - 1984

Installation Books
Map Collection
Military Collection
Oral History Collections
Personal Papers Collection

WASHINGTON NATIONAL RECORDS CENTER
SUITLAND, MD

RG 77 (Records of the Office of the Chief of Engineers)
Accession 52 - 0117
Accession 52 - 0434

SECTION III
REGIONAL NATIONAL ARCHIVES FINDINGS
PART A
POSITIVE FINDINGS

FORT FLAGLER MILITARY RESERVATION

NARA, PACIFIC ALASKA REGION (SEATTLE)
SEATTLE, WA

RG 392, Records of United States Army Coast Artillery
Box # 1
Entry 288
Book, Fort Record Book, Fort Flagler, dated 1901-1942

SECTION III
REGIONAL NATIONAL ARCHIVES FINDINGS
PART B
NEGATIVE FINDINGS

FORT FLAGLER MILITARY RESERVATION

NARA, PACIFIC ALASKA REGION (SEATTLE) SEATTLE, WA

RG 30, Records of the Bureau of Public Roads
All Entries
Nothing Found

RG 49, Records of the Bureau of Land Management
All Entries
Nothing Found

RG 77, Records of the Office the Chief of Engineers
All Entries
Nothing Found

RG 103, Records of the Farm Credit Administration
All Entries
Nothing Found

RG 121, Records of the Public Buildings Service
All Entries
Nothing Found

RG 156, Records of the Office of the Chief of Ordnance
All Entries
Nothing Found

RG 181, Records of Naval Districts and Shore Establishments
All Entries
Nothing Found

RG 269, General Records of the General Services Administration
All Entries
Nothing Found

RG 270, Records of the War Assets Administration
All Entries
Nothing Found

NARA, NATIONAL PERSONNEL RECORDS CENTER
ST LOUIS, MO

All Entries
Nothing Found

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

Appendix C

Abbreviations, Acronyms, and Brevity Codes

APPENDIX C

GLOSSARY

AAA	Anti-Aircraft Artillery
AP	Armor Piercing
AR	Army Regulation
BD	Building Demolition or Base Detonating
BD/DR	Building Demolition/Debris Removal
CEHNC	Corps of Engineers, Huntsville Center
CEMVR	Corps of Engineers, Mississippi Valley Division, Rock Island District
CENCR	Corps of Engineers, North Central Division, Rock Island District
CENWS	Corps of Engineers, Northwest Division, Seattle District
COE	Corps of Engineers
CON/HTRW	Containerized Hazardous, Toxic, and Radioactive Waste
CWM	Chemical Warfare Material
DA	Department of the Army
DAC	Defense Ammunition Center
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
EE/CA	Engineering Evaluation/Cost Evaluation
EOD	Explosive Ordnance Disposal
EPA	Environmental Protection Agency
FDE	Findings and Determination of Eligibility
FUDS	Formerly Used Defense Site
HE	High Explosive
HEAT	High Explosive Anti-Tank
HTRW	Hazardous, Toxic and Radiological Waste
HTW	Hazardous and Toxic Waste
INPR	Inventory Project Report
IRP	Installation Restoration Program
MT	Mechanical Time
NARA	National Archives Records Administration
NDAI	No DoD Action Indicated
NPL	National Priority List
OE	Ordnance and Explosives
PAE	Preliminary Assessment of Eligibility
PD	Point Detonating
PN	Project Number or Part Number
PRP	Potentially Responsible Party
QASAS	Quality Assurance Specialist (Ammunition Surveillance)
RD/RA	Remedial Design/Remedial Action
RG	Record Group
RI/FS	Remedial Investigation and Feasibility Study
SAB	Same As Before
SI	Site Investigation or Site Inspection
SJMAC-ES	Army Material Command Ammunition Center-Explosive Safety
TM	Technical Manual
USA	U.S. Army
USACE	U.S. Army Corps of Engineers
USATCES	U.S. Army Technical Center for Explosives Safety
UXO	Unexploded Ordnance

WD	War Department

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

Appendix D

Ordnance Technical Data Sheets

APPENDIX D

TEXTS/MANUALS

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D-1	3-inch Seacoast Gun Ammunition, 1942 (B-50)
D-2	3-inch Seacoast AAA Ammunition, 1919 (B-51)
D-3	6-Inch Gun Ammunition, 1903 (B-52)
D-4	Large Caliber Coast Artillery Projectiles, 1940 (B-53)
D-5	90-mm Ammunition, 1947 (B-54)
D-6	37-mm Ammunition, 1944 (B-55)
D-7	2.36-Inch Rocket, 1943 (B-56)
D-8	3.5-Inck Rocket, 1981 (B-57)
D-9	Small Arms Cartridges, 1943 (B-56)

AMMUNITION

TABLE II (Continued)

Ammunition for the Gun, 3-Inch (15-Pdr.), M1903

Nomenclature	Fuze: Type and Model	Fuze: Action	Approximate weight of projectiles as fired (pounds)
Drill Ammunition (Continued)			
CARTRIDGE, drill, M3, w/FUZE, dummy, 21-sec., M42A1, 3-in. AA guns, M1917 (all models), M1925MI, M2, and M4, or 3-in. (15-pdr.) gun, M1903	21-sec. Dummy M42A1	....	....
CARTRIDGE, drill, 3-in. (15-pdr.) gun, M1903	....	....	....
Subcaliber Ammunition			
See paragraphs 51 and 63	....	....	....

46. PREPARATION FOR FIRING.

The ammunition authorized for the GUN, 3-inch (15-pdr.), M1902MI, listed in Table I, and the ammunition authorized for the GUN, 3-inch (15-pdr.), M1903, listed in Table II, is shipped as fixed, complete rounds. Each round is ready for firing after removing the packing material and setting the fuze as required. In the case of the high explosive shell when delay action is required, it is necessary to set the fuze DELAY because the fuze is set SUPERQUICK as shipped (par. 49). In the case of projectiles fitted with time fuzes, it is necessary to set the fuze either for percussion action or the required time action (par. 49 c).

47. AMMUNITION FOR THE GUN, 3-INCH (15-PDR.), M1902MI.

a. General. The ammunition listed in Table I is designed especially to fit the cartridge chamber of the GUN, 3-inch (15-pdr.), M1902MI. This ammunition is not authorized for any other model of gun. Ammunition for the M1902MI gun can be identified only by the markings on the base (also on the body in earlier types) of the cartridge case showing its caliber and model number, "3-IN. MARK IIM2," and by the length (one in.) of the shoulder of the cartridge case. See also paragraph 47 e and the following subparagraphs.

b. SHELL, Fixed, H.E., M42A1, w/FUZE, P.D., M48, 3-Inch (15-Pdr.) Gun, M1902MI. This high explosive round (fig. 51) is intended

for use against submarines, mine sweepers, and invasion craft. It consists of the primer M28A1 and a propelling charge of smokeless powder contained in the brass cartridge case Mk. IIM2 which is crimped rigidly to the shell. The projectile has an ogival radius of 7 calibers. The bursting charge consists of 0.86 pound of trinitrotoluene (TNT). Alternative bursting charges may be 0.77 pound of amatol, or 0.88 pound of trimonite. The rotating band of the projectile is 1 inch wide and has 2 cannelures. A set screw in the ogive holds the BOOSTER, M20 or M20A1, in place. As shipped, this projectile is fitted with the M48 impact type fuze which may be set either superquick or at delay action. The round is 34.05 inches long, weighs 24.93 pounds and contains a propelling charge weighing 4.87 pounds. After removing the packing material and setting the fuze (par. 49 **d**), the round is ready for firing.

c. SHELL, Fixed, H.E., M42, w/FUZE, P.D., M48, 3-Inch (15-Pdr.) Gun, M1902MI. This high explosive shell is similar to the shell described in paragraph 47 **g**, except for slight differences in the internal details. This round weighs 24.85 pounds as compared with 24.93 pounds for the M42A1 model.

d. SHELL, Fixed, H.E., M1915, 3-Inch (15-Pdr.) Gun, M1902MI. This high explosive round is designed for use against heavy materiel targets. It consists of the primer M28A1 and a propelling charge of 4.625 pounds of smokeless powder contained in the brass cartridge case Mk. IIM2 which is crimped rigidly to the heavy-walled projectile, which has an ogival radius of 7 calibers. This projectile has a bursting charge of 0.48 pound of explosive D. The base detonating fuze (FUZE, B.D., Mk. V) is fitted to the base of the projectile and is covered by the base cover; hence it is not visible. This round is 34.85 inches long and weighs 26.7 pounds. It is identified by the marking and the narrow (½ in.) rotating band without cannelures. After removing the packing material, the round is ready for firing.

e. PROJECTILE, Fixed, Target Practice, Mk. VIIA1, 3-Inch (15-Pdr.) Gun, M1902MI. This practice round consists of the primer M28A1 and a propelling charge of 4.75 pounds of smokeless powder contained in the brass cartridge case Mk. IIM2 which is crimped rigidly to the projectile of steel or cast iron. The projectile which has a cavity in the base is inert (contains no explosive) and has no fuze. It has an ogival radius of 7 calibers and is similar in shape and ballistic properties to the fuzed, high explosive service projectile described in paragraph 47 **b**. The rotating band is 1 inch wide and has two cannelures. The round is 34.27 inches long and weighs 26.74 pounds.

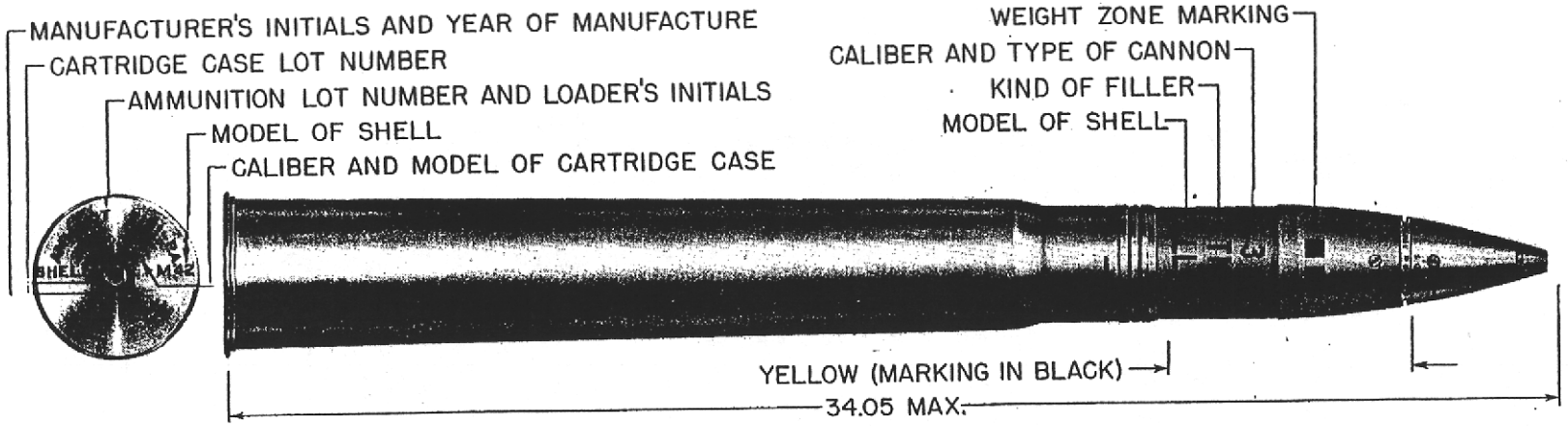
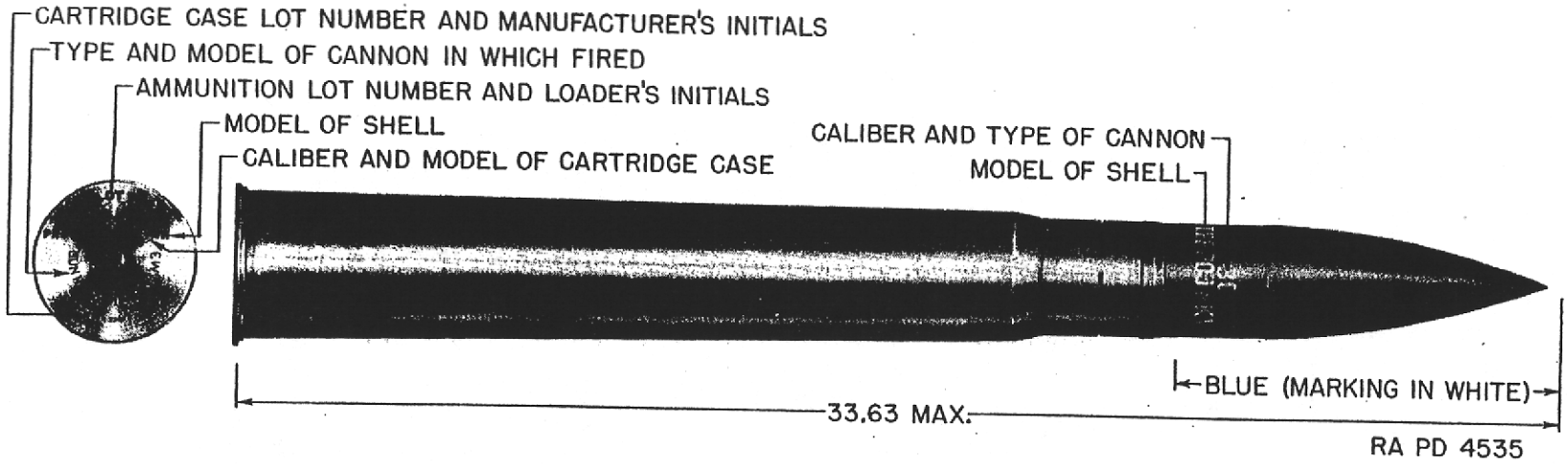


Figure 51—Shell, Fixed, H. E., M42, w/Fuze, P. D., M48, 3-inch (15-Pdr.) Gun, M1902MI



RA PD 4535

Figure 52—Projectile, Fixed, Target Practice, Mk. VII, 3-inch (15-Pdr.) Gun, M1902MI

The percussion cap recess is connected with the interior of the primer case by a small vent. The body of the case contains 110 grains of black powder, constituting the rear "priming" or igniting charge for the smokeless powder. This black powder is inserted under a pressure of 36,000 pounds per square inch, and is pressed into the primer body around a central wire, which is then withdrawn, leaving a longitudinal hole the full length of the primer. Six radial holes are drilled through the primer and compressed powder, affording 12 vents for the free exit of the black-powder flames. After filling the case the front end is closed by a cardboard wad covered with shellac, and the radial perforations in the body of the case are covered by a tinfoil wrapper to retain any loose black powder, as well as to exclude all moisture.

In action the blow of the firing pin explodes the percussion cap, which ignites the black powder; the flames of the latter shoot out through the vents in the primer case and ignite the smokeless-powder charge.

CARTRIDGE CASE.

The cartridge case is manufactured by a series of drawing and heading operations from a flat, circular, solid, brass disk. On the heading operations a flange or rim is formed under which the lip of the extractor engages in order to eject the case from the chamber of the gun. The center of the head of the case is bored out to form a seat, into which the primer is forced. The metal around the primer seat is hardened by additional working in order to prevent expansion of the primer hole from the chamber pressure, when the round is fired, and to prevent blowbacks from a loose fit of the primer in subsequent firings. The primers are inserted into the primer seat by a small primer-inserting press to avoid injury to the primer or case and to facilitate loading. Decapping tools are also used to extract fired primers from the case, to avoid injury to the primer seat.

The 3-inch (15-pounder) gun cartridge case Mark I is for use in 3-inch guns A. A. Model 1917. This case is 27.15 inches long, and weighs approximately 7¾ pounds without the primer. It is similar in appearance to the Mark II case shown in figure 2.

The 3-inch (15-pounder) gun cartridge case, Mark II (see fig. 2), is for use in 3-inch guns A. A. Model 1918. This case is 23.65 inches long and weighs approximately 6.75 pounds without the primer.

The propellant charge of nitrocellulose for both cases weighs 5 pounds and 6 ounces. A cylindrical distance wad of cardboard is placed on the propellant charge at the mouth of the case, in order to keep the charge against the primer at the base of the case.

As soon after firing as practicable the primer should be removed from the cartridge case. The case should then be thoroughly washed

in a strong solution of soft soap and soda to remove all powder residue. It should be then rinsed in water, thoroughly dried, packed in boxes, and sent to a reloading depot.

A good solution for washing cartridge cases may be prepared by using ingredients in the following proportions: One gallon water, 2½ ounces soft soap, and 5½ ounces soda. The mixture should be boiled and stirred until the ingredients are entirely dissolved. It should be used hot and in sufficient quantity to completely immerse the case. Neither acids nor solutions of acids will be used in the field for cleaning cartridge cases.

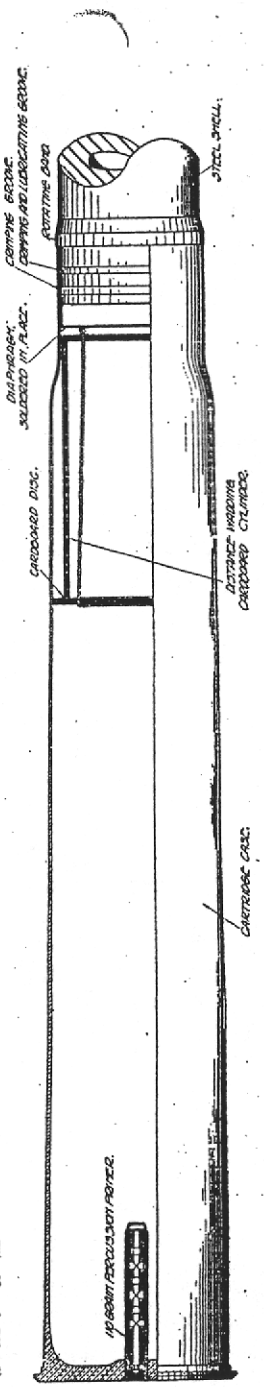
THE POWDER CHARGE.

The powder charge is a nitrocellulose powder, composed of multiperforated (7 perforations) cylindrical grains. The charge weighs approximately 5 pounds and 6 ounces. In making up the cartridges a brass diaphragm is soldered in place to avoid the possibility of moisture reaching the powder charge or the primer. To hold the powder in place distance wadding is used between the diaphragm and the powder. The charge, in Model 1917 gun, gives a muzzle velocity of 2,600 feet per second, with a maximum pressure in the bore not exceeding 36,000 pounds per square inch, and in the Model 1918 and 1918 MI a velocity of 2,400 feet per second and a pressure in the chamber not exceeding 34,000 pounds per square inch.

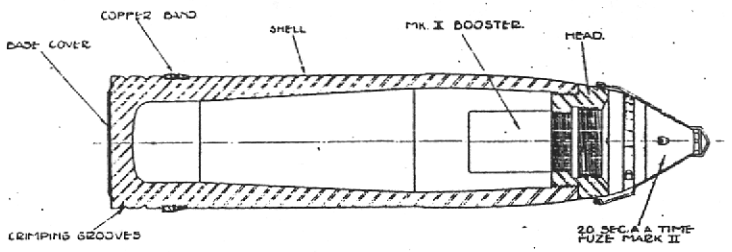
PROJECTILES.

ANTIAIRCRAFT SHELL, MARK I.

This high-explosive shell has a total length fuzed of 13.71 inches. Its ogive is struck with a radius of about seven calibers. It is fitted with a copper rotating band forced into a groove 1.2 inches from the



base of the shell. The bottom of the band seat is suitably scored to prevent the slipping of the band. The shell is provided with two crimping grooves between the band and base to take the crimping of the cartridge case. The nose of the shell is closed with a flat head threaded at the front end to take the Mark II time fuze, and at the rear end to take the Mark X booster. The shell is provided with a base cover, consisting of a lead disk and brass cover, which is forced into an undercut groove. This cover is to prevent leakage of flame from the propelling charge through the shell base and possibility of a premature burst of the shell in the bore.



A.A. SHELL MARK I.

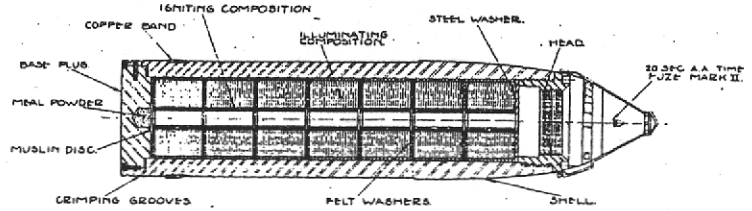
The capacity of the shell is about 32 cubic inches with the booster in place, and it contains a bursting charge of about 1.55 pounds of explosive. The weight filled and fuzed is approximately 15 pounds.

ILLUMINATING COMMON STEEL SHELL, MARK V (A. A.).

The over-all length of this shell is about 13.29 inches fuzed. Its ogive is struck with a radius of about seven calibers. It is fitted with a copper rotating band forced into a groove 1.2 inches from the base of the shell. The bottom of the band seat is knurled or scored to prevent slipping of the band. The shell is provided with two crimping grooves between the band and the base to take the crimping of the cartridge case. The base of the shell is closed by a steel plug which is fastened in place by steel pins driven in. The joint between the base plug and shell is undercut and calked with lead wire. A small recess on the inner face of this plug contains about 18 grains of meal powder, which is covered by a muslin disc, held in place by shellac. No base cover is used.

The illuminating charge consists of an illuminating composition compressed in small steel cups. Seven cups make up the charge for one shell. Each cup is 1.22 inches high by 2.1 inches in diameter, and has a hole $\frac{3}{8}$ inch in diameter in the bottom. The composition is inserted in the cups under heavy pressure, a central

channel lined with an igniting composition being formed in each unit, so that when the cups are assembled in the shell a passageway is provided for the flame from the fuze to the powder charge in the base. Each cup of illuminating composition is separated from the next one by a felt washer. When the last unit is in place a steel washer is placed over it, and the nose of the shell is closed with a flat head threaded to take the Mark II time fuze.

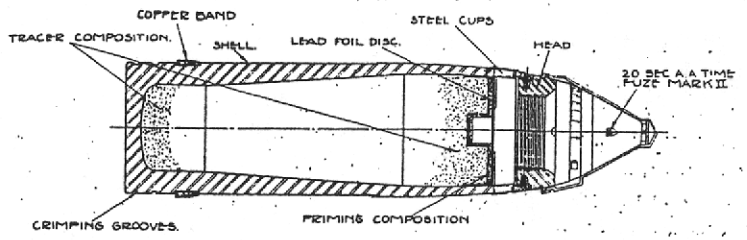


ILLUMINATING COMMON STEEL SHELL MK V A.A.

In action the flame from the powder magazine in the base of the fuze flashes down the central channel through the igniting composition, igniting it and the base charge of powder. The resulting explosion ejects the base plug, and the cups of composition, now ignited, are discharged from the base of the shell. The time of burning of the composition is about 10 seconds.

ANTIAIRCRAFT TRACER SHELL, MARK III.

This shell is designed with thin walls and carries a large charge of a tracer composition. It has a total length of 12.19 inches fuzed.



A.A. TRACER SHELL MARK III.

The ogive is struck with a radius of about seven calibers. It is fitted with a copper rotating band forced into a groove 1.2 inches from the base. The bottom of the band seat is suitably knurled to prevent slipping of the band. The shell is provided with two crimping grooves

between the band and the base to take the crimping of the cartridge case. No base cover is used. The nose of the shell is closed with a flat head threaded to take the Mark II time fuze. Just back of the head six holes one-half inch in diameter equally spaced are drilled in the body of the shell to provide exits for the burning gases by means of which the flight of the projectile is traced. These holes are stopped with sheet-steel cups inserted from the outside so they may be easily blown out by the explosion of the fuze magazine.

The tracing composition consists of a mixture of magnesium and red lead. It is assembled in the shell in layers under a pressure of 30,000 pounds per square inch, the shell being filled to within 0.05 inch of the lower edge of the drill holes previously mentioned. The last layer consists of a priming mixture. A cup-shaped recess is formed in this mixture directly underneath the lower opening of the fuze. A lead foil disk shellacked in place covers the mixture.

The capacity of the shell is about 32 cubic inches and the weight of the charge is about 5.5 pounds. The total weight of the shell is about 15 pounds.

In action the explosion of the powder magazine in the fuze throws out the cups in the vents of the shell, breaks through the foil covering over the cup-shaped recess left in the composition, and ignites the priming mixture. The smoke and flame from the burning tracer composition pour out through the open holes in the shell and trace the flight of the projectile. This is both a day and night tracer, the shell being traced by the thick yellow smoke in daylight and by the flame at night.

The shell can also be used as an incendiary shell against balloons and Zeppelins.

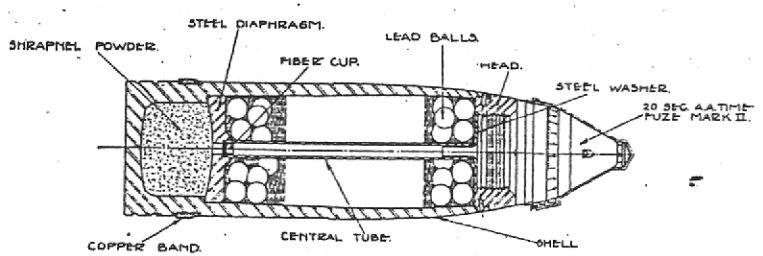
ANTIAIRCRAFT SHRAPNEL, MARK I.

This base charged shrapnel has a total length, fuzed, of 11.46 inches. The ogive is struck with a radius of about seven calibers. The rotating band is forced into a groove 1.2 inches from the base of the shell. The bottom of the band seat is suitably knurled to prevent the slipping of the band. The front, or mouth, of the case is closed by a steel head screwed in and tapped to take the Mark II time fuze. No base cover is used.

The base charge consists of 0.17 pound of shrapnel powder. It is separated from the balls by a steel diaphragm, with a hole in the center. Fitted into this hole and supported by the diaphragm is a brass or steel central tube which extends forward to the fuze, and thus affords a conduit for flames from the fuze to the bursting charge. The rear end of this tube is closed by a fiber cup, to prevent the loose powder from getting into the tube. At the rear end of the

head is a sheet-steel washer with a hole in the center to allow the tube to pass through to the fuze.

The shrapnel filling between the steel diaphragm and the matrix cover is composed of approximately 253 lead balls 0.48 inch in diameter. The balls are poured around the central tube and rest upon the steel diaphragm. The interstices contain a smoke-producing matrix, which disintegrates and frees the balls during burst of the shrapnel.



A.A. SHRAPNEL MARK I.

The matrix also produces most of the smoke, which makes possible the observation of shrapnel fire.

In action, the bursting charge does not rupture the shrapnel case, but blows out the head and ejects the diaphragm, throwing the balls forward with an increased velocity.

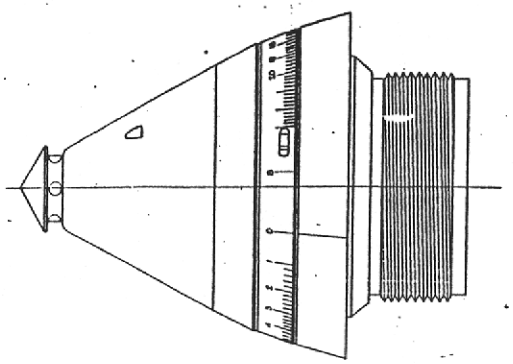
FUZE.

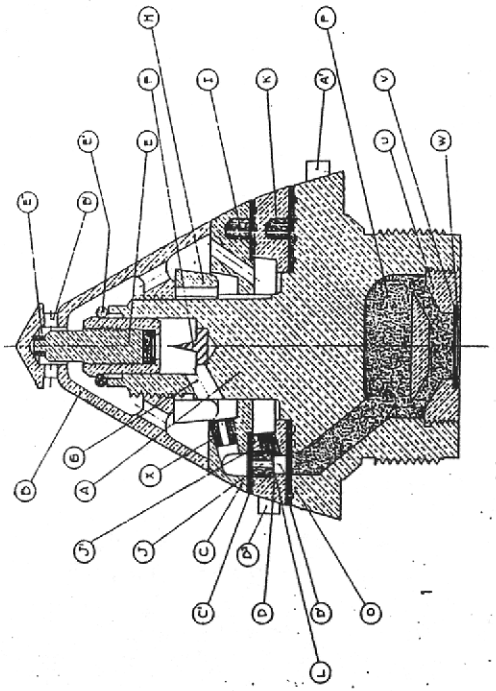
ANTIAIRCRAFT TIME FUZE MARK II.

This fuze differs from the combination fuzes used with common shrapnel chiefly in the omission of the percussion mechanism. It is set by turning a graduated ring which carries part of the time train, and may be reset as often as is necessary. Most of the parts are aluminum or brass.

The principal parts of this fuze are as follows (see fig. 7):

- (*a*) Body.
- (*b*) Closing cap.
- (*b*^{1}) Closing cap vents.
- (*c*) Upper time train ring.
- (*c*^{1}) Washer for graduated time train ring, felt cloth.
- (*d*) Graduated time train ring.
- (*d*^{1}) Washer for body, felt cloth.
- (*d*^{2}) Rotating pin.
- (*e*) Concussion plunger.
- (*e*^{1}) Concussion resistance ring.
- (*e*^{2}) Concussion plunger spring.
- (*f*) Firing pin.
- (*g*) Vent leading to upper time train.





ANTI-AIRCRAFT TIME FUZE, MARK II

(*h*) Compression ring.
(*i*) Upper time train, compressed powder.
(*j*) Compressed powder pellet, in vent leading to lower time train.
(*j*¹) Compressed powder pellet, in lower time train vent.
(*k*) Lower time train, compressed powder.
(*l*) Brass disc, locked in place.
(*o*) Vent leading to magazine.
(*p*) Powder magazine.
(*u*) Bottom closing screw.
(*v*) Cloth disc.
(*w*) Brass washer.
(*x*) Compressed powder pellet.

In the lower face of each ring a horseshoe-shaped annular groove is milled. Meal powder is compressed into these grooves under heavy pressure, forming the time train. The time train in the two grooves totals about 9 inches in length.

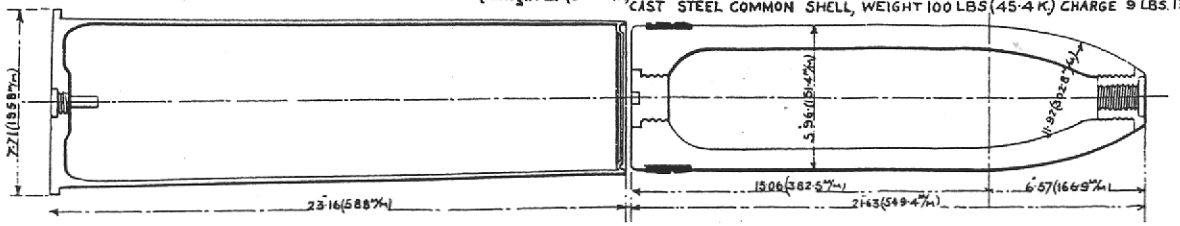
The plunger (*e*) is cylindrical and contains the primer composition in a recess in its base. The concussion resistance ring (*e*¹) prevents contact of the primer and firing pin until the projectile is fired. The acceleration of the projectile during discharge from the gun causes the plunger, through inertia, to spread the ring and brings the primer into contact with the firing pin. Assuming first the "zero" setting as shown in the figure, the flame from the primer passes out through the vent (*g*) which is drilled through the walls of the concussion plunger chamber and is exactly opposite a hole at one end of the upper time train. At the "zero" setting, the vents being all in register, the flame passes directly down vent (*j*), through a hole in the end of the time train (*k*), then through the vent (*o*) to the magazine (*p*), from which the flame is transmitted to the charge of the projectile.

For any other setting, such as 12 seconds, the rotation of the graduated ring has separated the vents (*j*), (*g*), and (*o*), stopping direct access to the train (*k*) and forcing the flame to travel in a clockwise direction along the time train (*i*), until it reaches the new position of vent (*j*), then pass down to train (*k*) and back, counterclockwise, to vent (*o*), where it ignites the powder pellet (*m*) and explodes the powder magazine (*p*).

The graduated time train ring is graduated in a counterclockwise direction on its outer edge from 0 to 23. For the 23-second setting the vent (*j*), leading to the beginning of the lower time train, is opposite the end of the upper time train and the end of the lower time train is opposite the vent (*o*) leading to the powder magazine. Thus the entire length of time train in both rings must be burned before the flame can reach the magazine (*p*).

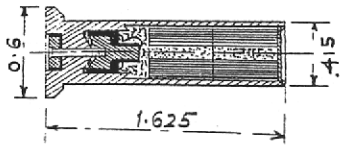
A safety setting is obtained by utilizing the solid surfaces of the upper and lower time train rings left between the ends of the an-

CARTRIDGE CASE, CHARGE 13·25 LBS.(6 K) CORDITE { Dia.-3 (7·6"/m) / Length 21"(533·4"/m) }

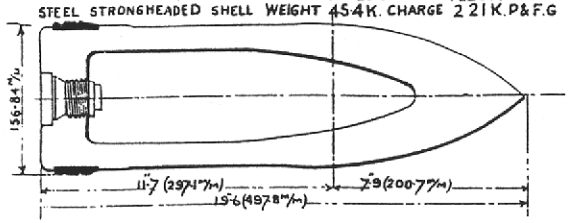


CAST STEEL COMMON SHELL, WEIGHT 100 LBS (45·4 K.) CHARGE 9 LBS. 13 OZS (4·45K) P & F.G.

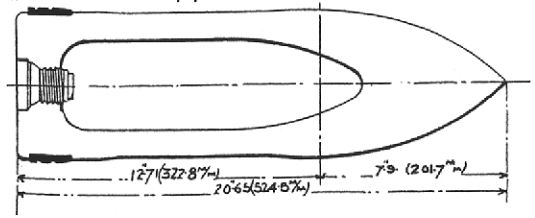
ELECTRIC PRIMER.



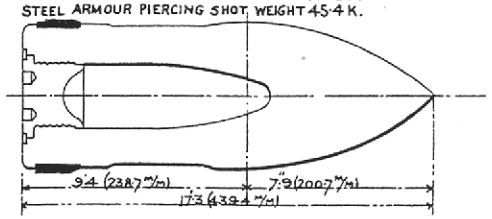
STEEL STRONGHEADED SHELL WEIGHT 100 LBS 45·4 K. CHARGE 4 LBS 14 OZS 2·21 K. P & F.G



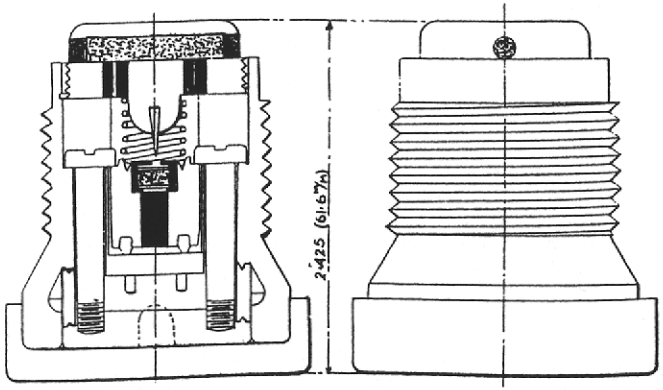
CAST IRON COMMON SHELL, WEIGHT 100 LBS 45·4 K. CHARGE 4 LBS 12 OZS 2·1SK. P & F. G.



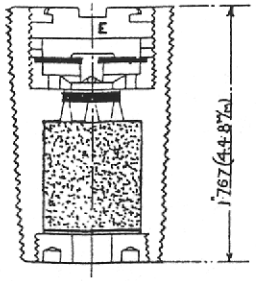
STEEL ARMOUR PIERCING SHOT WEIGHT 100 LBS 45·4 K.



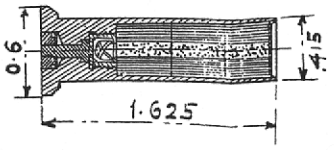
BASE PERCUSSION FUZE



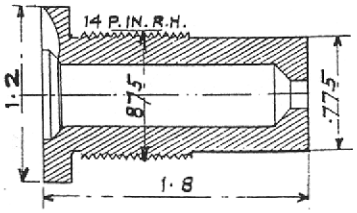
DIRECT ACTION PERCUSSION FUZE



PERCUSSION PRIMER.



PRIMER ADAPTER.



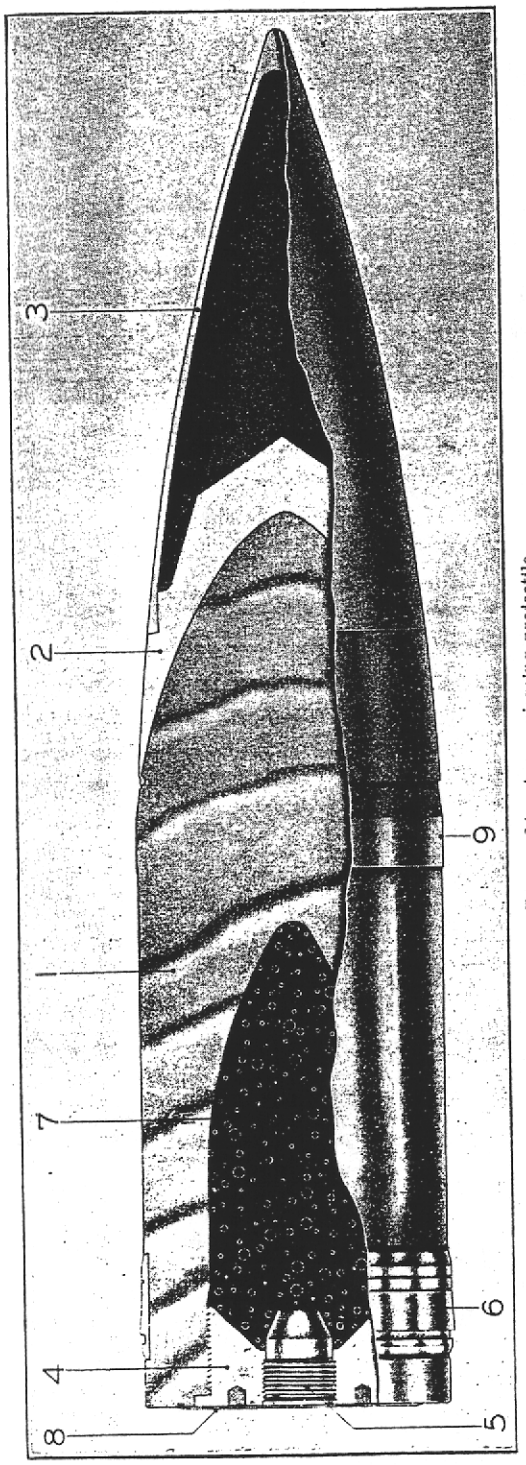


FIGURE 24.—Armor-piercing projectile.

1. Steel shell.
2. Armor-piercing cap.
3. Windshield.
4. Base plug.
5. Fuze.
6. Rotating band.
7. Bursting charge (explosive D).
8. Base cover.
9. Bourrelet.

D-4

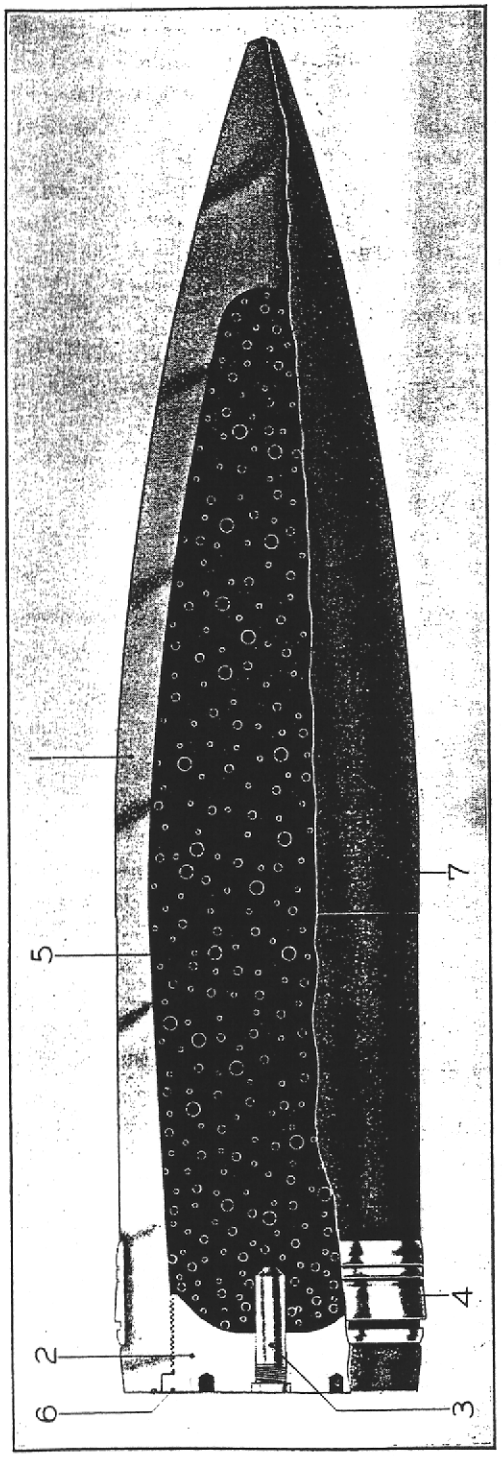


FIGURE 28.—High-explosive shell.

1. Steel shell.
2. Base plug.
3. Fuze.
4. Rotating band.
5. Bursting charge (explosive D).
6. Base cover.
7. Bourrelet.

D-4

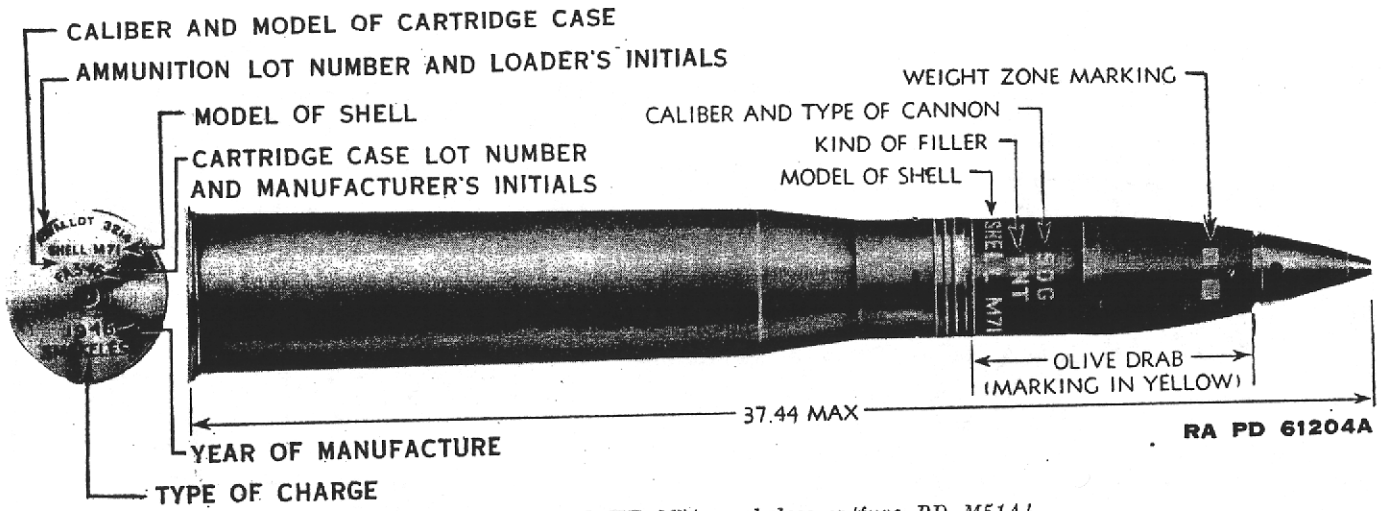


Figure 102. Shell, fixed, HE, M71, smokeless, w/fuze, PD, M51A4, 15-sec-delay, for 90-mm guns M1, M2, M3, and T8.

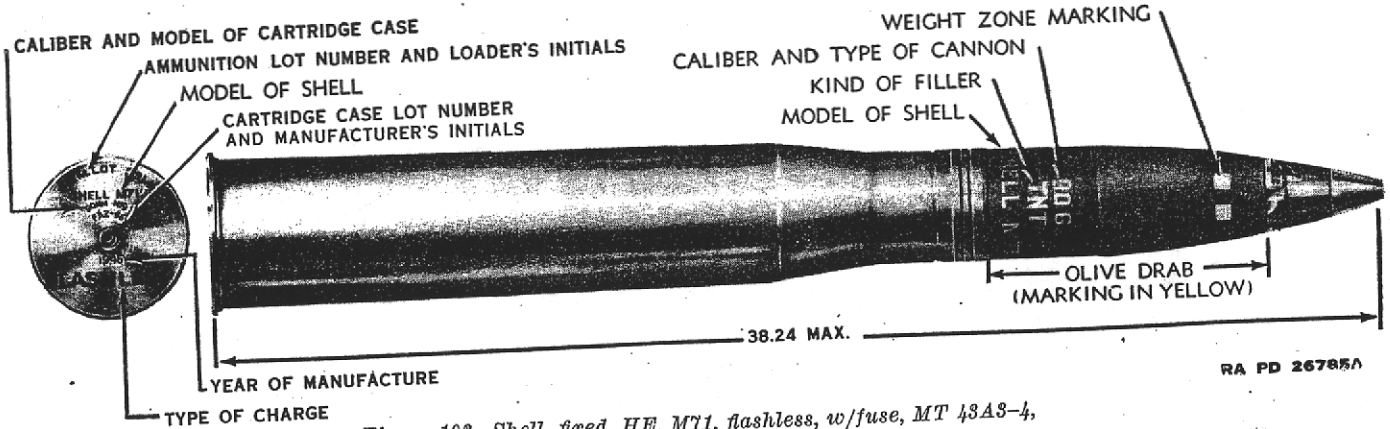


Figure 103. Shell, fixed, HE, M71, flashless, w/fuse, MT 43A3–4, for 90-mm guns M1, M2, M3, and T8.

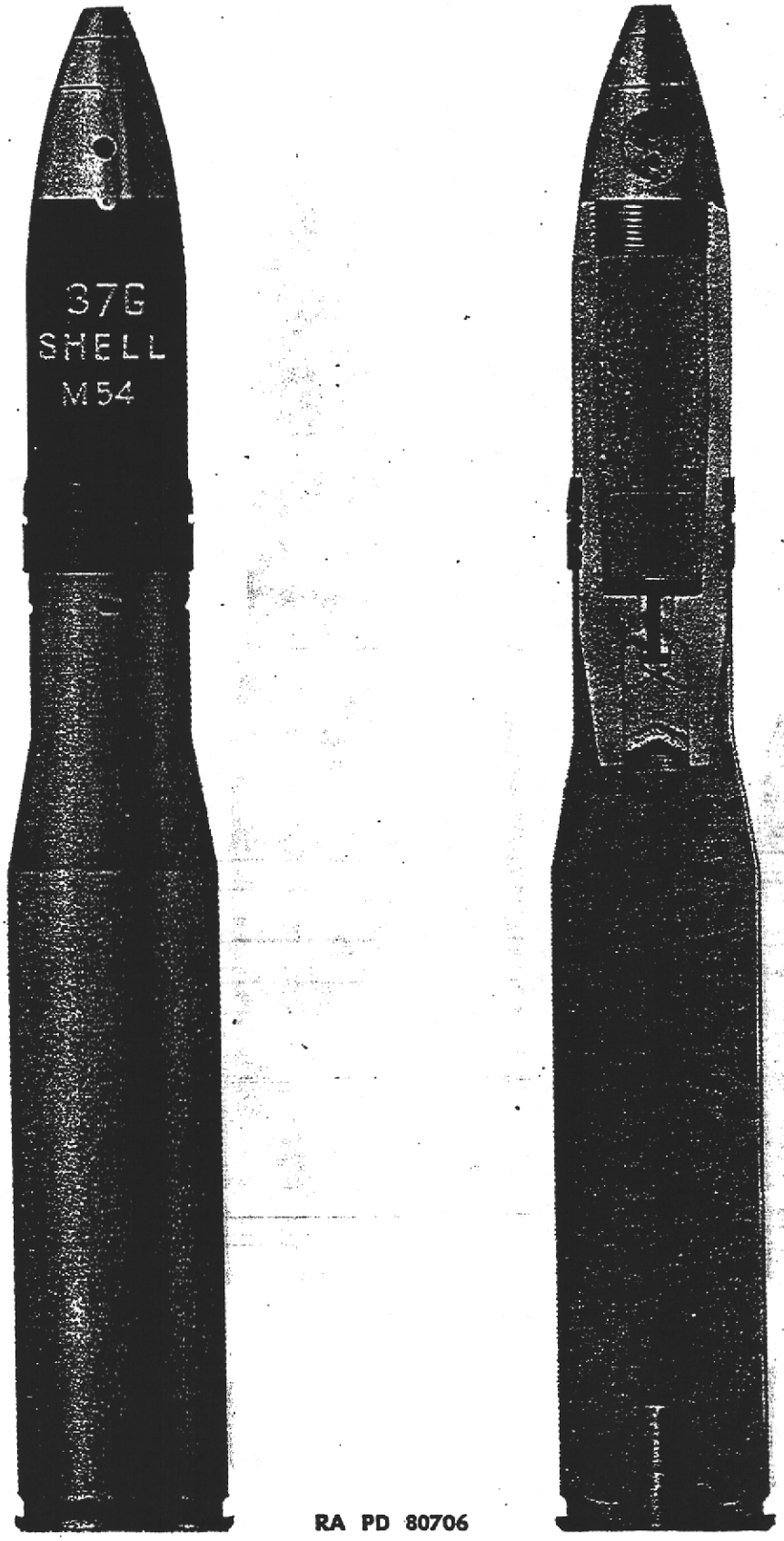


Figure 33 — SHELL, Fixed, H.E., M54, w/TRACER, SD, and FUZE, P.D., M56, 37-mm Auto. Guns, M1A2 and AN-M9

33. SHELL, FIXED, H. E., M54, W/TRACER, SD, AND FUZE, P. D., M56, 37-MM AUTO. GUNS, M1A2 AND AN-M9 (fig. 33), is provided for use in the M1A2 and AN-M9 Guns for firing against aircraft, hence is fitted with a supersensitive type fuze. The same shell and fuze are also used with the AN-M4 and M10 Aircraft Guns. However, when fired from the M1A2 and AN-M9 Guns, the round is assembled with the M17 Cartridge Case, or for the M1A2 Gun only, with the M17B1 (steel) Cartridge Case. The projectile consists of a relatively thin-welded shell body, a tetryl bursting charge, FUZE, P.D., M56, and a shell-destroying tracer. The nose is threaded to receive the fuze and the "boat-tailed" base is threaded to receive a tracer assembly containing a relay housing, an igniter charge, and a relay igniting charge. These charges connect the tracer with a black powder pellet in the base end of the bursting charge cavity. The tracer burns for about 8 seconds, equivalent to about 3,500 yards, whereupon the relay pellet is ignited and causes the bursting charge to detonate if prior functioning has not been caused by impact.

DATA

Weight of complete round	2.62 lb	Type of base	Boat-tailed
Length of complete round	12.81 in.	Degree of taper base	9 deg 15 min
Length of fuzed projectile	5.87 in.	Radius of ogive	4.34 cal.
Length of cartridge case	8.75 in.	Muzzle velocity	2,600 ft per sec
Width of rotating band	0.74 in.	Maximum range	3,500 yd*

Figure 34 — SHOT, Fixed, A.P., M74, w/TRACER, 37-mm Auto. Gun, M1A2

34. SHOT, FIXED, A. P., M74, W/TRACER, 37-MM AUTO. GUN, M1A2 (fig. 34), has the same shot as that used in the corresponding round for M3, M3A1, M5, M5A1, and M6 Guns (par. 43). However, when fired from the M1A2 Gun, it is assembled with the M17 Cartridge Case, which has an extractor groove. The tracer burns for 2,000 yards.

DATA

Weight of complete round	3.07 lb	Radius of ogive	1.52 cal.
Length of complete round	13.01 in.	Muzzle velocity	2,050 ft per sec
Length of projectile	4.84 in.	Maximum range	7,290 yd
Length of cartridge case	8.75 in.	Penetration (in. at 0-deg obliquity of homogeneous plate at 1,000 yd)	1.2
Width of rotating band	0.74 in.		
Type of base	Square		

*—Limited by shell-destroying tracer. Theoretical maximum is 8,875 yards, horizontal, and 6,200 yards, vertical.

D-6

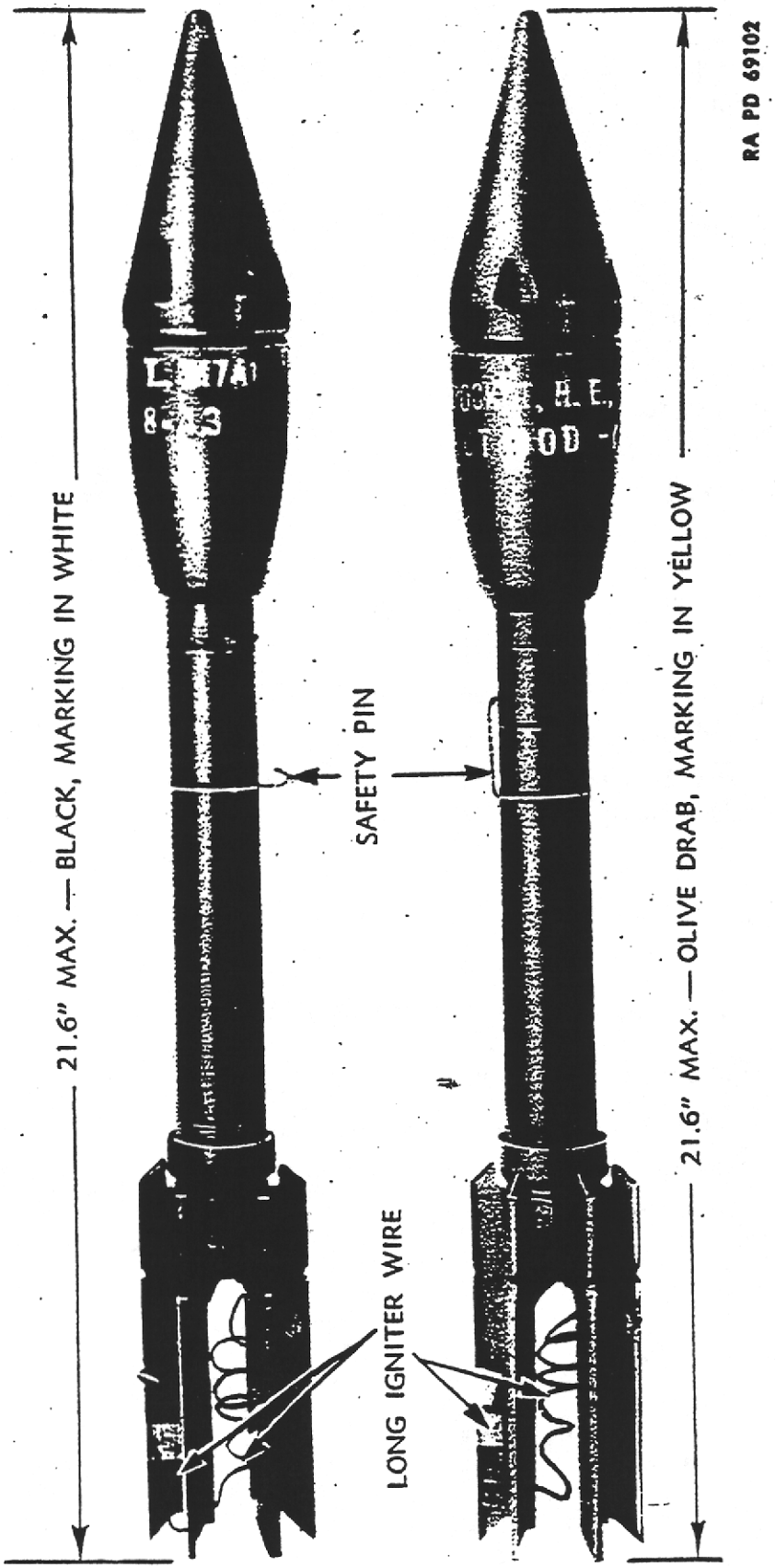


Figure 143—ROCKET, AT, 2.36", M6A1 (Lower) and ROCKET, Practice, 2.36", M7A1

D-7

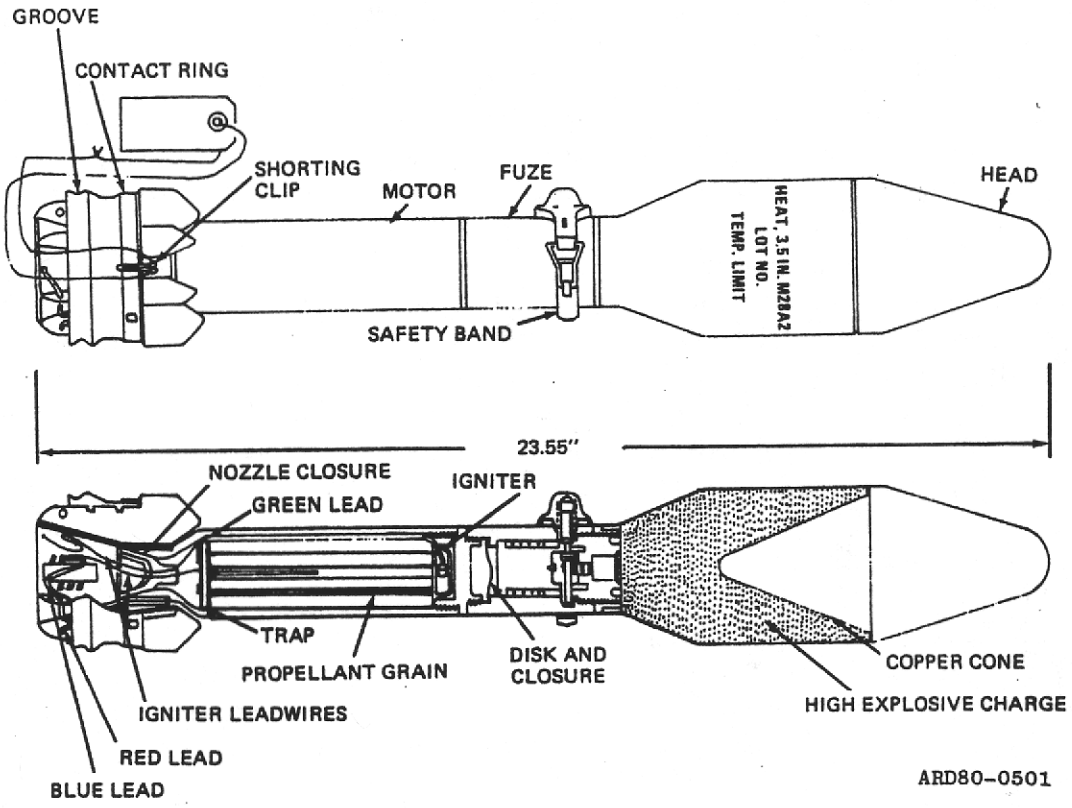
149. ROCKET, AT, 2.36", M6A1 AND ROCKET, AT, PRACTICE, 2.36", M7A1.

	Rocket, AT, M6A1	Rocket, AT, Practice, M7A1
a. Weight:	Pounds	
Complete round	3.39	3.39
Body, ogive, and cone assembly	1.09	1.09
Bursting charge	.483	
Stabilizer and fuze assembly	1.82	2.49
Propelling charge	.135	
Fin assembly with nozzle	.47	.47
b. Length:	Inches	
Complete round	(Max.) 21.62	(Max.) 21.62
Body, ogive, and cone assembly	8.80	8.80
Squib, ignition (electric) (long wire)	23.75	23.75
Stabilizer and fuze assembly	11.421	11.421
Stabilizer tube (exposed portion after assembly)	(Approx.) 6	(Approx.) 6
Fin	5.421	5.421
c. Diameter:	Inches	
Body, ogive, and cone assembly	2.245	2.245
Fin (maximum diameter)	(Approx.) 2.313	(Approx.) 2.313
d. Miscellaneous:		
Muzzle velocity	265 ft per sec	265 ft per sec
Maximum range	700 yds	700 yds
Propelling charge burning time	(Approx.) .03 sec	(Approx.) .03 sec
Type of fuze	Direct action, nondelay	None

References

SNL S-9
Drawing No. 82-6-3 (C/R)
Specification No. AXS-788
TM 9-294
TM 9-1900

ROCKET, HIGH-EXPLOSIVE, 3.5-INCH: AT, M28A2



Type Classification:

STD (LCC-B) OTCM 36841 Jul 58

Use:

The M28A2 HEAT rocket is used primarily against armored targets, tanks and secondary targets, such as gun emplacements, pillboxes and personnel. It is capable of penetrating heavy armor at angles of impact greater than 30°. In an antipersonnel role, it has a fragmentation area 10 yd wide and 20 yd deep.

Description:

a. The warhead is cylindrical and tapered. The forward end, called the ogive, is thin metal and hollow. The rear end, threaded internally to receive the fuze which is encircled by a safety band. The warhead contains a copper cone whose apex faces aft and acts to shape the high explosive charge Composition B (Comp B).

b. The base detonating (BD) rocket fuze M404A2 consists of a body which contains the functioning parts; a safety band, a detonator and a booster pellet. The fuze body and safety band are olive drab. The fuze mechanism consists of an activating plunger, a setback spring, a setback sleeve, a firing pin assembly, a detent spring, an ejection pin and an ejection spring. The spring-loaded ejection pin passes through the fuze body.

c. The motor assembly consists of a tube which houses the propellant and igniter. The fin assembly is securely attached to this tube. The front end of the tube is assembled to the base of the fuze. The rear end forms a nozzle. The cylindrical motor cavity is divided into four

sections by two spacer plates which support the grains of propellant powder.

d. Each grain of propellant is 5-in. long and approximately 3/8-in. in diameter. Three grains are placed in each of the four sections formed by the spacer plates. Each lot of propellant is adjusted at the time of manufacture to give standard velocity. The igniter ignites the propellant.

e. The igniter consists of a short, cylindrical plastic case containing a small black powder charge and an electrical squib. It is assembled in the forward end of the motor on top of the propellant, spacer plates. The leads of the electrical squib, running parallel to the grains of propellant, pass from the igniter through the nozzle into the expansion cone. A green lead (ground) wire is connected to the aluminum support ring of the contact ring assembly. A red lead (positive) wire is attached to a pin which is insulated from the support ring, but is in contact with the copper contact band. These connections are positioned 180° apart. Blue lead is used for test purpose only.

f. The fin assembly consists of six aluminum alloy fins and a contact ring assembly. The contact ring assembly, which encircles the fins, consists of three rings. The aluminum support ring, which is innermost, is separated from the copper contact ring by a plastic insulating ring. The fins are spot welded to the expansion cone, and the expansion cone is press fitted to the rear of the motor tube. The M24 and the M66 off-route mines utilizing M28A2 HEAT rockets are described in TM 43-0001-36.

Differences between Models:

The BD rocket fuze M404A1 is similar to BD rocket fuze M404A2. The M404A1 differs principally in minor design changes of the functioning parts and the shape of the safety band.

Functioning:

a. When the safety band is removed, the ejection pin moves outward approximately 3/8 of an inch but still prevents all parts of the fuze mechanism from moving. When the rocket is in the firing chamber, the ejection pin is partially depressed by the chamber, thereby freeing the setback sleeve so it can move to the rear when the rocket is fired. The fuze is still safe, since the ejection pin prevents movement of the actuating sleeve and firing pin.

b. If it becomes necessary to remove the rocket from the launcher, the ejection pin will move outward and re-engage the setback sleeve. This returns the fuze to its original safe condition.

c. When the rocket is fired, the force of inertia causes the setback sleeve to move rearward. It is held in its rearward position by the lockpin. When the rocket leaves the muzzle of the launcher, the ejection pin is thrown clear of the fuze by the ejection pin spring. The fuze is then fully armed.

d. During flight, the firing pin lever and firing pin spring prevent the firing pin from striking the detonator. The creep spring retards the forward movement of the plunger and actuating sleeve. The action of the creep spring prevents the fuze from firing should the rocket strike light objects such as thin brush or undergrowth.

e. Upon impact with a more resistant object, the plunger and actuating sleeve move forward until the sleeve hits the firing pin lever. This causes the firing pin to strike and detonate the warhead.

Tabulated Data:

Rocket:
- Model ------ M28A2
- Type ------- Service
- Diameter ---- 3.5 in.
- Length (max)-- 23.55 in.
- Weight ----- 9.00 lb
- Performance:
  - Operating temperature limits ----- -20° to +120°F (-28.6 to +48.4C)
  - Muzzle velocity (at 70°F) (approx) ---- 325 ft/sec (99 mps)

Warhead:
- Type ------- HEAT
- Body ------- Steel
- Color ------ Olive drab w/yellow markings
- Diameter ---- 3.5 in.
- Length ------ 10.5 in.
- Weight ----- 4.47 lb

High-explosive train:
- Detonator ---- M41
- Booster (tetryl)----- 0.17 oz (4.81 g)
- Filler (warhead)
  - Type ------ Comp B
  - Weight (approx) ---- 1.88 lb (.854 kg)

Fuze:
- Model ------ M404A1 or M404A2
- Type ------- Base detonating
- Diameter ---- 2.0 in.
- Length:
  - Overall ---- 3.48 in.
  - To shoulder (max)------ 2.94 in.
- Weight ------ 1.16 lb
- Arming distance ----- 10 ft (3.05 m)

Motor:
- Diameter (at fins) ------- 3.5 in.
- Length ------ 10.41
- Weight ------ 3.30 lb
- Thrust ------ 6,000 - 10,000 lb

Propelling initiating train:
- Igniter:
  - Model ----- M20A1
  - Charge (black powder) ---- 0.13 ± 0.007 (3.5 ± .2 g)
  - Electric squib ------ M2
- Propelling charge:
  - Propellant:
    - Model ---- M7
    - Type ----- Solvent
  - Configuration - Monoperforated, cylindrical, extruded grains (12)
  - Weight ------ 0.44 lb (198 g)
  - Burning time:
    - At -20°F---- 0.05 sec
    - At +120°F --- 0.02 sec

Launchers ----- M20, M20A1, M20A1B1, M20B1

Packing ------- 1 per metal/fiber container, 3 containers per wooden box

Box:
- Weight (with contents) ---- 53.0 lb

Dimensions:
W/metal container --- 29-9/16 in. x 14-1/16 in. x 16-19/32 in.

W/fiber container --- 29-3/16 in. x 13-7/8 in. x 16-19/32 in.

Cube:
W/metal container ---- 1.6 ft^3
W/fiber container ---- 1.5 ft^3

DODAC ------- 1340-H600

Shipping and storage data:
Storage class/ SCG --------- 1.1E
DOT shipping class --------- A
DOT designation - ROCKET AMMUNITION WITH EXPLOSIVE PROJECTILES
Field storage -- Group E

Drawings:
Complete assy -- 9211744 (82-6-22
Loading assy (head) ------- 82-16-36
Loading assy (motor) ------ 9225502 (82-16-35)
Packing (inner) -- 7549038
Packing (outer) -- 7549040

References:
TM 9-1340-222-34

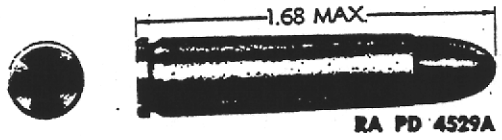


Figure 94—CARTRIDGE, Carbine, Cal. .30, M1

101. CARTRIDGE, CARBINE, CAL. .30, M1.

	Grains
a. Weight:	
Complete round	193
Bullet:	
Complete	(Average) 110
Jacket	28
Slug	(Average) 82
Case	66
Primer	3.1
Propellant	(Approx.) 14

	Inches
b. Length:	
Complete round	(Average) 1.67
Bullet:	
Complete	(Average) 0.68
Slug	0.66
Case:	
Over-all	(Average) 1.28
Headspace	1.29
Head thickness	0.160

	Inches
c. Diameter:	
Bullet:	
Complete	0.308
Slug	0.268
Jacket wall thickness	0.020
Case:	
Wall thickness at head	0.027
Wall thickness at mouth	0.012
Head	(Average) 0.356

d. Miscellaneous:

Powder space ..... 0.056 cu in.

AMMUNITION

Ballistic coefficient	0.179 lb per sq in.
Boat-tailing of base	None
Length of ogive	0.375 in.
Base of bullet to origin of rifling	*
Muzzle velocity	1,975 ft per sec
Normal pressure	40,000 lb per sq in.
Maximum range	2,700 yd

References

SNL T-1
Drawing No. B200954 (complete round)
Drawing No. B200955 (bullet)
Specification No. AXS-646
TM 9-1900
TM 9-1990

* Data not available at time of publication.

D-9

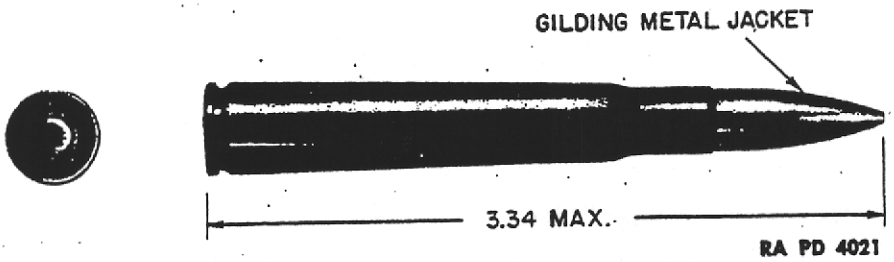


Figure 98—CARTRIDGE, Ball, Cal. .30, M2

105. CARTRIDGE, BALL, CAL. .30, M2.

a. Weight:	Grains
Complete round	396
M2 alternative	397
Bullet:	
Complete	151
M2 alternative	152
Jacket	52
M2 alternative	49
Slug	99
M2 alternative	103
Case	(Average) 19
Primer	5.5
Propellant	(Approx.) 50

b. Length:	Inches
Complete round	(Average) 3.32
Bullet:	
Complete	(Average) 1.10
Slug	0.98
Case:	
Over-all	2.49
Headspace	(Average) 1.946
Head thickness	(Average) 0.186

c. Diameter:	Inches
Bullet	(Average) 0.308
Slug	0.245
Jacket wall thickness	0.030

AMMUNITION

Case:

Wall thickness at head	0.032
Wall thickness at shoulder	0.010
Head	0.47

d. Miscellaneous:

Powder space	0.250 cu in.
Ballistic coefficient	0.21 lb per sq in.
Boat-tailing of base	None
Length of ogive	(Average) 0.730 in.
Base of bullet to origin of rifling	0.55 in.
Muzzle velocity	2,800 ft per sec
Normal pressure	50,000 lb per sq in.
Maximum range	4,700 yd

References

SNL T-1
Drawing No. B137544
(complete round)
Drawing No. B171958
(bullet and bullet, alternative)
Specification No. 50-1-30A
TM 9-1900
TM 9-1990

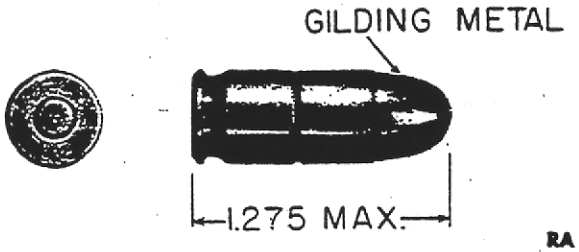


Figure 106—CARTRIDGE, Ball, Cal. .45, M1911

113. CARTRIDGE, BALL, CAL. .45, M1911.

a. Weight:	Grains
Complete round	322
M1911 Alternative	310
Bullet:	
Complete	234
M1911 Alternative	231
Jacket	317
M1911 Alternative	34
Slug	(Average) 196
Case	87
M1911 Alternative	78
Primer	(Average) 4
Propellant	5

b. Length:	Inches
Complete	(Average) 1.27
Bullet:	
Complete round	(Average) 0.67 in.
Slug	0.656
Case:	
Over-all	0.89
Headspace	0.898
Head thickness	(Minimum) 0.153

c. Diameter:	Inches
Bullet	(Average) 0.450
Slug	0.411
Jacket wall thickness	0.016

AMMUNITION

Case:	Inches
Wall thickness at head	0.028
Wall thickness at mouth	0.009
Head	0.48

d. Miscellaneous:

Powder space	0.058 cu in.
Ballistic coefficient	0.112 lb per sq in.
Boat-tailing of base	None
Length of ogive	0.401 in.
Base of bullet to origin of rifling	0.30 in.
Muzzle velocity (5-in. barrel)	830 ft per sec
Muzzle velocity (10.5-in. barrel)	920 ft per sec
Normal pressure	17,000 lb per sq in.
Maximum range (5-inch barrel)	1,600 yd
Maximum range (10.5-inch barrel)	1,700 yd

References

SNL T-2
Drawing No. B503 (complete round)
Drawing No. B136799 (bullet)
Specification No. 50-2-4C
TM 9-1900
TM 9-1990

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

Appendix E

Textual References

APPENDIX E

Textual References

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DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FOR FORMERLY USED SITES
FINDINGS AND DETERMINATION OF ELIGIBILITY

FORT FLAGLER STATE PARK
JEFFERSON COUNTY, WASHINGTON
SITE NO. F10WA031600

FINDINGS OF FACT

1. The site originally consisted of 544.35 acres public domain lands withdrawn by Executive Orders dated September 22, 1866 and November 14, 1896. Between 1896 and 1909, 262.50 acres fee were acquired by purchase and condemnation, and between 1941 and 1952, 5.85 acres fee were acquired by use permit from the Navy (4.68 acres) and by negotiated purchase (perpetual easements) for a water pipeline, bringing the total acres acquired for this site to 812.70 acres.

2. Fort Flagler Military Reservation was a U.S. Army coastal artillery battery. Fort Flagler, along with Forts Casey and Worden, formed the "Triangle of Fire" which was designed to prevent hostile forces from entering Puget Sound. Construction began in 1897 and by 1907 initial construction had been completed. The fort was placed on caretaker status in 1937. Two artillery regiments were based at Fort Flagler from 1940 until 1943. From 1945 until 1954, the fort was used for training engineers and amphibious military units. In 1954, the site was determined surplus to the military needs of the Department of Defense and reported to GSA for disposal.

3. The Marrowstone Point Lighthouse site, which consists of 9.00 acres, was transferred to the Department of the Treasury, U.S. Coast Guard, on July 12, 1955. A total of 16.25 acres were transferred to the Department of the Interior, Fish and Wildlife Service, on October 4, 1955. A total of 766.44 acres was conveyed by GSA to the State of Washington by quitclaim deed (QCD) as three separate parcels: 88.16 acres were conveyed on December 2, 1955, 494.75 acres on March 19, 1957, and 183.53 acres on September 8, 1959. The first QCD carried a 20-year condition that the property be used for a historical monument; the other two QCD's carried a 20-year condition that the property be used for public park and recreation purposes, and are subject to the national emergency recapture provision. On September 15, 1959, 15.16 acres used by the Army as a target and rocket range impact area were conveyed to the State of Washington. The QCD for this parcel carried a hold harmless provision giving notice of the former use of the property and releasing the USA from any liability arising from that former use. The 4.68 acres use permit and 1.17 acres perpetual easements for the water pipeline were transferred to the Department of the Navy on August 19, 1955. Over 100 original structures remained on site at the time of disposal. Structures included fortifications and their support buildings, and living facilities for the men and their families stationed at the post. Condition of the structures varied from very well maintained to dilapidated.

DETERMINATION

Based upon the foregoing findings of fact, the former Fort Flagler 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.

7 Jun 91
DATE

ERNEST J. HARRELL
Major General, USA
Commanding

SITE SURVEY SUMMARY SHEET
FOR
DERP-FUDS SITE NO. F10WA031600
FORT FLAGLER STATE PARK
FEBRUARY 1991

SITE NAME: Fort Flagler State Park (formerly Fort Flagler Military Reservation)

LOCATION: Jefferson County, Washington, on the north end of Marrowstone Island, approximately 2-1/2 miles southeast of Port Townsend; see site map attached

SITE HISTORY: Fort Flagler was established in 1897 to provide coastal protection to Puget Sound from invading fleets. Gun batteries, along with complete facilities to house, feed, train and support military personnel were constructed at the site. In 1954, Fort Flagler was declared excess to the needs of the Department of Defense. In 1955, the site became a State Park. It offers camping, swimming, and hiking along with historical military buildings and structures. Small portions of the old Fort are owned by the Federal Government, and utilized for aids to navigation and research by the departments of Transportation and Interior.

SITE VISIT: 16 July 1987 by Shapiro and Associates under contract to Seattle District, Corps of Engineers; and 16 January 1991 by Jonathan Maas, Michael Svizzero and John Vogel of Seattle District.

CATEGORIES OF HAZARDS: CON/HTW and OEW

PROJECT DESCRIPTION: There are two potential projects at this site.

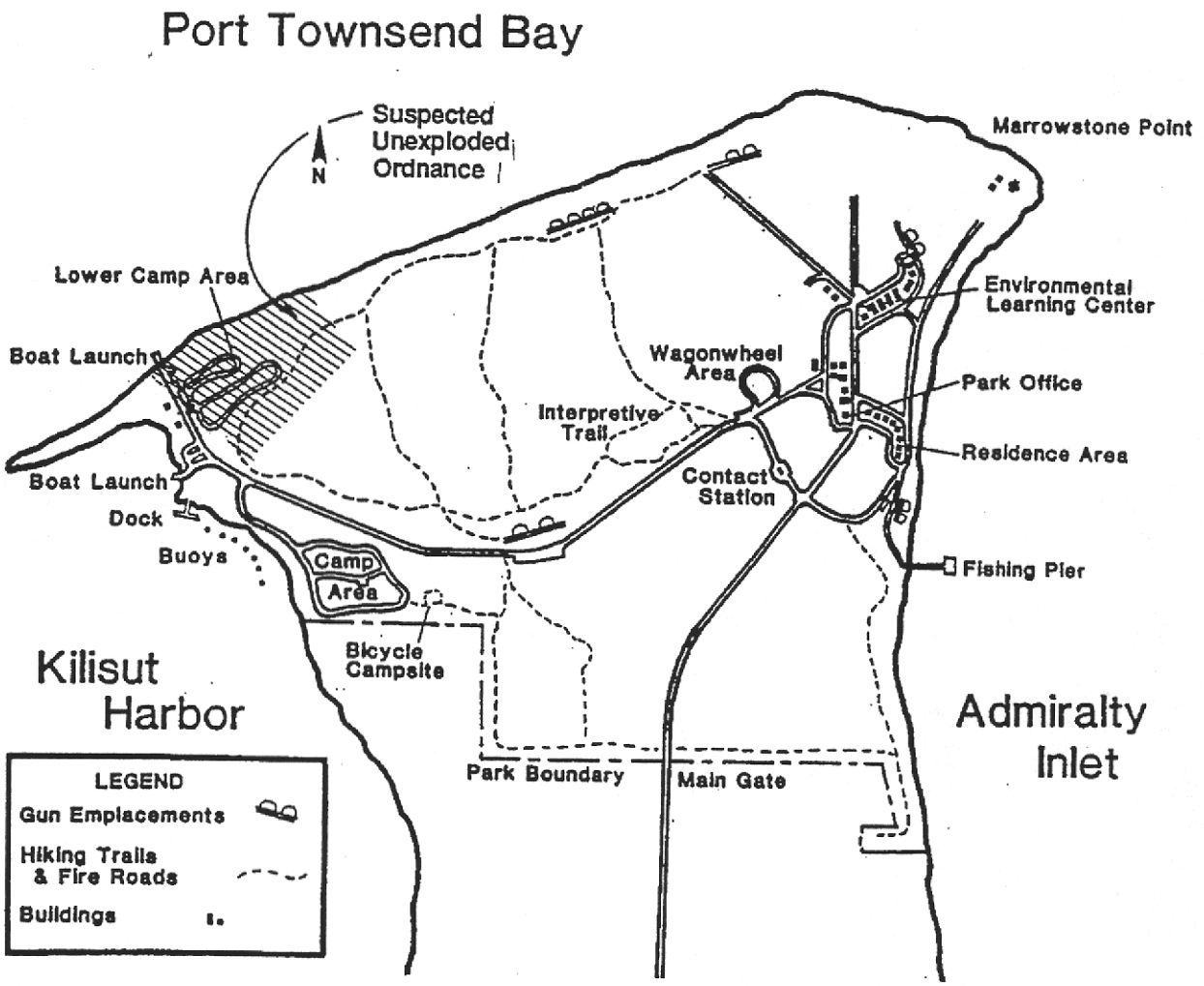
a. CON/HTW. Thirteen unused underground fuel storage tanks (UST) remain on the property. These USTs are located as shown on the attached site map. Additionally, there are three unused electrical transformers at the old power plant. Removal of the thirteen UST and three transformers is a potential project.

b. OEW. A geophysical survey for explosive ordnance is proposed for the northwestern portion of Fort Flagler. The 15.16 acre impact area of a rocket range, is suspected of containing four unexploded high explosive rockets. The area is currently a campground and children's play area.

AVAILABLE STUDIES AND REPORTS: None.

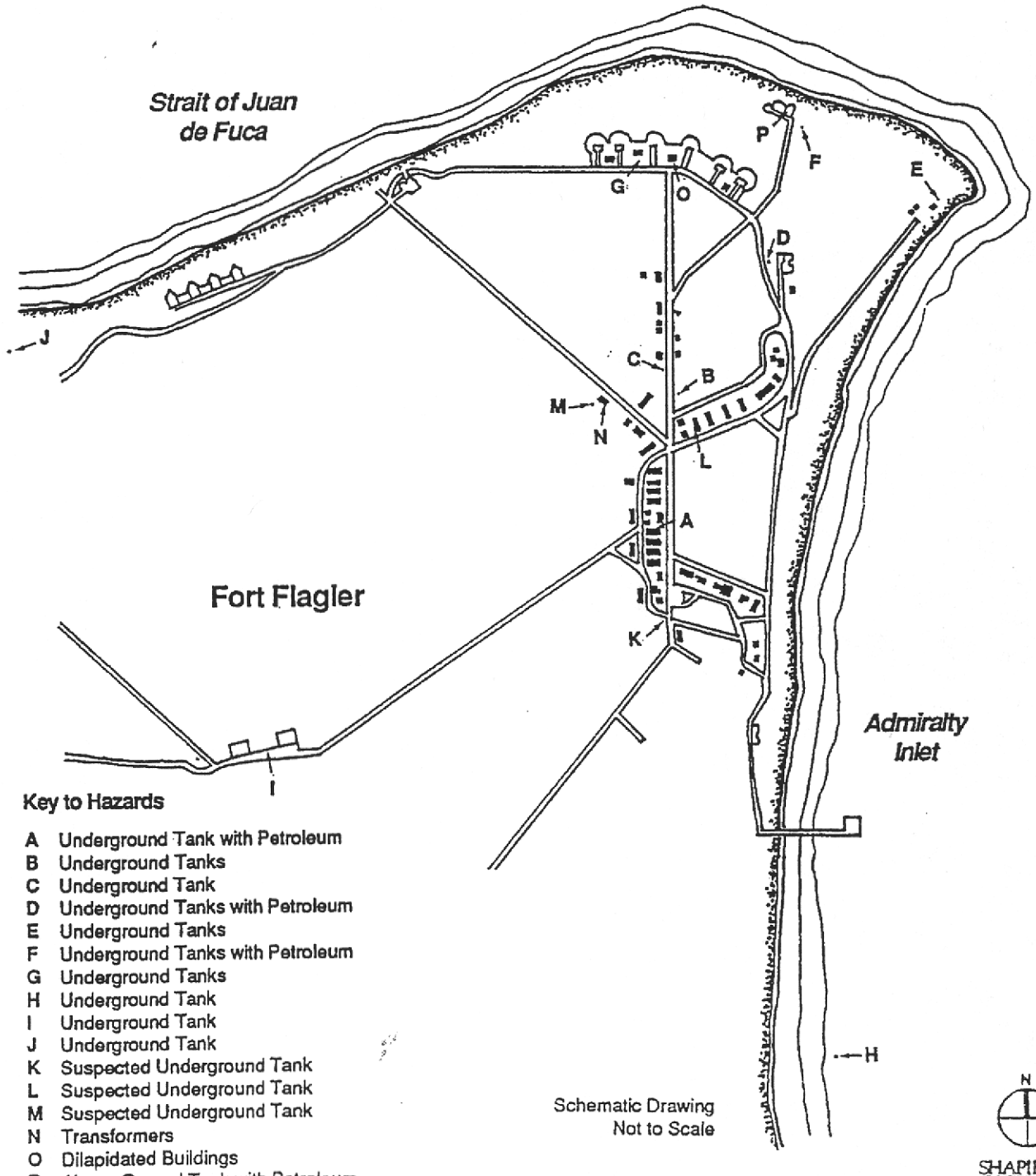
SEATTLE DISTRICT POC: Jonathan Maas, CENPS-EN-GT-HW, (206-764-6745).

Attachment **Suspected Unexploded Ordnance**
Fort Flagler Military Reservation



Attachment

Hazards at Fort Flagler Military Reservation



Key to Hazards

- A Underground Tank with Petroleum
- B Underground Tanks
- C Underground Tank
- D Underground Tanks with Petroleum
- E Underground Tanks
- F Underground Tanks with Petroleum
- G Underground Tanks
- H Underground Tank
- I Underground Tank
- J Underground Tank
- K Suspected Underground Tank
- L Suspected Underground Tank
- M Suspected Underground Tank
- N Transformers
- O Dilapidated Buildings
- P Above Ground Tank with Petroleum

EXECUTIVE SUMMARY

The former Fort Flagler is located on Marrowstone Island, Jefferson County, Washington, and presently used as Fort Flagler State Park. Fort Flagler was established in 1897 to provide coastal protection for Puget Sound. Gun batteries and housing facilities for military personnel were constructed at the site. In 1954, Fort Flagler was declared surplus by the Defense Department and was turned over to the General Services Administration (GSA) for disposal. Fort Flagler encompasses approximately 806.85 acres and is surrounded on three sides by salt water. A total of 766.44 acres was conveyed by GSA to the State of Washington by quitclaim deed (QCD) with condition that the property was to be used for a historical monument and for public park and recreation purposes. Fort Flagler State Park offers camping, swimming, hiking and a military history interpretive center. In 1975, Fort Flagler was placed on the National Register of Historic Places.

The former Fort Flagler was identified as a Formerly Used Defense Site (FUDS) that had potential for Ordnance and Explosive (OE) contamination. In the past, a hand grenade was found on the beach in the impact area. There was a report stated that at least four rockets (2.36-inch) with high explosive were unaccounted for at the former Fort Flagler. Hand grenades, which were used for training, were found occasionally in the park. Two site visits conducted in December 1990 and January 1991 determined that the site was formerly used by the Army. An Inventory Project Report (INPR) presenting the Preliminary Assessment (PA) with the recommendation for further investigation was submitted in April 1991. An Archives Search Report (ASR) was not prepared. Based on the INPR and Site Visits, a Time-Critical Removal Action was conducted in March 1992, following two public meetings.

The suspected rocket impact area (Dud Area) is located within the boundary of the former Fort Flagler. The project site consists of approximately 25.5 acres located at the west end of the Fort Flagler State Park adjacent to the Lower Camp Area. Phase 1 Area search began at the northeast corner of the site and progressed westward for total investigation of the site. One primary target bunker and two smaller target bunkers were located during the Phase 1 Area geophysical survey. In the primary target bunker, 97 expended (inert) 2.36-inch rocket motors were found. Within the Phase 1 Area, 124 expended (inert) 2.36-inch rocket motors, 12 inert anti-tank/anti-vehicle mines, and two inert 3.5-inch rocket shrouds were located. Large amounts of non-ordnance related scrap metal were also recovered. The inert munition items and the non-ordnance scrap metal were disposed of at the Jefferson County Landfill, Washington.

The finding of the target bunkers and locations of spent 2.36-inch rocket motors suggested that additional OE might be present east of the Phase 1 Area. The Phase 2 Area, east of Phase 1 Area, was extended eastward. Within the Phase 2 Area, additional OE was found that included one live practice grenade and two 2.36-inch rockets with intact fuses. No warheads were present. These items were removed from the site by the 27th Army EOD unit from Fort Lewis, Wahsington. With the total investigation of the Phase 2 Area, a total of forty-six 2.36-inch expended (inert) rocket motors were located and disposed of at the county landfill.

Following additional analysis of the occurrence of OE, an area south of the fire road was identified as likely to contain OE. This area is designated as the Phase 3 Area. This area is heavily timbered with pine, fir, and cedar. Heavy undergrowth along the road hampered the searches. No brush clearing was done in this area. Three live 2.36-inch rockets with warheads were found. These were detonated on site by the 27th Army EOD unit from Fort Lewis. Two expended (inert) 2.36-inch rocket motors were found in the Phase 3 Area and

disposed of at the county landfill. This area was not fully searched, nor was a quality control (QC) search completed due to the heavy accumulation of downed timber and undergrowth.

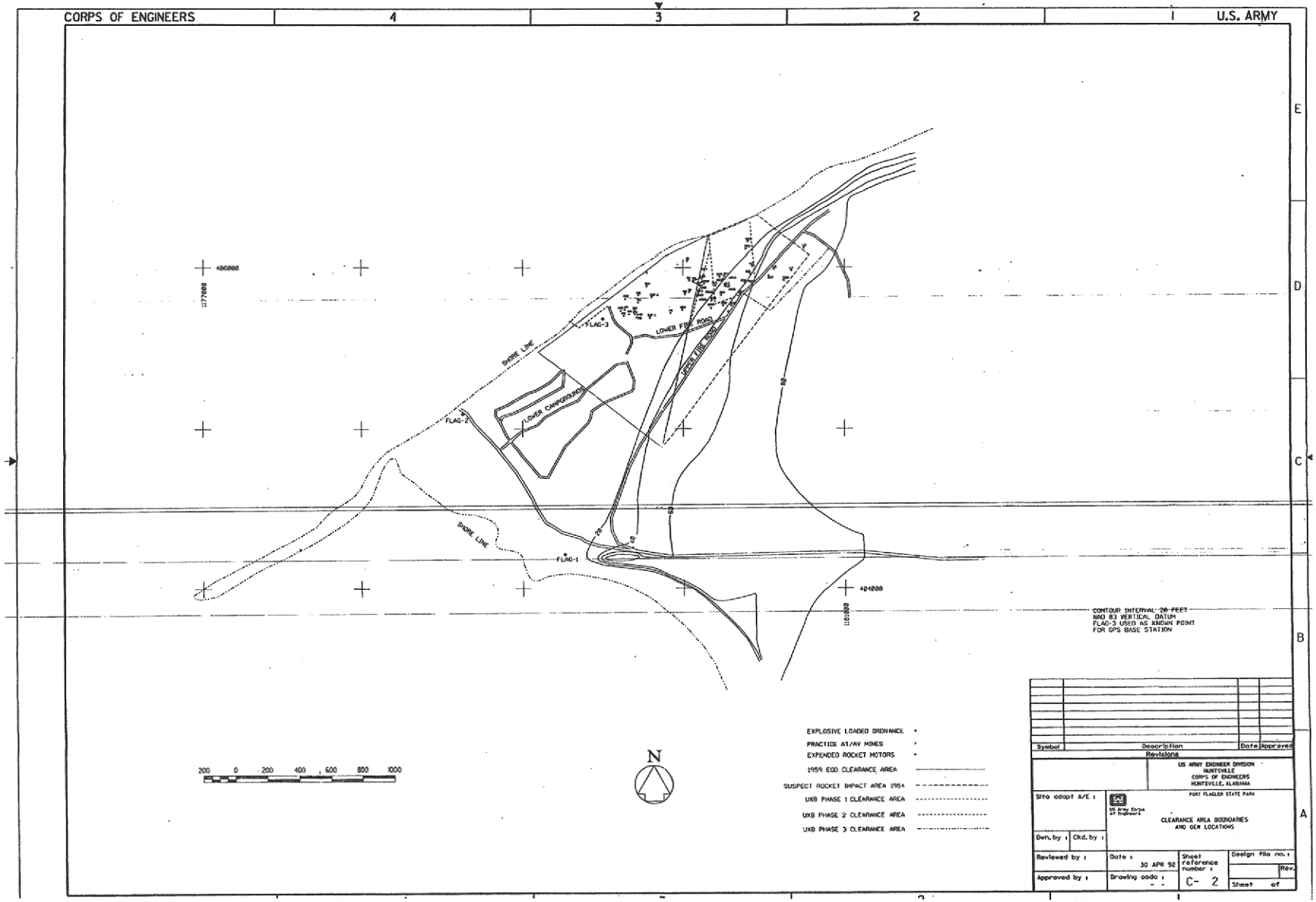
The purpose of this report is to assess the need for additional OE clearance at the former Fort Flagler. In addition, this report is to document the removal activities at the site, decide that the actions at the site be considered complete and provide the rationale for this decision. Alternatives considered include No Further Action; Perform Additional OE Detection and Removal; and Barricade the OE Site.

Based on the assessment of previous OE clearance activities and present safety risk to the general public, it is decided that No Further Action will be taken at the former Fort Flagler (Fort Flagler State Park).

The project boundaries as well as three new control monuments were established within 0.01 feet for both vertical and horizontal controls. All points were location surveyed using North American Datum of 1983 for horizontal control and North American Vertical Datum of 1988 for vertical control. The positions of OE found at the site were established using a Global Positioning Satellite (GPS). The GPS survey locations are accurate within five feet. Where more than one item were at a single location, a single GPS position was recorded. Before each day use, the GPS system was calibrated.

Approximately 11 acres were searched for OE. The locations and descriptions of OE found are shown on Table 1. In addition, more than 3,000 pounds of scrap metal and refuse were disposed of at the county landfill. The Ordnance Removal Report for the former Fort Flagler was prepared by the IT Corp. in April 1992. The following summarizes items found during the search:

Quantity	Description
172	2.36-inch expended rocket motors
3	2.36-inch rockets with live warhead
2	2.36-inch rocket motors with live fuse
2	3.5-inch expended rocket motors
1	Live training hand grenade
1	Bangalore torpedo fuse housing, inert
12	Anti-tank/anti-vehicle mines, inert
16	Empty 30 caliber casings


CORPS OF ENGINEERS
4
3
2
1
U.S. ARMY
E
D
C
B
A
400000
1179000
SHORE LINE
FLAG-3
LOWER FIRE ROAD
UPPER FIRE ROAD
LOWER CAMPGROUNDS
FLAG-2
SHORE LINE
FLAG-1
404000
1181000
CONTOUR INTERVAL: 20 FEET
NAD 83 VERTICAL DATUM
FLAG-3 USED AS KNOWN POINT
FOR GPS BASE STATION
200 0 200 400 600 800 1000
N
EXPLOSIVE LOADED ORDNANCE
PRACTICE AT/AV MINES
EXPENDED ROCKET MOTORS
1959 EOD CLEARANCE AREA
SUSPECT ROCKET IMPACT AREA 1954
UXB PHASE 1 CLEARANCE AREA
UXB PHASE 2 CLEARANCE AREA
UXB PHASE 3 CLEARANCE AREA
Symbol
Description
Date Approved
Revisions
US ARMY ENGINEER DIVISION
HUNTSVILLE
CORPS OF ENGINEERS
HUNTSVILLE, ALABAMA
Site adopt A/E :
FORT FLAGLER STATE PARK
US Army Corps of Engineers
CLEARANCE AREA BOUNDARIES
AND GEM LOCATIONS
Dwn. by :
Ckd. by :
Reviewed by :
Date :
30 APR 92
Sheet reference number :
C- 2
Design file no. :
Rev.
Approved by :
Drawing code :
Sheet of

(6) Permit March 22, 1940, for 5 years commencing January 30, 1940, to Treasury Department (United States Coast Guard) to land a submarine telephone cable on Fort Stevens, Oregon, and Fort Columbia, Washington, and to maintain a pole line on the latter reservation.

Metes and bounds.—A metes and bounds description of this reservation has not been published.

FORT FLAGLER

Location.—Situated at Marrowstone Point, 5 miles southeast of Port Townsend, in Jefferson County.

Area.—910 acres, more or less.

History.—Named Fort Flagler by General Orders, No. 138, Headquarters of the Army, Adjutant General's Office, 1899, in honor of the late Brigadier General D. W. Flagler, Chief of Ordnance, United States Army.

Original reservation of 550 acres, more or less, reserved and set apart from the public domain by Executive Order dated September 22, 1866.

By Executive Order dated November 14, 1896 (G. O. No. 48, Headquarters of the Army, Adjutant General's Office, 1896), an additional area containing 58 acres, more or less, was reserved and set apart from the public domain for military purposes.

In 1896, 60 acres, more or less, acquired by purchase.

In 1897, 172 acres, more or less, acquired by condemnation under Case No. 614 in the United States Circuit Court for the District of Washington, Northern Division. A deed in further assurance of the title was obtained on July 2, 1897, and recorded in Volume 47 of Deeds at page 271, records Jefferson County.

In 1907, an additional 25 acres, more or less, acquired by purchase.

In 1909, 5 acres, more or less, acquired by purchase for installation of a search light.

The use of certain tide lands was conveyed to the United States by the State of Washington by deed dated February 16, 1909, recorded in Book 48 of Deeds page 255, records Jefferson County and by deed dated April 28, 1933, given to correct a prior deed dated November 26, 1932, recorded in Book 102 of Deeds page 600, same records.

Jurisdiction.—Exclusive jurisdiction over the original reservation was ceded by Section I, Article 25 of the Constitution of the State of Washington, set out in Section I, under General legislation.

Exclusive jurisdiction over the area set apart from the public domain by Executive Order dated November 14, 1896, was ceded by the general act approved February 24, 1891, set out in Section I, under General legislation.

Exclusive jurisdiction over the remainder of the reservation vested in the United States pursuant to the provisions of Article I, section 8, clause 17 of the Constitution of the United States and the general act approved February 24, 1891, set out in Section I, under General legislation.

A map and metes and bounds description of the reservation was filed for record December 17, 1909, and recorded in Book 69 of Deeds, page 88, records Jefferson County. A more complete map and metes and bounds description of the reservation was filed for record in the Office of the Auditor of Jefferson County on February 27, 1914.

No cession of exclusive jurisdiction over the tide lands has been made.

Easements, etc.—(1) Permit July 9, 1929, to Department of Commerce to construct and maintain a gravel road 12 feet wide extending from an existing road on the reservation to the Marrowstone Point Light Station.

1141

(2) Permit September 19, 1938, for 5 years, as amended September 19, 1939, to Treasury Department (Lighthouse Service), to construct, operate, and maintain an underground cable to provide power for the Marrowstone Point Light Station.

Metes and bounds.—A metes and bounds description of this reservation has not been published.

CAPE GEORGE MILITARY RESERVATION

Location.—Situated at Port George on the east side of the entrance to Point Discovery in Township 30 North, Range 2 West of the Willamette Meridian in Jefferson County.

Area.—197.50 acres, more or less.

History.—This reservation has not been officially named.

Original reservation reserved and set apart as a military reservation by Executive Order, dated September 22, 1866. It was referred to therein as land "Opposite Protection Island" containing 640 acres. That area was, however, reduced by excepting tracts found to have been disposed of prior to the date of the above-mentioned order.

Jurisdiction.—Exclusive jurisdiction was ceded by Section I, Article 25, Constitution of the State of Washington and the general act approved January 23, 1890, set out in Section I, under General legislation.

Easements, etc.—None.

Metes and bounds.—A metes and bounds description of this reservation has not been published.

GRAYS HARBOR BATTERY SITE

Location.—Situated in Westport, at the mouth of Grays Harbor, in Grays Harbor County.

Area.—16.30 acres, more or less.

History.—This reservation has not been officially named.

Reservation acquired in 1919, by condemnation under Case No. 2474, in the United States District Court, Western District of Washington, Southern Division.

Jurisdiction.—Exclusive jurisdiction vested in the United States pursuant to the provisions of Article I, section 8, clause 17 of the Constitution of the United States and the general act approved February 24, 1891, set out in Section I, under General legislation.

Easements, etc.—None.

Metes and bounds.—A metes and bounds description of this reservation has not been published.

FORT LAWTON

Location.—Situated on Magnolia Bluff, in the city of Seattle, in King County.

Area.—640 acres, more or less, exclusive of tide lands and harbor area.

History.—Named Fort Lawton by General Orders, No. 20, Headquarters of the Army, Adjutant General's Office, 1900, in honor of Major General Henry W. Lawton, United States Volunteers (Colonel and Inspector General, United States Army), killed in action at San Mateo, Philippine Islands, on December 19, 1899.

Reservation acquired in 1896 and 1897, by donation under authority of act of Congress, approved March 2, 1895 (28 Stat. 945), subject to a certain exception set out below under *Easements, etc.*

DATE of COMMENCEMENT of CONSTRUCTION of FORTIFICATIONS.

The Records of the U.S. Engineer Department show that the initial work upon fortifications at Fort Flagler,consisted in the construction of emplacements for two 12" B.L. Rifles,and four 10" B.L. Rifles;two ten inch rifles to be emplaced on either side of the two 12" rifles. This work was begun in the year 1897. These emplacements are those pertaining to what are now known as batteries John Rawlins,Wilhelm and Paul Revere.

DATE of ESTABLISHMENT of GARRISON.

The first garrison stationed at Fort Flagler,consisted of Battery B",3rd U.S.Artillery,Captain John D.C.Hoskins,Commanding.

This organization arrived on the 6th day of September,1899.

ORDER NAMING FORT.

GENERAL ORDERS,)
No.138. }

HEADQUARTERS OF THE ARMY.
ADJUTANT GENERAL'S OFFICE.
WASHINGTON,JULY 27,1899.

E X T R A C T .

I. The following order from the War Department is published for the information and guidance of all concerned:

WAR DEPARTMENT,Washington,July 24,1899.

# # # # # # # #

Battery at Marrowstone Point,Puget Sound, Fort Flagler,in honor of the late Brigadier General D.W.Flagler,Chief of Ordnance,U.S.Army.

# # # # # # # #

R.A.ALGER,
Secretary of War.

# # # # # # # #

BY COMMAND OF MAJOR GENERAL MILES:

H.C.CORBIN,
Adjutant General.

A BRIEF REFERENCE TO THE PERSON FOR WHOM THE FORT IS NAMED.

Brigadier General Daniel W.Flagler,was born in Lockport,New York, June,24,1835. He was graduated from the U.S.Military Academy June 24,1861, and served during the Civil War,being brevetted three times for gallant and distinguished services.

He was appointed Chief of Ordnance,U.S.Army,January 23,1891.

He died at Fort Monroe,Virginia,March 29,1899.

GENERAL HISTORY.

The reservation contains 905 acres, and certain tide lands, situated [redacted] Marrowstone Point, Jefferson County, Washington.

It was declared a reservation by Executive Order dated September 22, 1866. This order reserved 640 acres, if the title should be found to be in the United States. Upon final designation the area was reduced to 590 acres. (See Military Reservations etc. 1904.)

By Executive Order dated November 14th 1896, the following described tract was added to the 590 acres mentioned above:

> "The N.1/2 of the SW.1/4 of Section 17, Township 30 North, Range 1 East of Willamette Meridian, and all that portion of Lot 6 of Section 18 in said township and range not already embraced in the reservation under Executive Order of September 22, 1866, all of which is located at Marrowstone Point, Admirlty Inlet, Washington."

This addition comprised 58 acres.

Sixty acres were subsequently added by deed from George Pitman and Florence Pitman his wife, to the United States. This deed is dated November 24th. 1896, and was filed for record in the office of the Auditor of Jefferson County State of Washington and recorded, on the 13th day of February, 1897, at thirty minutes past nine A.M. in volume 36 Deeds P.228 of the records of said county.

This tract is described as follows:

> "All of the south-east quarter of the south-west quarter, and the east half of the south-west quarter of the south-west quarter of Section seventeen (17), Township thirty North, of Range one (1) East of Willamette Meridian, containing sixty acres."

One hundred and seventy-two acres were added later as a result of condemnation proceedings had in the United States Circuit Court for the District of Washington, Northern Division, in which the United States of America was plaintiff and petitioner and Ann D. Starrett and George E. Starrett her husband; Wilhelmina M.P. Clapp and Cyrus F. Clapp, her husband; and Ann D. Starrett as Executrix of the last will and testament of John A. Van Bokkelen, Deceased, were defendants.

In pursuance to the decree entered in this cause, the defendants by a warranty deed dated July 2nd, 1897, conveyed to the United States the following described tract.

> "All of those certain lots, pieces and parcels of land situate, lying and being in Jefferson County, Washington, and particularly described as follows, to-wit:
> "Lots numbered three (3) and four (4) and the southwest quarter (1/4) of the northeast quarter (1/4), and the west half (1/2) of the southeast quarter (1/4) of section seventeen (17) in Township thirty (30) North of Range one (1) East of the Willamette Meridian, containing in all one hundred and seventy-two (172) acres of land, more or less, as the same appears by the official survey thereof made by the government of the said United States of America."

Book A Page 1.

2

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This deed was filed for record in the office of the Auditor of Jefferson County,Washington,on the 18th day of August,A.D.1897,at 9 A.M. and recorded in Volume 47,P.271,of the records of said County on the 21st day of August,1897.

Certain tide lands which form part of the reservation were also conveyed to the United States of America,under the provisions of Section I,of an act of the legisature of the State of, Washington,approved March 20,1890,by grant signed February,16th 1899.

This instrument was filed for record and recorded at 9 A.M.February, 24th 1899,in Book 48 P.255 Records of Deeds,Jefferson County,Washington.

These tide lands are described as follows:

> "Fronting and abutting upon lots 1, 2, 3, section 8, township 30 North,Range 1 East;upon lot 1,section9,township 30 North,Range 1 East;upon lot 1,section 16,township 30 North, Range 1 East;upon lots 1, 2, 3, and 4,section 17,township 30 North,Range 1 East;upon lots 1, 2, 3, 4, 5, 6, section 18, township 30 North,Range 1 East;upon lot 1,section 13,township 30 North,Range 1 West;and upon lot 1,section 24,township 30 North,Range 1 West;all of which tide lands are situate in Jefferson County,Washington.

Article 25,Constitution of the State of Washington,which is printed below,defines the right of legislation over tracts in this State,held or reserved by the Government of the United States,and also defines the extent of the jurisdiction of the State over such tracts:

Section I.. The consent of the State of Washington is hereby given to the exercise,by the Congress of the United States,of exclusive legislation in all cases whatsoever over such tracts or parcels of land as are now held or reserved by the Government of the United States for the purpose of erecting or maintaining thereon forts,magazines,arsenals,dock-yards,lighthouses and other needful buildings,in accordance with the provisions of the seventeenth paragraph of the eighth section of the first article of the Constitution of the United States,so long as the same shall be so held and reserved by the United States;Provided,That a sufficient discription by metes and bounds,and on accurate plat or map of each such tract or parcel of land be filed in the proper office of record in the county in which the same is situated,together with copies of the orders,deeds,patents or other evidences in writing of the title of the United States;And provided,That all civil process issued from the courts of this state,and such criminal process as may issue under the authority of this state,against any person charged with crime in cases arising outside of such reservations, may be served and executed thereon in the same mode and manner,and by the same officers,as if the consent herein given had not been made.

The following act of the legislature of the State, approved January 23rd 1890, gives the consent of the State to the purchase and reservation of land for public purposes, and defines the jurisdiction of the State over land so purchased or reserved.

An act giving the consent of the legislature of the State of Washington, to the purchase and reservation by the United States of land within this state for public purposes, and expressing an emergency.

Be it enacted by the Legislature of the State of Washington:

Section I. That the consent of the legislature of the State of Washington be and the same is hereby given, to the purchase, by the government of the United States or under the authority of the same, of any tract, piece or parcel of land from any individual or individuals, bodies politic or corporate, within the boundaries of this State, for the purpose of erecting and maintaining thereon armories, arsenals, fortifications, magazines, navy-yards, dock-yards, custom-houses, light-houses and other needful public buildings or establishments whatsoever; the consent herein and hereby given being in accordance with the provisions of the seventeenth clause of the eighth section of the first article of the constitution of the United States, and with the acts of Congress in such cases made and provided.

And like consent of the legislature of the State of Washington is hereby given in the cases of all such tracts or parcels of land as have been heretofore purchased by the government of the United States, or which have been or may hereafter be reserved by the said government, out of any public land belonging to the United States for any of the purposes before mentioned;

Provided, That as sufficient description by metes and bounds and an accurate plat or map of each such tract or parcel of land be filed in the proper office of record in the county in which the same is situated; together with copies of orders, deeds, patents or other evidences in writing of the title of the United States; And provided further, That all civil process issued from the courts of this State, and such criminal process as may issue under the authority of this State against any person charged with crime, in cases arising outside of such purchases or reservations, may be served and executed thereon in the same mode or manner and by the same officers as if the consent herein given had not been made.

Section II. In order to facilitate the operations of the government of the United States in the defense and proper lighting of the coasts of this State, and in continuing works of public improvement undertaken by the government of the United States, this act shall take effect immediately upon its passage.

Approved January,23,1890.

The following act of the State legislature approved February,24,1891, ceded to the United States limited jurisdiction over land aquired by purchase or condemination:

An act to Cede the jurisdiction of the State of Washington to the United States of America over land needed for the improvement of rivers and harbors and for the purchase and condemination thereof.

Be it enacted by the legislature of the State of Washington;

Section I. That the consent of the State of Washington be and the same is hereby given to the aquisition by purchase or by condemnation,under the laws of this state relating to the appropriation of private property to public uses,by the United States of America, or under the authority of the same,of any tract,piece or parcel of land,from any individual or individuals,bodies politic or corporate, within the boundaries or limits of this state,for the sites of locks, dams,piers,breakwaters,keeper's dwellings,and other necessary structures and purposes required in the improvement of the rivers and harbors of this state or bordering thereon,or for the sites of forts, magazines,arsenals,docks,navy yards,naval stations,or other needful building authorized by any act of congress,and all deeds, conveyances of title papers for the same shall be recorded,as in other cases, upon the land records of the county in which the land so aquired may lie,and in like manner may be recorded a sufficient description by metes and bounds,courses and distances,of any tract or tracts,legal divisions or subdivisions,of any public land belonging to the United States which may be set apart by the general government for any or either of the purposes before mentioned by an order,patent or other official document or papers describing such land;the consent herein and hereby given being in accordance with the seventeenth clause of the eighth section of the first article of the constitution of the United States,and with the acts of congress in such cases made and provided,and the jurisdiction of this state is hereby ceded to the United States of America over such land or lands as may have been or may be hereafter acquired by purchase or by condemination,or set apart by the general government for any or either of the purposes before mentioned:

Provided,That this state shall retain a concurrent jurisdiction with the United States in and over all tracts so acquired or set apart as aforesaid,So far as that all civil and criminal process that may issue under the authority of this state against any person or persons charged with crimes committed,or for any cause of action

on suit accruing without the bounds of any such tract,may be executed therein in the same manner and with like effect as though this assent and cession had not been granted.

Section II. The tracts,pieces or parcels of land so acquired or set apart,together with the tenements and appurtenances for the purposes before mentioned,shall be held exempt from taxation by the State of Washington.

Approved February,24,1891.

An act of the State legislature,approved March,20th 1890,which granted to the United States the use of certain tide lands,reads as follows:-

An act granting to the United States,for public purposes the use of certain tide lands belonging to the State of Washington:

Be it enacted by the legislature of the State of Washington:

Section I. That the use of any tide lands belonging to the State of Washington,and adjoining and bordering on any tract,piece or parcel of land held or reserved by the government of the United States for the purpose of erecting and maintaining thereon,forts,magazines, arsenals,dock yards and other needful buildings,be and the same is hereby granted to the United States so long as the upland adjoining such tide lands shall continue to be held by the government of the United States for any of the public purposes above mentioned: Provided,that this grant shall not extend to or include any lands covered by more than four fathoms of water at ordinary low tide: And provided further,That whenever the government of the United States shall cease to hold for public purposes any such tract,piece or parcel of land,the use of the tide lands bordering thereon shall revert to the State of Washington.

Approved March,20,1890.

Twenty five acres were subsequently added by warranty deed from Jacob Jenne and Bertha S.Jenne his wife,to the United States, This deed is dated January 17th. 1907,and was filed for record in the office of the Auditor of Jefferson County,State of Washington and recorded on the 19th. day of March 1907,at thirty minutes past nine A.M. in volume 58 deeds p.291 of the records of said county.

The patent, United States to Samuel Coulter,is recorded in Jefferson County records in volume 4,patents p.222.

This tract is described as follows:

" All of lot No.five (5),in section No.seventeen (17),in Township No.thirty (30) N.,R. one east,as shown by the plat of the surveys of the United States on file in the office of the Surveyor General for the State of Washington at Olympia,Washington."

This addition comprises 25 acres more or less,according to United States Survey.

THIS INDENTURE, made this 29th day of May in the year of our Lord one thousand nine hundred and nine, BETWEEN Jacob Kuhn and Margreth Kuhn, his wife, the parties of the first part, and United States of America, party of the second part:

WITNESSETH: That the said parties of the first part, for and in consideration of the sum of Five Hundred ($500.00) Dollars lawful money of the United States, to them in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, do by these presents Grant, Bargain, Sell, Convey and Confirm unto the said party of the second part, and to its assigns, the following described tract, lot or parcel of land, lying and being in the county of Jefferson, State of Washington, and particularly bounded and described as follows, to-wit:

" A portion of lot N° 4, Section N° 20, Tp. 30 N., R. 1 E., Wil. Meridian, containing about five acres, more or less, and particularly described as follows: Commencing at a point on the south boundary of the U. S. Military Reservation 5432.27 feet south, and 335.29 feet east from the fire-control station known as B' 11, said point being now marked by a concrete monument, running thence S. 15° E. 650 feet, thence west 500 feet, thence south 200 feet, thence east to the east boundary of said lot N° 4, thence northerly along said east boundary of lot N° 4 to the south boundary of the U. S. Military reservation, thence west along said reservation south boundary to the place of beginning," together with all the riparian rights belonging thereto.

TOGETHER with the appurtenances, to have and to hold the said premises, with the appurtenances, unto said party of the second part, and to its assigns forever.

And the said parties of the first part, their heirs , executors and administrators, do, by these presents covenant, grant and agree to and with the said party of the second part and its assigns, that the said parties of the first part, their heirs, executors and administrators, all and singular, the premises hereinabove conveyed, described and granted, or mentioned, with the appurtenances, unto the said party of the second part and its assigns, and against all and every person or persons whomsoever lawfully claiming or to claim the same or any part thereof shall and will WARRANT and forever DEFEND.

IN WITNESS WHEREOF, The said parties of the first part have hereunto set their hands and seals the day and year first above written.

Signed, Sealed and Delivered in presence of -
J. A. Kuhn
B. S. Pettygrove

(Signed) Jacob Kuhn
Margreth Kuhn

State of Washington:
S.S.
County of Jefferson:

This is to certify, that on this 29th day of May, A.D. 1909 before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally came Jacob Kuhn and his wife Margreth Kuhn, to me known to be the individuals described in and who executed the within instrument, and acknowledged to me that they signed and sealed the same as their free and voluntary act and deed for the uses and purposes therein mentioned.

WITNESS my hand and official seal, the day and year in this certificate first above ~~xxxxx~~ written.

J. A. KUHN

Notray Public for the State of Washington, residing at Port Townsend.

Rec Dec 13 8 Book

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-7-

Sketch of Fort Flagler, Military Reservation.

Received MAR 10 1906

Fort Flagler, Wash.,
(Engineer Department)
Mar. 5, 1906.

Lieut. F. A. Pope,
Corps of Engineers, U.S.A.
Seattle, Wn.

Sir;-

Referring to your letter of March 1 with letter of February 28 from the Commanding Officer relative to supplying certain information concerning the boundaries, etc., of Fort Flagler military reservation I have the honor to remark on the several clauses as follows;-

1. Original reservation; ~~Date unknown.~~ Sept 22,1866.
Reservation by executive order, Nov. 14, 1896.
Purchase of February 12, 1897.
Purchase of August 30, 1897.

2. U.S.Government surveys of September 2, 1858.

3. Surveys by U.S. Engineer Department in 1901 and 1905.

4. The corners of the South boundry are marked by monuments made of 3 - inch iron pipes filled with concrete. These pipes are about four feet long, standing about 2- feet out of ground. The exposed part is painted white.
The corners that are thus marked are shown on accompaning sketch map.
The Western boundry line across the sand-spit is the Willamette Meridian, and its position has been only approximately located (vide letter Dec. 11, 1901 Ober to Major Millis).
The Eastern boundry is marked by the existing fence built by the Lighthouse establishment.
The remainder of the boundry is determinedby the waters of Puget Sound, Port Townsend bay and Kilisut harbor.

The letter of the Commanding Officer is returned herewith.

Very respectfully,
Your obedient servant
S. D. Mason
Junior Engineer.

2 Enclo. Sketch map & $\frac{328}{6}$ F.

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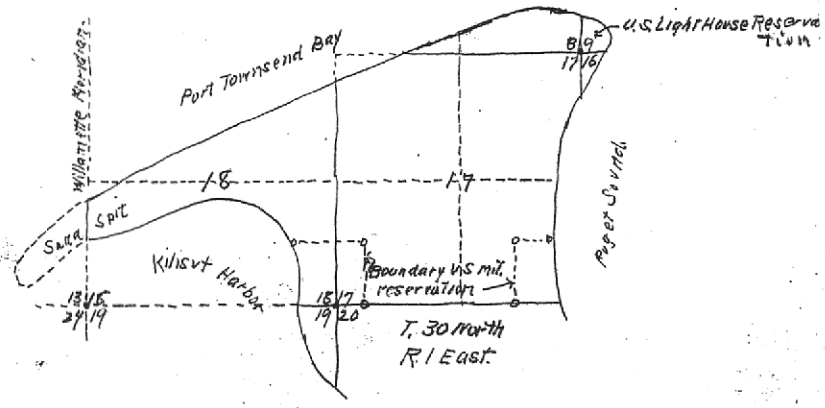

Corner Posts Mil. Rec. shown thus —o
3" iron pipes filled with concrete and painted white.

Hart Hagler | W.E.D. 5/6 1906 Seattle, Wash | Boundary Line

(Signed) H. D. Mann
W.M.S.
March 3, 1906.

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FORTIFICATIONS

PROJECT STATUS OF EACH BATTERY (July 1945)

BATTERY		STATUS	AUTHORITY
Wansboro	(2-3"BC)	To be retained permanently	Note 1
Downes	(2-3"BC)	To be retained permanently	Note 1
AMTB #5	(2-90mm)	To be retained permanently	Note 2
AA #2	(3-3"AA)	To be retained permanently	Note 3
Bankhead	(8-12"M)	Abandoned	Note 4
Wilhelm	(2-12"AGL)	Abandoned	Note 4
Revere	(2-10"BC)	Abandoned	Notes 5 & 6
Calwell	(4-6"DC)	Abandoned	Note 7
Grattan	(2-6"DC)	Abandoned	Note 7
Lee	(2-5"BC	Abandoned	Note 8
Rawlins	(2-10"BC)	Abandoned	Notes 9 & 10

* *

Note 1 - Letter, AG 660.2 (9-16-40) M-WPD-M, AGO, 9-26-40, Subj: Modernization of Harbor Defense Projects, Continental United States".

Note 2 - Letter, WD, AGO, AG 660.2 (4-12-43) OB-S-SPDDO-M, 17 April 1943, Subj: "Defense of Harbors Against Motor Torpedo Boats".

Note 3 - Basic Harbor Defense Project for the Harbor Defenses included in the Puget Sound - Columbia River Area, short title CCA-P-PSCR, approved by the Secretary of War in 1st Indorsement, AG 660.2 (10-22-32)(Misc)E, dated February 23, 1933

Note 4 - Ltr, WD, Headquarters Services of Supply, Wash. D.C., file SPDDO 400.93, Salvage, SPAG 660.2 (8-9-42) Ser. No 7831, dated 24 October 1942, Subj: "Salvage of Obsolete Armament".

Note 5 - First Revision-(26 Feb 1938) (AG 660.2(11-9-37)(Misc) E) Harbor Defense Projects for Harbor Defenses included in the Puget Sound - Columbia River Area. The short title of this document is CCA-P-PSCR.

Note 6 - Ltr, AGO, AG 400.3295 (1-30-41)M, 6 February 1941, Subj: "Supply of Armament to Canada".

Note 7 - Guns shipped to Watervliet Arsenal, New York per telegram AGO, 9 November 1917. Carriages salvaged or sold.

Note 8 - Guns and Carriages shipped to Fort Stevens, Oregon, S.O. 109, NPCAD, 8 Oct 1918.

Note 9 - Guns shipped to CO Watervliet Arsenal, New York, Ltr. AGO, 472.3 (10-inch) Misc. Div., 7 June 1918. Carriages salvaged or sold.

Note 10 - AA No. 2 relocated in outmoded emplacements of Battery Rawlins, Ltr. 660.2 HDP-Gen (G-3), Hq WDC & 4th Army, Presidio of San Francisco, Calif., 5 June 1942, Subj: "Defense of Harbors Against Motor Torpedo Boats".

July 1945

MOVABLE ARMAMENT

90mm AA GUN

Model M1, Serial No. 3341
w/tube #6066 on Mount, 90mm AA, M1A1, Serial No. 3791.
Received at Fort Flagler, 25 February 1943
Shipped to Benicia Arsenal, Calif. 29 March 1944.

90mm AA GUN

Model M1, Serial No. 3423
w/tube #6148 on Mount, 90 AA M1A1, Serial No. 1531
Received at Fort Flagler, 25 February 1943.
Shipped to Benicia Arsenal, Calif. 29 March 1944.

37mm AUTOMATIC AA GUN

Model M1A2, Serial No. 530
Mount Model M3, Serial No. 1078
Received at Fort Flagler, 11 November 1942
Shipped 29 March 1944.

37mm AUTOMATIC AA GUN

Model M1A2, Serial No. 528
Mount Model M3, Serial No. 1077
Received at Fort Flagler, 11 November 1942
Shipped 29 March 1944.

37mm AUTOMATIC AA GUN

Model M1A2, Serial No. 300
Mount Model M3, Serial NO. 224
Received at Fort Flagler, 11 November 1942
Moved to Fort Worden, 5 January 1944.

37 mm AUTOMATIC AA GUN

Model M1A2, Serial No. 4718
Mount Model M3A1, Serial No. 7845
Received at Fort Flagler, 6 December 1943
Shipped 5 January 1944

12 - Gun, Machine, AA, Cal. 50, Browning, (WC) M2, Flexible

12 - Mount, AA, MG, Cal .50, M3 or M2.

Date of receipt at Fort unknown, Serial Nos. unknown.

6 - Gun, Machine, Cal .30, Browning, M1917A1.
Serial Nos. 44826, 36876, 241127, 37767, 239745, 156648

6 - Mount, MG, Tripod, M1917A1, Cal .30
Serial Nos. 150691, 122365, 156652, 156642, 156666, 156525

July 1945

SUBMARINE DEFENSE

The only submarine defense ever installed at Fort Flagler was in the form of a Hydracoustic Station. This station was installed under supervision of the Army Signal Corps Laboratories as an experimental station, in August 1939. The first installation on Marrowstone Island consisted of a single binaural listening hydrophone, planted approximately 1900 yards south of Marrowstone Light in 8 fathoms of water. The control station for this hydrophone was located in the old B'''ll station at the southeast corner of the reservation (sometimes called Camp Donald). In 1941 another binaural listening hydrophone was planted across the channel at Greenbank, on Whidbey Island, forming a horizontal base position-finding system. The control station for this hydrophone was located at Greenbank.

On 10 May 1941 both instruments were transferred to the Commanding Officer of the Harbor Defenses of Puget Sound, and Battery G, 14th Coast Artillery was assigned to operate both these instruments. In January 1942 Battery L, 14th Coast Artillery was activated for the express purpose of manning this installation, Battery G, being relieved.

In February 1942 proceedings were initiated by the War and Navy Departments to transfer the responsibility for underwater listening posts of this kind from the Army to the Navy. Final transfer was effected 1 September 1942.

The Navy made several changes in the set-up of the installation, the most important being the centralization of the control stations in the old abandoned emplacement of Battery Grattan. At the time of present writing, the Navy is now operating the installation by remote control from the Harbor Entrance Control Post at Fort Worden. July 1945 - JGH.

F O R T I C A T I O N S.

A GENERAL SUMMARY OF THE SEVERAL WORKS, INCLUDING THEIR ARMAMENT.

Battery Wilhelm. 12-inch B. L. R.

2 - 12-inch B. L. Rifles, model 1888 MII, Nos. 35 and 25.

Emplacement No.1, Gun No.35.

Emplacement No.2, Gun No.25

1-12-inch Altered Gun Lift Carriage, No.1.

1-12-inch Barbette Carriage, No.2

Emplacement No.1, Carriage No. 2.

Emplacement No.2, Carriage No.1.

Guns and Carriages sold to M. Block and Company, Seattle, Wash. for salvage, December 1942. For specific authority see ~~Memo re XX~~ Ltr. Chief of Ordnance, 3 Oct. 1942 file SPOFX, Property and Salvage. 7/7/45 JPP

Battery John Rawlins, 10-inch B. L. R.

2 - 10-inch B.L.Rifles, model 1888 MII, Nos. 35, 28.

Emplacement No.1, ~~Gun No. 35.~~ } shipped to Watervliet Ars. 4/7/18 Lt. A.G.O. 4723 Reg

Emplacement No.2, ~~Gun No. 28.~~ }

2 - 10-inch Barbette Carriages model 1893, Nos. 10, 3. } Scrapped and to be sold 06 0920 Reg

Emplacement No.1, ~~Carriage No. 10~~

Emplacement No.2, ~~Carriage No. 3.~~

Carriages sold under authority Hq. No. Pacific C.A. District 0.400.702-9 13 December 1920 7/7/45 JPP

Battery Paul Revere, 10-inch B. L. R.

2 - 10-inch B.L.Rifles, model 1888 MII, Nos. 29 and 30.

Emplacement No.1, Gun No. 29.

Emplacement No.2, Gun No. 30.

2 - 10-inch Barbette Carriages model 1893, Nos. 4 and 5.

Emplacement No.1, Carriage No. 4.

Emplacement No.2, Carriage No. 5.

Guns and Carraiges turned over to York Safe & Lock Co., York, Penna. for shipment to Canada, April 1941, per auth., Ltr. AGO, AG 400.3295 (1-30-41) M, 6 Feb. 1941, Subj: "Supply of Armament to Canada". 7/7/45 JPP

Battery Henry Bankhead, 12-inch B.L.M. steel.

(PIT "A").

4 - 12-inch B.L. Mortars, steel, model 1890 MI, Nos. 114, 77, 90, and 133.

Mortar No. 114. = Mortar No. 1

Mortar No. ~~77~~. = Mortar No. 2.

Mortar No. 90 = Mortar No. 3.

Mortar No. ~~133~~ = Mortar No. 4.

Guns Nos. 114 & 90 sold to M. Block & Co., Seattle, Wn., Dec. 1942 per auth. Ltr. Chief of Ordnance, 3 Oct. 1942, file SPOFX, Property and Salvage. 7/7/45 JPP

shipped to I.O. Morgan Eng. Works Alliance Ohio 5/24/18 Lt. A.G.O. 4734.

Mortars #77 and 133 Reg

4 - 12-inch B.L. Mortar Carriages, spring return, model 1896. MII

Nos. 269, 270, 272 and 271.

Carriage No. 1 = Carriage No. 269.

Carriage No. 2, = Carriage No. 270.

Carriage No. 3, = Carriage No. 272.

Carriage No. 4, = Carriage No. 271.

Carriages Nos. 269 & 272 sold to M. Block & Co, Seattle, Wn. Dec. 1942, per auth. Ltr. Chief of Ordnance, 3 Oct. 1942, file SPOFX, Property & Salvage. 7/7/45 JPP

Scrapped & to be sold Reg 06 0920

Carriages Nos. 270 & 271 sold for scrap, 26 July 1920, auth. Ltr. Hq West Dept. file 400.702-12G, 15 July 1920 and Ltr. Hq NPCA, file 0.400.702-9, 12 June 1920. 7/7/45 JPP

Book C Page 4

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4 - 12-inch B.L.Mortars,steel,model 1890 MI,Nos.134, 67, 137, 128.

Mortar No. 134. = Mortar No. 1.

Mortar No. ~~67~~. = Mortar No.2.

Mortar No. 137. = Mortar No.3.

Mortar No. ~~128~~.= Mortar No.4.

Shipped to S.O. Morgan Eng Works Allison Furniss # 77 and 133 Ore 5/30/18 Lt. Also.

Guns Nos.134 & 137 sold to M.Block & Co, Seattle, Wn., Dec.1942 per auth. Ltr. Chief of Ordnance, 3 Oct.,1942 file SPOFX, Property & Salvage. 7/17/45 JPP.

4 - 12-inch B.L.Mortar Carriages,spring return,model,1896 M, Nos.273,274, 276 and 275.

Carriage No.1, = Carriage No. 273.

Carriage No.2, = Carriage No. 274.

Carriage No.3, = Carriage No. 276.

Carriage No.4, = Carriage No. 275.

Carriages Nos. 273 & 276 sold to M. Block & Co., Seattle, Wn., Dec 1942, per auth Ltr.Chief of Ordnance, 3 Oct 1942, file SPOFX, Property & Sal

Scrapped to be sold. Beg 060920

Carriages Nos. 274 and 275 sold for scrap, 26 July 1920, auth. Ltr. Hq West. Dept. file 400.702-12G, 15 July 1920 and Ltr Hq NPCA, fil 0.400.702-9, 12 June 1920. 7/17/45 JPP.

Reproduced at the National Archives-Pacific AK Region

Battery Lee, 5-inch R.F. Guns. [illegible]

~~2~~ - 5-inch R.F.Guns,model 1897,O.D. Nos.~~1~~ and ~~2~~.

Emplacement No.1,Gun No. ~~1~~.

Emplacement No.2,Gun No. ~~2~~.

Both guns and carriages shipped to O.O.C. Fort Stevens Org. Oct. 8/18 S.O. 109 N.P.C. H.Q.

~~2~~ - 5-inch Barbette Carriages,on Balanced Pillar Mounting,model 1896, Nos. ~~31~~ and ~~32~~.

Emplacement No.1,Carriage No. ~~31~~.

Emplacement No.2,Carriage No. ~~32~~.

see note re-guns Beg

Battery John Gratton, 6-inch R.F. Guns.

~~2~~ - 6-inch R.F.Guns, Mod.1905,O,D,Nos. ~~67~~ and ~~68~~.

Emplacement No. 1, Gun No. ~~68~~.

Emplacement No. 2, Gun No, ~~67~~.

2 guns shipped to C.O. Watervliet Ars. N.Y. per telegraphic inst also Nov. 9/17 Beg

2 - 6-inch Disappearing carriages Mod.1905,Nos. 73 and 45.

Emplacement No. 1, Carriage No. 73.

Emplacement No. 2, Carriage No. 45.

Scrapped to be sold. Beg 060920

Carriages sold under auth. Ltr. Hq NPCA Distr file 0.400.702-9, 12 June 1920. 7/17/45 JPP.

Battery Thomas Wansboro, 3-inch, (15,1lbrs.)

2 - 3-inch,(15,1lbrs.)Mod. 1908, Nos. ~~35~~ 10 and ~~36~~ 84.

Emplacement No. 1, Gun No. ~~35~~.10

Emplacement No. 2, Gun No. ~~36~~.84

Gun tubes exchanged with those of Battery Wal Fort Worden, 30 October 1943. JPP.

Pedistal Mounts, Model 1903, Nos. 16 and 17.

Emplacement No. 1, Carriage No. 16.

Emplacement No. 2, Carriage No. 17.

Reproduced at the National Archives-Pacific AK Region

Battery Dowers.

3-inch 15 pounders.

2 - 3-inch (15 pounders) Model 1903, No's. 27 and 16.

Emplacement No. 1 Gun No. 27.

Emplacement No. 2 Gun No. 16.

Pedestal Mounts, Model 1903, No's. 78 and 79.

Emplacement No. 1. Carriage No. 78.

Emplacement No. 2. Carriage No. 79.

P.6. E

Battery James Calwell. 6-inch R.F. Guns.

~~6~~ - 6-inch R.F. Guns, Mod. 1903, Nos. 48,60,65 and 70.

Emplacement No. 1, Gun No. ~~48~~. 2 guns # 48-60-65-70- shipped to (
Emplacement No.2, Gun No. ~~60~~. ais.ny. Nov. 21/17 Telegraphic inst
Emplacement No. 3, Gun No. ~~65~~. Nov. 9/17 Ely
Emplacement No. 4, Gun No. ~~70~~.

4 - 6-inch Disappearing Carriages, Mod. 1903, Nos.53,54,55, and 72.

Emplacement No. 1, Carriage No.53.
Emplacement No. 2, Carriage No. 54.
Emplacement No. 3, Carriage No. 55.
Emplacement No. 4, Carriage No. 72.

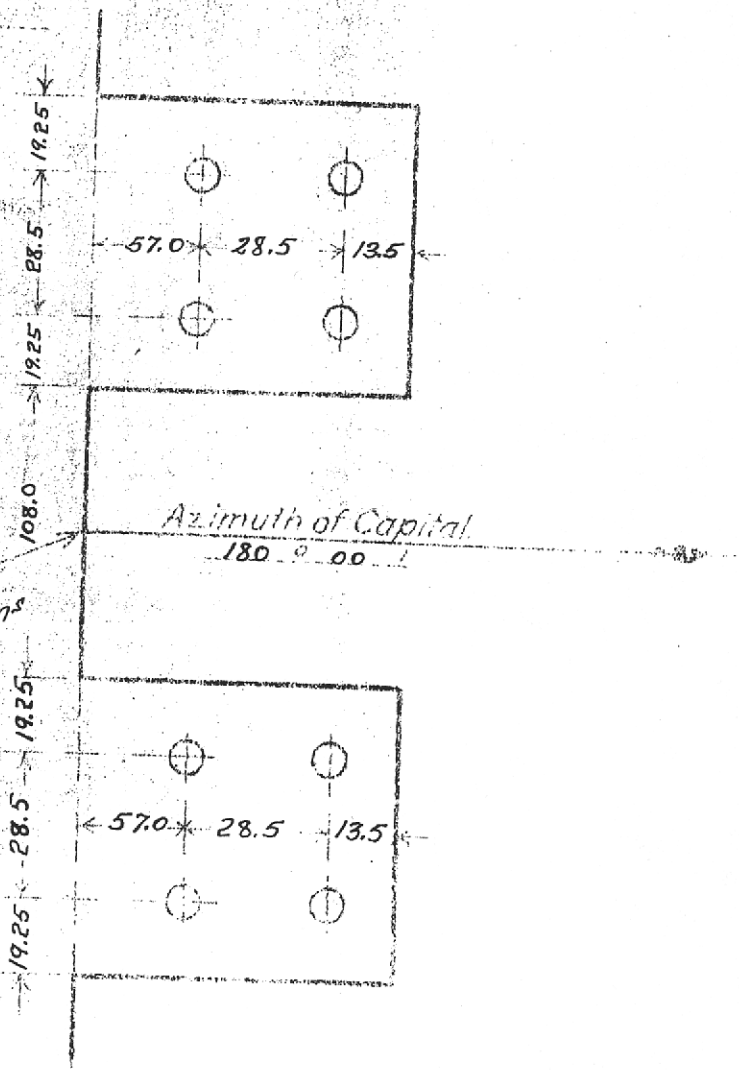
all carriages scrapped to be sold Ely c
Carriages dismounted and shipped, 13 De
E.M.Ricker, Seattle, Wn., per auth. Ltr.
District, O.400.702-9, 12 June 1920.

FORT FLAGLER ... BATTERY BANKHEAD ... B. H. M. R. A.

4-1

ARMAMENT: BATTERY

MODELS OF	MORTARS	CARRIAGES	
BT A No. 1	1890 M1	# 114	1896 # 269
" 2	1890 M1	77	1896 270
" 3	1890 M1	90	1896 272
" 4	1890 M1	133	1896 271
BT B No. 1	1890 M1	134	1896 273
" 2	1890 M1	67	1896 274
" 3	1890 M1	137	1896 276
" 4	1890 M1	128	1896 275



Azimuth 44° 26' 40" 70.13 ft. to ℄ rear face of center traverse from B11 battery primary station Rawlins

ELEVATION OF FLOORS OF PITS 115.37 ABOVE PLANE OF M.L.W.

E-8

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

HARBOR DEFENSES OF PUGET SOUND,
FORT FLAGLER, WASH.,
BATTERY BANKHEAD,
No. of guns, 4. Caliber 12". Carriage MORTARS

Form 1. Corrected to May 1,1933.

Battery commenced	October, 1900	Sources of electric current	Local Emplacement Plant, Central Power Plant or Commercial Power
Battery completed	June, 1902		
Date of transfer	Aug. 17,1902	Max. KW required for lights	5.72
Material of construction	Concrete	Max. KW required for motors	No motors
Portland or Rosendale cement	Portland		
Cost to date of transfer	$89,584.47		
Connected to water supply	Yes	Present condition of battery	Good
Connected to sewer	Yes	Rooms wet or dry	Dry
Type of latrine	Syphon		
Type of data transmission	Telephone	How ventilated	No vent. doors; no vent. shafts
Trunnion elevation in battery	119.87	Remarks:-	Plotting room in battery *
Datum plane	M.L.W.		

ARMAMENT

Mortar No.	Mortars: Cal.	Length	Model	Serial No.	Manufacturer	Mounted	Carriages: Type	Model	Serial No.	Manufacturer	Motor
Pit A 1	12"	129.25"	1890MI	114	Watervliet Ars.	Yes		1896MI	269	Rarig Engrg. Co.	No
Pit A 2	12"	129.25"	1890MI	90	Watervliet Ars.	Yes		1896MI	272	Rarig Engrg. Co.	No
Pit B 1	12"	129.25"	1890MI	134	Watervliet Ars.	Yes		1896MI	273	Rarig Engrg. Co.	No
Pit B 2	12"	129.25"	1890MI	137	Watervliet Ars.	Yes		1896MI	276	Rarig Engrg. Co.	No.

REMARKS :- *The battery was built for 8 mortars, 4 to each pit, but 2 mortars and their carriages were removed from each pit and the empty wells filled with sand and covered with concrete pavement in 1921.

E-9

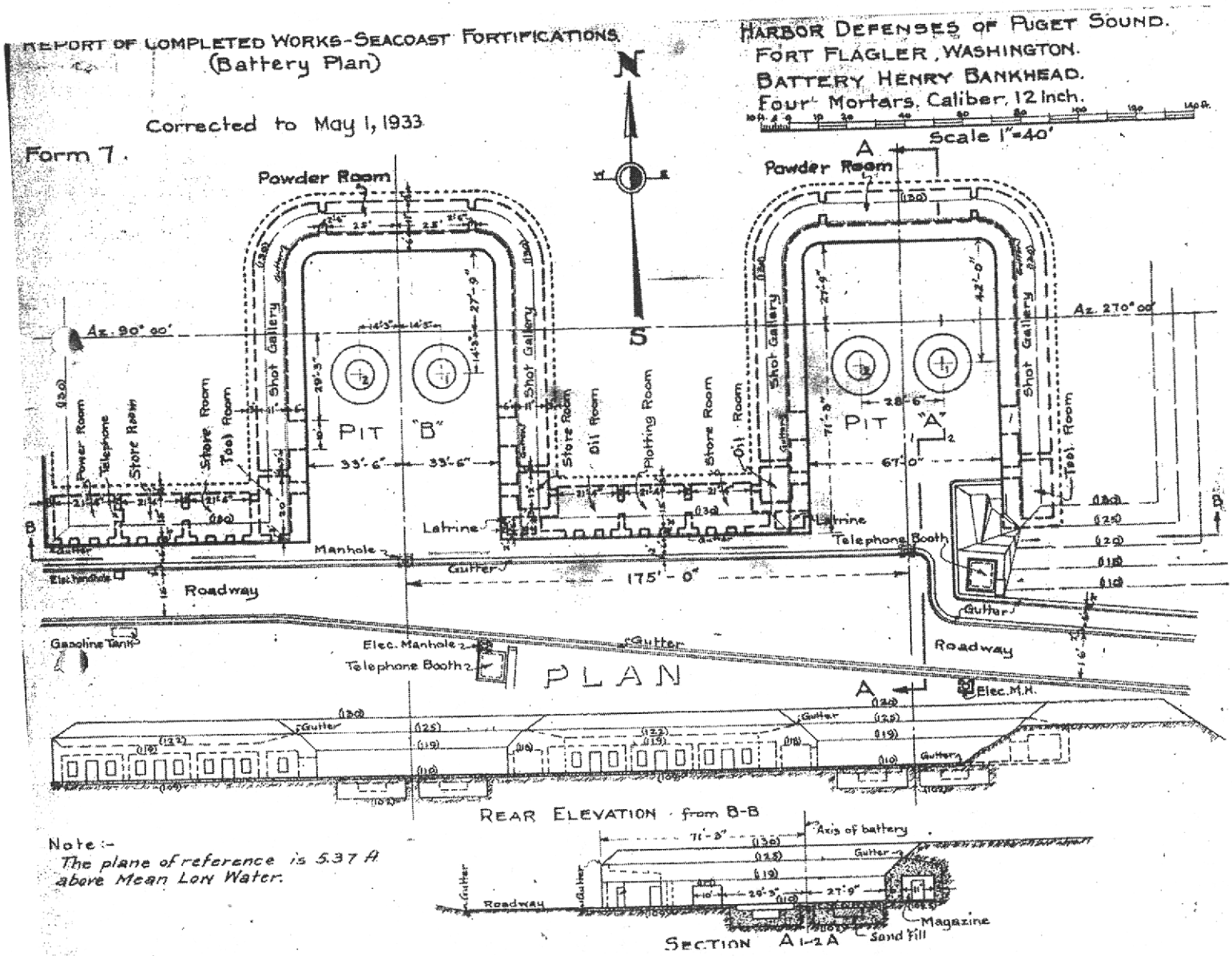
REPORT OF COMPLETED WORKS-SEACOAST FORTIFICATIONS
(Battery Plan)

Corrected to May 1, 1933

Form 7.

HARBOR DEFENSES OF PUGET SOUND.
FORT FLAGLER, WASHINGTON.
BATTERY HENRY BANKHEAD.
Four Mortars, Caliber, 12 Inch.

Scale 1"=40'



Note:-
The plane of reference is 5.37 ft above Mean Low Water.

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

Form 1 Corrected to February, 1930.

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER
BATTERY WILHELM
No. of guns 2 Caliber 12" Carriage BARB

Battery commenced	1897	Sources of electric current	Plant of Battery Wilhelm, Central Power Plant, or commercial power
Battery completed	1899		
Date of transfer	Aug. 17, 1902	Max.kw. required for lights	4.02
Material of construction	Concrete	Max.kw. required for motors	17.6
Portland or Rosendale cement	Portland		
Cost to date of transfer	$71,190.68		
Connected to water supply	Yes	Present condition of battery	Good
Connected to sewer	Yes	Rooms wet or dry	Magazines lined; galleries generally dry
Type of latrine	Syphon		
Type of data transmission	Telephone	How ventilated	No vent. doors; no vent.shafts
Trunnion elevation in battery	132.87	Remarks -	Built by contract
Datum plane	M.L.W.		

General remarks: Power plant for two 25-kw sets installed on left flank of battery in 1919-1920 at a cost of $10,981.45. See Form 5 with blueprint attached. &

ARMAMENT

Emplacement No.	Guns Cal.	Length	Model	Serial No.	Manufacturer	Mounted	Carriages Type	Model	Serial No.	Manufacturer	Motor
1	12"	440"	1888MII	35	Watervliet Ars.	Yes	*	1897	2	Watertown Ars.	No
2	12"	440"	1888MII	25	-do-	Yes	*	1897	1	-do-	No

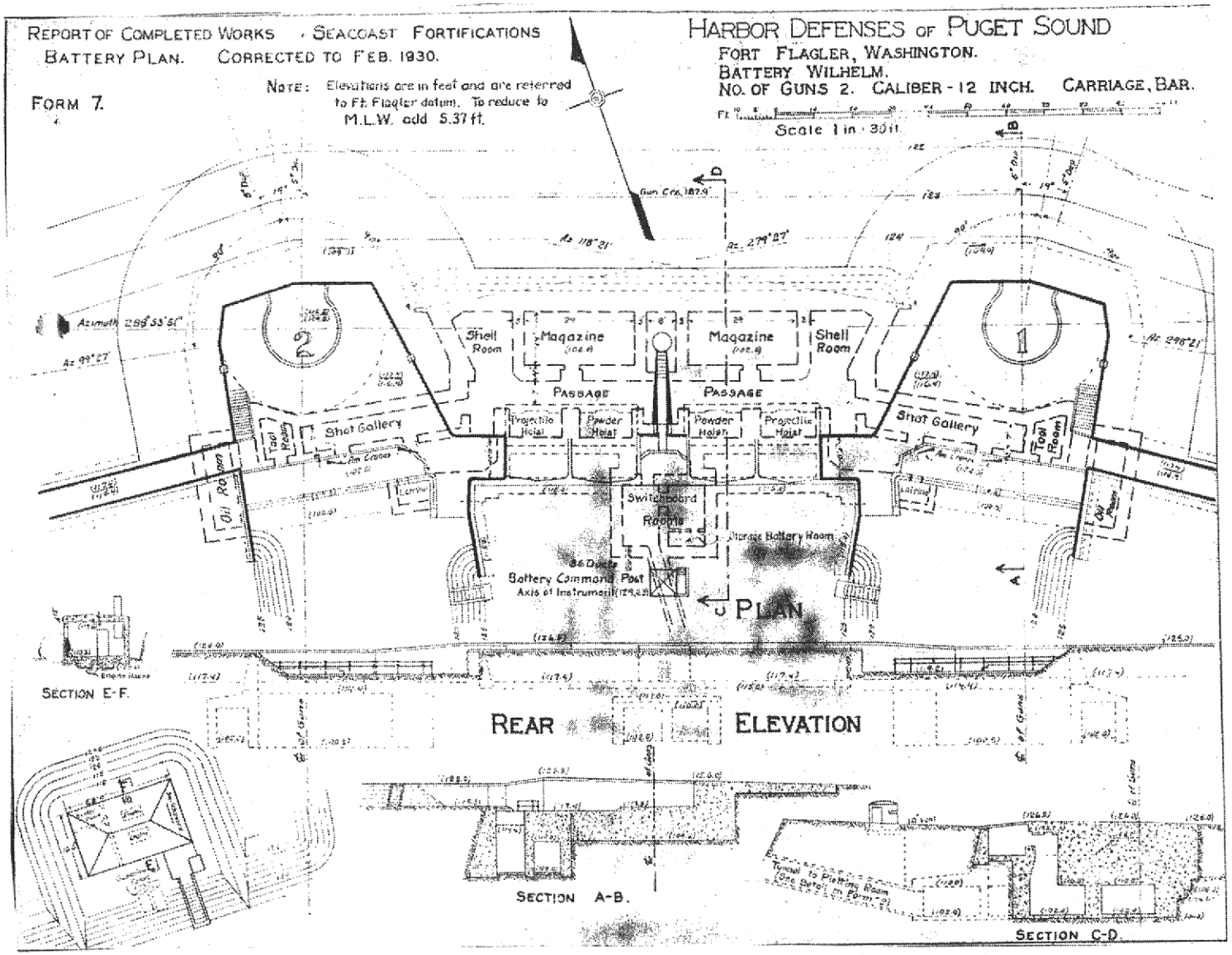
PROJECTILE HOISTS

Emplacement No.	Type	Delivery	Motor Serial No.	Maker	H.P.	Volts	RPM	Type of control	Date of transfer	Remodeled for long points
1	T-R	Back	1309 44	G.E.Co.	7-1/2	220		R-96-B	Sept. 26,1907	Yes
2	T-R	Back	130911	G.E.Co.	7-1/2	220		R-96-B	Sept. 26,1907	Yes

POWDER HOISTS

1	A-12"	178849	G.E.Co.	3	220	1060	R-96-B	June 7, 1911	
2	A-12"	178851	G.E.Co.	3	220	1060	R-96-B	June 7, 1911	

* Barb. altered Gun Lift.


REPORT OF COMPLETED WORKS . SEACOAST FORTIFICATIONS
BATTERY PLAN. CORRECTED TO FEB. 1930.
FORM 7.
NOTE: Elevations are in feet and are referred to Ft. Flagler datum. To reduce to M.L.W. add 5.37 ft.
HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON.
BATTERY WILHELM.
NO. OF GUNS 2. CALIBER - 12 INCH. CARRIAGE, BAR.
Scale 1 in. 30 ft.
Azimuth 288°53'50"
Shell Room
Magazine
Passage
Projectile Hoist
Powder Hoist
Shot Gallery
Switchboard Room
Storage Battery Room
Battery Command Post
PLAN
SECTION E-F.
REAR ELEVATION
SECTION A-B.
SECTION C-D.

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

HARBOR DEFENSES OF PUGET SOUND,
FORT FLAGLER, WASH.,
BATTERY RAWLINS
No. of Guns None. Battery designed for 2-10" BARB.

Form 1. Corrected to May 1,1933.

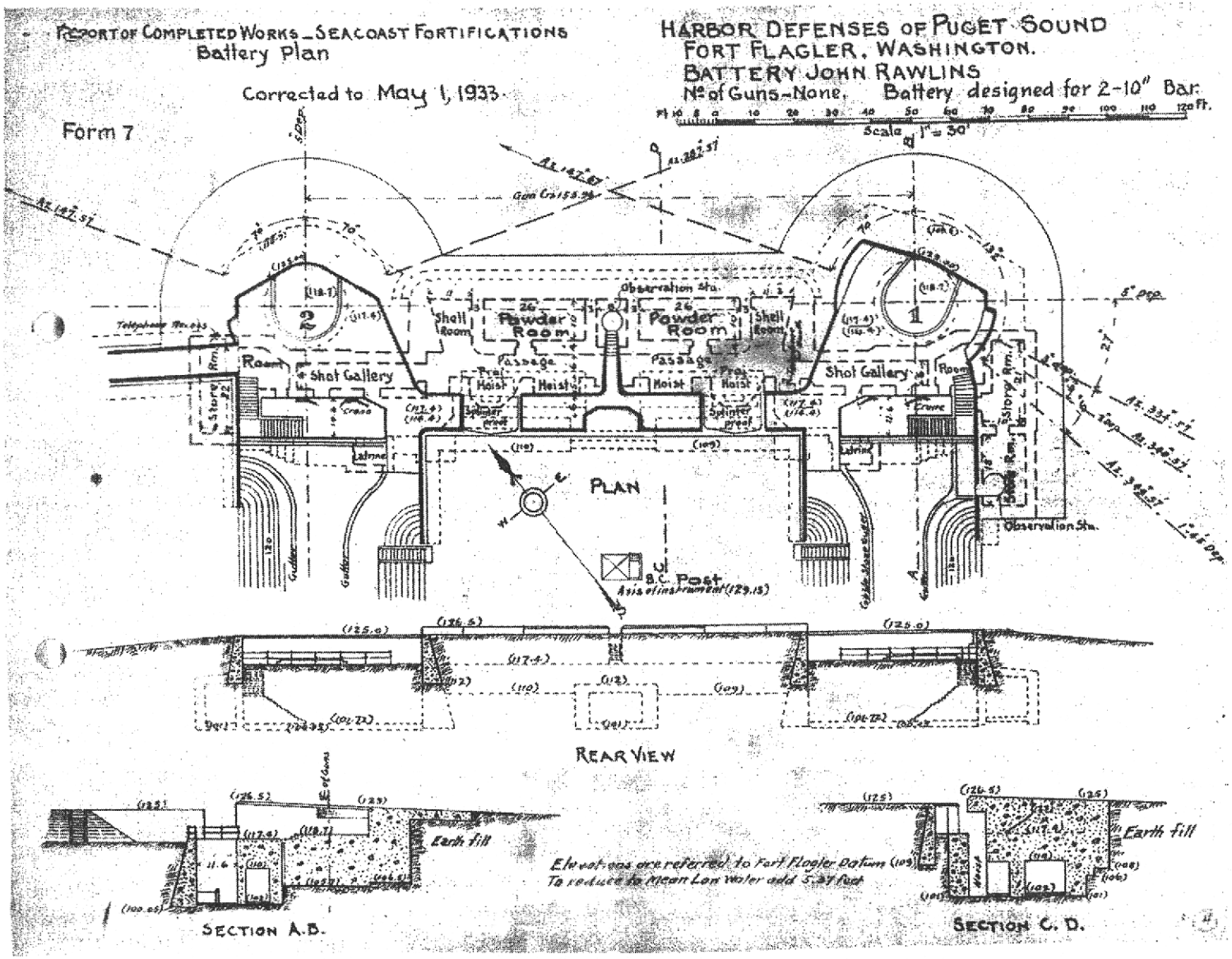
Battery commenced	1897	Sources of electric current	Central Power Plant and Commercial Power
Battery completed	1899		
Date of transfer	Aug.17,1902	Max. KW required for lights	3.9
Material of construction	Concrete	Max. KW required for motors	8.8
Portland or Rosendale cement	Portland		
Cost to date of transfer	$60,000.00		
Connected to water supply	Yes	Present condition of battery	Poor
Connected to sewer	Yes	Rooms wet or dry	Generally wet
Type of latrine	Syphon		
Type of data transmission	Telephone	How ventilated	No vent.doors; no vent. shafts
Trunnion elevation in battery	132.37	Remarks	Built by contract. The guns and carriages have been shipped out of these defenses
Datum plane	M. L. W.		

ARMAMENT None. (Has been removed)

HOISTS

Emp. No.	Type	Delivery	Serial No.	MOTOR Maker	H.P.	Volts	RPM	Type of Control	Date of transfer	Remodeled for long points
1	T-R	Back	96283	G.E.Co.	5	220	1060	R-67	Sept. 26,1907	Yes
2	T-R	Back	96235	G.E.Co.	5	220	1060	R-67	Sept. 26,1907	Yes

[illegible] to be relocated to vicinity Battery Rawlins, [illegible]


Report of Completed Works - Seacoast Fortifications
Battery Plan
Corrected to May 1, 1933
Form 7
HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON.
BATTERY JOHN RAWLINS
No of Guns-None. Battery designed for 2-10" Bar.
Scale 1" = 50'
Powder Room
Shell Room
Passage
Hoist
Shot Gallery
Observation Sta.
B.C. Post
PLAN
REAR VIEW
SECTION A.B.
SECTION C. D.
Earth fill
Elevations are referred to Fort Flagler Datum
To reduce to Mean Low Water add 5.27 feet

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

HARBOR DEFENSES OF PUGET SOUND,
FORT FLAGLER, WASH.,
BATTERY REVERE

Form 1. Corrected to May 1,1933.

No. of Guns 2. Caliber 10". Carriage BARB.

Battery commenced	1897	Sources of electric current	Central Power Plant or Commercial Power
Battery completed	1899		
Date of transfer	Aug.17,1902	Max. KW required for lights	3.9
Material of construction	Concrete	Max. KW required for motors	8.8
Portland or Rosendale cement	Portland		
Cost to date of transfer	$60,000.00		
Connected to water supply	Yes	Present condition of battery	Good
Connected to sewer	Yes	Rooms wet or dry	Generally dry
Type of latrine	Syphon		
Type of data transmission	Telephone	How ventilated	No. vent. doors; no vent. shaft.
Trunnion elevation in battery	132.45	Remarks:-	Built by contract
Datum plane	M.L.W.		

Superseded Form 1 corrected to Apr. 11, 1941

ARMAMENT

Emp. No.	GUNS Cal.	Length	Model	Serial No.	Manufacturer	Mounted	CARRIAGES Type	Model	Serial No.	Manufacturer	Motor
1	10"	367.25"	1888MII	29	Bethlehem Iron Co.	Yes		1893	4	Watertown Ars.	No
2	10"	367.25"	1888MII	30	-do-	Yes		1893	5	-do-	No.

HOISTS

Emp. No.	MOTOR Type	Delivery	Serial No.	Maker	H.P.	Volts	RPM	Type of Control	Date of transfer	Remodeled for long points
1	T-R	Back	96369	G.E.Co.	5	220	1060	R-67	Sept. 26,1907	Yes
2	T-R	Back	97639	G.E.Co.	5	220	1060	R-67	Sept. 26,1907	Yes

See 660.2 - 20. Above gun to have breech mechanisms removed, and stored locally for use as spares. Guns themselves be not disposed of until studies at present in progress indicate whether or not it is desirable to retain parts for technical investigation. #30 gun fired 111 rounds.

See 660.2 - 20. Above gun to be retained for use as spare, reporting them to Chief of Ordnance for shipping instructions. #29 gun fired 94 rounds.

See 660.2 - 20. Above carriages to be sold as scrap, no parts to be retained.

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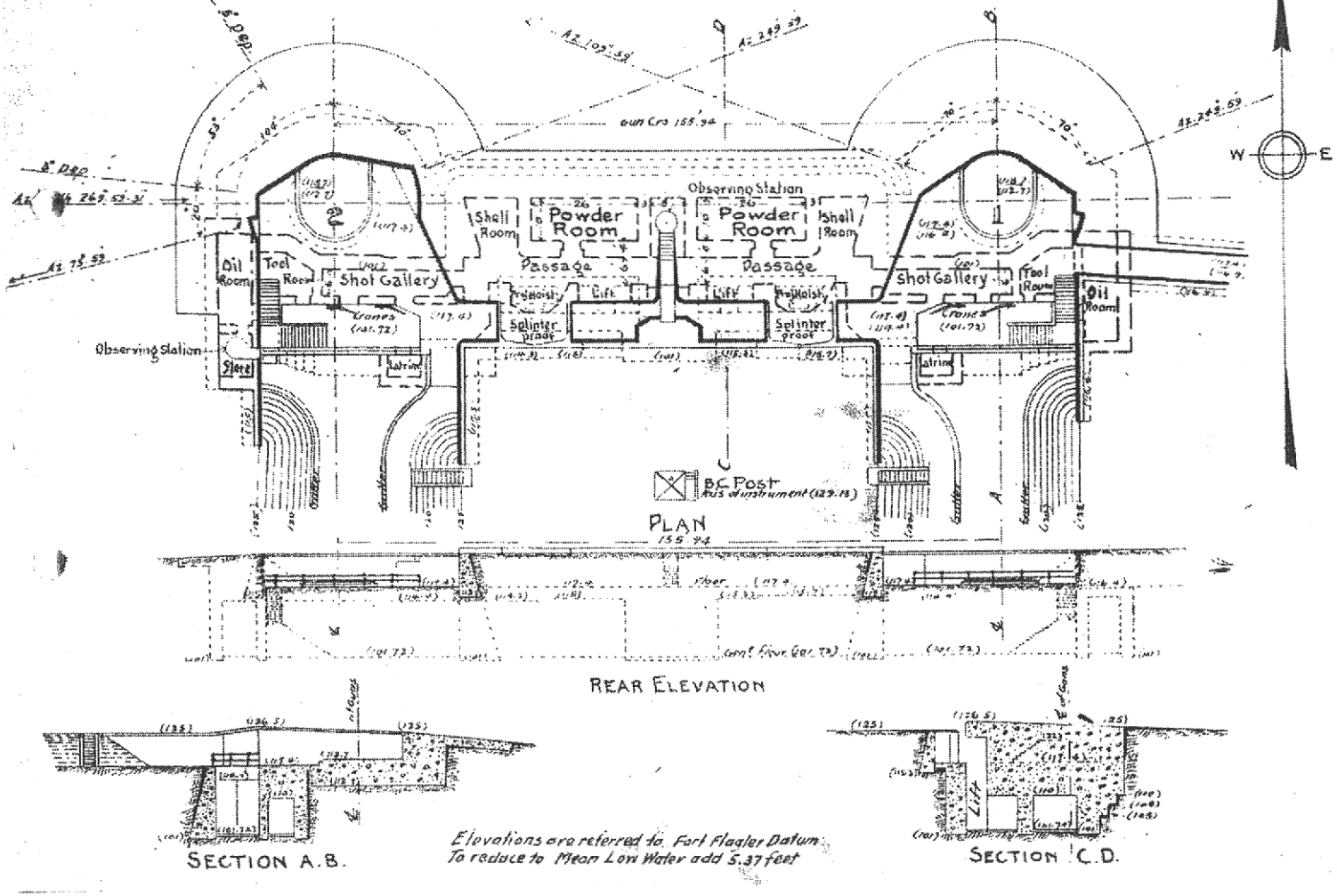
REPORT OF COMPLETED WORKS—SEACOAST FORTIFICATIONS
(Battery Plan)

Corrected to May 1, 1933.

Form 7.

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON.
BATTERY PAUL REVERE.
No of Guns,– 2 Caliber,– 10 inch. Carriage – Bar.

Scale 1 inch = 30 Ft.



Elevations are referred to Fort Flagler Datum
To reduce to Mean Low Water add 5.37 feet

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

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASH.
BATTERY REVERE

Form 1 — Corrected to April 11, 1941 — No. of Guns None

GENERAL:		ELECTRIC CURRENT:	
Battery commenced	1897	Sources of	Central power plant or private power.
Battery completed	1899	Max. Kw. required for lights	3.9.
Date of transfer	Aug. 17, 1902	Max. Kw. required for motors	8.8.
Cost to date of transfer	$60,000.00		
Materials of construction	Concrete		
Type of cement	Portland	Present condition of battery	Fair.
WATER & SEWER:		Rooms wet or dry	Generally dry.
Connected to water supply	Yes		
Connected to sewer	Yes	How ventilated	No vent. doors; no vent. shafts.
Type of latrine	Syphon	Type of data transmission	Telephone.
Trunnion elevation in btry.	- -	Remarks	Built by contract.
Datum plane	M.L.W.		

ARMAMENT

Guns and carriages removed April 11, 1941. (Former no. of guns, 2; caliber, 10"; carriage, barb.

HOISTS

Emplacement Number	Type	Delivery	Serial No.	Motor: Maker	H.P.	Volts	RPM	Type of control	Date of transfer	Remodeled for long points
1.	T-R	Back	96369	GE Co.	5	220	1060	R-67	Sept. 26, 1907	Yes
2.	T-R	Back	97639	GE Co.	5	220	1060	R-67	Sept. 26, 1907	Yes

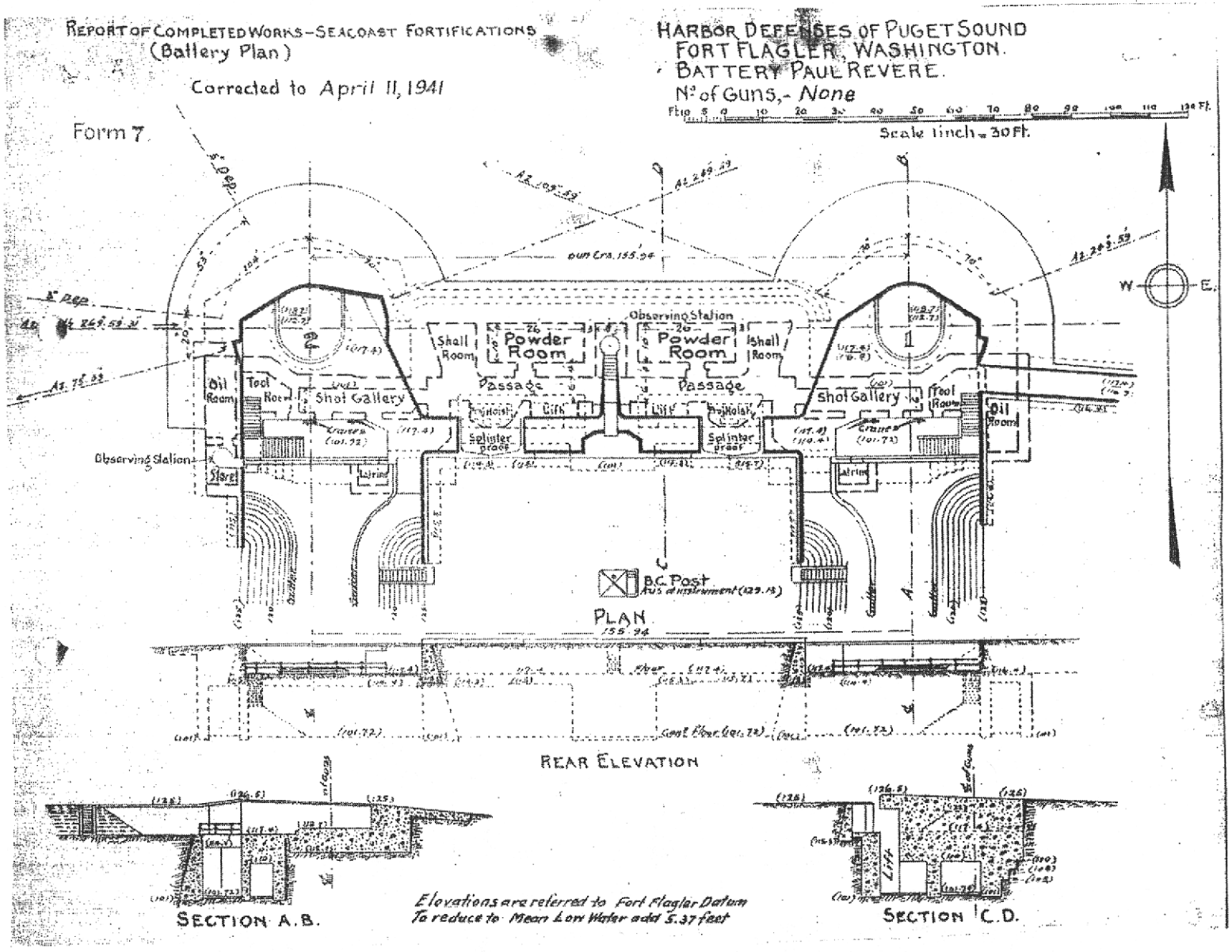
REPORT OF COMPLETED WORKS – SEACOAST FORTIFICATIONS
(Battery Plan)

Corrected to April 11, 1941

Form 7.

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON.
BATTERY PAUL REVERE.
No of Guns,- None

Scale 1 inch = 30 Ft.



Elevations are referred to Fort Flaglar Datum
To reduce to Mean Low Water add 5.37 feet

COAST DEFENSES OF *PUGET SOUND*

FORT *FLAGLER* BATTERY *CALWELL* NO. OF GUNS: *4* CALIBER: *6"*

	Emplacement Number 1	Emplacement Number 2	Emplacement Number 3	Emplacement Number 4
1-a. Azimuth	269°-14'-52"	74°-00'-00"	74°-00'-00"	74°-00'-00
b. Distance	2285.20	125.00'	79.33	125.00
2-a. Model of Gun	1903 № 48	1903 № 60	1903 № 65	1903 № 70
b. " " Carriage	1903 № 53	1903 № 54	1903 № 55	1903 № 72
c. Type of "	Dis.	Dis.	Dis	Dis
3- Elevations of				
a. Gun trunnions (in battery.)	82.37	82.37	82.37	82.37
b. Interior crest	80.37	80.37	80.37	80.37
c. Loading platform	73.29	73.29	73.29	73.29
4- Angle of depression	6°	6°	6°	6°

	From	To	From	To	From	To	From	To
5- Limiting azimuths of field of fire as determined by:	° '	° '	° '	° '	° '	° '	° '	°
a. Construction of emplacement	274-00	104-00	224-00	94-00	234-00	104-00	224-00	54-0
b. Interference by adjacent emplacements	None							
c. Interference of other obstacles external to emplacement	R237°							L99
d. Position of Ordnance stops	234°	104°	224°	99°	234°	104°	224°	99°

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 *Battery primary station* (B.P.) *Rawlins*

3. Above plane of *M.L.W.*

5-c. Nature of obstacles: *bluff*

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

E-14

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS
(GUN AND MORTAR BATTERIES)

COAST DEFENSES OF PUGET SOUND
FORT FLAGLER
BATTERY CALWELL (4-6"Dis.L.F.

Form 1 Corrected to August, 1921. No.of guns None Battery designed for

Battery commenced	June 1903	Sources of electric current	Bat.Wilhelm Plant,Central Power Plant or Commercial Power
Battery completed	Oct. 1905		
Date of transfer	Apr.23,1907	Max.kw. required for lights	5.52
Material of construction	Concrete	Max.kw.required for motors	No motors
Portland or Rosendale cement	Portland		
Cost to date of transfer	$89,500.00		
Connected to water supply	Yes	Present condition of battery	Excellent
Connected to sewer	No	Rooms wet or dry	Dry
Type of latrine	No latrine		
Type of data transmission	Telephone	How ventilated	No vent.doors;6-inch vent shafts; metal tops
Trunnion elevation in battery	82.37	Remarks -	Guns and carriages moved out of District
Datum plane	M.L.W.		

ARMAMENT - None (Has been removed)

E-15

REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS
(Battery Plan)

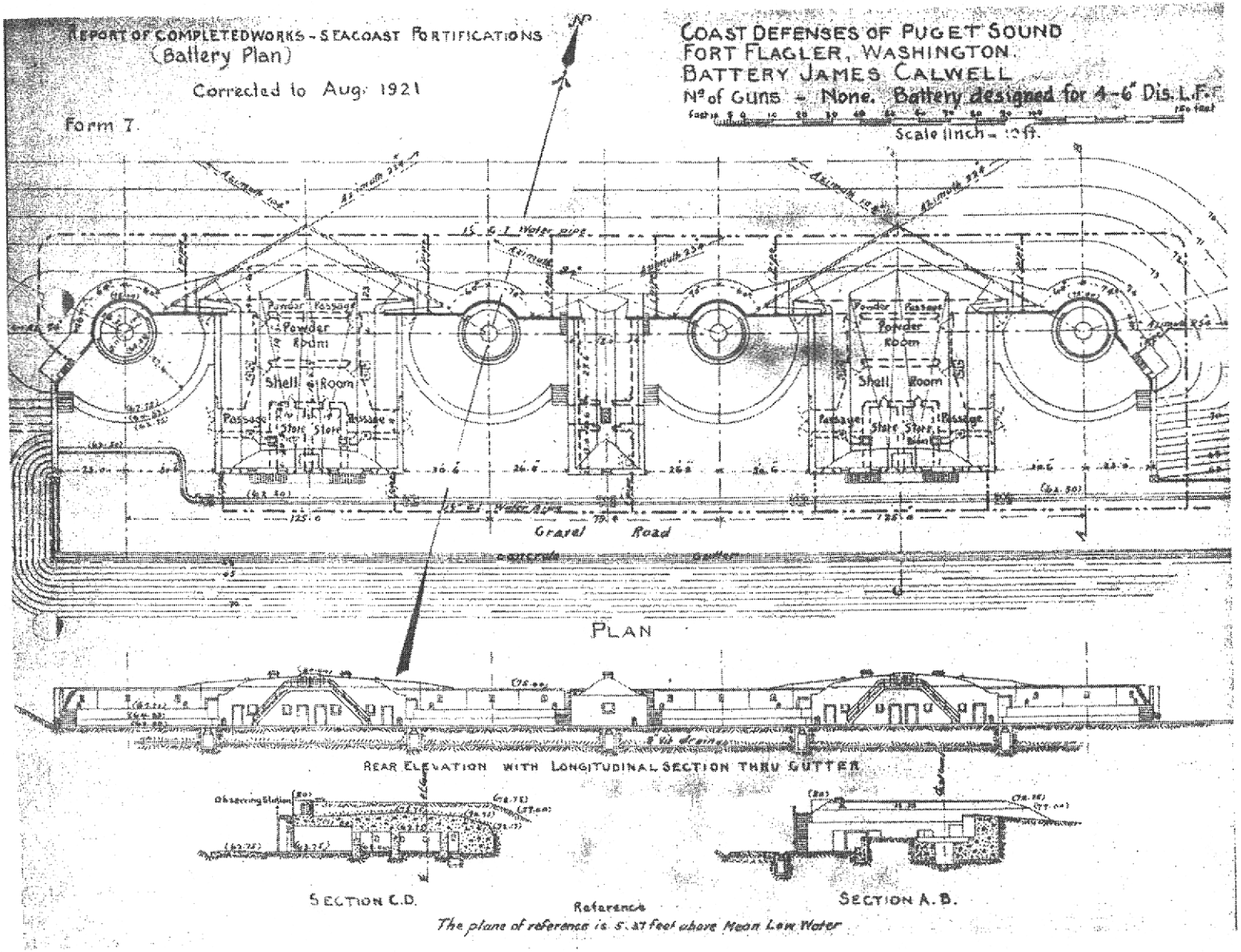
Corrected to Aug. 1921

Form 7.

COAST DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON.
BATTERY JAMES CALWELL

Nº of Guns - None. Battery designed for 4-6" Dis. L.F.C.

Scale 1 inch = 10 ft.



Reference

The plane of reference is 5.37 feet above Mean Low Water

COAST DEFENSES OF PUGET SOUND

FORT FLAGLER BATTERY GRATTAN NO. OF GUNS: 2 CALIBER: 6"

	Emplacement Number 1.	Emplacement Number 2.	Emplacement Number 3.	Emplacement Number 4.
1-a. Azimuth	120°-48-32"	180°-00-00"		
b. Distance	634.55	125.00'		
2-a. Model of Gun	1903 № 68	1903 № 69		
b. " " Carriage	1903 № 73	1903 № 45		
c. Type of "	Dis	Dis		
3- Elevations of				
a. Gun trunnions (in battery)	113.40	113.40		
b. Interior crest	111.37	111.37		
c. Loading platform	104.29	104.29		
4- Angle of depression	6°	6°		

5- Limiting azimuths of field of fire as determined by:	From	To	From	To	From	To	From	To
	° '	° '	° '	° '	° '	° '	° '	° '
a. Construction of emplacement	20-00	210-00	330-00	160-00				
b. Interference by adjacent emplacements	None							
c. Interference of other obstacles external to emplacement	None			∠205°				
d. Position of Ordnance stops	16°	210°	330°	160°				

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 Battery primary station (B#) Rawlins

3. Above plane of M.L.W.

5-c. Nature of obstacles: bluff

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

DECLASSIFIED
Authority NND 933588
By AB NARA Date 2/14/03

SECRET

Loc. 914 (Puget Sound) CM 66831

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

66831

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON
*BATTERY JOHN GRATTAN
No. of guns NONE. Designed for 2-6" Dis. L.F.

Form 1. Corrected to 1 September 1942

GENERAL:		ELECTRIC CURRENT:	
Battery commenced	Sept. 1904	Sources of	Commercial Power
Battery completed	June 1906		
Date of transfer	April 23, 1907	Max. kw. required for lights	2.52
Cost to date of transfer	$48,000.00	Max. kw. required for motors	No motors
Materials of construction	Concrete		
Type of cement	Portland	Present condition of battery	Good
WATER & SEWER:		Rooms wet or dry	Dry
Connected to water supply	Yes		
Connected to sewer	No	How ventilated	No vent. doors; 6" vent shafts with metal tops
Type of latrine	No latrine		
		Type of data transmission	Telephone
Trunnion elevation in btry.	113.41	Remarks	*
Datum plane	M.L.W.		

ARMAMENT

None. Guns and carriages shipped out of these defenses.

HOISTS

None

*Battery transferred to U.S. Navy 9/1/42, authority: 3rd Ind. Ltr., AGO, AG 413.68 (3-2-42) MS, 8 Apr. 1942, Subject: "Transfer of Responsibility for Fixed Underwater Listening Posts".

4577

E-17

E-17

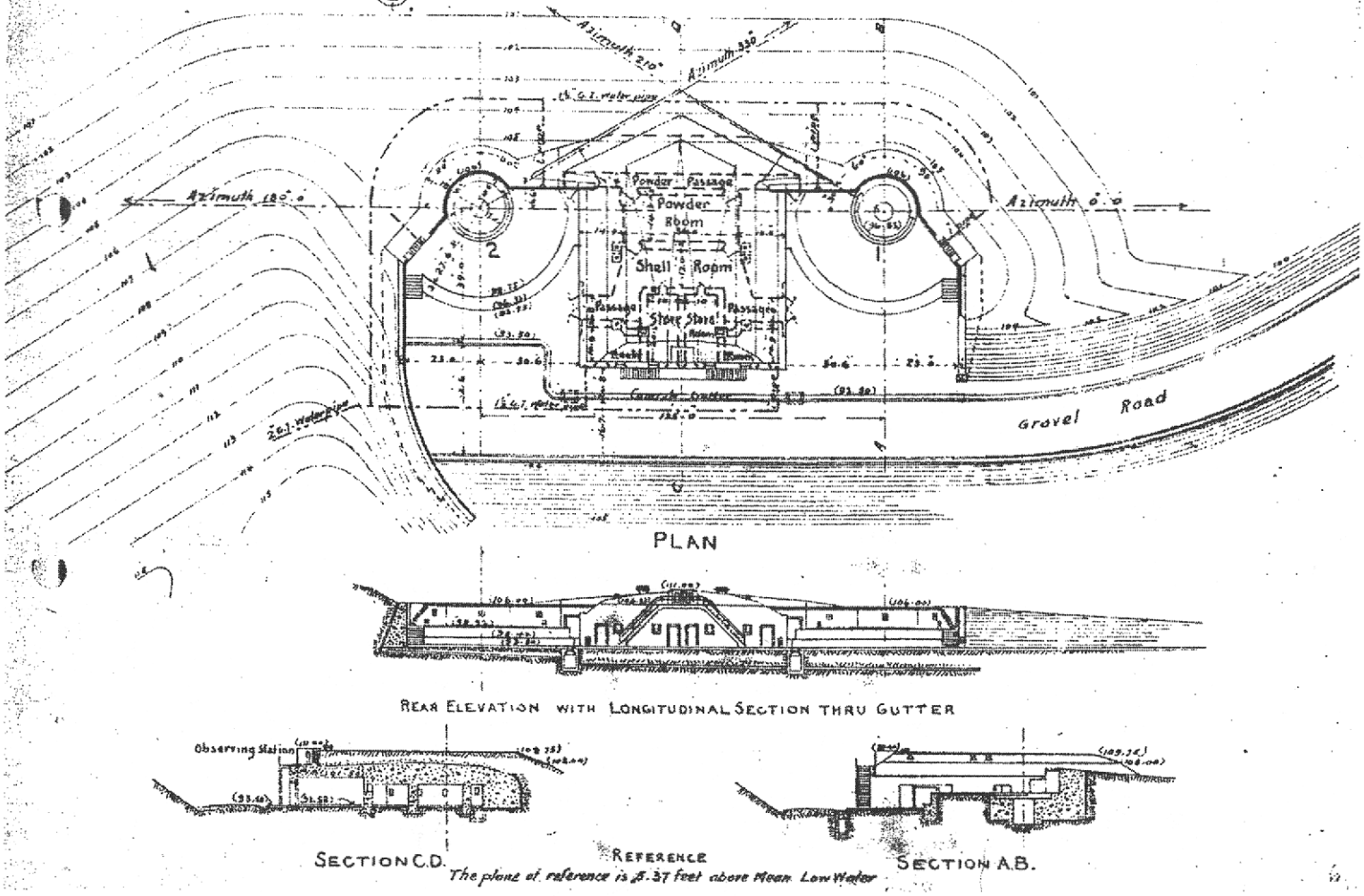
REPORT OF COMPLETED WORKS- SEACOAST FORTIFICATIONS
(Battery Plan)

Corrected to May 1, 1933.

Form 7.

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON
BATTERY JOHN GRATTAN
No. of Guns – None. Battery designed for 2-6" Dis. L.F.

Scale 1 inch = 40 ft.



REFERENCE

The plane of reference is 5.37 feet above Mean Low Water

COAST DEFENSES OF PUGET SOUND

FORT Flagler BATTERY LEE NO. OF GUNS: 2 CALIBER 5"

	Emplacement Number 1.	Emplacement Number 2.	Emplacement Number 3.	Emplacement Number 4
1-a. Azimuth,	52°-10'-29"	134°-57'		
b. Distance.	975.96	59.50'		
2-a. Model of Gun.	1897 No 5	1897 No 8		
b. " " Carriage.	1896 No 31	1896 No 32		
c. Type of "	B.P.	B.P.		
3- Elevations of				
a. Gun trunnions (in battery)	66.82	66.82		
b. Interior crest.	65.37	65.37		
c. Loading platform.	58.37	58.37		
4- Angle of depression.	7°	7°		

	Emplacement Number 1. From.	Emplacement Number 1. To.	Emplacement Number 2. From.	Emplacement Number 2. To.	Emplacement Number 3. From.	Emplacement Number 3. To.	Emplacement Number 4. From.	Emplacement Number 4. To.
5- Limiting azimuths of field of fire as determined by:	° '	° '	° '	° '	° '	° '	° '	° '
a. Construction of emplacement.	AR		AR					
b. Interference by adjacent emplacements.		L 155°	R 295°					
c. Interference of other obstacles external to emplacement.	R 348°			L 125°-54'				
d. Position of Ordnance stops.								

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 Battery primary station (B'1), Rawlins

3. Above plane of M.L.W.

5-c. Nature of obstacles: bluff;

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

E-18

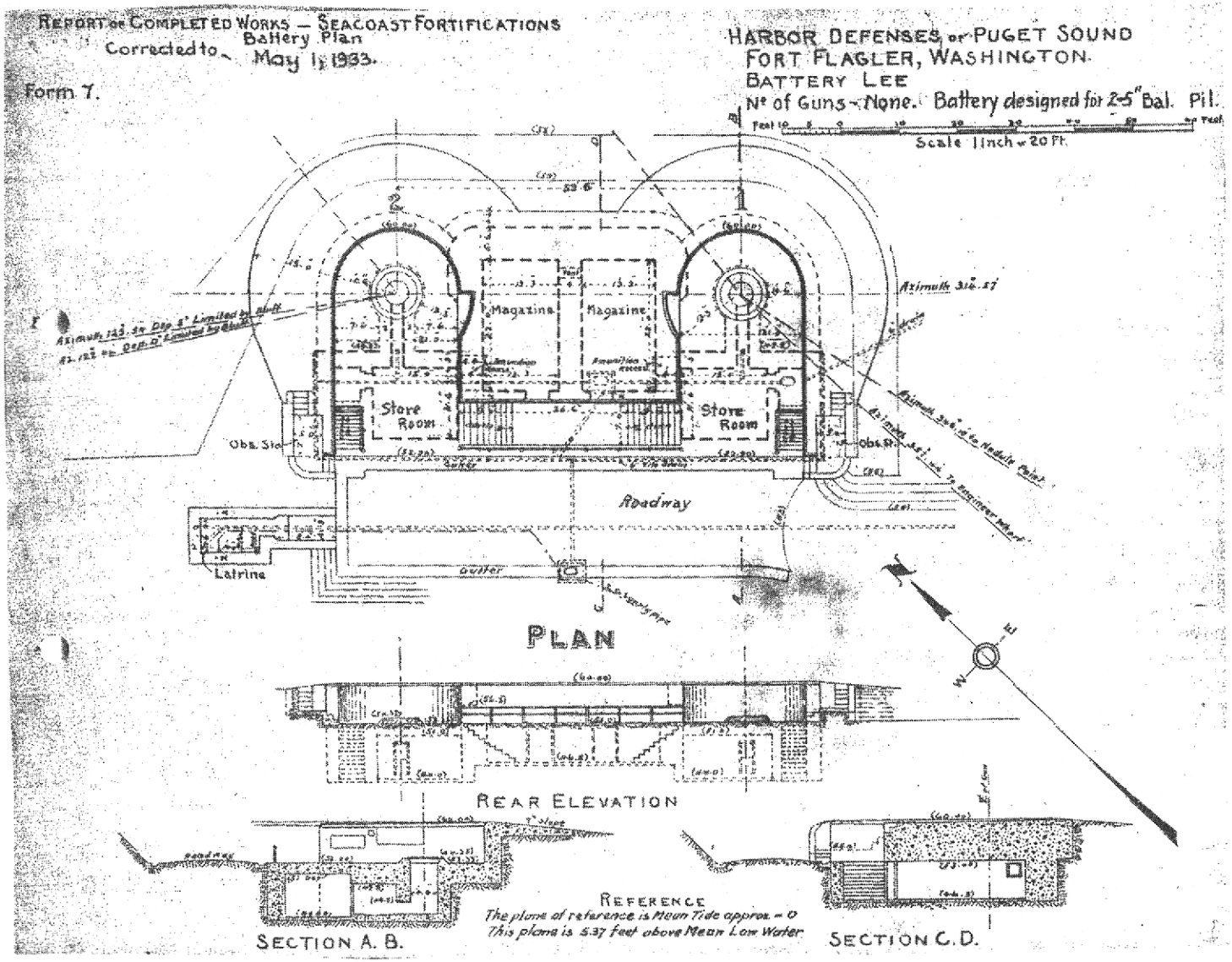
REPORT OF COMPLETED WORKS - SEACOAST FORTIFICATIONS
(Gun and Mortar Batteries)

HARBOR DEFENSES OF PUGET SOUND,
FORT FLAGLER, WASH.,
BATTERY LEE,
No. of Guns, None. Caliber, 5".
Carriage B.P.
Battery designed for 2-5" Bal. Pil.

Form 1. Corrected to May 1,1933.

Battery commenced	Aug. 1899	Sources of electric current	Central Plant or Commercial Power
Battery completed	Nov. 1900		
Date of transfer	Aug. 17,1902	Max. KW required for lights	1.2
Material of construction	Concrete	Max. KW required for motors	No motors
Portland or Rosendale cement	Portland		
Cost to date of transfer	$15,000.00		
Connected to water supply	Yes	Present condition of battery	Poor
Connected to sewer	Yes	Rooms wet or dry	Wet
Type of latrine	Syphon		
Type of data transmission	Telephone	How ventilated	No vent. doors; no vent. shafts.
Trunnion elevation in battery	66.82	Remarks:-	Guns and carriages shipped out of these defenses.
Datum plane	M.L.W.		

ARMAMENT - None. (Has been removed)


REPORT OF COMPLETED WORKS — SEACOAST FORTIFICATIONS
Battery Plan
Corrected to May 1, 1933.
Form 7.
HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON.
BATTERY LEE
No of Guns — None. Battery designed for 2-5" Bal. Pil.
Scale 1 inch = 20 Ft.
Magazine
Magazine
Store Room
Store Room
Roadway
Latrine
Obs. Sta.
Obs. Sta.
PLAN
REAR ELEVATION
SECTION A. B.
SECTION C. D.
REFERENCE
The plane of reference is Mean Tide approx. = 0
This plane is 5.37 feet above Mean Low Water

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

HARBOR DEFENSES OF PUGET SOUND,
FORT FLAGLER, WASH.,
BATTERY DOWNES
No. of Guns 2. Caliber 3". Carriage PED

Form 1. Corrected to May 1,1933.

Battery commenced	Feb. 1904	Sources of electric current	Plant at Battery Wilhelm, Central Plant, or Commercial Power
Battery completed	Sept.1905		
Date of transfer	April 23,1907	Max. KW required for lights	0.78
Material of construction	Concrete	Max. KW required for motors	No motors
Portland or Rosendale cement	Portland		
Cost to date of transfer	$12,000.00		
Connected to water supply	Yes	Present condition of battery	Good
Connected to sewer	No	Rooms wet or dry	Dry
Type of latrine	No latrine		
Type of data transmission	Telephone	How ventilated	No.vent. doors; 6-inch vent. shafts with metal tops
Trunnion elevation in battery	71.37	Remarks:-	
Datum plane	M.L.W.		

ARMAMENT

	GUNS						CARRIAGES				
Emp. No.	Cal.	Length	Model	Serial No.	Manufacturer	Mounted	Type	Model	Serial No.	Manufacturer	Motor
1	3"	170"	1903	27	Watervliet Ars.	Yes		1903	78	Watertown Ars.	No
	3"	170"	1903	16	-do-	Yes		1903	79	-do-	No

REPORT OF COMPLETED WORKS – SEACOAST FORTIFICATIONS
Battery Plan

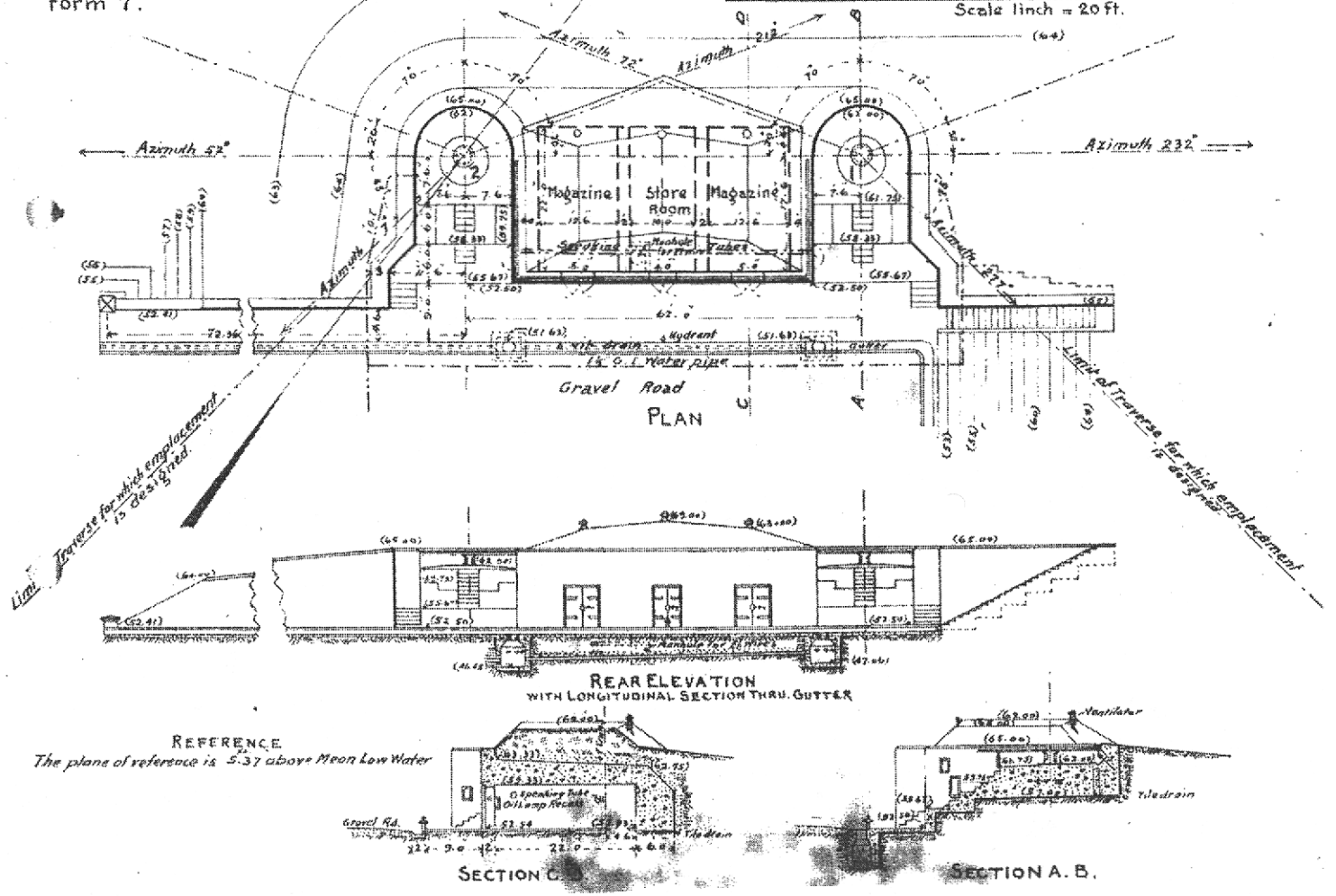
Corrected to May 1, 1933.

Form 7.

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER WASHINGTON
BATTERY EDWARD DOWNES

Nº of Guns – 2 Caliber – 3inch Carriage Ped. Mount

Scale 1inch = 20 ft.



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

HARBOR DEFENSES OF PUGET SOUND,
FORT FLAGLER, WASH.,
BATTERY WANSBORO
No. of Guns 2. Caliber 3". Carriage Ped.

Form 1. Corrected to May 1,1933.

Battery commenced	August,1905	Sources of electric current	Plant at Battery Wilhelm, Central Plant, or Commercial Power
Battery completed	Sept., 1905		
Date of transfer	April 23,1907	Max. KW required for lights	0.78
Material of construction	Concrete	Max. KW required for motors	No motors
Portland or Rosendale cement	Portland		
Cost to date of transfer	$14,000.00		
Connected to water supply	Yes	Present condition of battery	Good
Connected to sewer	No	Rooms wet or dry	Dry
Type of latrine	No latrine		
Type of data transmission	Telephone	How ventilated	No vent. doors; 6-inch vent shafts with metal tops
Trunnion elevation in battery	55.37	Remarks:-	
Datum plane	M.L.W.		

ARMAMENT

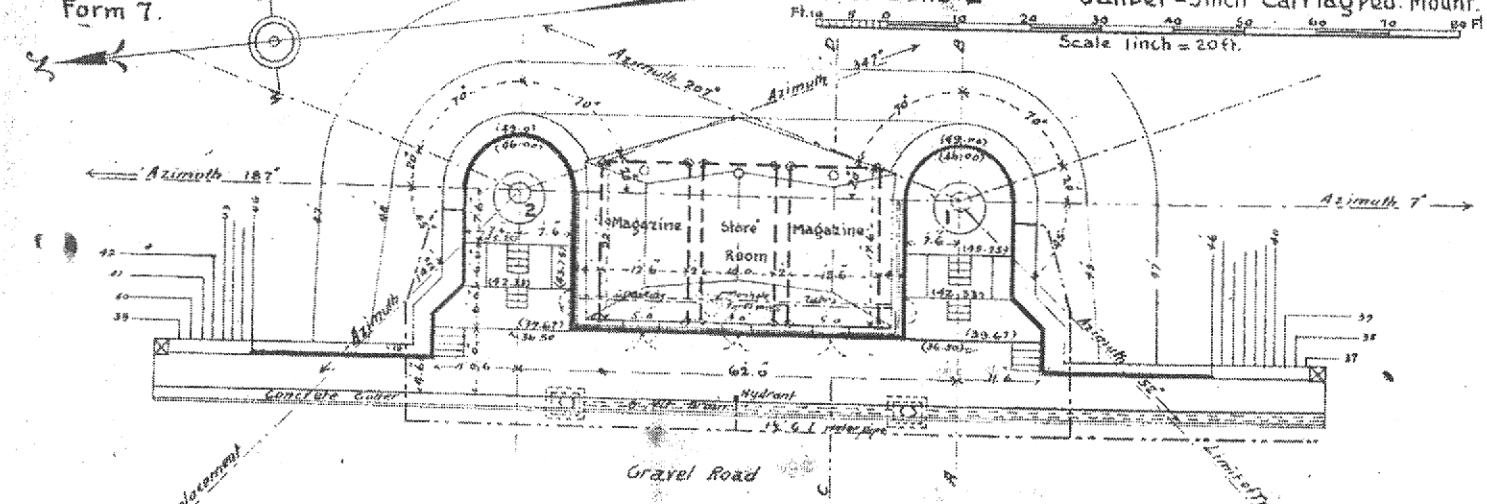
Emp. No.	GUNS Cal.	Length	Model	Serial No.	Manufacturer	Mounted	CARRIAGES Type	Model	Serial No.	Manufacturer	Motor
1	3"	170"	1903	35	Watervliet Ars.	Yes		1903	16	Watertown Ars.	No
2	3"	170"	1903	36	-do-	Yes		1903	17	-do-	No

REPORT OF COMPLETED WORKS – SEACOAST FORTIFICATIONS
Battery Plan

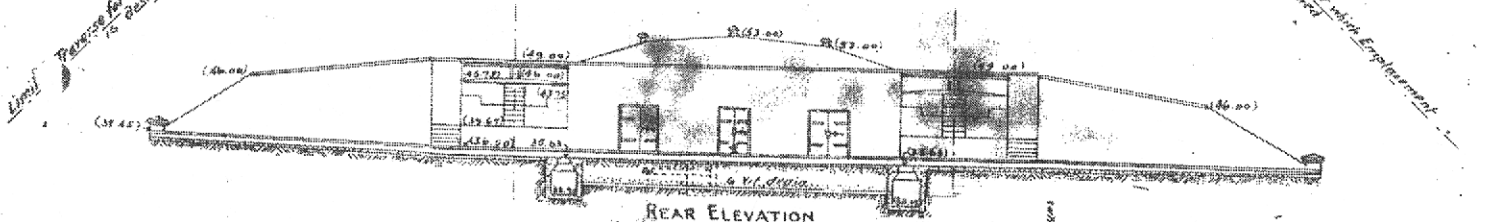
Corrected to May 1, 1933.

Form 7.

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON.
BATTERY THOMAS WANSBORO.
Nº of Guns-2 Caliber-3inch Carriage Ped. Mount.

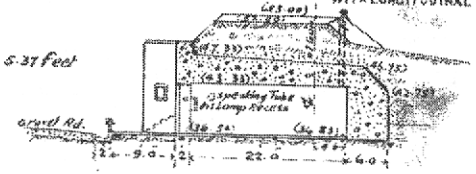


PLAN

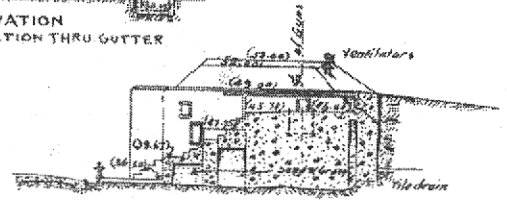


REAR ELEVATION
WITH LONGITUDINAL SECTION THRU GUTTER

REFERENCE
The plane of Reference is 5.37 feet above Mean Low Water.



SECTION C. D.



SECTION A. B.

600.91V (Puget Sd) 94550

94550

SECRET

SPEKM-1

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

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON
BATTERY: ANTI-MOTOR TORPEDO BOAT
No. of Guns: 2 Caliber 90 mm Carriage: Pedestal

Form 1. Corrected to 25 March 1944

GENERAL:		ELECTRIC CURRENT:	
Battery commenced	8 October 1943	Sources of	M 7 Generating power plant (Ordnance)
Battery completed	20 December 1943		
Date of transfer	25 March 1944	Max. Kw. required for lights	1
Cost to date of transfer	~~$11,300~~ 8,842 *	Max. Kw. required for motors	5
Materials of construction	Reinf. concrete		
Type of Cement	Portland		
WATER & SEWER:		Present condition of battery	Excellent
Connected to water supply	No	Rooms wet or dry	No rooms
Connected to sewer	No		
Type of latrine	None	How ventilated	---
		Type of data transmission	Remote control system M-13
Trunnion elevation in btry.	13.8'		
Datum plane	Mean sea level	Remarks:	Located at Marrowstone Point

ARMAMENT

Emplacement No.	Guns or Mortars: Cal.	length	model	Serial No.	Manufacturer	mounted	Carriages: Type	model	Serial No.	Manufacturer	Motor
1	90 mm	186.15"	M 1	6682	Chevrolet	Yes	Ped.	M 3	T3-81	Fisher Body	Remote Control System M-13
2	90 mm	186.15"	M 1	5389	Watervliet	Yes	Ped.	M 3	T3-166	Fisher Body	Remote Control System M-13

* For correction see 662 (Puget Sound) 96406

DECLASSIFIED
Authority NND 933588
By AB NARA Date 2/14/03

SECRET

E-22

REPORT OF COMPLETED WORKS-SEACOAST FORTIFICATIONS
(BATTERY PLAN)
FORM 7. CORRECTED TO 25 MARCH 1944

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON
BATTERY A.M.T.B.

SCALE 1"=20'
10 0 10 20 30 40 50
FUCA LAMBERT GRID IN YARDS.
DATUM IN MEAN SEA LEVEL.

DECLASSIFIED
Authority NND 933588
By AD NARA Date 2/14/03

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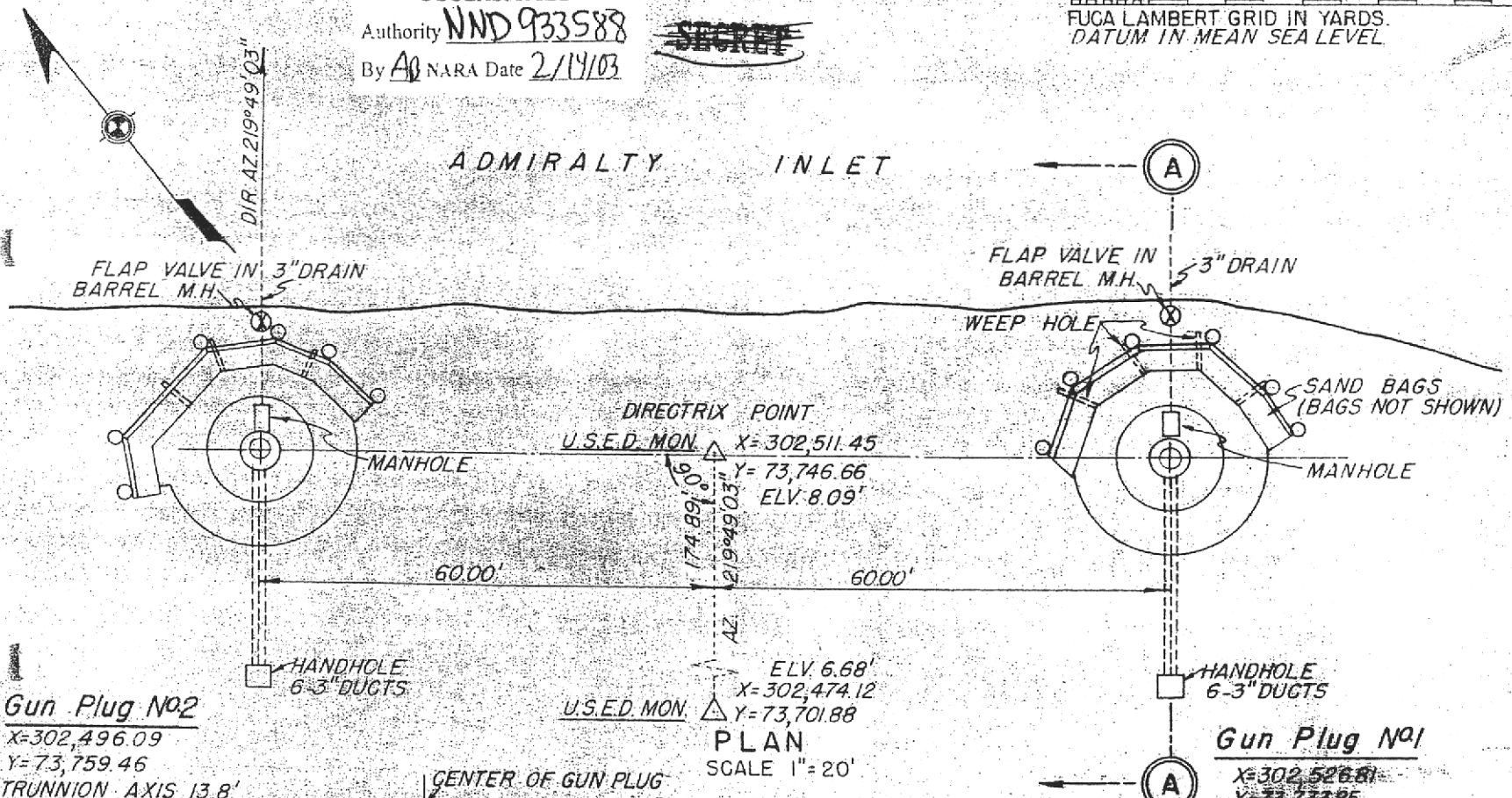
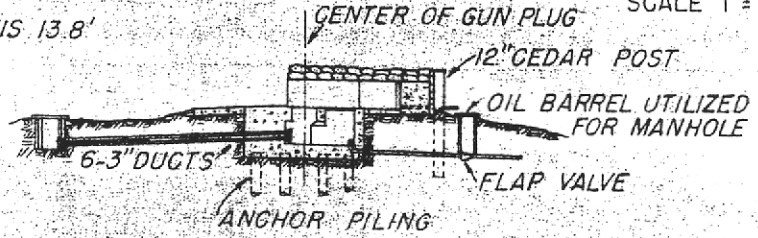




SECTION A-A
SCALE 1"=20'

~~SECRET~~

REMARKS:
REINFORCED & PLAIN CONCRETE CONSTRUCTION FOR GUN PLUG CONSTRUCTION SEE O.C.E. DWG. FILE NO. 188-81-3 (SHEET 2)
FOR ADDITIONAL DETAILS SEE FILE NO. F-41F-13-9
BATTERY CONSTRUCTED IN 1944 AT MARROWSTONE POINT, WASH.

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

FORM 1. Corrected to Dec. 1, 1939.

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON
* BATTERY A-A, FIXED
No. of Guns 3 Caliber 3" Carriage A-A

GENERAL		ELECTRIC CURRENT	
Battery commenced	May, 1920	Sources of	None - AA Dir. F.C. to be Inst.
Battery completed, two Emps.	June, 1920		
Third Emp. constructed	March, 1937	Max.Kw. required for lights	.1
Date of transfer, original	Sept. 23, 1920	Max.Kw. required for motors	No gun motors
" " " 3rd Emp.	Oct. 12, 1937		
Cost to date of transfer, original	$1,160.48		
Total cost, 3 emplacements	1,818.42		
Materials of construction	Reinf. Conc.		
Type of cement	Portland	Present condition of battery	Good
WATER & SEWER		Rooms wet or dry	No rooms
Connected to water supply	No		
Connected to sewer	No	How ventilated	In open
Type of latrine	None	Type of data transmission	Sperry Data Computer, Mod. A-A,
Trunnion elevation in Btry. # 1	177.31		M4, for 3"AA Guns, Ser. No. 32
# 2	177.33	Remarks	Above equipment in local storage
# 3	182.98		awaiting installation
Datum plane	M.L.W.		

ARMAMENT

Emplacement number	Guns: Cal.	Length	Model	Ser.No.	Manufacturer	Mounted	Carriages: Type	Model	Ser.No.	Manufacturer	Motor
1	3"	174.65	1917M1A2	81	Watervliet Ars.	Yes	A-A	1917M2	132	Watertown Ars.	None
2	3"	"	"	20	"	"	A-A	"	152	"	"
3	3"	"	"	105	"	"	A-A	"	25	"	"

* Guns to be relocated to vicinity of Battery Rawlins (abandoned). 662.B (Puget Sound) CM 0364 1 4934

Superseded: See
Form 1 corrected to 6/14/43

E-23

REPORT OF COMPLETED WORKS – SEACOAST FORTIFICATIONS
(Battery Plan)

FORM 7. Corrected to Dec. 1, 1939.

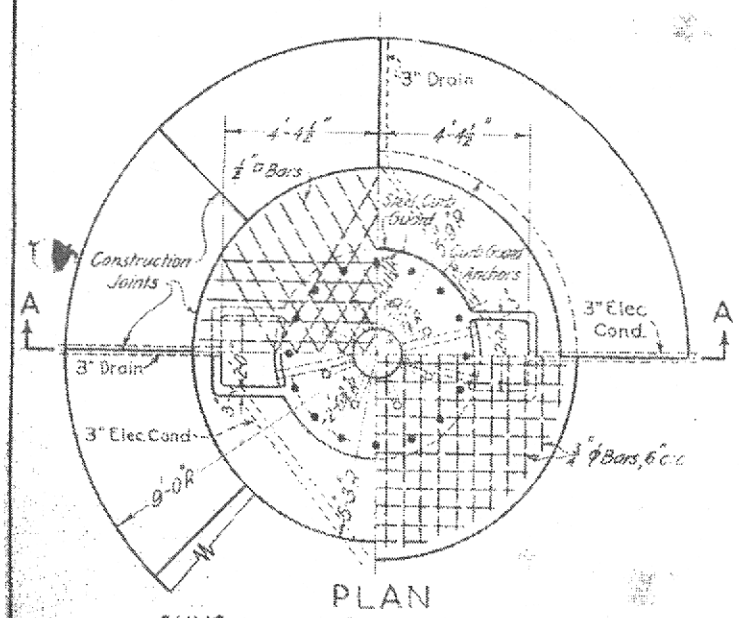
HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON.

BATTERY A-A FIXED

No. of Guns – 3. Caliber – 3" Carriage – A-A, M 1917M2

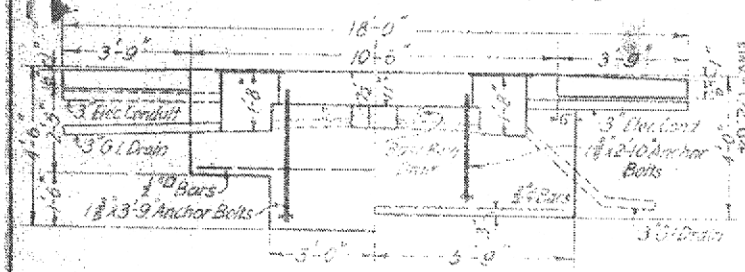
SCALES: 1/4" = 1' ; 1" = 40'

Datum is Mean Low Water
ONE THOUSAND FEET GRID FROM B'11



PLAN

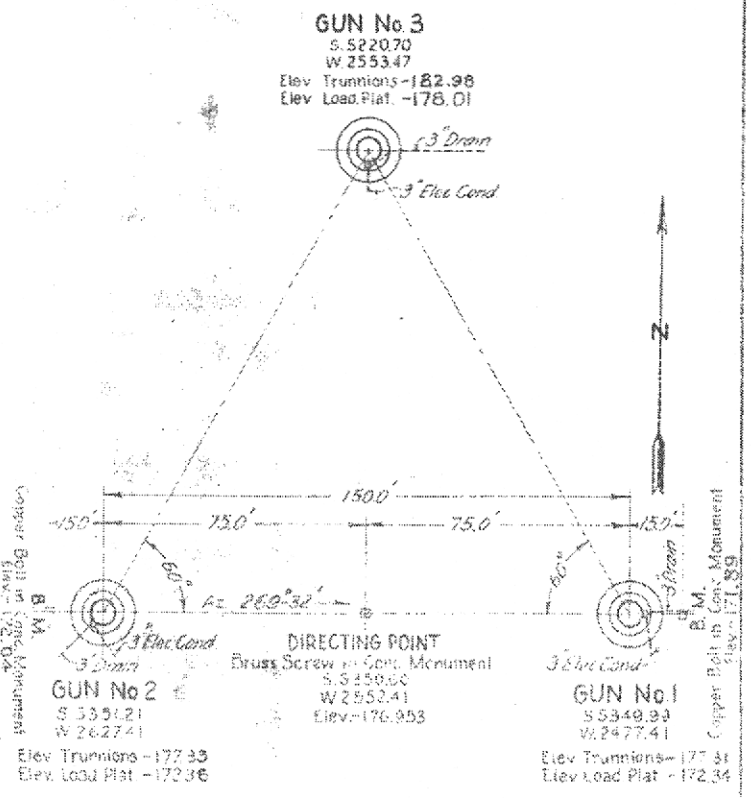
GUNS Nos. 1 & 2 GUN No. 3



SECTION AA

GUNS Nos. 1 & 2 GUN No 3

GUN PLATFORMS



BATTERY PLAN

62061

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

Form 1. Corrected to June 17, 1943

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON
BATTERY A-A, FIXED NO. 2
No. of Guns 3 Caliber 3" Carriage A-A

Sheet No. 1 of

GENERAL		ELECTRIC CURRENT	
Battery commenced	July, 1942	Sources of	AA Director Generating Units, H IV, and commercial
Battery completed	Jan., 1943		
Cost to date of transfer	$11,000.00	Max. kw. required for lights	3
Materials of construction	Reinf. conc.	Max. kw. required for motors	None
Type of cement	Portland	Present condition of battery	Good
WATER & SEWER		Rooms wet or dry	Dry
Connected to water supply	Yes		
Connected to sewer	Yes	How ventilated	-
Type of latrine	Siphon	Type of data transmission	H IV AA Director
Emmision elevation in Btry. #1	130.04'		
#2	122.51'	Remarks	Entire battery relocated and moved from its former location at South Reservation Boundary of Fort Flagler
#3	130.04'		
Datum plane	M.S.L.		

ARMAMENT

Emplacement Number	Guns: Cal.	Length	Model	Ser. No.	Manufacturer	Mounted	Carriages: Type	Model	Ser. No.	Manufacturer	Motor
1	3"	174.65	1917M1A2	81	Watervliet Ars.	Yes	A-A	1917M2	132	Watertown Ars.	None
2	3"	"	"	105	"	"	A-A	"	25	"	"
3	3"	"	"	20	"	"	A-A	"	152	"	"

(over)

62061

E-24

E-24

REPORT OF COMPLETED WORKS — SEACOAST FORTIFICATIONS
Battery Plan

~~SECRET~~

Sheet No. 2 of

HARBOR DEFENSES OF PUGET SOUND
FORT FLAGLER, WASHINGTON.
BATTERY A-A No. 2 FIXED
No. of Guns, 3. Caliber 3". Carriage AA1917M

Corrected to June 14, 1943

Form 7

X - 302, 127.50 yds.
Y - 73, 736.44 yds.
Elev. Axis Trunion
122.51 M.S.L.

A-A DIRECTOR
X - 302, 112.23 yds.
Y - 73, 718.42 yds.
Elev. Axis Inst.
129.72 M.S.L.

X - 302, 092.16 yds.
Y - 73, 734.98 yds.
Elev. Axis Trunion
130.04 M.S.L.

X - 302, 133.52
Y - 73, 703.46
Elev. Axis Trunion
130.04 M.S.L.

Pt. 10 5 0 10 20 30 40 50 60 70 80 90
Scale 1" = 30'

Cable 25 Cond., L.C.A. (Rubber insulation)

Junction Box

Switch Box

Power Plants

PLAN

REAR VIEW

SECTION A-A

SECTION B-

DECLASSIFIED
Authority NND 933588
By AB NARA Date 2/14/03

Elevations are referred to Mean Sea Level.
Fuca Grid Coordinates in yds.

~~SECRET~~

PUGET SOUND DISCONTINUED

HISTORICAL DATA - POST, CAMP, STATION OR AIR FIELD

NAME: Harbor Defenses of Puget Sound

Location: Hq. Fort Worden, Wash.

Post Office: _____ Telegraph Office: _____ Radio available: Yes ☐ No ☐

Railroad Station: _____ Express Station: _____ Acquired by: _____

Class Installation: I Assignment: GF ☐ SF ☐ AF ☐ WD ☐ Capacity: Troops _____

Hospital Beds _____

Storage (Sq. Ft.) _____

Land Acres _____

Date Occupied _____

Adm. Control: 6th Army

Nearest Landing Field: _____

HISTORY: Harbor Defenses of Puget Sound was organized Jun 1918 and Discontinued 28 Feb 1919 and was made up of defenses from Cp Lewis, Wash; Ft Lawton, Wash; Ft Casey; Ft Flager; Ft Ward; Ft Whitman;

Hq. & Hq. Det., HD/Puget Sound, with station at Fort Worden, Washington, assigned to Sixth Army - per AGF Assignment List, Hq. AGF, Fort Monroe, Va., dated 16 June 1947.

Effective as of 1 January 1950, the Harbor Defenses of Puget Sound, Washington, were discontinued. Fort Worden, Washington, will remain a class I installation under the control of the Commanding General, Sixth Army, with Fort Flagler and Fort Casey as subinstallations. - per GO #1, Department of the Army, dated 3 January 1950.

Effective 31 December 1949, certain property, Harbor Defenses of Puget Sound, Washington, is excess to the Department of Defense.- per AGAO-S 602 (27 Jan 50) CSGLD/C2-M, AGAO-I, dated 3 February 1950.

1156

HISTORICAL DATA REFERENCE:

Military Reservations, _____ dated _____ ☐

Construction and Real Estate Progress Report, C. of E, dated _____ ☐

Chief of Transportation Routing Instructions _____ ☐

Headquarters Army Air Forces _____ ☐

GO 52

GENERAL ORDERS
No. 52

DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., *22 June 1953*

	Section
JOINT COMMUNICATION AGENCY, FORT RITCHIE, MARYLAND—Designated as a class II activity	I
FINANCE OFFICE, U. S. ARMY, RIO DE JANEIRO, BRAZIL—Transfer of jurisdiction	II
ARMED FORCES EXAMINING STATION, CORPUS CHRISTI, TEXAS—Discontinued	III
FORT WORDEN, WASHINGTON—Discontinued	IV
FORT FLAGLER, WASHINGTON—Discontinued	V

I..JOINT COMMUNICATION AGENCY, FORT RITCHIE, MARYLAND.—Effective 1 November 1951, the Joint Communication Agency, Fort Ritchie, Maryland, is designated a class II activity under the jurisdiction of the Chief Signal Officer.

[AG 323.31 (2 Jun 53)]

II..FINANCE OFFICE, U. S. ARMY, RIO DE JANEIRO, BRAZIL.—Effective 1 July 1953, the Finance Office, U. S. Army, Rio de Janeiro, Brazil, APO 676, c/o Postmaster, New York, New York, is transferred from the control of the Chief of Finance to the jurisdiction of the Commanding General, U. S. Army Section, Joint Brazil—U. S. Military Commission. The Chief of Finance retains technical supervision.

[AG 323.3 (4 Jun 53)]

III..ARMED FORCES EXAMINING STATION, CORPUS CHRISTI, TEXAS.—Effective 31 August 1953, the Armed Forces Examining Station, Corpus Christi, Texas formerly designated an element of the U. S. Army—U. S. Air Force Recruiting Main Station at Corpus Christi, Texas, is discontinued.

[AG 341.8 (10 Jun 53)]

IV..FORT WORDEN, WASHINGTON.—Effective 30 June 1953, Fort Worden, Washington, a class I installation under the jurisdiction of the Commanding General, Sixth Army, is discontinued.

[AG 323.3 (5 Jun 53)]

V..FORT FLAGLER, WASHINGTON.—Effective 30 June 1953, Fort Flagler, Washington, a class I subinstallation of Fort Worden, Washington, is discontinued.

[AG 323.3 (5 Jun 53)]

BY ORDER OF THE SECRETARY OF THE ARMY:

J. LAWTON COLLINS
Chief of Staff, United States Army

OFFICIAL:
WM. E. BERGIN
Major General, USA
The Adjutant General

DISTRIBUTION:
According to requirements submitted on DA AGO Form 12.

TAGO 4539B—June 200499°—53

U. S. GOVERNMENT PRINTING OFFICE: 1953

GSA FORM NO. 30
7- 3-1-50
This form expires December 31, 1950

GENERAL SERVICES ADMINISTRATION

REPORT OF EXCESS REAL PROPERTY

1. DATE REPORTED	2. HOLDING AGENCY NUMBER
22 April 1954	NPSRM-44
3. DATE RECEIVED	4. GSA CONTROL NUMBER

5. TO: GENERAL SERVICES ADMINISTRATION — ADDRESS: Public Buildings Service, Federal Office Building, Seattle 4, Washington

6. FROM: (Name of Holding Agency) — ADDRESS: Department of the Army, Corps of Engineers, Washington 25, D. C.

7. NAME OF REPRESENTATIVE TO BE CONTACTED: N. A. MATTHIAS, District Engineer, Colonel, Corps of Engineers, U.S. Army — ADDRESS: 4735 East Marginal Way, Seattle 4, Washington

8. NAME OF CUSTODIAN: N. A. MATTHIAS, District Engineer, Colonel, Corps of Engineers, U.S. Army — ADDRESS: 4735 East Marginal Way, Seattle 4, Washington

9. PROPERTY IDENTIFICATION: Fort Flagler is situated at PROPERTY ADDRESS AND FULL LOCATION: North end of Marrowstone Island, Jefferson County, about 2½ miles SE of Port Townsend, W

10. SPACE USE (1)	NUMBER OF BUILDINGS (2)	FLOOR AREA (SQ. FT.) (3)	NUMBER OF FLOORS (4)	FLOOR LOAD CAPACITY (5)	CLEAR HEAD ROOM (6)	11. LAND (1)	ACRES OR SQUARE FEET (2)
a. OFFICE	19					a. FEE	806.85
b. STORAGE	28					b. LEASED	
c. OTHER (See 10e)	60					c. OTHER	
d. TOTAL	107					d. TOTAL	806.85

12. GOV'T. INTEREST	
a. OWNER	
b. TENANT	

10e. SPECIFY "OTHER" USE ENTERED IN 10c: Rifle ranges, battery emplacements, tennis courts, wharfs, etc.

13. COST TO THE GOVERNMENT	SCHEDULE	COST
a. BUILDINGS, STRUCTURES, UTILITIES AND MISCELLANEOUS FACILITIES	A	$2,256,055.00
b. LAND	B	5,680.00
c. RELATED PERSONAL PROPERTY	C	
d. TOTAL		$2,261,735.00

14. LEASEHOLD DATA	
a. TOTAL ANNUAL RENTAL	$
b. ANNUAL RENT PER SQ. FT. OR ACRE	$
c. DATE LEASE EXPIRES	
d. NOTICE REQUIRED FOR RENEWAL	
e. TERMINAL DATE OF RENEWAL RIGHTS	
f. ANNUAL RENEWAL RENT PER SQ.FT. OR ACRE	$
TERMINATION RIGHTS (IN DAYS) LESSOR	GOVERNMENT

15. ANNUAL PROTECTION AND MAINTENANCE COST TO GOVERNMENT (GOVERNMENT-OWNED OR LEASED) $4,000.00 (approximately)

16. DISPOSITION OF PROCEEDS

17. TYPE OF CONSTRUCTION: Frame, concrete fortifications.

18. HOLDING AGENCY USE: Fixed fortifications, Harbor Defenses of Puget Sound, training of Army units.

19. RANGE OF POSSIBLE USES: Private agricultural use, resort property, Public Institution, and/of Forest production.

20. NAMES OF INTERESTED FEDERAL AGENCIES KNOWN TO HOLDING AGENCIES: Department of Treasury, U. S. Coast Guard; Department of Interior, Fish & Wildlife Service

21. REMARKS:

This report covers the 806.85 acres of land owned in fee by the Government which comprises the self-contained military reservation, Fort Flagler, Washington, at the north end of Marrowstone Island, Jefferson County, Washington, about 2-1/2 miles southeast of the City of Port Townsend. The original reservation of 544.35 acres was set aside for military purposes out of public lands by Executive Orders dated 22 September 1866 and 14 November 1896. Tidelands were conveyed to the Government by deed from the State of Washington 26 November 1932 (corrected 28 April 1933) with reversion to the State of Washington of the title when the uplands are no longer used for military purposes. (Continued)

22. REPORT AUTHORIZED BY HOLDING AGENCY

FOR THE DISTRICT ENGINEER:

W. M. TRUESDELL — Name

W. M. Truesdell — Signature

Chief, Real Estate Division — Title

22 April 1954 — Date

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F-50-

GSA Form 30 (Cont'd.)

Fort Flagler is an element of the former Harbor Defenses of Puget Sound and Army improvements consist of former fixed Coast Artillery fortifications and a cantonment with a housing capacity of 33 officers and 574 enlisted men. The reservation is improved with roads, walks, fencing and utility systems, including submarine cable connections with Fort Worden on the mainland and Fort Casey on Whidby Island. There are on the reservation some 50 military buildings of frame construction and two wharves. The improvements occupy approximately 60 acres of cleared land and the remainder of the reservation is timber. The reservation has water frontage on all sides except the south. Access to the mainland is over hard-surfaced roads and bridges by way of adjacent Indian Island. There are no rail connections.

The Treasury Department has established the Marrowstone Lighthouse on a site in the extreme northeast corner of the reservation on land made available by the Department of the Army by Permit dated 6 May 1895 covering 9.00 acres. Permits have also been granted to the Treasury Department for necessary access and utilities as hereafter listed.

As indicated above Fort Flagler was originally an active unit of the Seacoast Defenses of the United States. Its most recent use was by the Army Field Forces for military training purposes, including amphibious military maneuvers. All coast artillery, ordnance and weapons of every type were removed from Fort Flagler at an earlier date.

There is no foreseeable requirement for use of this reservation by any of the military Departments of the Government and it is consequently excess to the needs of the Department of Defense.

The United States has exclusive jurisdiction over the reservation herein reported as excess.

The Fort Flagler water supply is derived through a government-owned six inch water-pipe-line extending from the Fort Flagler water reservoir in a southwesterly direction some seven miles, crossing the mouth of Kilisut Harbor; thence across the Indian Island Naval Reservation; thence across the Port Townsend Canal; thence across private land to a connection with the City of Port Townsend water system near Hadlock, Washington. Only that portion of the water supply line from the tip of Indian Island to the Fort Flagler reservoir is included in this report as excess to the Department of Defense. The water pipe line from the tip of Indian Island to its connection with the City of Port Townsend water system is in process of being transferred to the Department of the Navy, which has primary jurisdiction over Government-owned Indian Island and the transfer to the Department of the Navy will include a provision that the Navy Department will continue to make water available to Fort Flagler through this pipe line until and unless other arrangements are made by General Services Administration when final disposal of Fort Flagler is completed.

Attention is invited to the inclusion in this report of excess of two submarine communications cables identified on attached GSA Form 30b. The cables are excess to the Department of Defense but the cable from Fort Worden to Fort Flagler

GSA Form 30 (Cont'd).

is energized and service is provided through the cable to the U. S. Coast Guard at Marrowstone Point by the Pacific Telephone & Telegraph Company through land connections with the cable at Fort Worden, Washington. The cable from Fort Flagler to Fort Casey is not energized and appears to serve no useful purpose.

As noted above the Fort Flagler Military Reservation is encumbered with the following outgrants:

Permit, Department of Treasury, USCG, 5-6-1895 to occupy land for lighthouse
Permit, Department of Commerce, USCG, 7-9-29 to maintain gravel road
Permit, Department of Treasury, USCG, 9-30-48 for electric power cable expired —
Permit, Department of Treasury, USCG, 4-22-53 to maintain power line

Any disposal of Fort Worden should take into consideration the requirements of the U. S. Coast Guard, Treasury Department, for those facilities covered by above listed permits, and the rights of essential ingress and egress across existing military roads on Fort Flagler.

There is also a one year, revocable, grazing outlease at Fort Flagler dated 9-23-53. ✓

Fort Flagler has been carefully inspected by the Department of the Army to determine its degree of contamination, if any, by explosive materials, and a certificate defining this condition will be supplied by supplemental report. It is considered to be available for future unrestricted use except for the unconfirmed, but suspected presence of four (4) high explosive rockets, and the certificate will reflect the official Department of the Army decision and policy as to any restrictions that may be imposed on the disposal of the land.

An attorney's opinion certifying as to the legality of the Government title to Fort Casey will also be furnished by supplemental report.

Copies of existing outgrants affecting Fort Flagler and maps of the installation showing real estate boundaries, improvements, etc., are available, as required.

Following is a list of names of persons and organizations who have indicated their interest in the future disposal of Fort Flagler:

D. A. Anderson
Route No. 2
Port Townsend, Wash.

Victor H. Pinard
Junction Supply Co.
Route No. 1
Port Orchard, Wash.

H. E. Pike, Supervisor
Dept. of Public Institutions
Olympia, Washington

Kenneth I. McMillen
1614 Franklin Street
Port Townsend, Wash.

K. E. Willmer
Box No. 751
Port Orchard, Wash.

Thomas E. Spaulding
928 Franklin Street
Port Townsend, Wash.

F. M. Phifer
Route 3, Box 328
Poulsbo, Washington

Louis Buchhills
19th & Lands Street
Port Townsend, Wash.

Walter H. Ross
Route 3, Box 149
Poulsbo, Washington

GSA Form 30 (Cont'd).

Ted & Verne Lessary & Co.
1206 Water Street
Port Townsend, Washington

G. D. Neville
Star Route No. 2
Port Townsend, Washington

Vernon L. Jones
704 Lawrence Street
Port Townsend, Washington

John N. Nourse
Route 1, Box 787
Port Blakely, Washington

Tom Sawyer
Box No. 85
Suquamish, Washington

Harvey W. Robbins
Sequim
Washington

Earl E. Eckhoff
1955 Chestnut Street
Antioch, California

C. H. Haley
Quilcene, Washington

Charles W. Martin
Quilcene
Washington

Green River Lumber Company
Tukwila, Washington

R. Montle
1864 South 120th Street
Seattle 88, Washington

Howard S. Rusk
Route 1, Box 1982
Bremerton, Washington

M. D. Waters
Route 4, Box 1243
Bremerton, Washington

Charles H. Erickson
1113 McKenzie
Bremerton, Washington

Adolph Peterson
Southworth
Washington

Vashon Island Packing Company
Vashon
Washington

F. G. Wise
Route No. 1
Gig Harbor, Washington

W. H. Short
Dabob
Washington

Eino A. Putas
Hadlock, Washington

Jack L. Wade
Route No. 1
Hadlock, Washington

Ralph W. Weymouth
Woodinville, Washington

Fred L. O'Neil
1608 West Chestnut
Yakima, Washington

D. Lasell Company, Inc.
216 South "H" Street
Aberdeen, Washington

HEADQUARTERS

Fort Worden, Washington
Office of the Commanding Officer

AMNWO-S3 471 18 May 1953

SUBJECT: Condition of Ranges at Fort Worden, Washington, and Sub-posts

THRU: Post Engineer
Fort Worden, Washington

TO: Seattle District Engineer
Seattle, Washington

C E R T I F I C A T E

1. I, the undersigned, certify that to the best of my knowledge and belief there is no unexploded ammunition of any type on ranges at Fort Worden, Washington, or South Secondary, West Secondary, and Hudson Point, sub-posts of Fort Worden, Washington.

2. I further certify that only the unexploded Rockets HE, AT, 2.36" exist at Fort Flagler and Cape George, Washington, to the best of my knowledge and belief.

/s/ F. S. Bagley
F. S. BAGLEY
Lt. Colonel, TC
Commanding

E-28

CORPS OF ENGINEERS, U.S. ARMY

OFFICE OF THE DISTRICT ENGINEER

SEATTLE DISTRICT

4735 E. Marginal Way

Seattle 4, Washington

REFER TO FILE NO. NPSRM

CERTIFICATE OF RECONNAISSANCE

2 April 1954

All lands comprising the Fort Flagler Military Reservation, Jefferson County, State of Washington, situated on the northerly tip of Marrowstone Island, have been given a careful visual inspection and no unexploded explosive missiles could be located. The area reported by the Commanding Officer, Fort Worden Military Reservation, Washington (Fort Flagler being a sub-installation of Fort Worden) in letter dated 18 May 1953 as being suspected of containing four (4) possible unexploded rocket missiles was given an especially careful visual search with negative results.

Theodore L. McPhail

THEODORE L. McPHAIL
EORA No. W-1003

William L. White

WILLIAM L. WHITE
EORA No. W-1005

E-29

CORPS OF ENGINEERS, U.S. ARMY
OFFICE OF THE DISTRICT ENGINEER
SEATTLE DISTRICT
4735 E. Marginal Way
Seattle 4, Washington

Address Reply To
DISTRICT ENGINEER
(Not to Individuals)

Refer to File
No.

16 June 1954

CERTIFICATE OF DECONTAMINATION

All lands comprising the Fort Flagler Military Reservation, Jefferson County, State of Washington, situated on the northerly tip of Marrowstone Island, have been given a careful visual inspection and all dangerous and/or explosive materials reasonably possible to detect have been disposed of.

This property is recommended for any use for which the land may be suited except that public notice should be given in the disposal of the property stating that it is suspected there may remain on the land four (4) unexploded high explosive rockets in the area shown in crosshatching on the attached map of Fort Flagler. In the event of the discovery of an explosive missile or an object resembling an explosive missile, or any untoward incident resulting from or connected with explosive missiles, such discovery or incident should be reported immediately to the District Engineer, Seattle District, Corps of Engineers, U. S. Army.

George E. Pickett

GEORGE E. PICKETT
Colonel, Corps of Engineers
Acting District Engineer

NPDRM (26 Jun 57 - NPS to NPD) 1st Ind
NPD 602(Ft. Flagler, Washington)
SUBJECT: Decontamination of Land at Fort Flagler, Washington

Office, Div Engr, US Army Engr Div, Nor Pac, CE, 210 Custom House, Portland 9, Oreg, 28 June 57

TO: District Engineer, U. S. Army Engr. Dist., Seattle, Washington

1. Before referring this correspondence to Sixth United States Army or the Office, Chief of Engineers, it is requested that the matter be further discussed with the Regional Office of General Services Administration.

2. The inclosed certificate dated 16 June 1954 (GSA Form 30 dated 21 June 1954) contains no statement that the land is contaminated nor any recommendation for a deed restriction on use. To the contrary, the certificate states that the land has been given a careful visual inspection and is recommended for any use for which it is suited. The public warning or notice suggested in the certificate is only precautionary, based on the possibility that four high explosive rockets, the courses of which were not definitely traced, might have fallen in the area without exploding. The board of officers investigating this matter in May 1953 reported that the rockets could have exploded in wooded areas or fallen into the waters of Puget Sound. After three unsuccessful search attempts with qualified personnel and equipment it was concluded by the board of officers that all practicable means had been employed to locate the rockets. The expenses and loss which would be occasioned by clearing or "burning off" of the area is not considered to be justified nor does it appear, under the circumstances that withdrawal from excess and retention of the area by the Army is indicated in this particular case.

3. It is requested that this office be informed as to the results of discussion with General Services Administration and any further developments.

FOR THE DIVISION ENGINEER:

/s/ Richard F. Ebbs
RICHARD F. EBBS
Colonel, Corps of Engineers
Deputy Division Engineer

5 Incls
n/c
1 Cy Incl 1 w/d

C

O

P

Y 3

E-31

170th ORDNANCE DETACHMENT (ED)
Fort Lewis, Washington

3 August 1959

STATEMENT OF CLEARANCE

All lands within parcel lying in section 18, Township 30 North, Range 1 East, W.M., Jefferson County, State of Washington, commencing at the section corner common to section 17, 18, 19, 20, Township 30 North, Range 1 East, W.M., thence North 26° 26' West, a distance of 3366.8 feet to a point, thence North 51° 38' West, a distance of 292.5 feet to a point, said point being the true point of beginning, thence North 51° 38' West, a distance of 710.6 feet to a point on the line of ordinary high tide of Port Townsend Bay, thence in the line of ordinary high tide of Port Townsend Bay, North 58° 26' East, a distance of 422.0 feet; thence North 51° 58' East, a distance of 558.0 feet; thence North 67° 58' East, a distance of 313.9 feet; thence leaving the line of ordinary high tide of Port Townsend Bay, South 26° 02' West, a distance of 1271.0 feet to the true point of beginning, have been given a careful search and have been cleared of all dangerous and/or explosive materials reasonably possible to detect. All lands referred to in above legal description is cleared for any use for which the land is suited.

John W Galbraith

JOHN W GALBRAITH
2nd Lt Ord Corps
Commanding Officer
170th Ord Det (ED)

E-32

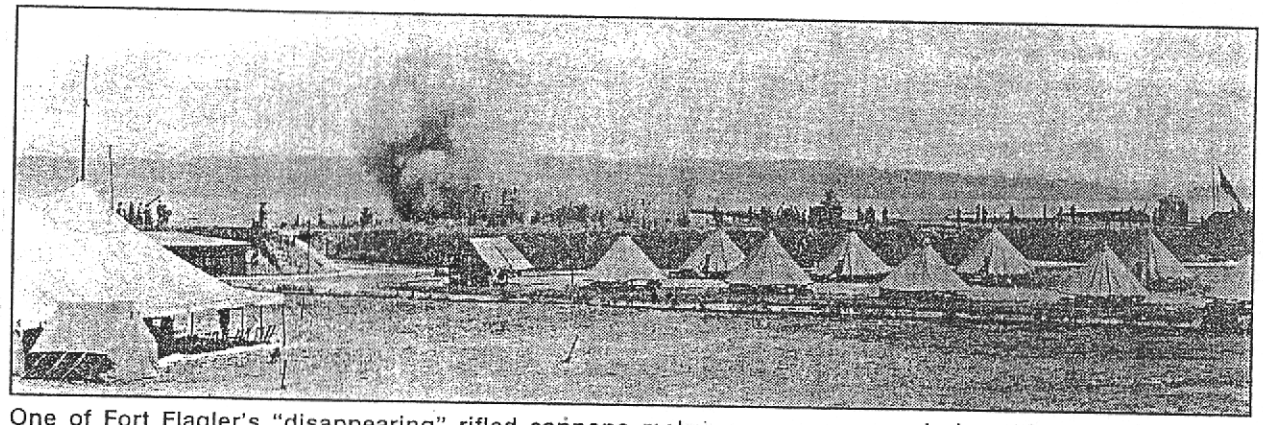
FORT CASEY'S GUNS TESTED.

Windows Broken and Cisterns Shattered in Port Townsend.

PORT TOWNSEND, Sept. 14. — (Special.)—Major Rhulen came down from Seattle Wednesday to test the guns at Fort Casey across the inlet from this city, and distant about six miles. Three shots were fired during the afternoon and the concussion was terrific, even at this distance. A number of windows were shattered and the damage to cisterns, which it is too early to determine, is believed to be considerable. Many people claimed, when the guns at Fort Flagler was tested, that their cisterns were cracked by the underground concussion.

This is the second of the three forts tested. Fort Flagler receiving that attention about a year ago.

The guns at Fort Worden are in place and will be the next to be tested, but perhaps it will not be done until the condemnation proceedings are finished and barracks completed so that a detachment can be stationed there comfortably. Proceedings have at last commenced in the matter of condemnation and will come before the next term of the United States court at Seattle for adjudication, after



One of Fort Flagler's "disappearing" rifled cannons makes an appearance during this undated training exercise.

— Photos courtesy of Jefferson County Historical Society

War Department Lands Suitable for Use as Target Ranges

in an Emergency - January 1, 1937

NINTH CORPS AREA

Sheet #7.

Location and Name	a Now Used For		a Can Be Used For		Targets Existing		Targets Possible		Replacement Value of Facilities	Acres in Range		b Used By	c Remarks
	Arm	Amm	Arm	Amm	No.	Range	No.	Range		Used	Available		
Fort Flagler, Washington	Not used				None		4	200	$1,000.00	-	2		Range salvaged 1932. Range was located on beach & replacement would require building of butts.
Fort Funston, California	Rifle M.G.	Any	Rifle M.G.	Any	6	300 yds	6	300	$6,000.00	2.1	2.1	RA NG RO, CMTC	No extension practicable
	Pistol	Any	Pistol	Any	9	50 yds	9	50	$ 500.00	.3	.3	RA, NG RO, CMTC	No extension practicable
	Pistol	Any	Pistol	Any	10	50 yds	10	50	$2,500.00	.5	.5	San Francisco Police Dept.	This range was constructed by San Francisco Police Dept. & is used exclusively by the Police Dept.

a- Specify artillery, machine gun, rifle, anti-aircraft machine gun, anti-aircraft artillery; and type of modern ammunition (e.g. M I) for which range is or can be made safe. If not now used for range state use.

b- RA, NG, OR, ROTC, CMTC.

c- As to limitations, practicability of extension, etc.

NOTE: (RE: FT. FUNSTON) - Antiaircraft guns, antiaircraft machine guns and seacoast artillery of medium caliber can fire at targets towed over or on the waters of the Pacific west of Fort Funston.

36/938

E-35

DECLASSIFIED
Authority NND 907557
By SR NARA Date 2/13/03

Fort Flagler

1. Rifle Range

   a. One (1) only

   b. Cost of Construction:
      Rifle Butts and Range - $2571.74
      Integral Shelter 6'8"x20' -$989.18
      Target Shelter 20'x30' - $298.07

   c. Description:
      200 yard range, rifle butts 10'x100', reinforced concrete construction, with integral shelter 6'8"x20'. Target shelter 20'x30'. 8 targets, sliding, combination 6'x6' complete.

2. Pistol Range

   a. One (1) only

   b. Cost of Construction:
      Range $19.48

   c. Description:
      Pistol targets, on blocks - movable.
      Targets stored in rifle target shelter.

3. Small Bore Range (Indoor)

   a. One (1) only

   b. Cost of Construction:
      Building $2375.76

   c. Description:
      Building 26'x90', 15-25 yard range.
      Movable targets, metal stop.

4. AA Diving Targets under construction.

JOSEPH E. SCHILLO,
Lt. Col., Quartermaster Corps,
Quartermaster.

GSA FORM NO. 30a
3-1-50
This form expires December 31, 1950

GENERAL SERVICES ADMINISTRATION

BUILDINGS, STRUCTURES, UTILITIES, AND MISCELLANEOUS FACILITIES

SCHEDULE A - SUPPLEMENT TO REPORT OF EXCESS REAL PROPERTY

1. HOLDING AGENCY NUMBER	2. GSA NUMBER
NPSRM-44	
3. COST TO THE GOVERNMENT	4. ANNUAL RENTAL
$2,182,965.00	
5. PAGE 9 OF 12 PAGES OF THIS SCHEDULE	

LINE NO. (a)	HOLDING AGENCY BUILDING NUMBER (b)	DESCRIPTION (c)	OUTSIDE DIMENSIONS (d)	FLOOR AREA* (SQ. FT.) (e)	NUMBER OF FLOORS* (f)	CLEAR HEAD ROOM (g)	FLOOR LOAD RANGE (h)	RESTRICTIONS ON USE OR TRANSFER OF GOVERNMENT INTEREST (i)
1	P-101	Guard Shack	6' x 6'	36	1			
2								
3	P-161	Range house, frame	12' x 16'	192	1			
4								
5	1	Small Bore Range (Indoor), frame,						
6		w/concrete post foundation, 6-target	26' x 90'	2340	1			
7								
8	2	Target Butts, w/integral storeroom	6'8" x 20'					
9		Addition of 12 firing markets	6' x 100'					
10		40 yds x 300 yds (All concrete)	6' x 120'					
11		(8 Butts - increased to 12 Butts)						
12								
13	3	Target Shelter, frame	20' x 30'	600	1			
14								
15	T-4	Transition Course, Table - 9						
16		constructed of 12 targets, cables						
17		and controls. Surface is dirt and						
18		gravel. 130 yds x 55 yds		7150 yds.				
19								
20	48	Tennis Court, concrete slab	90' x 100'	9000				
21								
22	51	Flagstaff, concrete foundation and						
23		iron staff - 1 flag	75' high					
24								
25	T-55	Training aid, C-82 Mock-up, C-82						
26		constructed of skeleton frame only						
27		2" planking, not covered		342				
28								
29	T-58	Transition Range table 8, Range is	500 yds					
30		dirt & gravel w/hand operated targets	x					
31		pits of 2" planking. 18 pits	400 yds	22,222	sq yds			
		TOTAL						

F-50-1198

*Prefix figures with symbols to denote type of space, as follows: (a) FOR OFFICE; (b) FOR STORAGE; (c) FOR OTHER

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

Appendix F

Still Photograph References

Appendix F

Still Photograph References

Table of Contents

F-1 Aerial Photograph, 1943 (B-58)

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

Appendix G

Maps/Drawings References

Appendix G

Maps/Drawings References

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G-1 Real Estate Map of Fort Flagler, October 1913 (B-9)

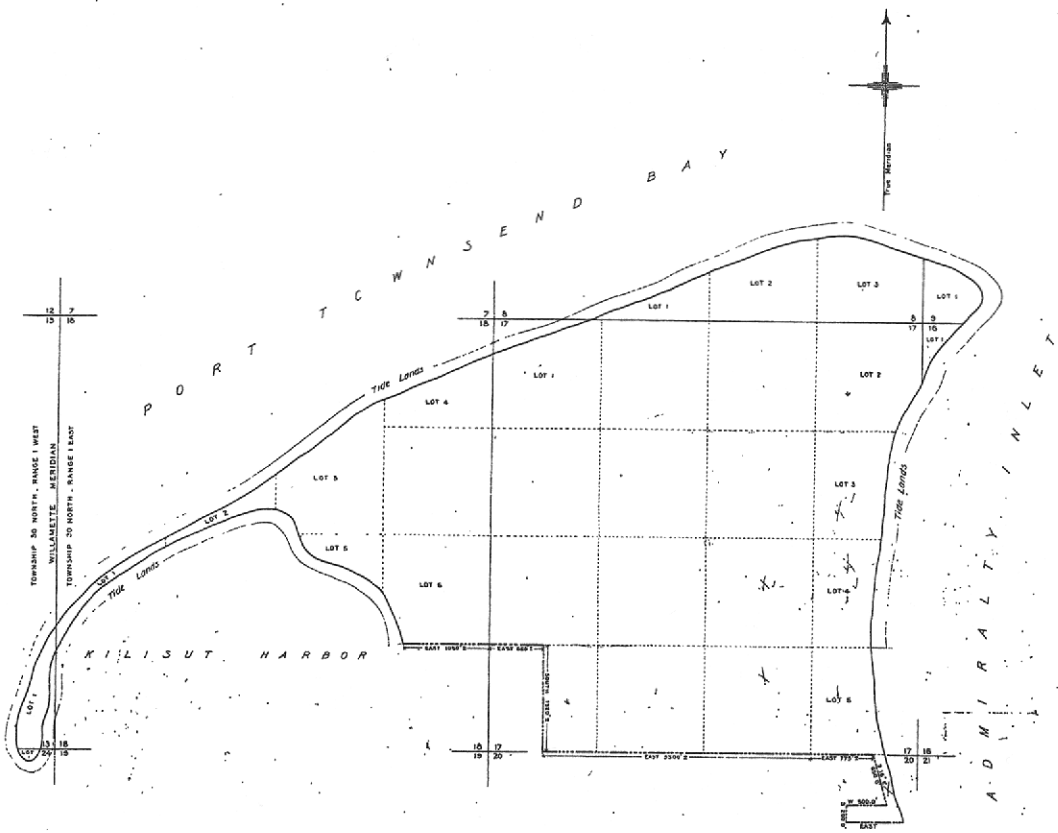
G-2 Real Estate Map of Fort Flagler, 22 April 1954 (B-10)

G-3 Map of Fort Flagler, 1921 (B-42)

G-4 Map of Fort Flagler, 1936 (B-43)

G-5 Location of Rifle Range and Training Beach (B-46)

G-6 Location of Transition Range Table 8 and Gas Chamber (B-46)



FORT FLAGLER, WASHINGTON.

Scale in Feet

LEGEND

This reservation contains 688.84 acres more or less, and certain tide lands, situated at Marrowstone Point in Jefferson County.
Latitude 48°02' N. Longitude 122°43' W.
Jurisdiction ceded to the United States by Acts of the State Legislature approved Jan 23,1890, and Feb 24,1891.
Revocable Licenses License, Sept 6 1904, to Carl Troxel to occupy a small log building on the reservation
License, Sept 6,1904, to D B Weatherbe to occupy as a residence, the house erected by him upon the reservation.
License, Sept 6, 1904, to Stanley Munn to conduct laundry business upon the reservation.
License, Apr 7, 1906, to The Sunset Telephone and Telegraph Company for telephone line for private telephone service.
License, Sept 15,1906, to The Independent Telephone Co. for telephone service.

Filed at the request of ...
on ... day ... in the year of our Lord 1913 at ...

War Department,
Washington City,
September 20, 1866

Hon. O.H Browning,
Secretary of the Interior.

Sir:

I have the honor to inclose herewith copies of communications dated respectively Sept 7, 1865, and Sept 13, 1866 (together with two sketches) made to this department by the Chief of Engineers, U.S. Army, respecting Reservations of land in Washington Territory; with the direction of the President that you take immediate measures to reserve for military purposes all the tracts of land enumerated in the communications and designated on the sketches being twenty-five (25) in number, if the titles thereto have not already been acquired by private parties. The tracts so to be reserved are the following:

13. Marrowstone Point, entrance to Port Townsend and Admiralty Inlet 640 acres.

Please acknowledge the receipt of this communication.

Very Respectfully, Sir
Your Obt Servant
Edwin M Stanton,
Secretary of War.

Executive Mansion
Sept 22, 1866.

The foregoing application of the Secretary of War is approved and the reservations directed to be made as therein required where the title is still in the United States. The Secretary of the Interior authorized and directed to make the reservations and take such action as is necessary to accomplish the purpose.

Andrew Johnson.

General Orders,
No 46.

Headquarters of the Army,
Adjutant General's Office,
Washington, November 23, 1896.

The following order from the War Department is published for the information and guidance of all concerned.

War Department, Washington, November 20, 1896.

By authority of the President of the United States, dated Nov 14th 1896, the lands comprised within the N.E. of the S.W ¼ of Section 17, Township 30 North, Range 1 East of Willamette Meridian, and all that portion of Lot 6 of Section 18 in said township and range not already embraced in the reservation under Executive Order of September 22, 1866, all of which is located at Marrowstone Point, Admiralty Inlet, Washington, are hereby reserved and set apart for Military purposes and proclaimed a military reservation.

Daniel S. Lamont,
Secretary of War.

By Command of Major General Miles:
Geo. D Ruggles,
Adjutant General.

Abstract from the records showing title in the United States to the tracts purchased within the reservation.

Grantor	Kind of Instrument	Date	Description	Where recorded (Records of Jefferson County Wash.)
George Pitman & Wife.	Deed	Nov. 24, 1896	60 A. All of S.E.¼ of S.W ¼ and E.½ of S.W.¼ of the S.W ¼ of Sec. 17, T 30 N., R.1 E., W.M.	Vol. 30, Deeds p 226
Ann D. Starrett & Husband	Decree & Deed	June 2, 1897 July 2, 1897	172 A Lots 3 & 4 and S.W ¼ of N.E.¼ and W.½ of S.E ¼ of Sec. 17, T. 30 N., R.1 E., W.M.	Vol. 47, p. 257 Vol. 47, p. 271
Jacob Jenne & Wife	Deed	Jan. 17, 1907	25 A. Lot 5 of Sec. 17, T. 30 N., R. 1 E. W M.	Vol. 58, Deeds, 291
State of Washington	Deed	Feb 16, 1899	Certain tide lands in front of land adjacent to the reservation	Vol. 48, Deeds, 255
Jacob Kuhn & Wife	Deed	May 29, 1909	5 A. A portion of Lot 6, Sec. 20, T 30 N, R 1 E., W.M. Metes and Bounds.	Vol. 62, Deeds, 317

United States of America.
WAR DEPARTMENT,

Washington, ...

I hereby certify that the foregoing orders and this map are true copies of orders pertaining to and of a map of the military reservation of Fort Flagler, Washington, on file in the office of the Judge Advocate General, United States Army, and that the foregoing abstract showing title in the United States to the tracts purchased within the said reservation is a true and correct abstract from the records of that office, and that its records also show that all of said reservation comprised within the bounds of this map was set aside by the executive order of September 22, 1866, except five additional tracts reserved by executive order of Nov 20, 1896 (General Order No. 46, November 23, 1896) and the tracts purchased under the deeds described in the above abstract

.....
Judge Advocate General, U.S. Army

I hereby certify that E.H. Crowder, who signed the foregoing certificate, is the Judge Advocate General, United States Army, and that to his certification as such full faith and credit are and ought to be given.

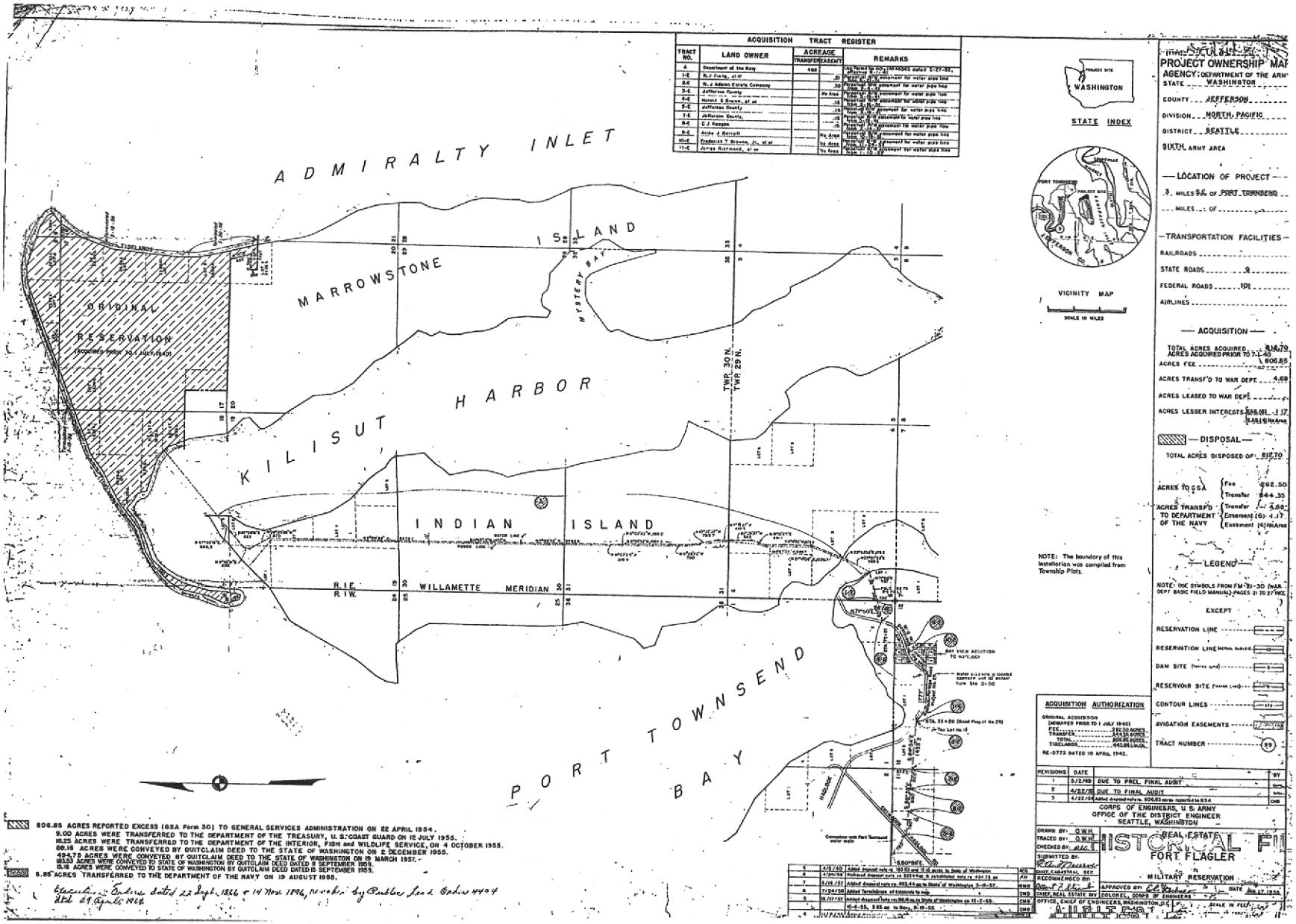
In testimony whereof I, ... Secretary of War, have hereunto caused the Seal of the War Department to be affixed and my name to be subscribed by the Assistant and Chief Clerk of the said Department, at the City of Washington, this ..... day of ..... 1913.

.....
Secretary of War.

By .....
Assistant and Chief Clerk.

Encl #3

G-1


ADMIRALTY INLET
MARROWSTONE ISLAND
MYSTERY BAY
ORIGINAL RESERVATION
(ACQUIRED PRIOR TO 1 JULY 1940)
KILISUT HARBOR
INDIAN ISLAND
TWP. 30 N.
TWP. 29 N.
R. 1 E.
R. 1 W.
WILLAMETTE MERIDIAN
PORT TOWNSEND BAY
TIDELANDS
BAY VIEW ADDITION TO NAVLOG
HENDRICKSON
ACQUISITION TRACT REGISTER
TRACT NO.
LAND OWNER
ACREAGE
TRANSFER
EASEMENT
REMARKS
A
Department of the Navy
468
1-E
R.F. Finly, et al
.01
2-E
W. J. Adams Estate Company
.30
3-E
Jefferson County
No Area
4-E
Harold S. Brown, et ux
.15
5-E
Jefferson County
.13
7-E
Jefferson County
.12
8-E
C. J. Keegan
.15
9-E
Alice J. Carroll
No Area
10-E
Frederick T. Brown, Jr., et ux
No Area
11-E
James Raymond, et ux
No Area
PROJECT OWNERSHIP MAP
AGENCY: DEPARTMENT OF THE ARMY
STATE WASHINGTON
COUNTY JEFFERSON
DIVISION NORTH PACIFIC
DISTRICT SEATTLE
SIXTH ARMY AREA
LOCATION OF PROJECT
3 MILES S.E. OF PORT TOWNSEND
TRANSPORTATION FACILITIES
RAILROADS
STATE ROADS 9
FEDERAL ROADS 101
AIRLINES
ACQUISITION
TOTAL ACRES ACQUIRED 806.70
ACRES ACQUIRED PRIOR TO 7-1-40 806.85
ACRES FEE
ACRES TRANSF'D TO WAR DEPT 4.68
ACRES LEASED TO WAR DEPT
ACRES LESSER INTERESTS FOR (6) 1.17
(4) No Area
DISPOSAL
TOTAL ACRES DISPOSED OF: 806.70
ACRES TO GSA Fee 262.50
Transfer 544.35
ACRES TRANSF'D TO DEPARTMENT OF THE NAVY Transfer 4.68
Easement (6) 1.17
Easement (4) No Area
LEGEND
NOTE: USE SYMBOLS FROM FM-21-30 (WAR DEPT BASIC FIELD MANUAL) PAGES 21 TO 27 INCL.
EXCEPT
RESERVATION LINE
RESERVATION LINE (Retroc. Submitted)
DAM SITE
RESERVOIR SITE
CONTOUR LINES
AVIGATION EASEMENTS
TRACT NUMBER
STATE INDEX
PROJECT SITE
WASHINGTON
VICINITY MAP
SCALE IN MILES
NOTE: The boundary of this installation was compiled from Township Plats.
ACQUISITION AUTHORIZATION
ORIGINAL ACQUISITION (ACQUIRED PRIOR TO 1 JULY 1940)
FEE 262.50 ACRES
TRANSFER 544.35 ACRES
TOTAL 806.85 ACRES
TIDELANDS 445.85 ACRES
RE-0773 DATED 10 APRIL 1942.
REVISIONS
DATE
BY
1 5/2/48 DUE TO PREL. FINAL AUDIT
2 4/22/55 DUE TO FINAL AUDIT
3 4/22/56 Added disposal note re 806.85 acres reported to GSA
CORPS OF ENGINEERS, U.S. ARMY
OFFICE OF THE DISTRICT ENGINEER
SEATTLE, WASHINGTON
DRAWN BY: O.W.H.
TRACED BY: O.W.H.
CHECKED BY:
SUBMITTED BY:
CHIEF, COASTAL SEC
RECOMMENDED BY:
CHIEF, REAL ESTATE BR
OFFICE, CHIEF OF ENGINEERS, WASHINGTON, D.C.
REAL ESTATE
HISTORICAL FI
FORT FLAGLER
MILITARY RESERVATION
APPROVED BY:
COLONEL, CORPS OF ENGINEERS
DATE
SCALE IN FEET
A-1815-1-M
806.85 ACRES REPORTED EXCESS (GSA Form 30) TO GENERAL SERVICES ADMINISTRATION ON 22 APRIL 1954.
9.00 ACRES WERE TRANSFERRED TO THE DEPARTMENT OF THE TREASURY, U. S. COAST GUARD ON 12 JULY 1955.
15.25 ACRES WERE TRANSFERRED TO THE DEPARTMENT OF THE INTERIOR, FISH and WILDLIFE SERVICE, ON 4 OCTOBER 1955.
88.16 ACRES WERE CONVEYED BY QUITCLAIM DEED TO THE STATE OF WASHINGTON ON 2 DECEMBER 1955.
494.75 ACRES WERE CONVEYED BY QUITCLAIM DEED TO THE STATE OF WASHINGTON ON 19 MARCH 1957.
(6)1.53 ACRES WERE CONVEYED TO STATE OF WASHINGTON BY QUITCLAIM DEED DATED 8 SEPTEMBER 1959.
15.16 ACRES WERE CONVEYED TO STATE OF WASHINGTON BY QUITCLAIM DEED DATED 15 SEPTEMBER 1959.
5.85 ACRES TRANSFERRED TO THE DEPARTMENT OF THE NAVY ON 19 AUGUST 1958.
Executive Orders dated 22 Sept 1866 & 14 Nov 1896, revoked by Public Land Order 4404 dtd 29 April 1968.

G-2

EDITION OF APR. 23, 1915.
REVISIONS: DEC. 7, 1915; NOV. 8, 1916; DEC. 6, 1919 - MAY. 7, 1921.

SERIAL NUMBER 124

CONFIDENTIAL.

PUGET SOUND

FORT FLAGLER

MARROWSTONE POINT.

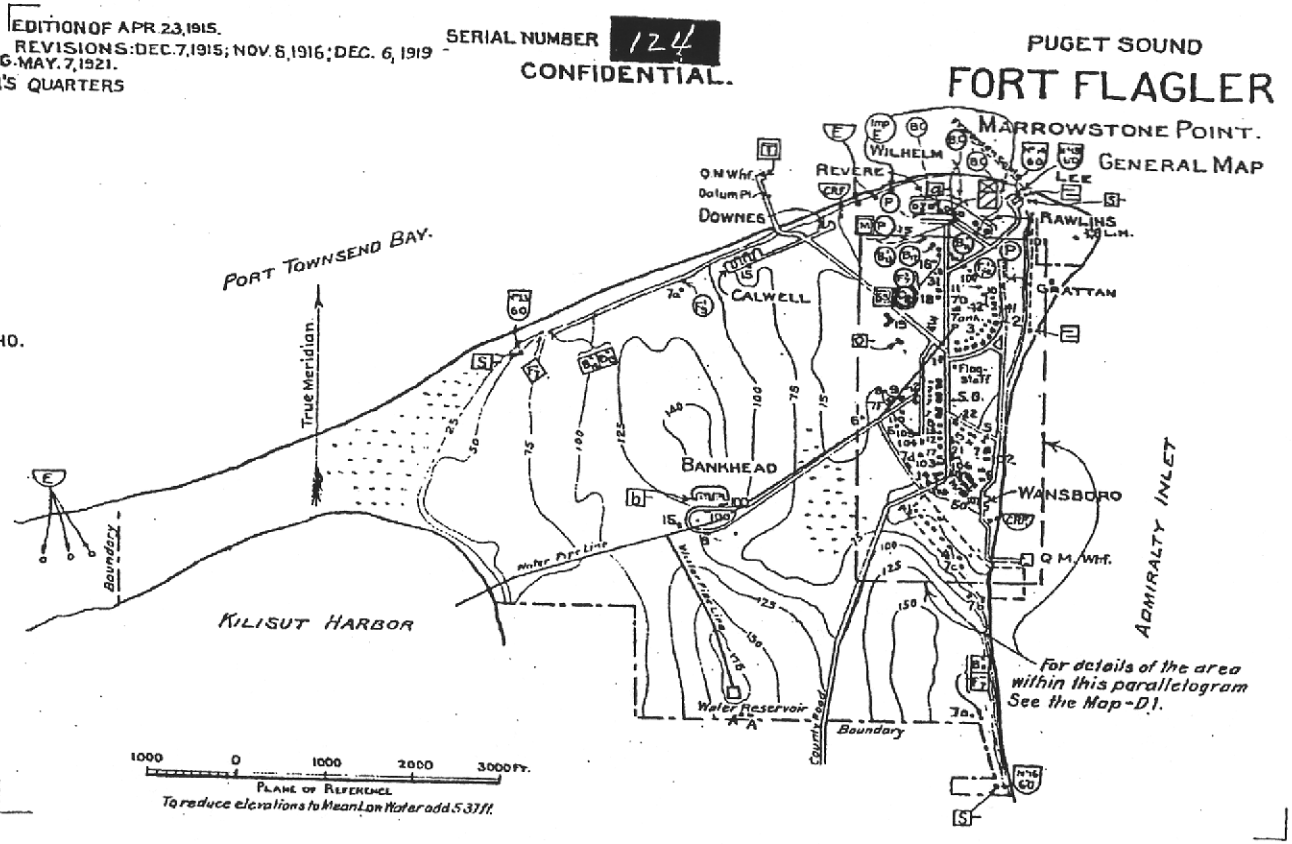
GENERAL MAP

LEGEND.

1. ADMINISTRATION BLDG.
2 COMMANDING OFFICER'S QUARTERS
3 OFFICER'S QUARTERS.
4 HOSPITAL.
5 HOSPITAL STWD'S QRS.
6 N.C. OFFICERS' QRS.
7 BARRACKS;
7a DORMITORY;
7b POST BLACKSMITH'S QRS.
7c POST PLUMBER'S QRS.
7d TEAMSTERS' QRS.
8 GUARD HOUSE.
9 POST EXCHANGE.
10 POST OFFICE.
11 ARTILLERY ENGR. ST. HO.
12 FIRE HOUSE.
13 BAKERY.
14 BLACKSMITH SHOP.
15 CAMP KITCHENS.
16 LAVATORY;
17 CARPENTER SHOP.
18 OIL HOUSE.
19 FUEL SHED.
100 TELEPHONE BOOTHS.
101 RIFLE BUTTS.
102 ROOT HOUSE.
103 STABLE.
104 WAGON SHED.
105 HARNESS ROOM.
106 SHOOTING GALLERY.
21 Q.M. STOREHOUSE.
22 COMMISSARY ST. HO.
31 ORDNANCE ST. HO.
41 ENGR. DEPT. BLDGS.

70 CHAPEL.
71 BOWLING ALLEY.
72 SERVICE CLUB.

107 CANTONMENT 25 BLDGS
108 PLUMBING SHOP.
109 TOOL HOUSE
110 PAINT SHOP.



BATTERIES.

BANKHEAD..4-12"M.
WILHELM...2-12"N.DIS.
RAWLINS....
REVERE.....2-10"N.DIS.
GRATTAN....
CALWELL....
LEE.....
DOWNES....2-3" P.
WANSBORO..2-3" P.
A-Anti-aircraft gun-2-3"

G-3

EDITION OF APR. 23, 1915.
REVISIONS: DEC. 7, 1915; NOV. 8, 1916; DEC. 6, 1919; MAY. 7, 1921; APR. 8, 1925; NOV. 2, 1928; MAY 22, 1936

SERIAL NUMBER [redacted]

CONFIDENTIAL.

PUGET SOUND

FORT FLAGLER

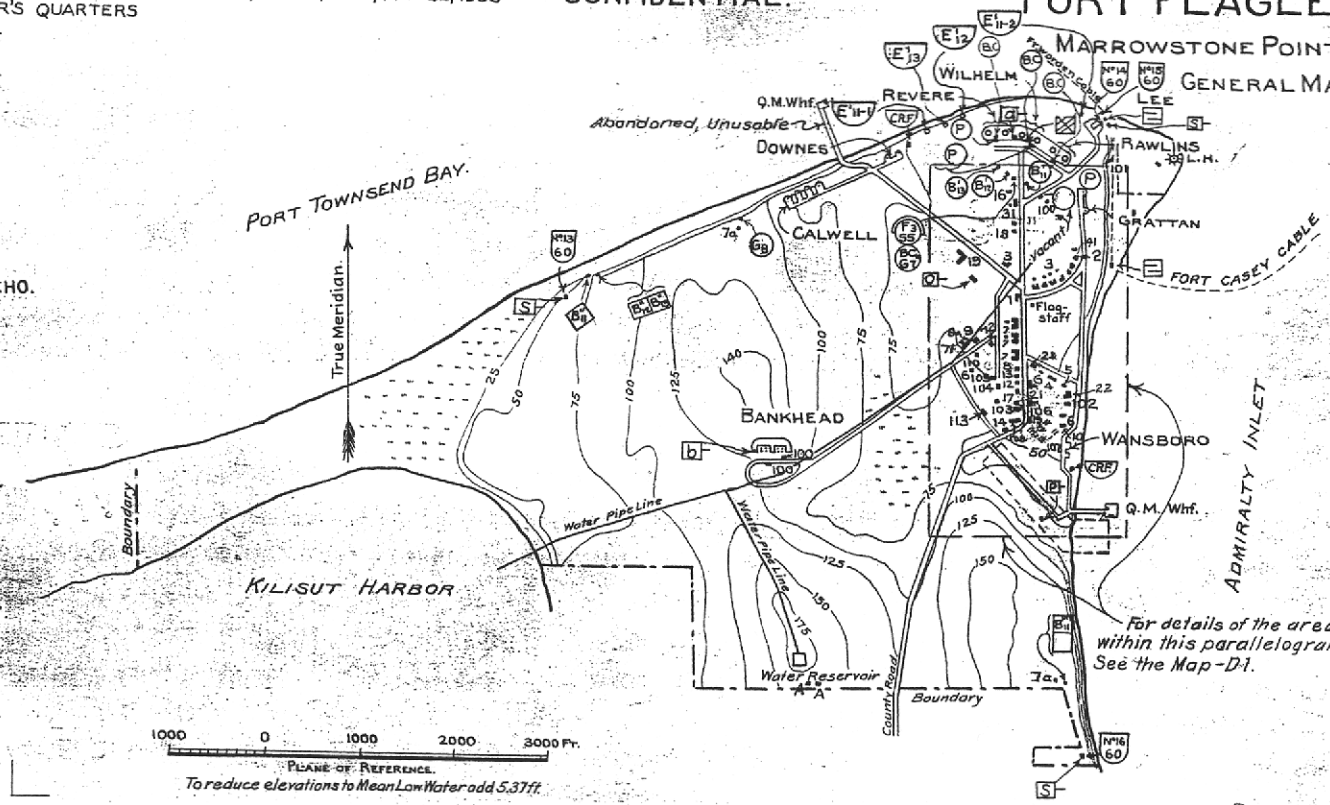
MARROWSTONE POINT.

GENERAL MAP

LEGEND.

1 ADMINISTRATION BLDG.
2 COMMANDING OFFICER'S QUARTERS
3 OFFICER'S QUARTERS.
4 HOSPITAL.
5 HOSPITAL STWD'S. QRS.
6 N.C. OFFICERS' QRS.
7 BARRACKS.
7a DORMITORY.
7
7
7
8 GUARD HOUSE.
9 POST EXCHANGE.
10 POST OFFICE.
11 ARTILLERY ENGR. ST. HQ.
12 FIRE HOUSE.
13 BAKERY.
14 BLACKSMITH SHOP.
15
16 LAVATORY.
17 CARPENTER SHOP.
18 OIL HOUSE.
19 FUEL SHED.
100 TELEPHONE BOOTHS.
101 RIFLE BUTTS.
102 ROOT HOUSE.
103 STABLE.
104 WAGON SHED.
105 HARNESS ROOM.
106 SHOOTING GALLERY
21 Q.M. STOREHOUSE.
22 COMMISSARY ST. HQ.
31 ORDNANCE ST. HQ.
41 ENGR. DEPT. BLDGS.
113 TEAMSTERS QRS.
70
71 BOWLING ALLEY.
72 SERVICE CLUB.

107 CANTONMENT 16 BLDGS
108 PLUMBING SHOP.
109 TOOL HOUSE.
110 PAINT SHOP.



For details of the area within this parallelogram See the Map - D-1.

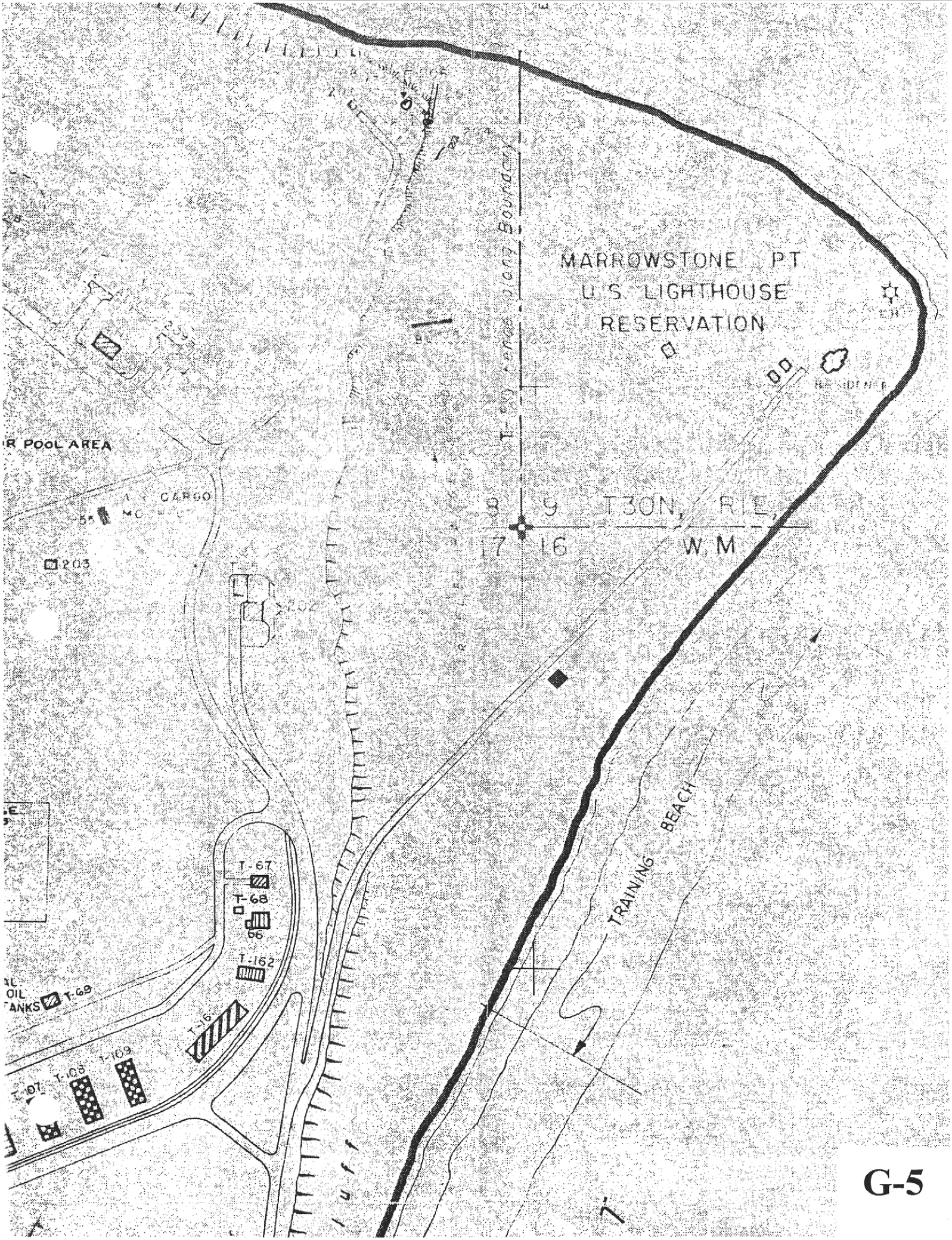
BATTERIES.

BANKHEAD 4-12" M.
WILHELM 2-12" N. DIS.
† RAWLINS
REVERE 2-10" N. DIS.
† GRATTAN
† CALWELL
† LEE
DOWNES 2-3" P.
WANSBORO 2-3" P.
A - Anti-aircraft gun - 2-3"

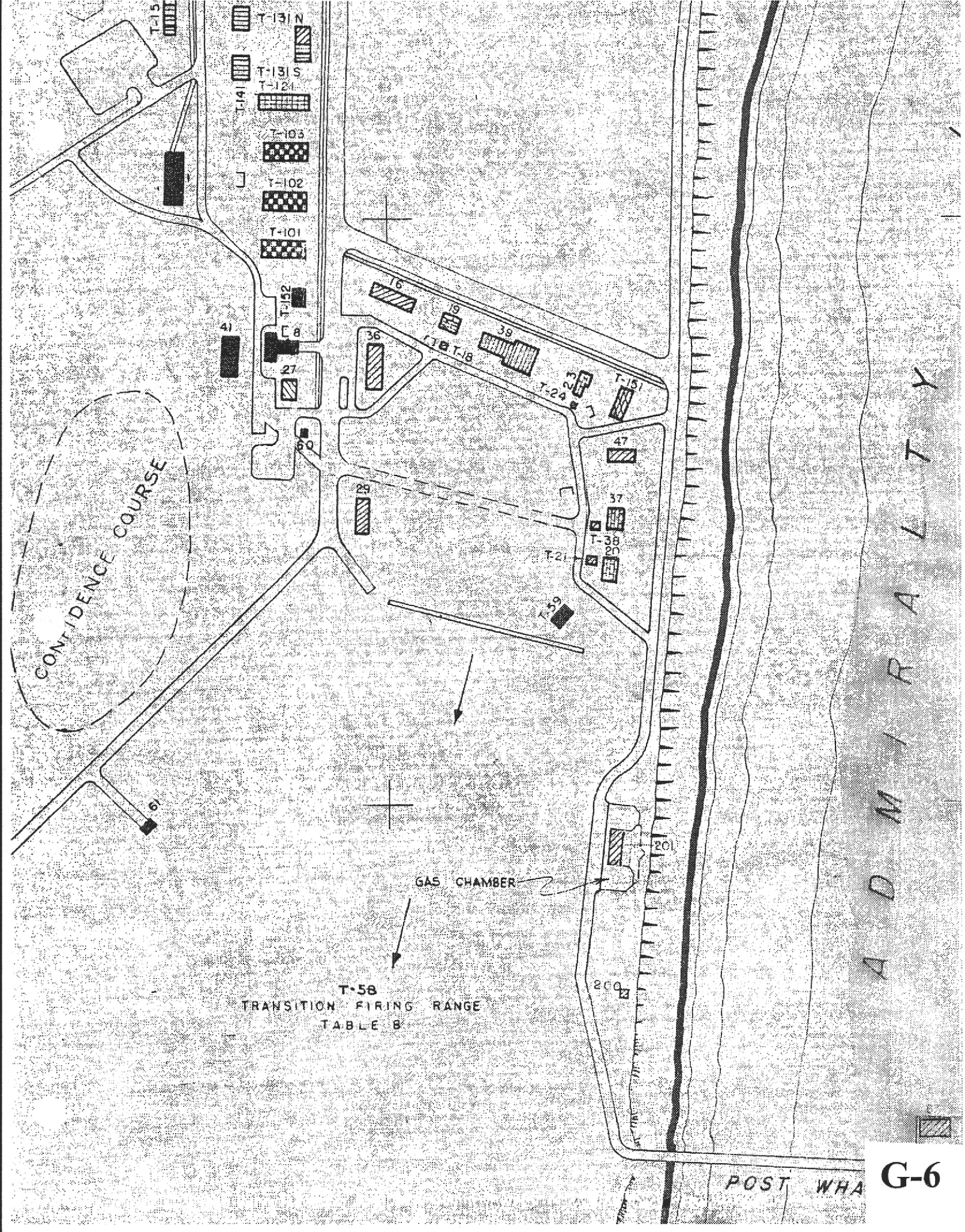
† Armament removed

Caretaking Status.

G-4


MARROWSTONE PT
U.S. LIGHTHOUSE
RESERVATION
T-69
T-67
T-68
66
T-162
T-16
T-109
T-108
T-107
T-69
203
TRAINING BEACH
8
9
17
16
T30N., R1E.,
W.M.

G-5


T-131 N
T-131 S
T-141
T-124
T-103
T-102
T-101
T-152
T-151
T-18
T-24
T-38
T-21
T-59
16
19
39
36
41
8
27
60
47
29
37
20
61
201
200
CONFIDENCE COURSE
GAS CHAMBER
T-58
TRANSITION FIRING RANGE
TABLE B
ADMINISTRATIVITY
POST

G-6

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

Appendix H

Interviews

Appendix H

Interviews

Table of Contents

H-1 Interview with Mr. Kenneth Jones, 7 May 2003

H-2 Interview with Mr. Kaye B. Leiby, 8 May 2003

H-3 Interview with Mr. Fred Erickson, 12 May 2003

H-4 Interview with Mr. Benjamin Randall, 14 May 2003

H-5 Interview with Mr. Mike Zimmerman, 12 July 2003

CONVERSATION RECORD	TIME 1300 CDT	DATE 7 May 2003

TYPE

☐ VISIT	☐ CONFERENCE	☐ TELEPHONE ☒ INCOMING ☐ OUTGOING

NAME OF PERSON CONTACT WITH	ORGANIZATION	TELEPHONE NO.
Kenneth J Jones, 29620 Whipple Drive Delmar, MD 21875		(410) 727-5709

SUBJECT

Fort Flagler

SUMMARY

Mr. Jones contacted this office after reading our advertisement in the VFW magazine. He said that he was at Fort Flagler for about six months in 1950. At the time he was assigned to the 56th Amphibious Tank and Tractor Battalion.

When asked if he remembered where any the of the ranges were located, he said that he didn't remember any firing at Fort Flagler.

ACTION REQUIRED

ACTION TAKEN

NAME OF PERSON DOCUMENTING CONVERSATION	ORGANIZATION	TELEPHONE NUMBER
George Ofslager	CEMVR-ED-DO	(309) 794-5502
SIGNATURE George Ofslager	TITLE Chemist	DATE 7 May 2003

H-1

CONVERSATION RECORD	TIME 1300 CDT	DATE 8 May 2003

TYPE

☐ VISIT	☐ CONFERENCE	☐ TELEPHONE ☒ INCOMING ☐ OUTGOING

NAME OF PERSON CONTACT WITH	ORGANIZATION	TELEPHONE NO.
Kaye B. Leiby 67 3rd Avenue Lehighton, PA 18235		(610) 377-4259

SUBJECT

Fort Flagler

SUMMARY

Mr. Leiby contacted this office after reading our advertisement in the VFW magazine. He said that he was at Fort Flagler in 1951-1952. At the time he was assigned to Company C, 369th Engineer Amphibious Support Regiment. He said that his unit used the beech at Fort Flagler to simulate the landing of supplies. No munitions were used during these exercises.

When asked if he remembered where any the of the ranges were located, he said that he didn't remember any firing at Fort Flagler.

ACTION REQUIRED

ACTION TAKEN

NAME OF PERSON DOCUMENTING CONVERSATION	ORGANIZATION	TELEPHONE NUMBER
George Ofslager	CEMVR-ED-DO	(309) 794-5502
SIGNATURE George Ofslager	TITLE Chemist	DATE 8 May 2003

CONVERSATION RECORD	TIME 1300 CDT	DATE 12 May 2003

TYPE

☐ VISIT ☐ CONFERENCE ☐ TELEPHONE ☒ INCOMING ☐ OUTGOING

NAME OF PERSON CONTACT WITH	ORGANIZATION	TELEPHONE NO.
Fred Erickson 2144 Portside Psge Palm Harbor, FL 34685		(727) 789-4628

SUBJECT

Fort Flagler

SUMMARY

Mr. Erickson contacted this office after reading our advertisement in the VFW magazine. He said that he was at Fort Flagler in 1951. At the time he was assigned to 369th Engineer Amphibious Support Regiment.

When asked if he remembered where any of the ranges were located, he said that he said that he remembered firing at a rifle range on the beach. He recalled that they would have to cease fire for approaching boats in Puget Sound. He didn't recall any other ranges at Fort Flagler.

ACTION REQUIRED

ACTION TAKEN

NAME OF PERSON DOCUMENTING CONVERSATION	ORGANIZATION	TELEPHONE NUMBER
George Ofslager	CEMVR-ED-DO	(309) 794-5502
SIGNATURE George Ofslager	TITLE Chemist	DATE 12 May 2003

CONVERSATION RECORD	TIME 0900 CDT	DATE 14 May 2003

TYPE

☐ VISIT	☐ CONFERENCE	☐ TELEPHONE ☒ INCOMING ☐ OUTGOING

NAME OF PERSON CONTACT WITH	ORGANIZATION	TELEPHONE NO.
Benjamin Randall 201 Apple Vly Lagrange, IN 46761		(260) 463-3415

SUBJECT
Fort Flagler

SUMMARY

Mr. Randall contacted this office after reading our advertisement in the VFW magazine. He said that he was at Fort Flagler from 1949 to 1950. At the time he was assigned to the 56th Amphibious Tank and Tractor Battalion.

When asked if he remembered where any the of the ranges were located, he said that he didn't remember any firing at Fort Flagler. When he was at the fort there was only one battalion and the post was used only for maneuvers.

ACTION REQUIRED

ACTION TAKEN

NAME OF PERSON DOCUMENTING CONVERSATION	ORGANIZATION	TELEPHONE NUMBER
George Ofslager	CEMVR-ED-DO	(309) 794-5502
SIGNATURE George Ofslager	TITLE Chemist	DATE 14 May 2003

CONVERSATION RECORD	TIME 1200 PDT	DATE 12 July 2003

TYPE

[X] VISIT [ ] CONFERENCE [ ] TELEPHONE [ ] INCOMING [ ] OUTGOING

NAME OF PERSON CONTACT WITH	ORGANIZATION	TELEPHONE NO.
Mike Zimmerman Fort Flagler State Park 10541 Flagler Road Nordland, WA 98358-9656	Area Manager Parks and Recreation Commission	(360) 385-1259

SUBJECT

Fort Flagler

SUMMARY

The assessment team met Mr. Zimmerman at his office on Fort Flagler. He said that he had been at the park for five years and he was aware of the removal action at the bazooka range.

When asked if he knew of any OE discovered at the park, he showed the team two five round clips of caliber .30 rifle ammunition. The cartridges were severely corroded and as a result the head stamps were illegible. He said that a park volunteer had found them on the beach near the quartermaster dock. He said that the particular area where the cartridges were found might have been a refuse site as a variety of objects had been found there over the years.

He said that other than the rifle cartridges no other OE had been discovered in the park.

ACTION REQUIRED

ACTION TAKEN

NAME OF PERSON DOCUMENTING CONVERSATION	ORGANIZATION	TELEPHONE NUMBER
George Ofslager	CEMVR-ED-DO	(309) 794-5502
SIGNATURE George Ofslager	TITLE Chemist	DATE 12 July 2003

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

Appendix I

Site Safety and Health Plan (SSHP)

U.S. ARMY CORPS OF ENGINEERS
ROCK ISLAND DISTRICT

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
For
FORMERLY USED DEFENSE SITES
ORDNANCE AND EXPLOSIVES

APPENDIX A-304

Fort Flagler State Park
Jefferson County, Washington
DERP-FUDS Site Project F10WA031602

1. PURPOSE

The purpose of this appendix is to provide specific site characteristics of potential OE. This appendix supplements the main safety plan.

2. ON-SITE ORGANIZATION/COORDINATION

Members of the inspection/coordination team are shown in Table A-304-1. The number of inspection personnel team members on site will not exceed 4 per inspection.

TABLE A-304-1
ON-SITE ORGANIZATION/COORDINATION

Function	Organization	POC	Telephone Number
Assessment Team	CEMVR-ED-DO	George Ofslager Chemist	(309) 794-5502
	CEMVR-ED-DO	Timothy Holland UXO Specialist	(309) 794-5432
Industrial Hygiene	MCXP-RIA	Bob Platt Hygienist	(309) 782-0807
Geographic District Support	CENWS-PM-EM	Jonathan Maas	(206) 764-6745
Project Engineer	CEMVR-ED-DO	Robert E. Hoffman Supervisory Civil Engineer	(309) 794-5504
Division Support	CEHNC-OE-EM	Wayne Galloway UXO Safety Specialist	(205) 895-1582 (205) 895-1180 (After Duty Hours)

3. SITE DESCRIPTION

(a) Fort Flagler originally consisted of 544.35 acres obtained by Executive Orders dated 22 September 1866 and 14 November 1896. 262.5 acres were acquired by fee and condemnation between 1896 and 1909. Between 1841 and 1952, 5.85 acres were acquired by permit, bringing the total acreage of Fort Flagler to 812.7 acres.

(b) Fort Flagler was originally a U.S. Army coastal artillery battery designed to protect Puget Sound. Construction of the battery began in 1897 and was completed in 1907. The fort was placed on caretaker status in 1937. However, the fort saw continued use for many more years. From 1940 to 1943, two artillery regiments were based at the fort. From 1945 to 1954, the fort was used for training engineers and amphibious units. In 1954, the site was declared surplus and turned over to GSA. Fort Flagler never participated in any engagements.

(c) There were several disposal actions between 1955 and 1959. The largest portion of the site, 766.44 acres, was transferred to the State of Washington. Currently, the majority of the site is still owned by the State of Washington and is used as a state park, Fort Flagler State Park. In 1975, Fort Flagler was placed on the National Register of Historic Places.

(d) Fort Flagler was certified as being decontaminated on 16 June 1954 and again in August 1959. However, in March 1992, a Time Critical Removal Action was performed on a suspected rocket impact area on Fort Flagler. The project area consisted of approximately 25 acres. OE cleared from the area included three live 2.36-inch rockets with warheads and several pieces of inert OE such as expended 2.36-inch rocket motors, 3.5-inch rocket debris and inert mines.

4. LIST OF EMERGENCY TELEPHONE NUMBERS

TABLE A-304-2
EMERGENCY PHONE NUMBERS

Function	Organization	Telephone No
Police	Port Townend Police Department	(360) 379-4438
Fire Department	Port Fire Department	(360) 385-1122
Hospital	Jefferson General Hospital	(360) 385-2200
Safety Office	COE, Huntsville, AL	(205) 895-1582
Explosive Ordnance Disposal	53d Ordnance Company (EOD) Yakima, WA	(509) 557-3376

5. ORDNANCE AND EXPLOSIVE POTENTIAL

Table A-304-3 lists the items that may have been used at Fort Sullivan and the potential hazards associated with each item.

TABLE A-304-3
POTENTIAL OE HAZARDS AND EVALUATION

OE	Potential Hazards
Anti-tank Rockets	Explosion, Fragments
Small Arms Ammunition	Moderate Fire

6. PERSONAL PROTECTIVE CLOTHING

a. Table A-304-4 includes personal protective equipment that must be readily available should it be required. As each site presents a unique set of circumstances, the determination of need shall be based on available information and the judgment of the team leader/site safety person.

TABLE A-304-4
PERSONNEL PROTECTIVE CLOTHING

Work Area/Zone	Job Function/Task	Level of Protection
All Areas	Visual Inspection	Safety Shoes (as required) Hard Hat (as required) Eye Protection (as required) Hearing Protection (as required)

b. Table A-304-5 lists specialized equipment anticipated for general safety purposes. The team leader is responsible for determining appropriate use of the equipment.

TABLE A-304-5
GENERAL EQUIPMENT

Type	Comments
Global Positioning System (GPS)	Used to determine exact locations of OE and significant landmarks.

7. SITE SAFETY

Standard safety practices for explosive material will be followed at all times. The site investigation team will use caution when outside any improved areas. All personnel accompanying the SI team will be briefed on the team's purpose and the requirement of not disturbing any OE material during the investigation.

8. SIGNATURES

My signature below signifies that I have read, understand, and will follow the requirements of the above site safety plan for OE investigation at Fort Flagler. It further signifies that I attended and participated in the safety briefing conducted prior to the on-site visit.

Name (Print)	Signature	Office Symbol	Date
George Aslaser		CEMVR-ED-DO	8 July 2003
Timothy Holland		CEMVR-ED-DO	8 July 2003

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

Appendix J

Site Inspection Report

Site Inspection Report

The assessment team conducted the visual inspection of the former Fort Flagler during the period of 10 through 15 July 2003. The photographs taken by the team are presented in Appendix K and the photograph locations as well as the path taken by the team are on plate 6.

Fort Flagler State Park is extremely well maintained. Many of the original cantonment buildings are used as lodging for park guests. There is also a museum and interruptive center in the cantonment area. The batteries are in good condition and interpretive placards are posted at many of the batteries.

The first stop was Battery Wansboro; this was a 3-inch battery that was converted into a gas chamber (see documents E-7, E-21 and G-6). There is no remaining evidence of the modifications made to the building to turn it into a gas chamber (see photograph K-7). While the guns were removed after the Second World War, they were later replaced by similar guns removed from the Philippines as a display for the park in 1963 (see photograph K-6). According to an interpretive placard placed at the battery, the guns were fired 16 times between 1907 and 1928. From the placard, it is not clear whether the firing involved the guns originally at Fort Flagler or the 16 times refers to the use of the presently mounted guns. In one of the magazines there were 155-mm propelling charge containers stacked to represent ammunition. The containers for 3-inch ammunition would have been completely different than the propelling charge cans, but this was still a nice touch to proved patrons with an idea of what a magazine might have looked like.

After leaving Battery Wansboro, the team went to the beach at the location of the Quarter Master wharf. The wharf has seen better days and it is now derelict (see photograph K-8). At the location that the park manager gave the team as the location of where the caliber .30 cartridges were found, the team noted an old heating radiator that had been discarded but no OE or OE related debris. The disposal area appears to be immediately to the south of the wharf and the discarded radiator was immediately adjacent to the wharf (see photograph K-5). Otherwise, the beach is clear of most manmade debris and litter, it seems that either the patrons of the park are extremely neat and orderly or litter is removed from the beach often. In either case the beach is very clean.

The team left the beach and traveled by foot trough the cantonment area to Battery Grattan. The buildings in the cantonment area are also well maintained and at the time of the site inspection there were lodgers in the old officer's quarters and barracks (see photograph K-9).

Battery Grattan once contained 6-inch pedestal mounted guns and the mounting bolts for the pedestals are still clearly visible, which is amazing as the gun were removed over 80 years ago (see document E-16). During the Second World War the Navy used the battery as an underwater listening post (see document E-17); the sound absorbing material for this post is still visible (see photograph K-10).

After leaving Battery Grattan, the team proceeded to the old lighthouse station (see photograph K-11) and then walked the beach north of the Quarter Master wharf. According to the sign at the entrance of the station, the lighthouse and surrounding buildings are now under the jurisdiction of the USGS and is called the Marrowstone Marine Center. There were no employees at the center at the time of the visit.

The beach north of the Quarter Master Warf was used for amphibious training (see document G-5). It is a wide beach with a gentle slope. When the assessment team was on the beach there was a transient bald eagle (see photograph K-12).

Next the team visited Battery Caswell (see photograph K-13), which once contained four 6-inch disappearing guns (see document E-14). According to a sign posted at the battery the guns were removed and shipped to France in 1918.

Next came Battery Downes, which once contained two 3-inch guns (see document E-20 and photograph K-14). Adjacent to the battery was an observation post that looked like it was modified during World War II; pierced steel planking covered part of the post. It didn't appear that this structure was modified to be anything other than an observation post.

Next on the list was Battery Bankhead, the location of the 12-inch seacoast mortars (see document E-8, E-9 and photograph K-15). This battery is in particularly good shape as many of the original fixtures are still present, the overhead rails used to handle the ammunition are still present in the shot gallery and the board used to give instructions to the crews regarding elevation and deflection are still present on the telephone booths (see photograph K-16).

The team ended the inspection of the batteries by saving the best for last, the main gun line. This consisted of Batteries Rawlins, Revere and Wilhelm (see documents E-10, E-11, E-12 and E-13). Together, these batteries are impressive and in near perfect condition. Most of the original fixtures are still emplace including some of the ammunition hoist machinery (see photograph K-17). Battery Rawlins was originality a 10-inch gun battery that was modified to a 3-inch AAA battery in the Second World War (see document E-24). Two of the AAA emplacements were built on top of the 10-inch emplacements and the third AAA emplacement was built on the forward slope of the battery. Batteries Revere and Wilhelm were 10 and 12-inch batteries respectively.

The vicinity of the main gun line seems to have been the most likely location of the mobile 37-mm present during the Second World War; there was plenty of storage space in the abandoned magazines and AAA fire control would have been available from the 3-inch AAA battery. This was only an opinion of the team and there was no clear evidence that the 37-mm guns were here; but after viewing all the other locations on post it seemed the most likely.

Battery Lee was not visited, as it seemed too close to the sea cliff; there is no telling when the cliff will give way.

After inspecting the batteries, the team proceeded to the rifle range (see documents G-2 and G-5). The concrete butts are still present as well as some remains of the target frames (see photograph K-2). It appears that the range was set up so as to use the sea cliff as a backstop to the range. The team notice that the land between the firing lines and the butts is a wetland affected by the tides (see photograph K-3); the range couldn't be used for anything other than a known distance range for rifles and carbines. The team new that the pistol range was located somewhere near the rifle range, but the team couldn't find it. This would have been a small and simple range and any location that could have used the sea cliff as backstop would have been appropriate.

The team then proceeded to the AMTB battery. There was noting special about these emplacements. The emplacements are being broken up by high waves from the ocean (see photographs K-18 and K-19).

The team then visited the transition range (see document G-6). This area is now being used as a picnic area and a sewage treatment plant is also located on the range.

The team then went into the woods at the south end of the park to find the AAA battery that was present from 1920-1943. The team found it right where the historical maps indicated (see document G-3 and photograph K-20). These emplacements seem to be seldom visited by park patrons as they are somewhat hidden.

The last stop was the rocket range. This area likely contained an additional transition range. The firing lines would have been located on the current day campground and the hill rising to the east would have been used as a backstop. All evidence of past military activity has been obliterated, so the likely location of the firing line is a guess. The team walked down the beach well past the maximum range of a 3.5-inch rocket and found no further evidence that this area might still contain ordnance. The beach is clear of any manmade debris except the remains of concrete portions of auxiliary coast defense buildings that are eroding out of the sea cliff (see photograph K-1).

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

Appendix K

Present Site Photographs

Appendix K

Present Site Photographs

Table of Contents

K-1 Concrete Debris Eroding from Sea Cliff (Area A: Rocket Range)

K-2 Target Butt (Area B: Rifle Range)

K-3 Looking Up Range from the Target Butt (Area B: Rifle Range)

K-4 Sewage treatment Plant (Area C: Transition Range)

K-5 Beach Near the Quarter Master Wharf (Area D: Disposal Site)

K-6 3-Inch Gun at Battery Wansboro (Area E: Remaining Lands)

K-7 Battery Wansboro (Area E: Remaining Lands)

K-8 Quarter Master Wharf (Area E: Remaining Lands)

K-9 Quarters being used as Lodging (Area E: Remaining Lands)

K-10 Acoustic Tile on Interior of Battery Grattan (Area E: Remaining Lands)

K-11 Light House Station (Area E: Remaining Lands)

K-12 Bald Eagle at Training Beach (Area E: Remaining Lands)

K-13 Battery Calwell (Area E: Remaining Lands)

K-14 Magazines of Battery Downes (Area E: Remaining Lands)

K-15 One of the Mortar Pits at Battery Bankhead (Area E: Remaining Lands)

K-16 Telephone Booth at Battery Bankhead (Area E: Remaining Lands)

K-17 Ammunition Hoist Machinery (Area E: Remaining Lands)

K-18 AMTB 90-mm Gun Emplacement (Area E: Remaining Lands)

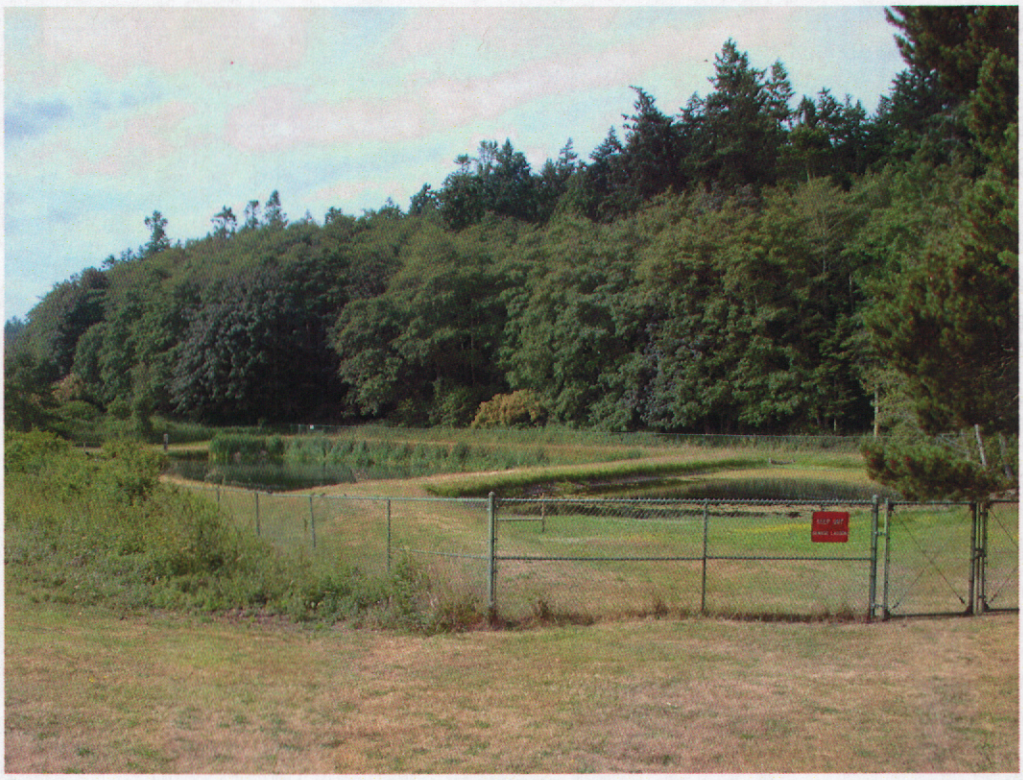
K-19 AMTB (Area E: Remaining Lands)

K-20 AAA Gun Emplacement (Area E: Remaining Lands)

K-1: Concrete Debris Eroding from Sea Cliff
(Area A: Rocket Range)

K-2: Target Butt (Area B: Rifle Range)

K-3: Looking Up Range from the Target Butt
(Area B: Rifle Range)



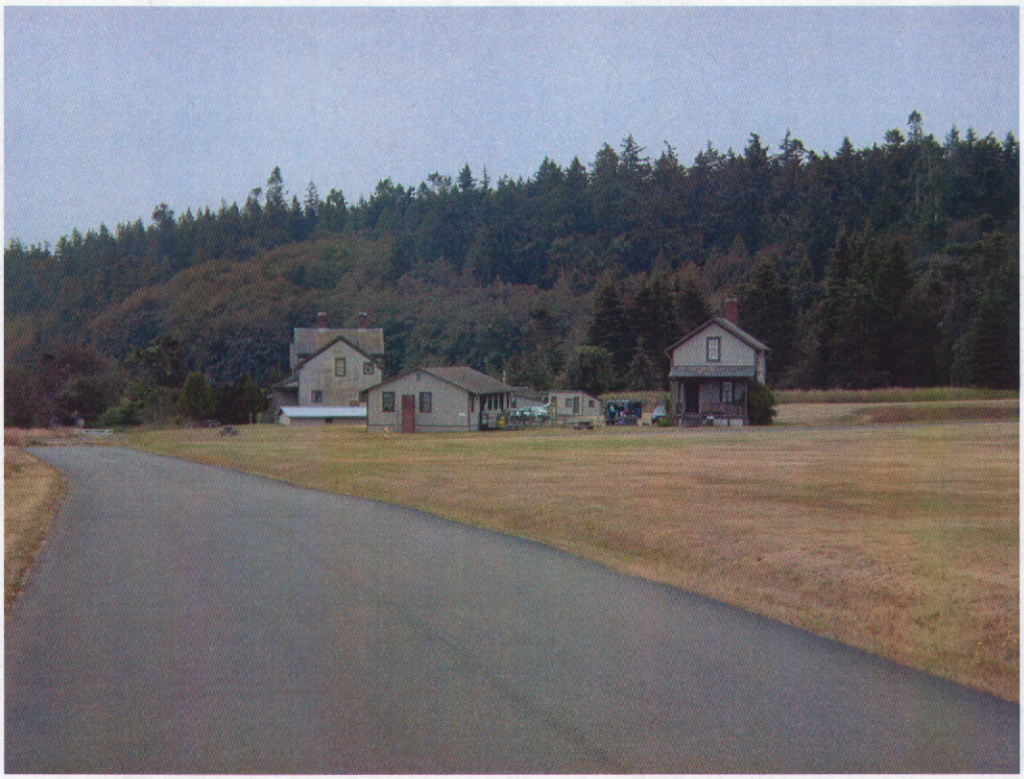
K-4: Sewage treatment Plant
(Area C: Transition Range)

K-5: Beach Near the Quarter Master Wharf
(Area D: Disposal Site)

K-6: 3-Inch Gun at Battery Wansboro
(Area E: Remaining Lands)

K-7: Battery Wansboro (Area E: Remaining Lands)

K-8: Quarter Master Wharf (Area E: Remaining Lands)

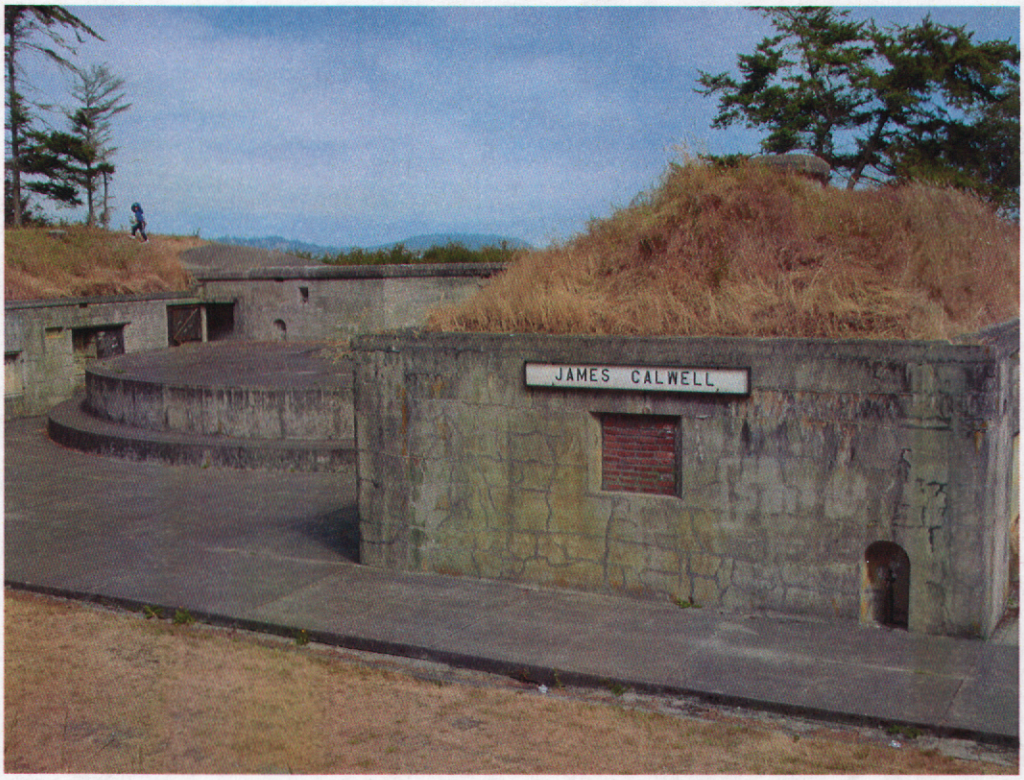


K-9: Quarters being used as Lodging
(Area E: Remaining Lands)

K-10: Acoustic Tile on Interior of Battery Grattan
(Area E: Remaining Lands)

K-11: Light House Station (Area E: Remaining Lands)

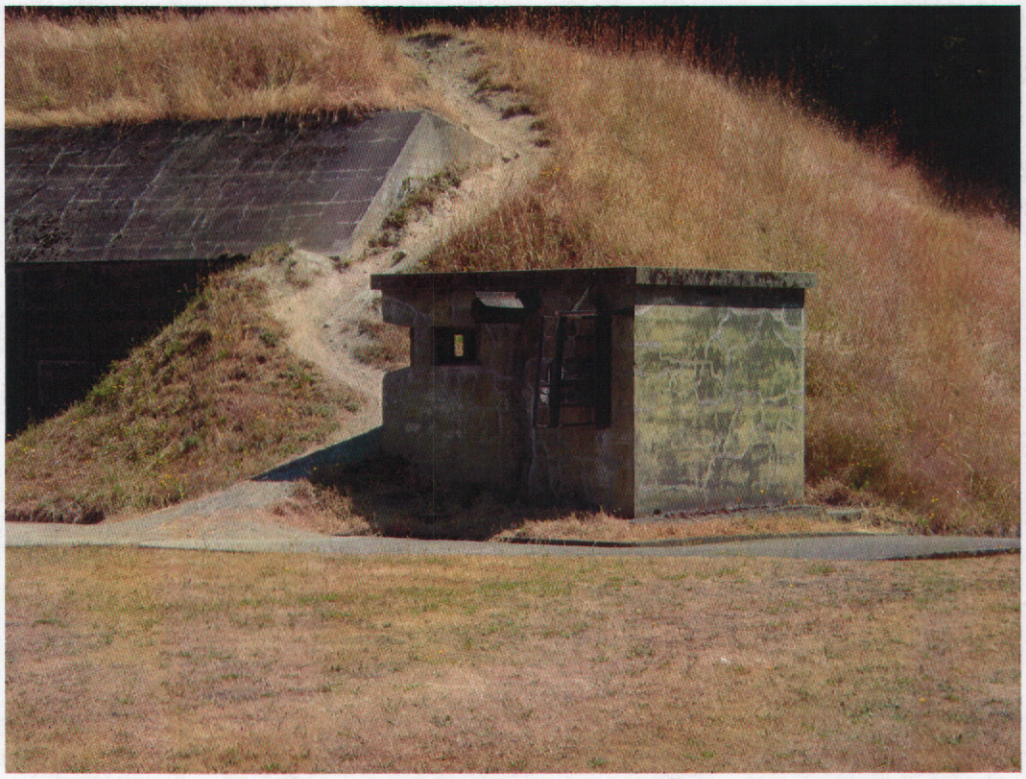
K-12: Bald Eagle at Training Beach
(Area E: Remaining Lands)



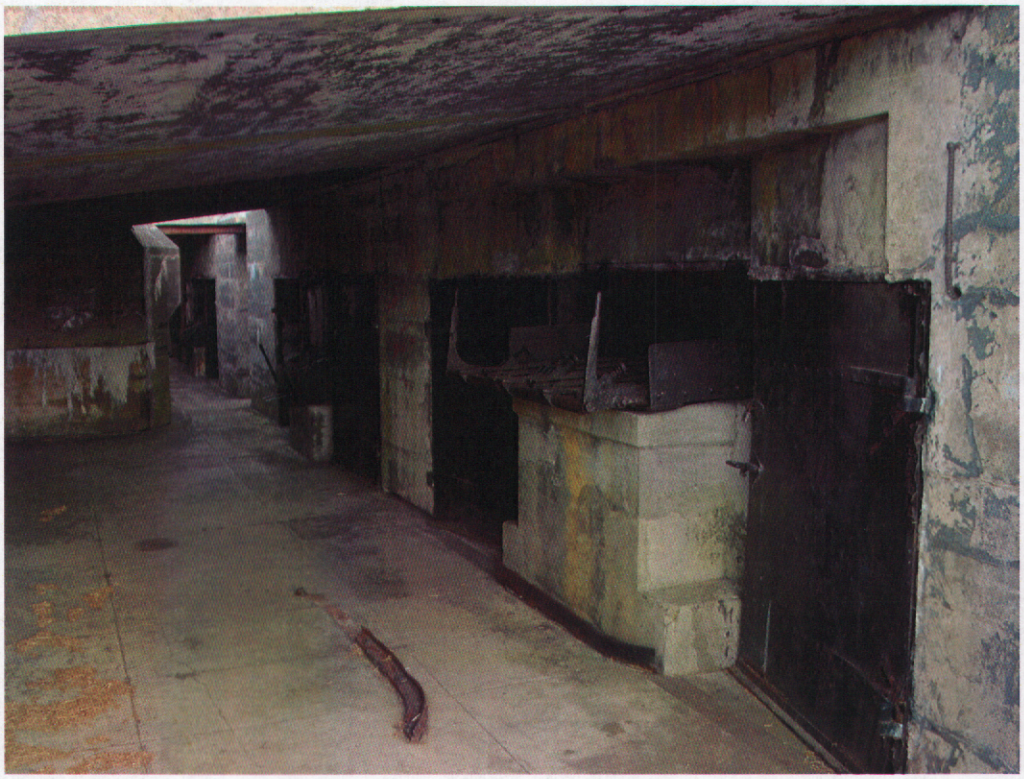
K-13: Battery Calwell (Area E: Remaining Lands)

K-14: Magazines of Battery Downes
(Area E: Remaining Lands)

K-15: One of the Mortar Pits at Battery Bankhead
(Area E: Remaining Lands)



K-16: Telephone Booth at Battery Bankhead
(Area E: Remaining Lands)



K-17: Ammunition Hoist Machinery
(Area E: Remaining Lands)

K-18: AMTB 90-mm Gun Emplacement
(Area E: Remaining Lands)

K-19: AMTB (Area E: Remaining Lands)

K-20: AAA Gun Emplacement (Area E: Remaining Lands)

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

APPENDIX L

Response to Comments

U. S. ARMY ENGINEER DIVISION HUNTSVILLE

CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT Ft Flagler State Park Jefferson County , WA F10WA031602

☐ SITE DEV & GEO	☐ MECHANICAL	☒ OE SAFETY	☐ SYSTEMS ENG	REVIEW	Review ASR
☐ ENVIR PROT& UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	11 December 2003
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	Michael G. Smith 5-1569
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1	GENERAL	Completed a review of Ft Flagler State park. I have the following comments.	1. No action required.
2		Concur with a RAC 5 for Areas A, B, C and E.	2. No action required.
3		Concur that Area D should be reevaluated. RAC 3 for a clip of small arms ammo may not be appropriate for this area.	3. The RAC worksheets, dated 5 April 2004, that were approved by the TAG has been included in the report.
4		The RAC work sheet label E is not complete. Should be completed or removed.	4. The RAC worksheets, dated 5 April 2004, that were approved by the TAG has been included in the report.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

U. S. ARMY ENGINEER DIVISION HUNTSVILLE — CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT: Fort Flagler State Park – F10WA031602

☐ SITE DEV & GEO	☐ MECHANICAL	☐ OE SAFETY	☐ SYSTEMS ENG	REVIEW: ASR Review
☐ ENVIR PROT& UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE: 28 January 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	■ OTHER – USA Environmental, Inc.	NAME: Doug Ralston 813-884-5722 x104
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS		

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1	General	Draft ASR for the Fort Flagler State Park, Jefferson County, WA, was reviewed for accuracy and completeness. Based on this review the following comments are provided:	1. No action required.
2	New RAC Worksheet	A new RAC worksheet for Area A, dated 18 Jan 2004 was completed for this project. The RAC score of this project changed from RAC 5 to RAC 4.	2. The RAC worksheets, dated 5 April 2004, that were approved by the TAG has been included in the report.
3	New RAC Worksheet	A new RAC worksheet for Area D, dated 18 Jan 2004 was completed for this project. The RAC score of this project changed from RAC 3 to RAC 4.	3. The RAC worksheets, dated 5 April 2004, that were approved by the TAG has been included in the report.
4	General	I do not concur with a RAC 3 for Area D and the recommendation on the RAC form.	4. The RAC worksheets, dated 5 April 2004, that were approved by the TAG has been included in the report.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

Design Review Comment

Project:

☐ *Site Dev & Geo* ☐ *Mechanical* ☐ *OE Safety* ☐ *Systems Eng*
☐ *Envir Prot & Util* ☐ *Mfg Technology* ☐ *Adv Tech* ☐ *Value Eng*
☐ *Architectural* ☐ *Electriclal* ☐ *Estimating* ☐ *Other*
☐ *Structural* ☐ *Inst Controls* ☐ *Specifications*

Review Fort Flagler State Park F10WA031600
Date 11/15/2003 3:39:51 PM
Name

Item	*Drawing No. or Reference*	*Comment*	*Action*
1		None	1. No action required.
2		None	2. No action required.
3		FDE is printed in the ASR September 2003. Total acres 812.70.	3. No action required.
4		None	4. No action required.
5		Site Survey Summary Sheet dated is Feb 1991, is printed in the ASR dated September 2003.	5. No action required.
6		Several RAC Worksheets are printed in the September 2003 ASR.	6. No action required.
7		The RAC Workheet for Area requires reevaluation. A RAC 3 for 1 clip of small arms ammunition is not justification.	7. The RAC worksheets, dated 5 April 2004, that were approved by the TAG has been included in the report.

ACTION CODES: **W - Withdrawn**
A - Accepted/Concur **N - Non-Concur**
D - Action Deferred **VE - VE Potential/VEP Attached**

Previous Editions of This Form Are Obsdete

U. S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE — CORPS OF ENGINEERS

F10WA031602

DESIGN REVIEW COMMENTS — PROJECT DERP FUDS FT. FLAGLER STATE PARK

X ASR/INPR TEAM

REVIEW ASR TAG OE
DATE 5 APRIL 2004
NAME Daniel Linehan (918)420-8867

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1.	General	After reviewing this ASR, I concur with the ASR and HNC Safety for a RAC score of 5 areas A, B, C, E.	1. The RAC worksheets, dated 5 April 2004, that were approved by the TAG has been included in the report.
2.	App. D	Recommend including appropriate small arms datasheets.	2. Small arms ammunition data sheets were added as attachment D-9.
3.	App. E	Project Summary Sheet not present.	3. A project summary sheet was not present in the INPR.

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

APPENDIX M

Report Distribution

APPENDIX M

Report Distribution

	Draft	Final
Commander, U.S. Army Corps of Engineers, Engineering and Support Center, Huntsville ATTN: CEHNC-ED-SY (Mardis) P.O. Box 1600 Huntsville, Alabama 35807-4301	2	2
Director, Defense Ammunition Center ATTN: SJMAC-ESL 1C Tree Road, Building 35 McAlester, Oklahoma 74501	2	-
Commander, U.S. Army Engineer District, Seattle ATTN: CENWS-PM-EM (Maas), 4735 E. Marginal Way S. Seattle, WA 98134-2385	2	-
Commander, U.S. Army Engineer District, Rock Island ATTN: CEMVR-EDDO P.O. Box 1600 Rock Island, IL 61201	2	2

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORT FLAGLER STATE PARK

JEFFERSON COUNTY, WASHINGTON
PROJECT NUMBER F10WA031602

REPORT PLATES

PORT TOWNSEND

PROJECT LOCATION

FORT FLAGLER STATE PARK

MARROWSTONE ISLAND

KILISUT HARBOR

INDIAN ISLAND

MYSTERY BAY

NORLAND

SCOW BAY

OAK BAY

JEFFERSON COUNTY

PUGET SOUND

ISLAND COUNTY

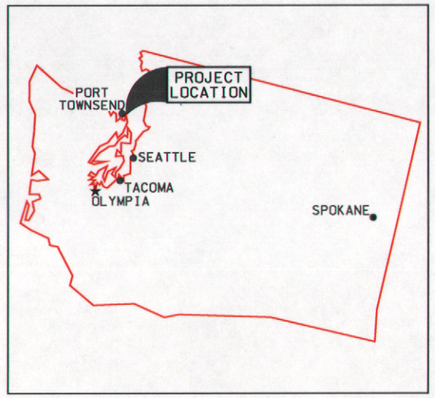
WHIDBEY'S ISLAND

MUTINY BAY

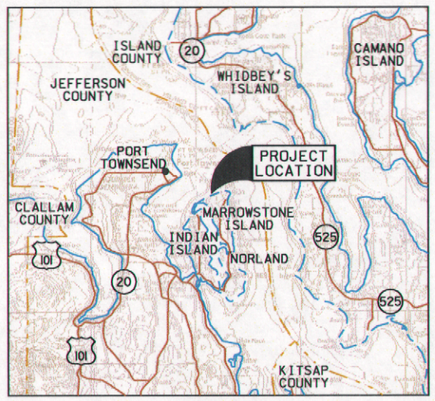
5327055

523539

N



STATE MAP OF WASHINGTON



VICINITY MAP

LEGEND

- PROPERTY BOUNDARY
- COUNTY LINE
- U.S. ROUTE
- STATE ROUTE
- MAIN ROAD
- SECONDARY ROAD
- UTM COORDINATES (NAD 83)
- SHORE LINE

3000 0 3000 6000 FEET

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

Designed by: G.C. OFSLAGER
Drawn by: A.E. RODRIGUEZ
Checked by: G.C. OFSLAGER
Reviewed by: R.E. HOFFMAN
Approved by: COL. DUANE P GAPINSKI, MVR

US Army Corps of Engineers Rock Island District

FORT FLAGLER MILITARY RESERVATION
JEFFERSON COUNTY, WA

SITE MAP

Scale:
Dates:
Drawing Code:
Sheet reference number:

Project Number: F10WA031602

PLATE 1

21-MAR-2005 09:01
\\mvrdfs\cadd\projects\dp493\dp493p11.dgn

BATTERY RAWLINS AND AAA BATTERY (1943–1946)

BATTERY WILHELM

BATTERY REVERE

BATTERY LEE

RIFLE BUTTS

BATTERY DOWNES

BATTERY CALWELL

COAST GUARD RESERVATION

Lighthouse

LIGHTHOUSE

Marrowstone Poi

CANTONMENT AREA

BATTERY GRATTAN

FORT FLAGLER STATE PARK

ROCKET RANGE

BATTERY BANKHEAD

BATTERY WANSBORO

TRANSITION RANGE

QUARTER MASTER WHARF

AAA BATTERY (1920–1943)

Craven Rock

Gravel

Piles

Pier

Tower

Bank

BM 7

BM 95

MERIDIAN

NOTES

1. INFORMATION EXRACTED FROM DOCUMENTS E-22, E-23, E-24, G-1, G-2, G-3, G-4, G-5, AND G-6
2. FIRING FANS OF COAST ARTILLERY AND ANTI-AIRCRAFT ARTILLERY (AAA) ARE SHOWN ON PLATE 3
3. LOCATION OF ROCKET RANGE IS APPROXIMATE AN BASED UPON TERRAIN FEATURES

LEGEND

- SITE BOUNDARY
- SMALL ARMS RANGE SURFACE DANGER AREAS
- ROCKET RANGE DISPERSION AND RICOCHET AREA
- AAA BATTERY
- MAIN ROAD
- SHORELINE

700 0 700 1400 FEET

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

US Army Corps of Engineers Rock Island District

FORT FLAGLER MILITARY RESERVATION
JEFFERSON COUNTY, WA

FACILITY LAYOUT

Designed by:	G.C. OFSLAGER
Drawn by:	A.E. RODRIGUEZ
Checked by:	G.C. OFSLAGER
Reviewed by:	R.E. HOFFMAN
Approved by:	COL. DUANE P GAPINSKI, MVR
Scale:	
Date:	
Drawing Code:	
Sheet reference number:	
Project Number:	F10WA031602
	PLATE 2

21-MAR-2005 09:02
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OE PROJECT AREA			
AREA	FORMER USE	OE PRESENCE	ACREAGE
F	OFF SHORE ORDNANCE AREA	POTENTIAL	18.686
		TOTAL ACREAGE	18.686

AREA F

ISLAND CO.
JEFFERSON CO.

20

525

NOTES

1. INFORMATION EXTRACTEED FROM NUMEROUS SOURCES. SEE TABLE 4-1
2. BASED UPON THE LOCATION OF THE AAA BATTERY (1920-1943) IT IS UNLIKELY THAT THE GUNS WERE FIRED

LEGEND

- PROPERTY BOUNDARY
- RANGE BOUNDARY
- COUNTY BOUNDARY
- MAIN ROAD
- SHORELINE

3000 0 3000 6000 FEET

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

Designed by: G.C. OFSLAGER
Drawn by: A.E. RODRIGUEZ
Checked by: G.C. OFSLAGER
Reviewed by: R.E. HOFFMAN
Approved by: COL. DUANE P GAPINSKI, MVR

US Army Corps of Engineers Rock Island District

FORT FLAGLER MILITARY RESERVATION
JEFFERSON COUNTY, WA

ARTILLERY RANGES

Scale:
Date:
Drawing Code:
Sheet reference number:
Project Number: F10WA031602

PLATE 3

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OE PROJECT AREAS			
AREA	FORMER USE	OE PRESENCE	ACREAGE
A	ROCKET RANGE	POTENTIAL	16
B	RIFLE RANGE	NONE	15
C	TRANSITION RANGE	NONE	31
D	DISPOSAL AREA	CONFIRMED	1
E	ALL REMAINING LANDS	NONE	746
		TOTAL ACREAGE	809

AREA A
ROCKET RANGE
AREA E
FORT FLAGLER STATE PARK
CANTONMENT AREA
AREA B
LIGHTHOUSE
COAST GUARD RESERVATION
Lighthouse
Marrowstone Poi
AREA C
TRANSITION RANGE
QUARTER MASTER WHARF
AREA D
Craven Rock
Gravel
Tower
Piles
Pier
BM 95
BM 7
BM 10

LEGEND

- SITE BOUNDARY
- SMALL ARMS RANGE SURFACE DANGER AREAS
- ROCKET RANGE DISPERSION AND RICOCHET AREA
- AAA BATTERY
- MAIN ROAD
- SHORELINE

700 0 700 1400 FEET

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

Designed by: G.C. OFSLAGER
Drawn by: A.E. RODRIGUEZ
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US Army Corps of Engineers Rock Island District

FORT FLAGLER MILITARY RESERVATION
JEFFERSON COUNTY, WA

OE PROJECT AREAS

Scale:
Date:
Drawing Code:
Sheet reference number:
Project Number: F10WA031602
PLATE 4

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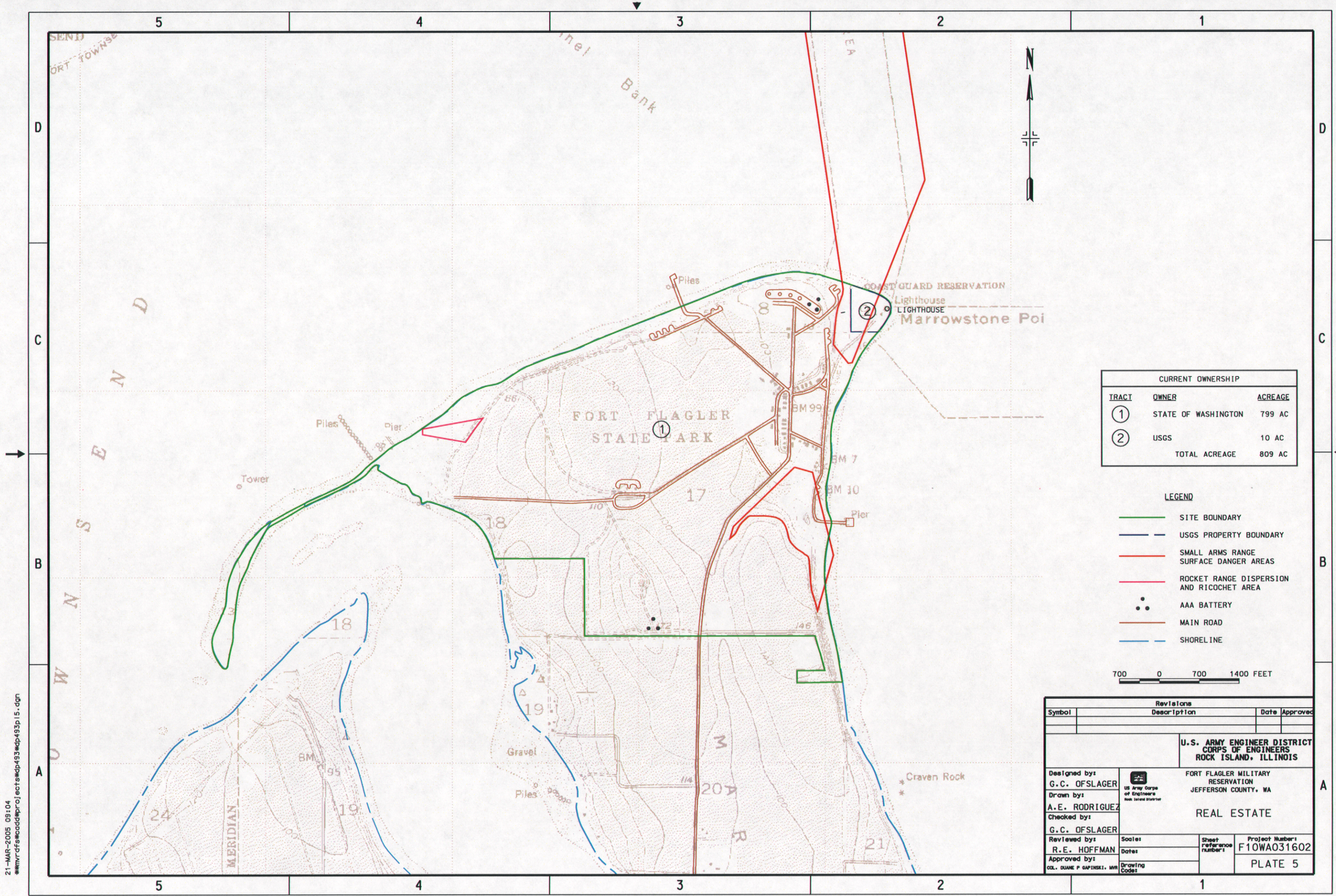
5
4
3
2
1
D
C
B
A
N
Piles
Lighthouse
LIGHTHOUSE
COAST GUARD RESERVATION
Marrowstone Poi
FORT FLAGLER
STATE PARK
BM 99
BM 7
BM 10
Pier
Tower
Piles
Pier
Gravel
Piles
Craven Rock
MERIDIAN
CURRENT OWNERSHIP
TRACT | OWNER | ACREAGE
1 | STATE OF WASHINGTON | 799 AC
2 | USGS | 10 AC
TOTAL ACREAGE | 809 AC
LEGEND
SITE BOUNDARY
USGS PROPERTY BOUNDARY
SMALL ARMS RANGE SURFACE DANGER AREAS
ROCKET RANGE DISPERSION AND RICOCHET AREA
AAA BATTERY
MAIN ROAD
SHORELINE
700 0 700 1400 FEET
Revisions
Symbol | Description | Date | Approved
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS
Designed by: G.C. OFSLAGER
Drawn by: A.E. RODRIGUEZ
Checked by: G.C. OFSLAGER
Reviewed by: R.E. HOFFMAN
Approved by: COL. DUANE P GAPINSKI, MVR
US Army Corps of Engineers Rock Island District
FORT FLAGLER MILITARY RESERVATION
JEFFERSON COUNTY, WA
REAL ESTATE
Scales:
Dates:
Drawing Code:
Sheet reference number:
Project Number: F10WA031602
PLATE 5
21-MAR-2005 09:04
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D C B A

N

K-1 K-2 K-3 K-4 K-5 K-7 K-8 K-9 K-11 K-12 K-13 K-14 K-15 K-16 K-17 K-18 K-19 K-20

Bank

Piles

Pier

Tower

COAST GUARD RESERVATION

Lighthouse

Marrowstone Poi

FORT FLAGLER STATE PARK

BM 99

BM 7

BM 10

Gravel

Craven Rock

MERIDIAN

LEGEND

- SITE BOUNDARY
- PATH OF ASSESSMENT TEAM
- SMALL ARMS RANGE SURFACE DANGER AREAS
- ROCKET RANGE DISPERSION AND RICOCHET AREA
- AAA BATTERY
- PHOTOGRAPH LOCATIONS
- MAIN ROAD
- SHORELINE

700 0 700 1400 FEET

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

Designed by: G.C. OFSLAGER
Drawn by: A.E. RODRIGUEZ
Checked by: G.C. OFSLAGER
Reviewed by: R.E. HOFFMAN
Approved by: COL. DUANE P GAPINSKI, MVR

US Army Corps of Engineers Rock Island District

FORT FLAGLER MILITARY RESERVATION
JEFFERSON COUNTY, WA

PHOTOGRAPH LOCATION

Scale:
Date:
Drawing Code:
Sheet reference number:
Project Number: F10WA031602

PLATE 6

21-MAR-2005 09:06
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