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Authority: Chief of Coast Artillery

12/20/39 ---------- DATE ---------- INITIAL

Register No. 7

ANNEXES TO HARBOR DEFENSE PROJECT
HARBOR DEFENSES OF NARRAGANSETT BAY

The short title of this document is CCA-AN-NARB 38

Under the provisions of A.R. 380-5 (paragraph 27a), each recipient of this document should make return therefor on June 30 and December 31 of each year to the Chief of Coast Artillery, Washington, D. C.

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ANNEX A

SEACOAST GUNS.

1. Gun Defense. The gun defense of Narragansett Bay is divided into the inner defense and the outer defense. These are, however, inter-related. The existing inner defense consists of the armament at Forts Adams, Wetherill, Getty and Kearney, defending the mine fields and submarine barriers and covering the bay out to a line Point Judith - Sakonnet Point. The projected outer defense is designed to hold hostile vessels at such a distance offshore as will permit our Navy to pass freely back and forth between Narragansett Bay and Long Island Sound. The maximum probable bombardment range of the guns of naval vessels is assumed to be 35,000 yards. This implies holding the enemy approximately 40,000 yards off Point Judith so far as deliberate bombardment movements are concerned. The line inshore of which safe passage is provided, is shown in Exhibit 3-B, Annex B.

2. Tactical Organization. The organization of the harbor defense into five groups is shown in Exhibit 1-A.

a. The underwater defense consisting of mine fields in the Eastern and Western Passages, together with the secondary armament of the inner defense, is organized as a mine group.

b. The major caliber guns and mortars of the inner defense may conveniently operate as one group, as their fields of fire all lie principally in the triangle Point Judith-Sakonnet Point - Beavertail.

c. Because of their isolation, the batteries at Point Judith, including the antiaircraft batteries, are organized into one group. The same situation exists at Sakonnet Point, where one group is formed.

d. As the Harbor Defense Command Post is on Conanicut Island with Forts Wetherill and Getty, the only fort commands which need to be provided for are Forts Adams and Kearney. In these two cases, the senior battery commander is hereby designated as fort commander.

e. The two antiaircraft batteries and the machine gun detachment protecting the inner defenses are organized as one group. The command post is located at the Harbor Defense Command Post and also includes an antiaircraft intelligence center designed to serve both outer and inner defenses.

(1) Each of the six antiaircraft batteries is organized into a gun, a machine gun and a searchlight detachment.

3. Present Armament.

a. Batteries of Inner Defense.

(1) There are four major caliber batteries in the inner defense:

(a) Batteries Wheaton (two 12-inch disappearing guns) and Varnum (two 12-inch barbette guns) at Fort Wetherill;

(b) Batteries Edgerton and Greene (each four 12-inch mortars) at Fort Adams.

(2) In addition, there are two 6-inch and two 3-inch batteries covering the mine fields and the antisubmarine net in the Western Passage, and one 6-inch and one 3-inch battery covering those of the Eastern Passage.

(3) Battery Wheaton, two 12-inch DC at Fort Wetherill.

(a) The field of fire of this battery is shown in Exhibit 5-B. While the field of fire of No. 2 gun could be increased toward the left so as to cover the entrance of the Sakonnet River, the cost of cutting away the concrete emplacement is estimated as $3,050; and the need is slight, as the Sakonnet is covered by the mortars and No. 2 Varnum, as well as by the Sakonnet Point batteries. The disadvantage would be incurred in increasing this field of fire to the left, that fire in the increased sector would probably interfere with the batteries on the left flank of Wheaton.

(b) The field of fire of No. 1 gun is masked on the extreme right up to mid-range by the parapet of Battery Walbach on its right but this area is inside the western mine field and is unimportant.

(c) The rate of fire which may be expected for a short period with these guns is approximately 35 seconds per shot per gun using Case II and 50 seconds using Case III.

(4) Battery Varnum, two 12-inch barbette guns at Fort Wetherill.

(a) The field of fire is shown in Exhibit 6-B, Annex B. By removing the inclined steel ladders leading to the loading platform from the side of the carriage and replacing them with vertical ladders, No. 1 gun could be traversed an additional 9½ degrees on each side of the present limiting azimuths. This is unimportant on the right, as both guns can now fire across the Western Passage at a point north of the mine field. On the left, this modification has now been made.

(b) The rate of fire which may be expected for a short time with these barbette guns is approximately 40 seconds per shot per gun using Case II, and 55 seconds using Case III.

(5) Battery Edgerton, four 12-inch mortars, and Battery Greene, four 12-inch mortars, at Fort Adams.

(a) The fields of fire of these two mortar batteries are shown in Exhibit 7-B, Annex B; as the two batteries are close together, their fields of fire are plotted as one. While they are capable of all-around fire, the important part of the field lies between azimuth 90°, or due west, counterclockwise to azimuth 221° or to the northeast.

(b) A rate of fire somewhat under 60 seconds per salvo may be expected.

(c) As these batteries may be expected to fire chiefly in the outer zones, most of the ammunition should be for the longer ranges. The distribution should be four 700-pound projectiles to one 1046-pound projectile.

(6) Rapid Fire Batteries. There are six batteries of the secondary armament -- three 6-inch and three 3-inch. Four of these batteries (two 6-inch and two 3-inch) bear on the Western Passage, covering the mine field and antisubmarine net; and two (one 6-inch and one 3-inch) cover the mine field and antisubmarine nets in the Eastern Passage.

(7) (a) Batteries Cram (two 6-inch DC) and Armistead (two 3-inch BC) at Fort Philip Kearney) have the fields of fire shown in Exhibits 8-B and 9-B, Annex B, and tabulated in paragraph 3 (8) below; these batteries bear on the Western Passage.

(b) Batteries House, (two 6-inch BC) and Whiting (two 3-inch BC) at Fort Getty, have the fields of fire shown in Exhibits 12-B and 13-B of Annex B, and tabulated in paragraph (8) below; these batteries also bear on the Western Passage.

(c) Batteries Dickenson, (two 6-inch BC) and Crittenden (two 3-inch BC) at Fort Wetherill, bear on the Eastern Passage and have the fields of fire shown in Exhibits 10-B and 11-B of Annex B, and tabulated in paragraph (8) following.

(d) It is not necessary to widen the field of fire of any of the above rapid fire batteries.

(8) Limits of Fields of Fire.

Fort	Battery	Gun No.	Azimuth Right Limit	Azimuth Left Limit
			o	o
Kearney	Cram - 2 6" DC	1	25	235
		2	359	205
	Armistead - 2 3" BC	1	356	220
		2	350	185
Getty	House - 2 6" BC	1	180	310
		2	180	310
	Whiting - 2 3" BC	1	143	333
		2	133	338
Wetherill	Dickenson - 2 6" BC	1	140	220
		2	140	220
	Crittenden - 2 3" BC	1	55	280
		2	63	270

b. Additional Armament.

(1) Near Point Judith. One 16-inch, one 8-inch railway, one 155-mm battery, and two 3-gun mobile antiaircraft batteries (Narragansett Pier) are provided for in the project.

(2) 16-inch Battery.

(a) This two-gun battery is to be located on the tract of approximately 146 acres shown in Exhibit 2-A. It is unnecessary to build a wharf. The value of the land was appraised in 1938 as $97,375. A small storehouse, and

barracks and quarters for a detachment of one officer and ten men should be included, this detachment to care also for the 155-mm battery; the construction is to be carried out by the Corps of Engineers under the provisions of paragraph 14 b, AR 100-20. The general type of construction is to be that designated as Type C Emplacement for 2 - 16-inch guns (Inclosure No. 1 and No. 2 to 4th Indorsement, June 13, 1934, C. of E. 381 (Coast Defense) 116; file No. 188-70-32a). This design provides a bombproof traverse housing the power plant and magazines, and a separate bombproof structure for combined plotting and switchboard room. (With reference to the type of emplacement it is to be noted that the War Department policy in this matter is stated in paragraph 2 of the 11th Indorsement dated the Office of The Adjutant General, March 30, 1939, on letter subject "Type Emplacement, 16-inch Gun on Barbette Carriage with Steel Cover Protection," dated the Office of the Chief of Engineers, May 31, 1938, (C. of E. 662 B) (AG 660.2 (5-31-38) (Misc.) E) (OCCA 662/E-22), which states in part "The selection of the type of emplacement for any particular locality will be made the subject of a special study which will take note of local conditions".

(b) The field of fire of the battery, constructed as above, is shown in Exhibit 4-B of Annex B. The azimuth of the line of gun centers should be 258° so that the axis of the field of fire will be 348°. With this directrix, there will be a minimum disadvantage resulting from the inability with this type of emplacement to fire one gun directly over the other at low elevations.

(c) The layout of the battery is shown in Exhibit 3-A.

(3) 155-mm Battery.

(a) This four-gun battery is to be located on a tract of approximately 9 acres shown in Exhibit 2-A. The value of the land was appraised in 1938 as $16,700. The concrete platforms should be so constructed as to permit a wide field of fire. The distance between gun centers should be approximately 30 yards. The azimuth of the line of gun centers should be 335°; the directrix of the field of fire will then be azimuth 245° on the east, and azimuth 65° on the west. This will allow all four guns to fire from the shore line near Narragansett Pier on the northeast to azimuth 305° on the southeast, and from azimuth 5° on the south to the shore line of Block Island Sound on the west. One gun will bear from azimuth 305° to azimuth 5°. Exhibit 4-A shows the field of fire of the battery disposed as above.

(b) It is not necessary to construct permanent ammunition storage facilities at the battery; temporary facilities should be provided when the emergency arises. The short-delay fuze and not the super-quick fuze should be provided for fire against naval targets as the former always will and the latter usually will not function on water impact where ricochet occurs.

(4) Narragansett Pier 8-inch Battery, two railway guns.

(a) The battery is to be located in the 5-acre field in which the Narragansett Pier Railroad terminates at South Pier. As the last 580 yards of this road has not been used since about 1927, new ties and some new rails will have to be put in. The useful part of the tract at South Pier is 660 feet long and can be paralleled by a siding of equal length. See Exhibit 5-A.

(b) If the open plot of ground at South Pier should become no longer available through construction of buildings or otherwise, the battery can be fired from a siding which can be constructed on open grass land approximately 450 yards west of the railroad station. See Exhibit 5-A.

(c) These guns are so mounted as to permit of all-around fire. The useful portion of the field of fire is from azimuth 67° on the west (which is near where the maximum range arc crosses the shore-line) around through the south to azimuth 241° on the east (which is near Beavertail). This arc of fire of 186° has its median at azimuth 334° which should therefore be the directrix; the line of gun centers should have azimuth 244°. It will not be practicable to fire 2 guns over this entire arc of 186° since the plot of ground at South Pier will not permit of sufficient distance between guns to allow of firing one over the other. One gun can fire over all portions of the field and both guns can fire from about due east across Narragansett Bay to about azimuth 34° which is well to the west of Block Island.

(d) Should the South Pier site become no longer available, and the guns be located on the plot one-half mile to the west described in paragraph 3 b (4) (b) above, the same azimuth of the line of gun centers should be secured. In this location the guns should be emplaced approximately 125 yards apart so as to permit of firing one over the other at the longer ranges.

4. Alternative Plan for 8-inch Fixed Battery.

a. As an alternative plan, an 8-inch fixed battery of two guns is to be constructed 2,000 yards south of the 16-inch gun site and 500 yards northwest of Point Judith Light; the plot of 14 acres is shown in Exhibit 2-A. The center of the battery should be 450 yards or more from the center of the 155-mm battery in order that there may be no interference. The value of the land was estimated in 1934 at $350 per acre.

b. The Type E, 1933, layout is to be employed. The axis of the field of fire is to be 15° east of south or azimuth 345°; hence the line of gun centers should be 255°. The Type E construction does not allow of firing one gun over the other at angles of elevation of less than 7½° corresponding to about 10,000 yards range. At about 12° from the line of gun centers, point blank range can be obtained. Therefore this battery may be fired at all ranges from azimuth 267° clockwise to azimuth 63°.

5. Near Sakonnet Point. One 16-inch, one 8-inch, one 155-mm battery, and two 3-gun mobile antiaircraft batteries are provided for in the project.

a. 16-inch Battery.

(1) This two-gun battery is to be located on the tract of approximately 99 acres shown in Exhibit 6-A. The value of the land was appraised in 1938 as $28,362. A storehouse and detachment barracks and quarters should be provided, to be constructed by the Corps of Engineers under the provisions of paragraph 14 b, AR 100-20; this detachment of an officer and ten men can also care for the 8-inch and 155-mm batteries. The general type of construction of the battery is to be that referred to in the 11th Indorsement dated the Office of The Adjutant General, March 30, 1939, on letter subject "Type Emplacement, 16-inch Gun on Barbette Carriage with Steel Cover Protection," dated the Office of the Chief of Engineers, May 31, 1938, (C of E 662 B) (AG 660.2 (5-31-38) (Misc.) E) (OCCA 662/E-22), which provides for two 16-inch guns on barbette carriages with steel envelope covers for guns and carriages. This design provides a bombproof traverse housing the magazines and power plant and a separate bombproof structure for combined plotting and switchboard room.

(2) The field of fire, constructed as above, is shown in Exhibit 14-B of Annex B. The azimuth of the line of gun centers should be 265° so that the axis of the field of fire will be 355°. With this axis, both guns can fire from a line which strikes Point Judith Neck just south of Narragansett Pier, counterclockwise to any important part of Buzzards Bay within range.

(3) The layout of the battery is shown in Exhibit 7-A.

b. 8-inch Battery.

(1) This two-gun battery is to be located on a tract of approximately 22 acres shown in Exhibit 6-A. The value of the land was appraised in 1938 as $9,220. The Type E, 1933 layout is to be employed. As the axis of the field of fire is to be due south, the line of gun centers should be azimuth 90°. Space at the northeast corner overlooking the swamp should be left for an antiaircraft battery.

(2) The Type E layout does not permit of firing one gun over the other at angles of elevation of less than 7⅓° corresponding to a range of about 10,000 yards. At about 12° from the line of gun centers point blank range can be obtained. Therefore this battery may be fired at all ranges from azimuth 78° counterclockwise to azimuth 282° or from a line toward Narragansett Pier to all points within maximum range in Buzzard's Bay. See Exhibit 14-B, Annex B.

c. 155-mm Battery.

(1) This battery of four guns is to be constructed on Salconnet Point about 350 yards from the tip of the point, on a strip of about 4⅓ acres, the estimated cost of which is $7,755, as appraised in 1938. A right of way must be ensured over an existing sandy road or drift-way. The concrete platforms should permit of a wide field of fire. The guns should be arranged on a straight line with a distance between gun centers of approximately 30 yards.

(2) The azimuth of the line of gun centers should be 30°. This permits all four guns to fire on the east from the shore-line to a due south line. On the west, all four guns can fire from azimuth 60° (which is between Block Island and Point Judith) to a due north line. The field of fire is shown in Exhibit 8-A.

(3) It is not necessary to construct permanent ammunition storage facilities at the battery; temporary facilities should be provided when the emergency arises. The short-delay fuze and not the super-quick fuze should be provided for fire against naval targets as the former always will and the latter usually will not function on water impact where ricochet occurs.

6. a. The locations of proposed fixed and railway batteries described in this Annex were approved by the War Department in 12th Indorsement, W.D., AGO, August 31, 1933, (AG 660.2 (1-30-33) (Misc.) E).

b. The sites were surveyed in 1933-34 by the District Engineer, Providence, Rhode Island. The report on the sites at Sakonnet Point is dated April 28, 1934; the report on the sites at Point Judith is dated May 22, 1934. These surveys were made pursuant to 18th Indorsement, C. of E., October 16, 1933 (AG 660.2 (1-30-33) (Misc.). Appraisals as to the value of the sites for the 16-inch battery at Point Judith and for the 16-inch and 8-inch fixed batteries at Sakonnet Point were made by the District Engineer, Providence, Rhode Island, on April 12, 1938 (Reference: 10th Ind. dated the O. C. of E., May 12, 1938, on letter subject "Recommendation for Acquisition of Land for Seacoast Armament, Harbor Defenses of Narr. Bay and Long Island Sound," dated the O. C. of E., October 6, 1937 (C of E 662 B (Narr. Bay) (AG 660.2 (10-6-37) (Misc.) (OCCA 601/17-3).

c. A monument is now being placed to mark the position of No. 1 gun of the 16-inch battery at Sakonnet Point and one at Point Judith, and their latitude and longitude determined.

7. Camouflage. A continuous program to provide for the natural camouflage of the fixed elements of the harbor defense will be instituted by the local commander and upon war becoming imminent he will provide for the necessary artificial camouflage. Reference Section I, Chapter 9, Coast Artillery Field Manual, Volume I, Seacoast Artillery, Part One; Basic Field Manual, Volume VIII; and Part Two, Engineer Field Manual, Volume II.

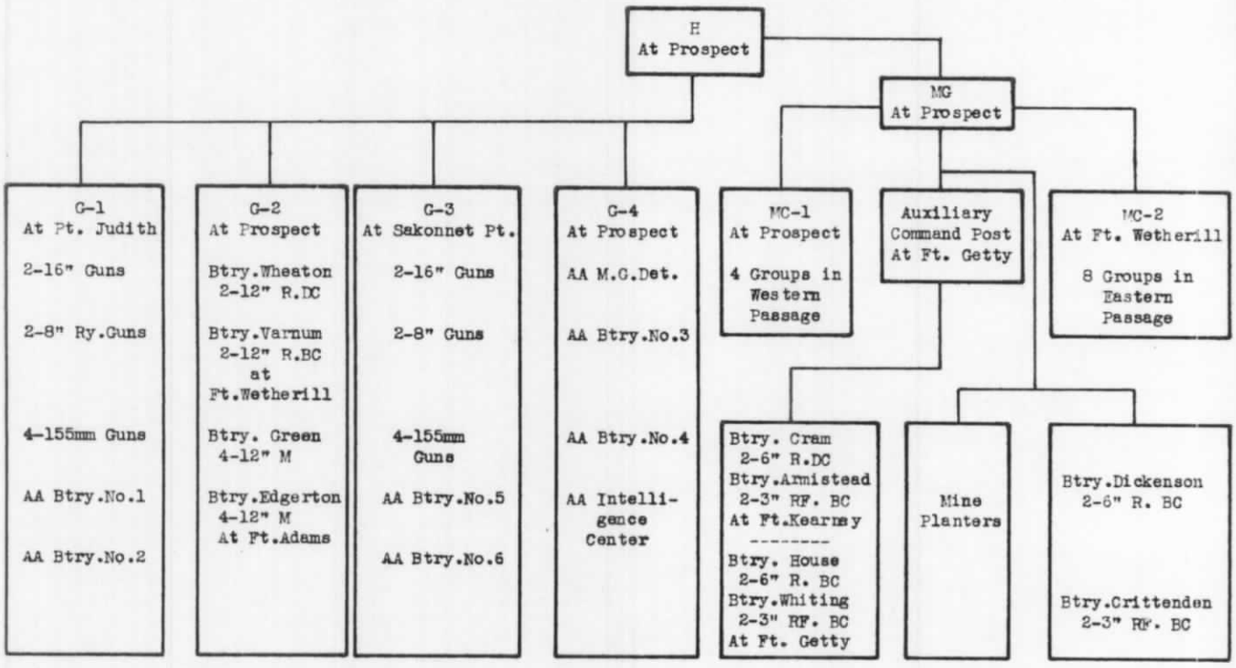
8. Storage of Explosives. The regulations for storage of explosives, including mine explosives (Technical Regulations 1370-A, to include Changes 4) are being complied with. See Exhibit 9-A.

9. Ammunition. The war reserve and battle allowances of ammunition for the batteries of the harbor defense are shown in Exhibit 16-A.

10. Cost estimate. An estimate of cost and priority guide is appended as Exhibit 17-A. Those items which should be procured and installed in peacetime are marked with an A. Those which should be procured in peace but whose installation may be deferred until an emergency arises are marked B. Those items to be procured and installed when an emergency arises are marked C.

TACTICAL ORGANIZATION

HARBOR DEFENSES OF NARRAGANSETT BAY

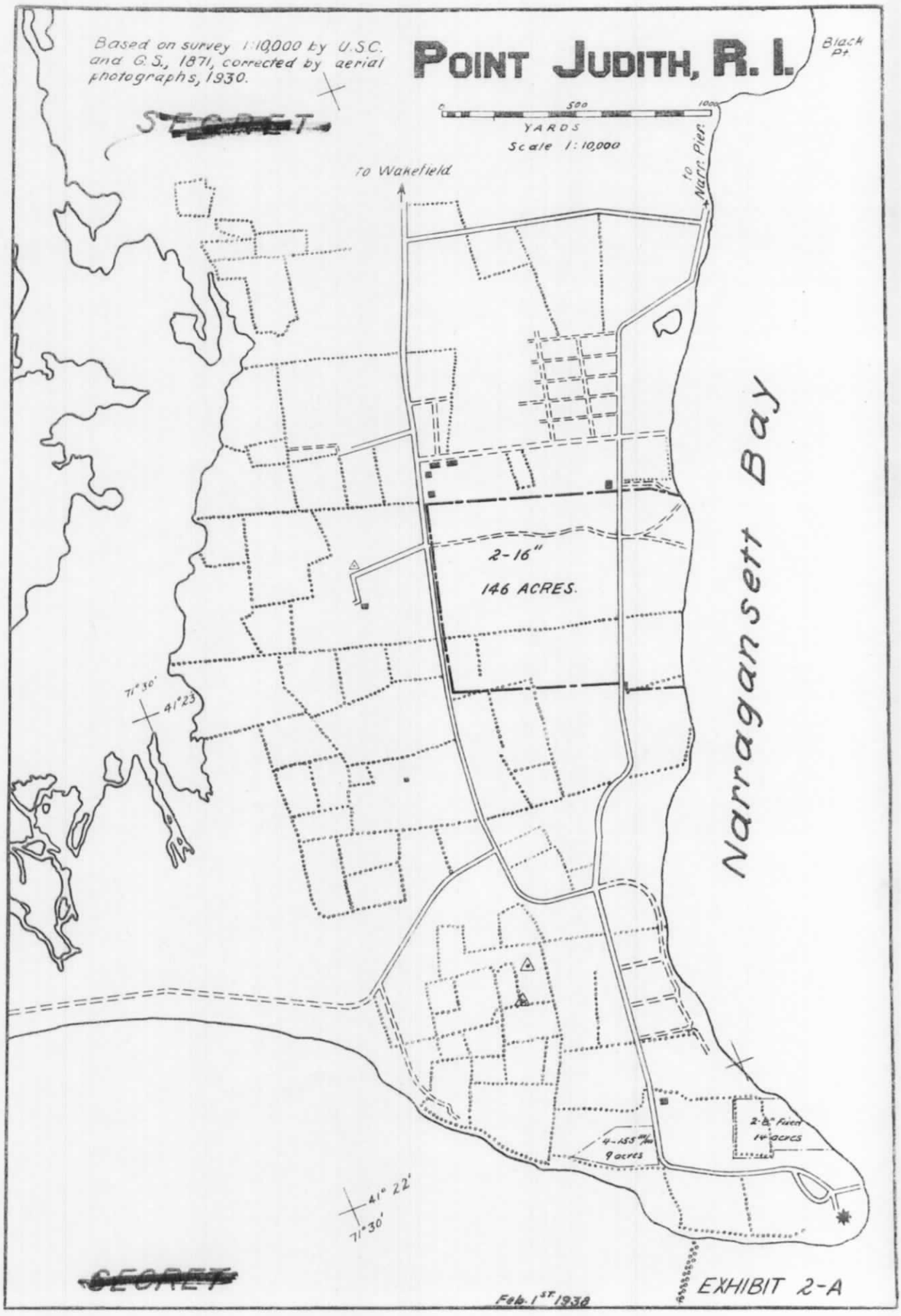


Each AA Battery includes a gun, a machine gun, and a searchlight detachment.

Fort Commanders, where designation is needed; Fort Adams - Senior B.C. Fort Kearney - Senior B.C.

SECRET

EXHIBIT 1-A


Based on survey 1:10,000 by U.S.C. and G.S., 1871, corrected by aerial photographs, 1930.
POINT JUDITH, R. I.
Black Pt.
SECRET
0 500 1000
YARDS
Scale 1:10,000
To Wakefield
To Navy Pier
2-16"
146 ACRES.
Narragansett Bay
71°30'
41°23
41° 22'
71°30'
4-155 mm
9 acres
2-8" Fixed
14 acres
SECRET
Feb. 1ST 1938
EXHIBIT 2-A

PROPOSED GROUND PLAN FOR 16" BATTERY

POINT JUDITH, R. I.

Area: 105 Acres ±
Type "C", 1934 layout.
One combined plotting and switchboard room in bombproof.
One small storehouse
Barracks for maintenance detachment of 10 men who will also maintain neighboring 155 mm battery.
One set lieutenant's quarters.

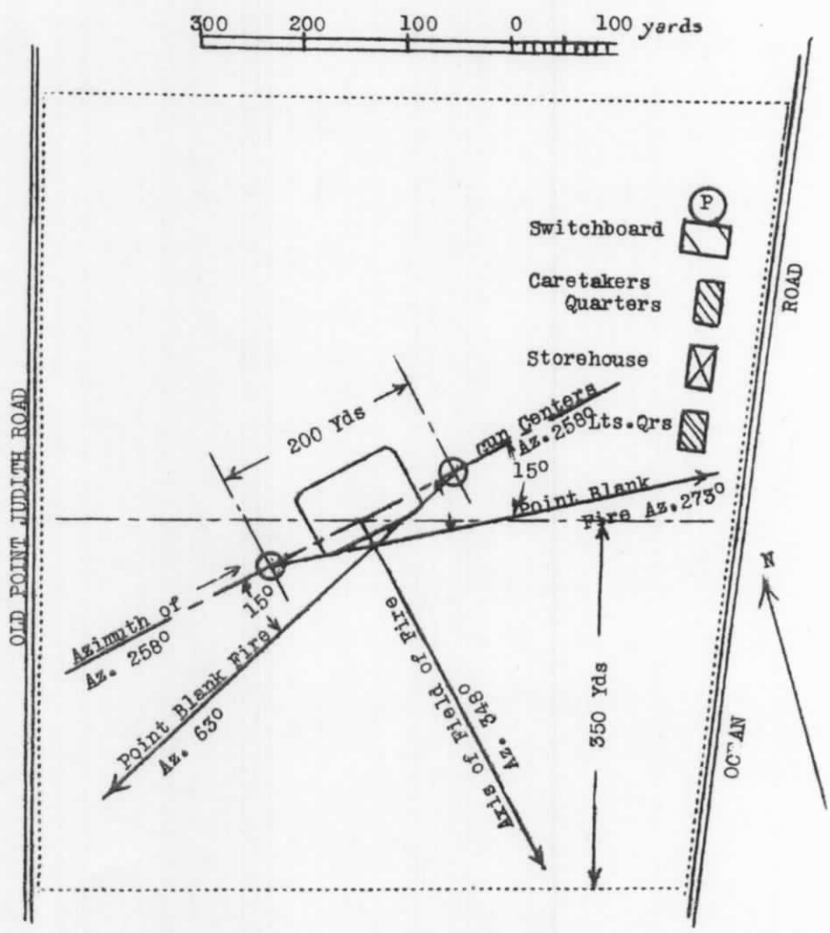
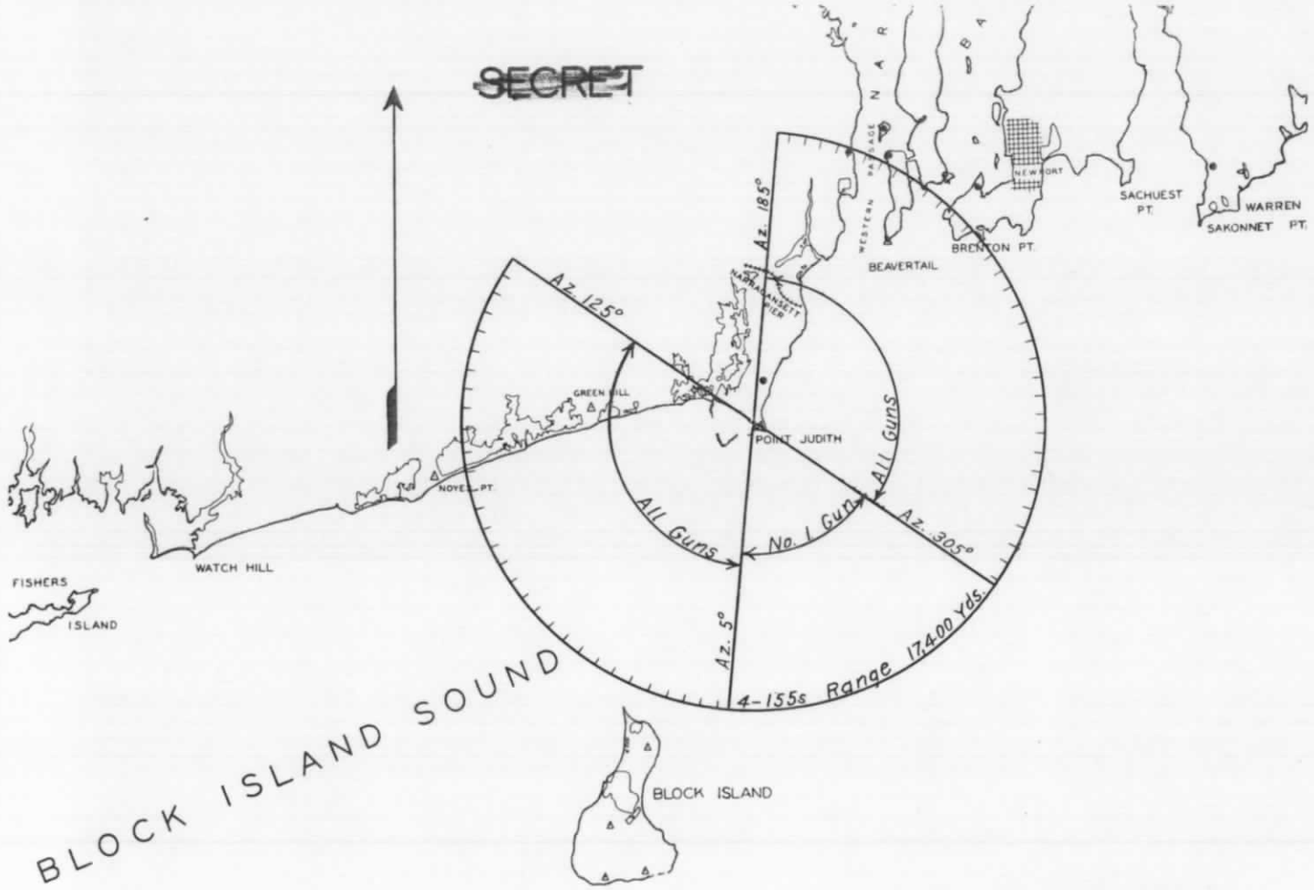
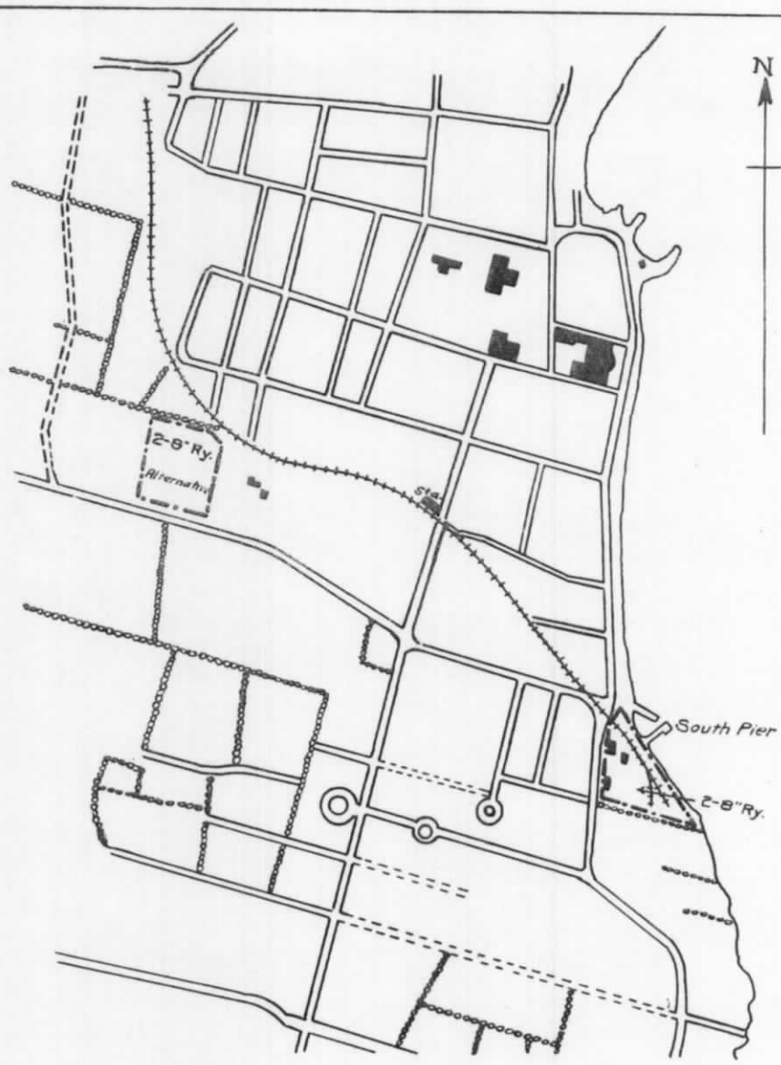


EXHIBIT NO. 3-A.

SECRET


SECRET
NARRAGANSETT BAY
WESTERN PASSAGE
NEWPORT
SACHUEST PT.
WARREN
SAKONNET PT.
BRENTON PT.
BEAVERTAIL
Az. 185°
Az. 125°
GREEN HILL
POINT JUDITH
NOYES PT.
WATCH HILL
FISHERS ISLAND
All Guns
No. 1 Gun
All Guns
Az. 305°
Az. 5°
4-155s Range 17,400 Yds
BLOCK ISLAND SOUND
BLOCK ISLAND
155MM BATTERY
POINT JUDITH
MONTAUK LIGHT
FORT POND BAY
LONG ISLAND
SECRET
EXHIBIT 4-A
10000 5000 0 10000 20000



NARRAGANSETT PIER

Traced from survey by U.S.C.& G.S., 1902.

Scale 1:10,000

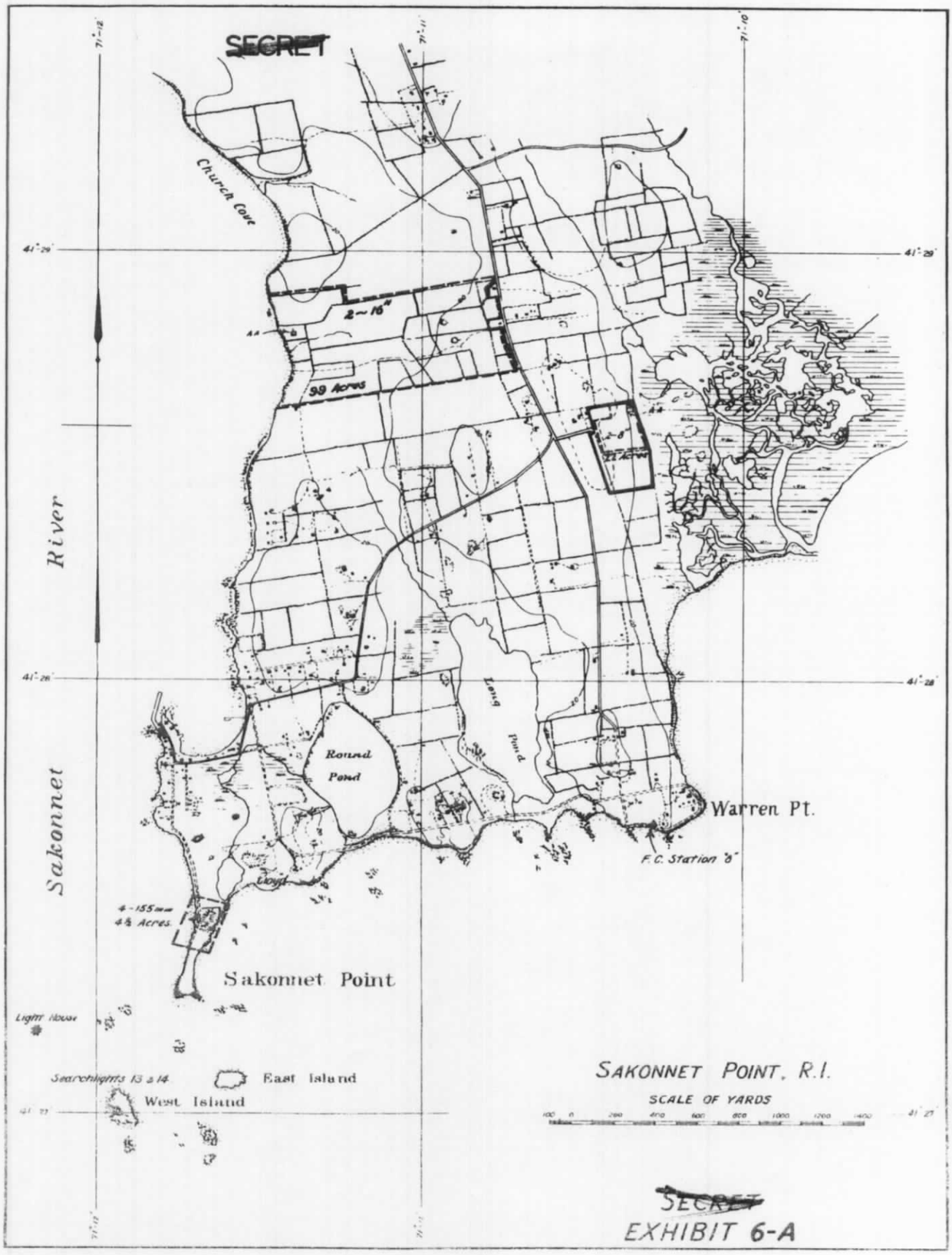
0 500 1000
YARDS

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EXHIBIT 5-A

Feb. 1st 1938.

Corrected chart per 16th Ind., AG 660.2
(5-2-34)(Misc.) E, dated Jan. 2, 1935.



PROPOSED GROUND PLAN FOR 16" BATTERY
SAKONNET POINT, R. I.

Area: 99 acres ±.
Type "C", 1934 layout.
One combined plotting and switchboard room in bombproof.
One small storehouse. One set lieutenant's quarters.
Barracks for maintenance detachment of ten men who will also maintain 8-inch and 155 mm batteries.

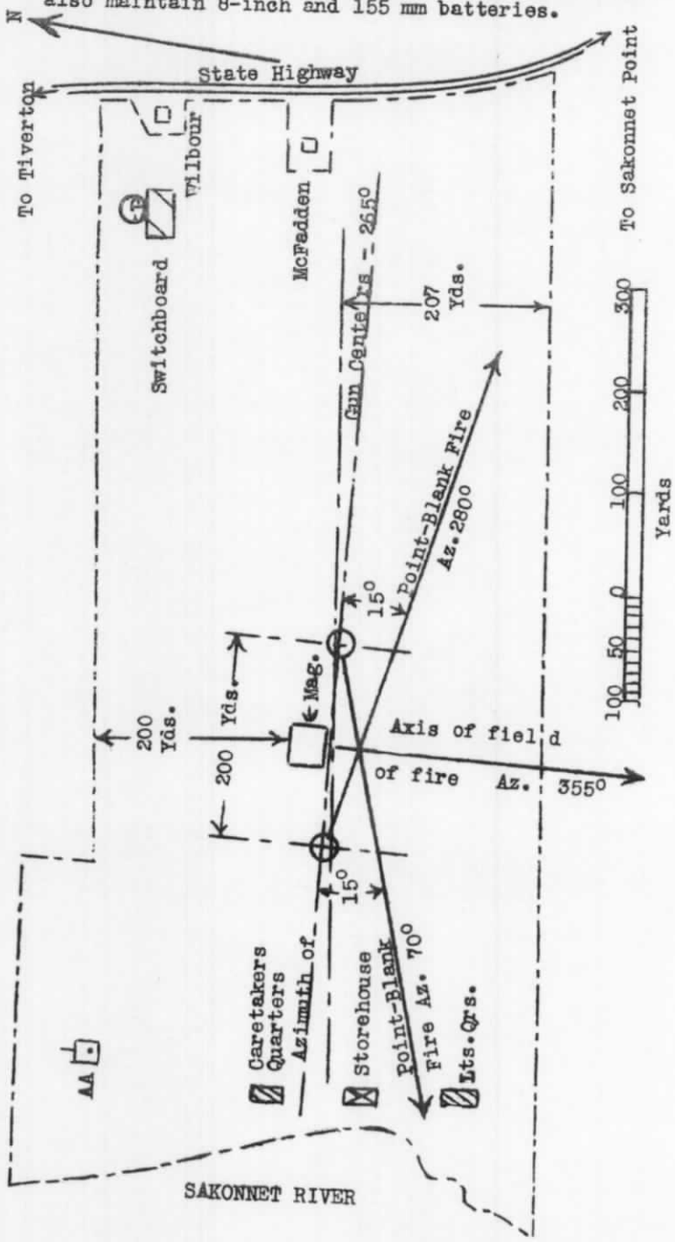
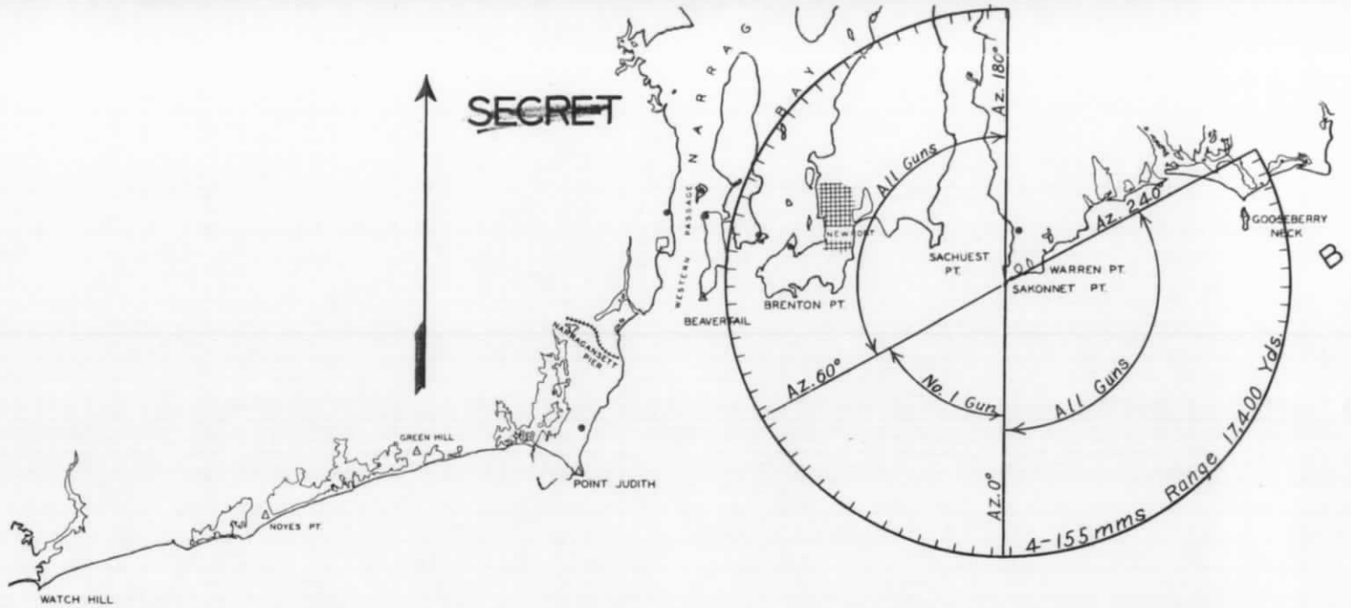


EXHIBIT NO. 7-A

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155MM BATTERY
SAKONNET POINT

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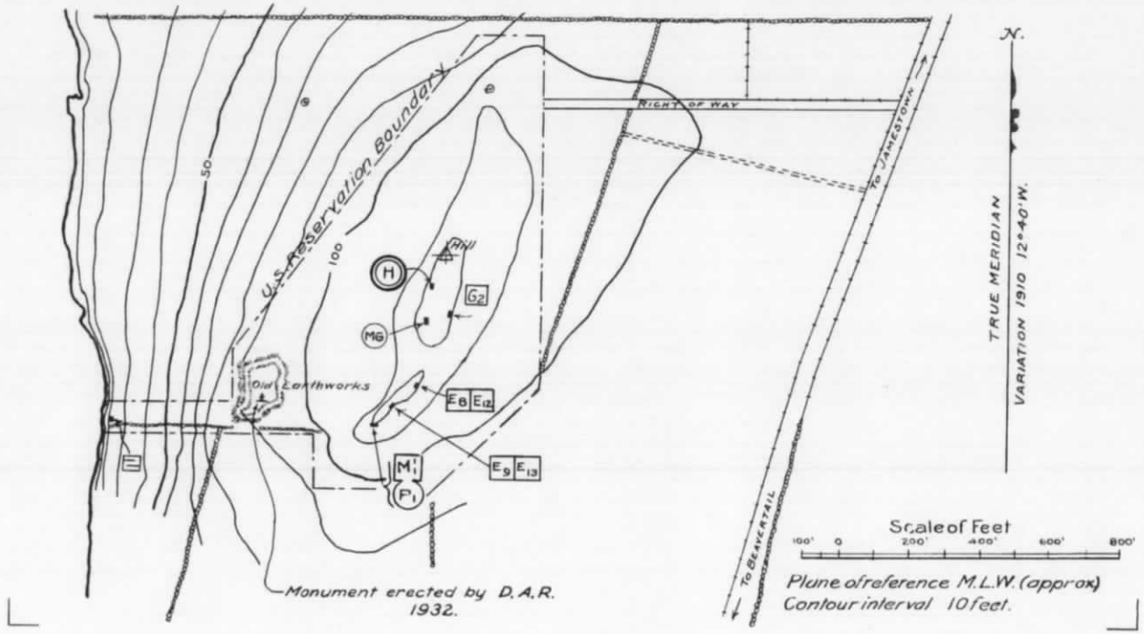
EXHIBIT 8-A

EDITION OF JAN. 28, 1925.
REVISIONS: DEC. 10, 1928, OCT. 25, 1934; APR. 4, 1938.

SERIAL NUMBER

NARRAGANSETT BAY, R.I.

PROSPECT HILL.



Monument erected by D.A.R. 1932.

Plane of reference M.L.W. (approx)
Contour interval 10 feet.

On Caretaking Status.

SECRET

Exhibit 10-A

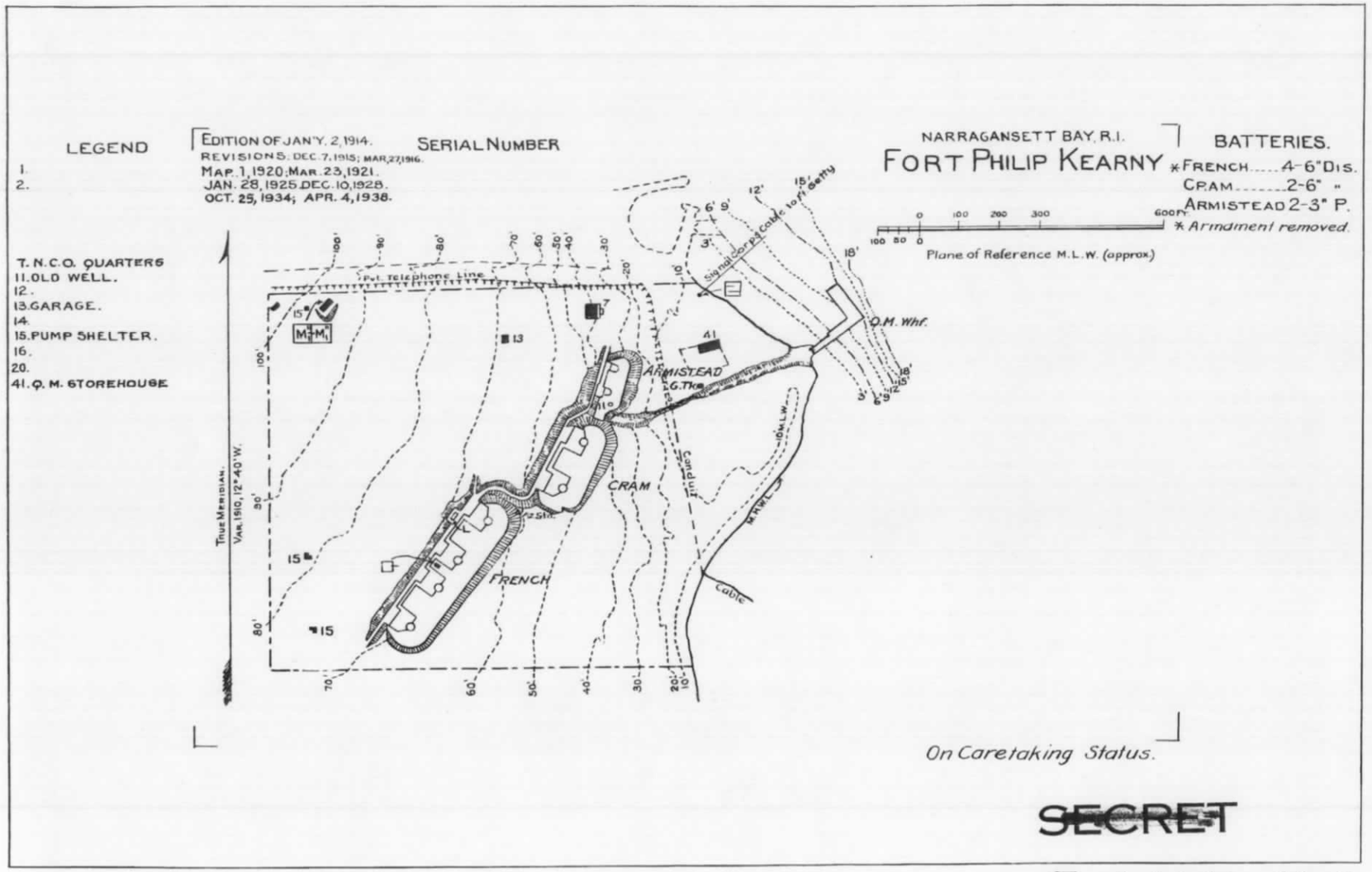

LEGEND
1.
2.
T. N.C.O. QUARTERS
11. OLD WELL.
12.
13. GARAGE.
14.
15. PUMP SHELTER.
16.
20.
41. Q. M. STOREHOUSE
EDITION OF JAN'Y. 2, 1914. SERIAL NUMBER
REVISIONS: DEC. 7, 1915; MAR. 27, 1916.
MAP. 1, 1920; MAR. 23, 1921.
JAN. 28, 1925. DEC. 10, 1928.
OCT. 25, 1934; APR. 4, 1938.
NARRAGANSETT BAY, R.I.
FORT PHILIP KEARNY
BATTERIES.
*FRENCH ..... 4-6" DIS.
CRAM ..... 2-6" "
ARMISTEAD 2-3" P.
* Armament removed.
0 100 200 300 600 FT.
100 50 0
Plane of Reference M.L.W. (approx)
Pwt. Telephone Line
Signal Corps Cable to Ft Getty
O.M. Whf.
ARMISTEAD
G.Tks
CRAM
FRENCH
Conduit
M.H.W.L.
M.L.W.
Cable
True Meridian.
Var. 1910, 12° 40' W.
On Caretaking Status.
SECRET

Exhibit II-A

LEGEND.

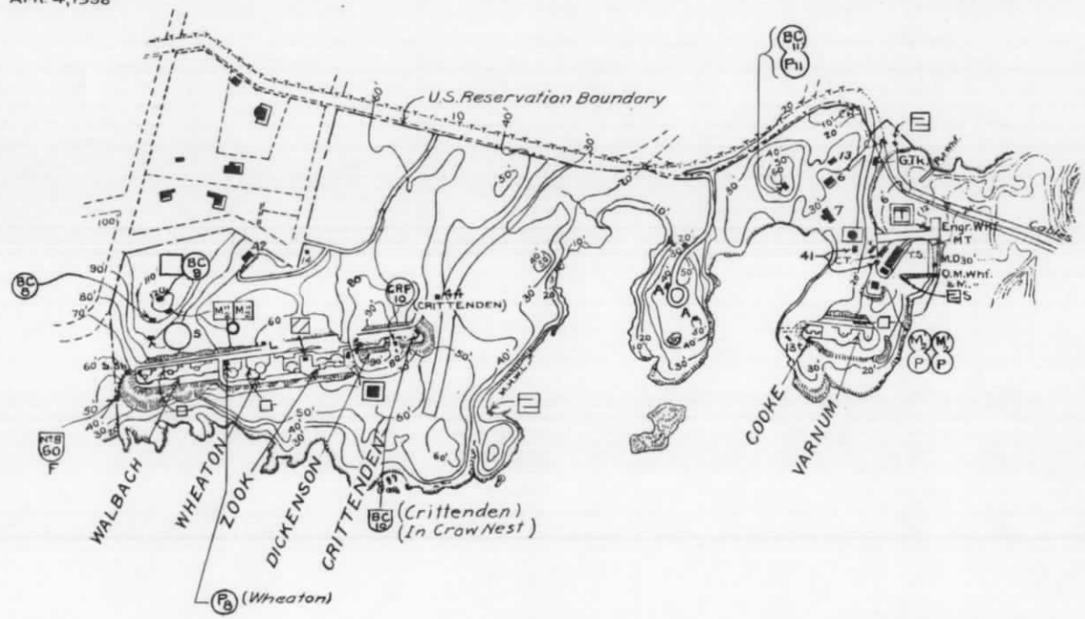
1.
2.
3.
4.
5.
6. N.C.O. QUARTERS.
7. BARRACKS.
8.
9.
10.
11.
12.
13. GARAGE.
14.
21.
41. ORD. ST. ROOM.
42. E.D. STOREHOUSE.
43.
71.
44. E.D. STONE CRUSHER.

EDITION OF MAR. 27, 1916.
REVISIONS: MAR. 1, 1920; MAR. 23, 1921. JAN. 28, 1925; DEC. 10, 1926, OCT. 25, 1934; APR. 4, 1938

SERIAL NUMBER

NARRAGANSETT BAY, R.I.

FORT WETHERILL.



PLANE OF REFERENCE M.L.W.

SCALE OF FEET.
100 0 1 2 3 4 5 600 1200 1800

BATTERIES.

VARNUM ..... 2-12" N.DIS.
WHEATON 2-12" DIS.
•WALBACH 2-10" "
‡ZOOK ..... 3-6" "
DICKENSON 2-6" P.
CRITTENDEN 2-3" P.
‡COOKE ..... 2-3" P.

‡ Armament removed.
• Armament not required in Project.

A.A. Btry. No. 4
A - 3-3" Fixed Guns

On Caretaking Status

SECRET

Exhibit 12-A

LEGEND.

1.
2.
3.
4.
5.
6.
7. BARRACKS.
8.
9.
10.
12.
13.
14.
15.
20. ROCK FILL EMBANKMENT.
40.
41. STORE HOUSE, E.D.
70

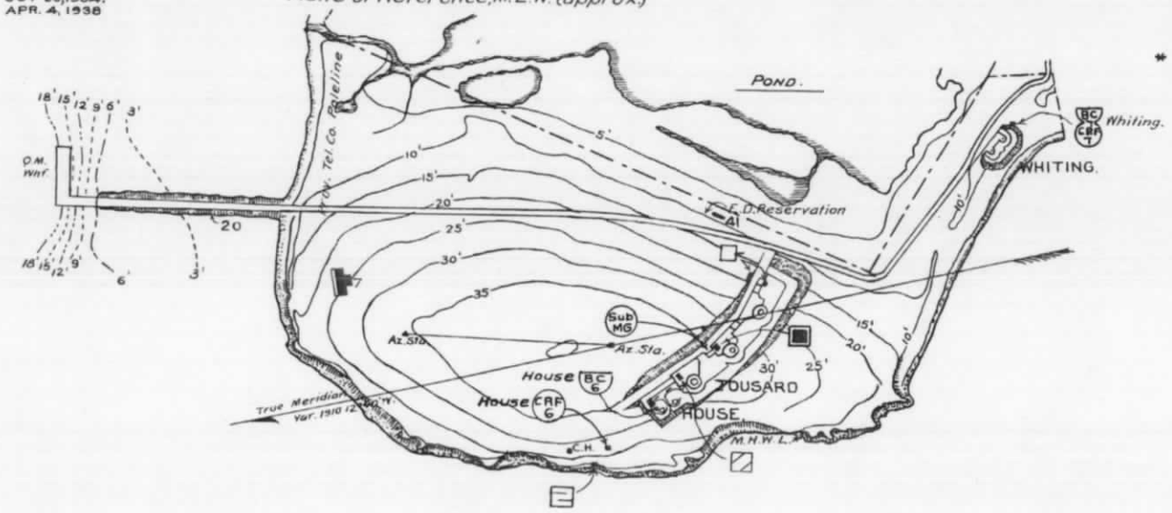
EDITION OF JAN'Y. 2, 1914. SERIAL NUMBER
REVISIONS: DEC. 7, 1915; MAR. 27, 1916.
MAR. 1, 1920; MAR. 23, 1921.
JAN. 28, 1925.
DEC. 10, 1926.
OCT. 25, 1934.
APR. 4, 1938

0 100 200 300 400 800 1200 FT.
100 50 0

NARRAGANSETT BAY, R.I.

FORT GETTY.

Plane of Reference, M.L.W. (approx.)



BATTERIES.

* TOUSARD....3-12"Dis
HOUSE.....2-6" P.
WHITING.....2-3" P.

* Armament not required in Project.

On Caretaking Status

SECRET

Exhibit 13-A

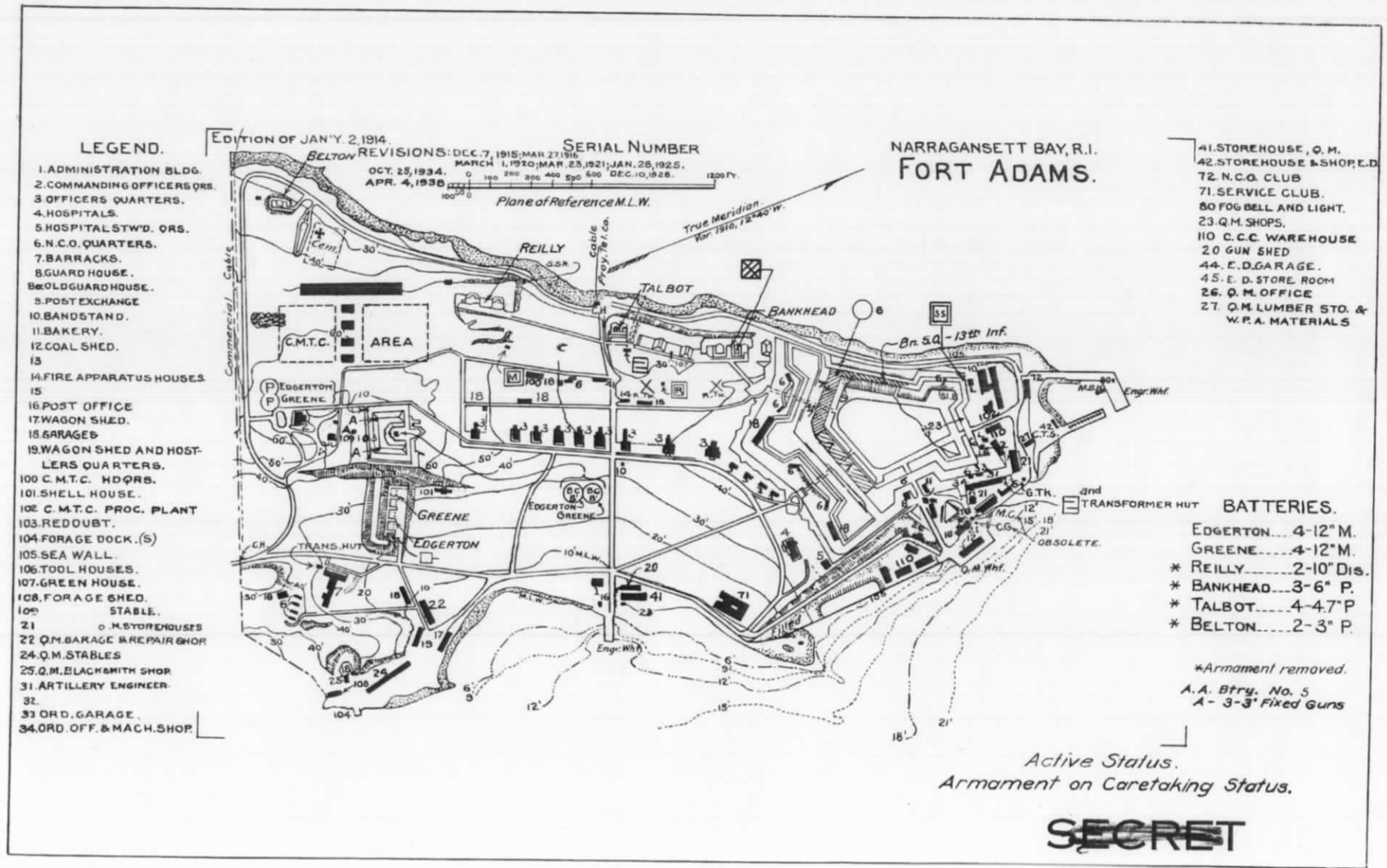
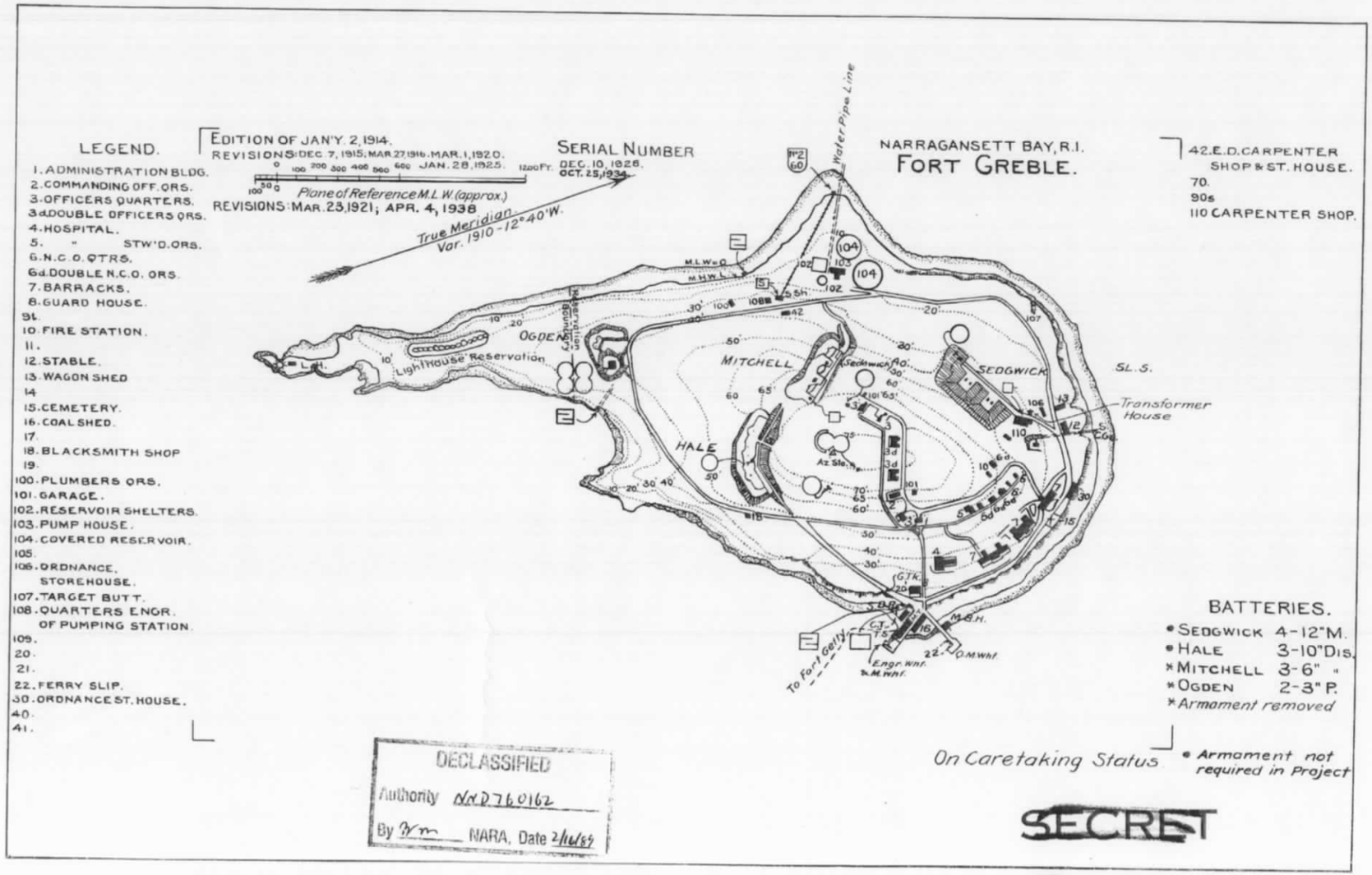

NARRAGANSETT BAY, R.I.
FORT ADAMS.
EDITION OF JAN'Y. 2, 1914.
SERIAL NUMBER
REVISIONS: DEC. 7, 1915; MAR 27, 1916. OCT. 25, 1934. APR. 4, 1938
MARCH 1, 1920; MAR. 23, 1921; JAN. 28, 1925. DEC. 10, 1926.
Plane of Reference M.L.W.
True Meridian Var. 1910, 12°40' W.
LEGEND.
1. ADMINISTRATION BLDG.
2. COMMANDING OFFICERS QRS.
3. OFFICERS QUARTERS.
4. HOSPITALS.
5. HOSPITAL STW'D. QRS.
6. N.C.O. QUARTERS.
7. BARRACKS.
8. GUARD HOUSE.
8a. OLD GUARD HOUSE.
9. POST EXCHANGE
10. BAND STAND.
11. BAKERY.
12. COAL SHED.
13.
14. FIRE APPARATUS HOUSES.
15.
16. POST OFFICE
17. WAGON SHED.
18. GARAGES
19. WAGON SHED AND HOSTLERS QUARTERS.
100. C.M.T.C. HDQRS.
101. SHELL HOUSE.
102. C.M.T.C. PROC. PLANT
103. REDOUBT.
104. FORAGE DOCK.(S)
105. SEA WALL.
106. TOOL HOUSES.
107. GREEN HOUSE.
108. FORAGE SHED.
109. STABLE.
21. O.M. STOREHOUSES
22. Q.M. GARAGE & REPAIR SHOP
24. Q.M. STABLES
25. Q.M. BLACKSMITH SHOP
31. ARTILLERY ENGINEER.
32.
33. ORD. GARAGE.
34. ORD. OFF. & MACH. SHOP.
41. STOREHOUSE, Q.M.
42. STOREHOUSE & SHOP, E.D.
72. N.C.O. CLUB
71. SERVICE CLUB.
80. FOG BELL AND LIGHT.
23. Q.M. SHOPS.
110. C.C.C. WAREHOUSE
20. GUN SHED
44. E.D. GARAGE.
45. E.D. STORE ROOM
26. Q.M. OFFICE
27. Q.M. LUMBER STO. & W.P.A. MATERIALS
BELTON
REILLY
TALBOT
BANKHEAD
Br. S.Q. - 13th Inf.
C.M.T.C.
AREA
EDGERTON
GREENE
TRANS. HUT
Engr. Wh'f
Q.M. Wh'f
Commercial Cable's
Gable Prov. Tel. Co.
OBSOLETE.
and TRANSFORMER HUT
BATTERIES.
EDGERTON.... 4-12" M.
GREENE..... 4-12" M.
* REILLY..... 2-10" Dis.
* BANKHEAD... 3-6" P.
* TALBOT..... 4-4.7" P
* BELTON..... 2-3" P.
*Armament removed.
A.A. Btry. No. 5
A - 3-3" Fixed Guns
Active Status.
Armament on Caretaking Status.
SECRET

Exhibit 14-A



DECLASSIFIED
Authority NND760162
By ... NARA, Date 2/14/69

SECRET

Exhibit 15-A

~~SECRET~~

ANNEX A EXHIBIT 16-A H. D. OF NARRAGANSETT BAY

WAR RESERVE AND BATTLE ALLOWANCE OF AMMUNITION

Approved by the Secretary of War in the 5th Indorsement, WD, AGO March 28, 1933 (AG 381.4 (2-16-33) (Misc.) E) (OCCA 471.308/04), except as noted under (a).

Batteries	Guns	Caliber & Type	Projectile	Rounds W.R.	Rounds C.S.	Rounds B.A.	Remarks
Sakonnet Point	2	16-inch		400	300	100	(a)
Sakonnet Point	2	8-inch LRG		500	200	300	
Sakonnet Point	4	155-mm		1600	800	800	~~Store in NG Storehouse, Ft. Greble.~~
Point Judith	2	16-inch		400	300	100	(a)
Point Judith	4	155-mm		1600	800	800	Store at Btry. French, Ft. Kearney.
Narragansett Pier	2	8-inch Ry		500	500	0	250 rounds to be forwarded with battery.
Greene	4	12-inch M		960	360	600	Of B.A. of 600 rds., each battery is to have 100 1046-lb. and 500 700-lb. projectiles; of Cent. Stor.
Edgerton	4	12-inch M		960	360	600	of 360 rds., each battery is to have 100 1046-lb. and 260 700-lb. projectiles. ~~Store projectiles at battery~~ 697 powder charges at ~~Btry.~~ Bankhead, 503 at ~~Btry.~~ Belton.
Varnum	2	12-inch MRG	870-lb.	480	-	480	
Wheaton	2	12-inch MRG	1070-lb.	480	-	480	
House	2	6-inch BC	(A.P.	600	200	400	
			(H.E.	200	-	200	
Dickenson	2	6-inch BC	(A.P.	1200	400	800	Store 465 powder charges at Btry. Zook.
			(H.E.	400	-	400	
Cram	2	6-inch DC	(A.P.	1200	400	800	
			(H.E.	400	-	400	
Whiting	2	3-inch BC		400	100	300	
Crittenden	2	3-inch BC		800	200	600	Store 300 powder charges at Btry. Walbach.
Armistead	2	3-inch BC		800	200	600	

NOTES: (a) Magazine capacity limits B.A. to 100 rounds.
Ammunition to be stored at battery to which it pertains except as other wise stated.
~~No increase in 3, 6 or 12-inch ammunition over that now on hand can be accommodated until surplus 10-inch ammunition is removed from H.D.~~

EXHIBIT 16-A

~~SECRET~~

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project				Ordnance	Engineer Material	Engineer Labor	Engineer Land	Total
			SAKONNET POINT				$	$	$	$	$
4	1	A	16" Battery, 2-16" Guns, Sakonnet Point				1,040,000	527,650	237,350	28,362	1,833,362
			Ordnance:								
			2 - 16" Guns and Carriages at $520,000			$1,040,000					
			Engineers:								
			Purchase of 99 acres of Land (Ref.: AG 660.2 (10-6-37) (Misc.) E); OCCA 601/17-B)			$28,362					
			Type "C" Emplacement:	Material	Labor	Total					
			Protective Magazine Traverse	$141,400	$ 86,600	$228,000					
			2 Gun Blocks	76,000	20,000	96,000					
			Mounting 2 Guns	10,000	20,000	30,000					
			1 Plotting and Switchboard Room	33,750	16,250	50,000					
			1 Latrine	4,000	2,000	6,000					
			Power and Light Equipment	157,500	17,500	175,000					
			Water Supply and Sewerage	20,000	10,000	30,000					
			Plant and Temporary Buildings	35,000	15,000	50,000					
			Contingencies	50,000	50,000	100,000					
			Total	$527,650	$237,350	$765,000					
4	2	A	8" Battery, 2-8" Guns, (Fixed) Sakonnet Point				250,000	106,000	50,000	9,220	415,220
			Ordnance:								
			2 - 8" Carriages (fixed) at $125,000 (Navy Guns on hand)			$250,000					
			Engineers:								
			Purchase of 22 acres of Land (Ref.: AG 660.2 (10-6-37) (Misc.) E); OCCA 601/17-B)			$9,220					
			Type "E" Emplacement:	Material	Labor	Total					
				$106,000	$50,000	$156,000					
4	3	A	155 mm Battery, 4-155 mm, Sakonnet Point				10,000	4,500	2,500	7,755	24,755
			Ordnance:								
			Modification of Trails for: 4 - 155 mm Guns		$800						
			4 - Sights for 155 mm Guns at $2,300		9,200	$10,000					
			Engineers:								
			Purchase of 4½ acres of Land (Ref.: AG 660.2 (10-6-37) (Misc.) E); OCCA 601/17-B)			$7,755					
			4 Emplacements:	Material	Labor	Total					
				$4,500	$2,500	$7,000					

SECRET

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Total
				$	$	$	$	$
			POINT JUDITH					
5	1	A	**16" Battery, 2-16" Guns, Point Judith**	1,040,000	527,650	237,350	97,375	1,902,375
			Ordnance:					
			2 - 16" Guns and Carriages at $520,000	$1,040,000				
			Engineers:					
			Purchase of 140 acres of Land (Ref.: AG 660.2 (10-6-37) (Misc.) E); OCCA 601/17-B)	$97,375				
			Type "C" Emplacement: Material / Labor / Total					
			Protective Magazine Traverse: $141,400 / $86,600 / $228,000					
			2 Gun Blocks: 76,000 / 20,000 / 96,000					
			Mounting 2 Guns: 10,000 / 20,000 / 30,000					
			1 Plotting and Switchboard Room: 33,750 / 16,250 / 50,000					
			1 Latrine: 4,000 / 2,000 / 6,000					
			Power and Light Equipment: 157,500 / 17,500 / 175,000					
			Water Supply and Sewerage: 20,000 / 10,000 / 30,000					
			Plant and Temporary Buildings: 35,000 / 15,000 / 50,000					
			Contingencies: 50,000 / 50,000 / 100,000					
			Total: $527,650 / $237,350 / $765,000					
5	2	A	**155 mm Battery, 4-155 mm, Point Judith**	10,000	4,500	2,500	16,700	33,700
			Ordnance:					
			Modification of Trails for: 4 - 155 mm Guns	$800				
			4 - Sights for 155 mm Guns at $2,300	$9,200	$10,000			
			Engineers:					
			Purchase of 9.3 acres of Land (Ref.: AG 660.2 (10-6-37) (Misc.) E); OCCA 601/17-B)		$16,700			
			4 Emplacements: Material $4,500 / Labor $2,500 / Total $7,000					
			NARRAGANSETT PIER					
5	3	B	**8" Railway Battery, 2-8" Railway Guns, Narragansett Pier**	443,300	4,500	2,500		450,300
			Ordnance:					
			2 Carriages, Railway for 8" Guns	$400,000				
			2 Sets (on carriage) Fire Control Equipment	13,300				
			2 Ammunition Cars	10,000				
			2 Powder Cars	10,000				
			2 Tool Cars	10,000	$443,300			
		C	Engineers:					
			Lay new track at $12.50 per yard; repair 580 yards track. Material $4,500 / Labor $2,500 / Total $7,000					
			Land to be leased in an emergency.					
			TOTALS	$2,793,300	$1,174,800	$532,200	$159,412	$4,659,712

Class A - To be procured and installed in peacetime.
Class B - To be procured in peacetime and installed when an emergency arises.
Class C - To be procured and installed when an emergency arises.

SECRET

ANNEX B

FIRE CONTROL INSTALLATIONS

1. The tactical organization of the batteries of the harbor defense is shown in Exhibit 1-A of Annex A, Seacoast Guns. The system of communication between the elements of the command is shown in the Fire Control Diagram for the Eventual Status of the harbor defense, which accompanies this annex as Exhibit 1-B. The location on the ground of the new elements of the fire control system, provided for in this plan, is shown on map attached, marked Exhibit 2-B.

2. In determining the fire control system needed by a battery, cognizance is taken of the following:

a. The angle of intersection at the target must be 15° or greater, and the area within 15° of the baseline (as measured from both base ends) is to be excluded because the construction of the plotting board arms does not permit utilizing this area.

b. The DPF may be depended on to furnish reasonably accurate ranges to a distance of 800 yards for each 10 feet of its height above sea level, but is more dependent on clear weather than either the horizontal base or the CRF since accurate waterlining is essential. For the horizontal base or the CRF, sighting on the mast is sufficient and haze may not interfere with accurate range finding.

c. Atmospheric conditions in this region are such that visibility extends beyond 20,000 yards on exceptionally clear days only; it may be depended on up to 12,000 yards; and is ordinarily in the vicinity of 15,000 yards.

d. The extreme ranges of which the modern long range batteries are capable require the use of a number of baselines in order that the full range and field may be utilized. Some of these baselines are at such distance from the battery that unless a simplified and small scale plotting board is used, relocating will be necessary. This may be accomplished directly by use of the seacoast director, or by the use of an intermediate plotting board.

e. The same baseline will frequently serve more than one long range battery (though each battery may have its own fire control personnel using separate observing rooms); and in some places the same baseline will serve batteries belonging to different harbor defenses.

3. a. The orientation data of each harbor defense are based on rectangular coordinates whose origin is some convenient geodetic point on a meridian passing through the harbor defense. The data obtained by instruments oriented on a system of rectangular coordinates are not applicable to guns, plotting boards, and fire control instruments oriented on the rectangular coordinates of another harbor defense. Therefore position finding and spotting data obtained by the fire control stations of one harbor defense are not available to batteries of the adjacent harbor defense. The three harbor defenses of the Narragansett Bay Sub-Area have overlapping batteries, and their orientation data should be redetermined on one system extending from Montauk to Buzzards Bay. The case becomes obvious when spotting and position finding stations of Block Island are visualized since such stations should serve the two batteries at Montauk, Battery Davis at Fort Michie, and the four long range batteries at Point Judith and Sakonnet Point. See Exhibit 3-B.

b. A study has been undertaken to determine the projection which will involve the smallest error when applied to the Narragansett Bay Sub-Area as a whole. Several reasons make it advisable to carry through this redetermination of orientation data:

(1) The accuracy of some of the data in use in the harbor defenses is in doubt.

(2) The new batteries and fire control stations included in the project must be surveyed.

(3) The U. S. Coast and Geodetic Survey is redetermining its basic data, on the New 1927 North American Datum and thereby affording an opportunity for increasing the accuracy of harbor defense data, if it is availed of; or introducing an element of future discord if all data is not resolved to the new Datum. It happens that the work on the New 1927 North American Datum has been carried through the Narragansett Bay Sub-Area, three points (Gay Head, Block Island ECC and Montauk-2) being primary triangulation points.

c. The following steps will be taken should the War Department so direct and the funds become available:

(1) Direction of the work on lines which are mathematically and technically sound.

(2) Execution of the necessary field work including placing of monuments and determination of the location of each fire control instrument and battery directing point.

(a) The field work may be carried out by employees of the Corps of Engineers or by Engineer troops.

(3) Carrying out of the necessary computations and drafting room work.

d. A preliminary estimate of the entire cost of the work is $7,200.

4. a. The Fire Control Diagram of the Eventual Status of the harbor defense is appended as Exhibit 1-B. This diagram shows the fire control system as it will be when all changes contemplated by the approved Project and the annexes thereto, shall have been effected.

b. Whenever changes in the fire control system are made (such, for example, as construction of new duct lines or the laying of new cables) this diagram shall constitute a guide and shall be consulted in order that the trend of new work shall be to provide for the eventual needs of the command.

c. Whenever alterations are made in the approved Project or its annexes, affecting the fire control diagram, the diagram should be modified to accord with the alterations. This fire control diagram of the eventual status, and the fire control diagram of the existing status of the harbor defense will both be maintained and kept up to date at all times.

5. Post Telephone Lines.

a. Between forts (or the distant groups at Sakonnet Point and Point Judith), two telephone pairs have been provided, connecting each fort with the fort which is the administrative headquarters of the harbor defense; thus two pairs are provided from Point Judith to Fort Adams; two from Fort Kearney to Fort Adams, and so for the other forts and for Sakonnet Point. The two trunk lines are considered adequate for administrative needs.

b. Within a fort, one post telephone line has been provided from each battery, group or higher command post to the post telephone switchboard; where a plotting room is distant from the BC station, a post telephone line has been provided from the plotting room also.

c. If additional post telephones are authorized, it should be done sparingly. The above provision will enable the harbor defense to operate, and concentration of effort and funds on the fire control system is important.

6. Spotters. A spotter with azimuth instrument usually should be provided at each base end station and at each battery.

7. Steel Fire Control Tower.

a. The long range of modern batteries has resulted in the necessity of providing very wide fields of view for the observing instruments of many of the base end stations. The required field is often greater than 180°; in the case of the long range station at Point Judith it is 225° and at Gay Head it is 329°. To avoid interference of one station with the view from an adjacent station, it is essential (where the need for a wide view exists) to provide for one observing room above another. Those wide angles can be obtained equally well with a concrete building; the advantage of the steel tower (in addition to lower cost) is in its quick erection if an emergency arises before funds have become available to purchase the site and build the station.

b. The required wide angle of view is usually best obtainable from some one location, only; if that site is not occupied, it becomes necessary to build several stations instead of one. It not infrequently happens that the desired site is on an estate which the owner will not sell at any reasonable cost but the wartime use of which would present no difficulties. A quickly erected steel tower best meets this case.

c. The cost of the steel tower above is estimated as 25% of the cost of a concrete station. The cost of sheathing for protection against the weather must be added.

d. Preliminary design of a steel fire control tower has been prepared by the Corps Area Engineer and submitted to the Chief of Engineers.

8. The next succeeding paragraphs are concerned with description of places required for new fire control installations. Following these are paragraphs dealing with the requirements of each battery. The numbers used refer to the fire control stations shown in Exhibit 2-B.

9. Baseline 1 - 2. This baseline extends from Noyes Point to Green Hill and is 15,355 yards long. It is shown in Exhibit 2-B as Baseline 1 - 2, and affords observation over and beyond the area included in the 25° intersection line shown in Exhibit 4-B, as limited by the 20,000 yard limit of visibility which is an approximation.

a. Noyes Point. The proposed fire control station, marked 1, is located on a rise about 900 yards from the beach. There is a Coast and Geodetic Survey station, "Chapman", nearby. The arc of visibility from a height 14 feet above ground level is from Watch Hill Light counterclockwise to Point Judith; an instrument height of 14 feet above the ground is needed because of the presence of several cottages in the foreground. About one acre of ground should be obtained; the cost is estimated as $400. A 2-story fire control structure should be built. This would provide a combined base end and spotting station for the 16-inch and 8-inch batteries near Point Judith. An antiaircraft observer should be provided for in one of the observing rooms. Both stations should be equipped with observers' and spotters' azimuth instruments.

(1) Each observing room should permit of a view from Watch Hill on the west, through the south to Green Hill on the east, or from azimuth 74° to azimuth 249°.

(2) If an emergency arises before this station has been constructed, it will be possible to establish two emergency base end stations here by erecting two wooden platforms for azimuth instruments on tripods; the two structures should be approximately 50 yards apart to avoid interference.

b. Green Hill. The proposed fire control station, marked 2, is located on Green Hill. A Coast and Geodetic Survey station is located at this point. The site is about 1,100 yards from the shore. It is pasture land and will cost approximately $450 for one acre, which is a sufficient area. A 3-story fire control station should be constructed here. The arc of view is from a line tangent to Watch Hill Point on the west to a line tangent to Point Judith on the east; or from azimuth 71° to azimuth 279°. Each station should be equipped with an azimuth instrument for an observer and one for a spotter. An antiaircraft observer should be provided for in one of these stations, and a spotter for the 155-mm battery at Point Judith in another room.

(1) If this station has not been constructed when an emergency arises, the location can be occupied and used at once by two azimuth instruments on tripods located about 50 yards apart.

10. Baseline 2 - 3. This baseline extends from Green Hill, just described, to a location on Point Judith Neck approximately 1,500 yards northwest of Point Judith Light and about 700 yards north of the 155-mm gun site. The location is in an open field belonging to the Colonial Farm owned by Thomas L. Greene, and has a view from the direction of Noyes Point on the west, around through the south and east to a line tangent to the shoreline south of Narragansett Pier on the northeast, or from azimuth 77° counterclockwise to azimuth 212°. Approximately 2 acres should be purchased, at an estimated cost of $400 per acre. There is a bench mark known as "Point Judith", placed by the Corps of Engineers in 1922 at this point, the latitude and longitude of which are given in a table at the end of this annex. The ground at this site is approximately 30 feet above sea level. Suitably designed buildings here will not be conspicuous because of higher ground and wooded areas in the background and the presence of other buildings in the vicinity. The proposed baseline 2 - 3 is approximately 9,845 yards long.

a. At location 3 provision should be made for two structures about 150 yards apart, one with four observing rooms, one above another in order to permit of the wide field of view (225°) required; a fifth room (which should be the lowest) is required as a group commander's station for the Point Judith Group. One each of the four base end stations is required for the 16-inch battery at Point Judith, the 8-inch battery at Narragansett Pier, the 16-inch battery at Sakonnet Point and the 8-inch battery at Sakonnet Point.

b. The second fire control station at Point Judith should have four observing rooms one above another. The station should be approximately 150 yards distant from the long range station described in paragraph 10 a above. Interference with the field of view from the long range station must be avoided; this will be accomplished by locating the second station about 150 yards at azimuth 210° from the first station or to the west of that azimuth. The field of view of this second station should be from azimuth 315° counterclockwise to azimuth 212°. One of the four base end stations is required for each major caliber battery of the inner defense.

c. Each observing room of these two stations should be equipped with azimuth instrument for observer, and the stations for Wheaton and Varnum with spotters' instruments also.

11. Baseline 3 - 4.

a. The baseline is planned to extend northeast from Station 3 at Point Judith to Station 4 on Boston Neck, 13,217 yards (measured between Coast and Geodetic Survey stations of these names). Two 4-story base end stations will be required at 4. They should be so located on the ground with reference to each other as to avoid interference. The southern one of the two stations should provide a base end for the 16-inch battery at Point Judith, and the 8-inch battery at Narragansett Pier, and the 16-inch and 8-inch batteries at Sakonnet Point; the observing rooms should have a field of view from a line tangent to the high ground of Point Judith Neck just south of Narragansett Pier, to a line across Beavertail tangent to Brenton Point or from azimuth 17° counterclockwise to azimuth 271°. The northerly station should provide a base end station each for Batteries Wheaton, Varnum, Edgerton and Greene, and should have the same field of view; viz, from a line tangent to the high ground of Point Judith Neck just south of Narragansett Pier (azimuth 17°) around through the east to a line tangent to Brenton Point, azimuth 271°.

b. The location on Boston Neck has a ground level of approximately 76 feet. The instrument height of the lowest room in both structures should be 10 feet above the ground. Each of the eight observing rooms should be equipped with a DPF and a spotter's azimuth instrument.

c. All instruments in both stations require the same field of view, which is 106° wide. There is no difficulty in so placing the two stations that this limited arc of view can be obtained without interference.

d. Approximately one and one-half acres of ground should be obtained. The cost is estimated as $600. There is a Coast and Geodetic Survey station "Boston Neck" located nearby and a U. S. Engineer Department survey station "Narrow River East" just west of Clump of Rocks at the south point of the Neck.

(1) The land on which the stations are to be located is owned by Frank L. Hinkley, Industrial Trust Building, Providence, Rhode Island. As scaled off from a 1:10,000 land survey map, the position is: latitude 41° 27' 50"; longitude 71° 26' 30".

12. Auxiliary Station "5".

a. Hazard Tower on the east side of Point Judith Neck about one-half mile south of Narragansett Pier and 500 yards from the shore on the west side of the Point Judith - Narragansett Pier road, is a valuable location for a spotting station. See Exhibit 5-A. The tower is approximately 101 feet high, on ground about 65 feet above sea level, giving a height of about 166 feet; it is 13 feet square at the top and of massive construction. The platform is of plank covered with canvas, and is surrounded by a parapet about 2½ feet high. The tower is on the property of Isaac Peace Hazard. The latitude and longitude are given in the table of orientation data appended hereto. There is an all-around view from the west side of Western Passage, through the east and south to the direction of Noyes Point on the southwest.

b. The property probably cannot be purchased for any reasonable price. Its use in time of emergency should be contemplated. Spotters should be located here, with instruments on tripods, for the four major caliber batteries of the inner defense and the 155-mm battery at Point Judith. An antiaircraft observer should be located on the tower.

13. Auxiliary Station at St. George's School Tower.

a. The location designated "6" on Exhibit 2-B is a massive stone tower 101 feet above ground and approximately 205 feet above sea level. The observing platform is paved and is 22 feet square, facing with the points of the compass. At each corner a pillar rises about 25 feet above the observing platform with two lesser pillars on each face, which prevent full usefulness of the tower as a base end station. There is a stone grillwork parapet rising 8 feet above the floor; this can be avoided by using a plank platform about 5 feet high.

b. Range Finders. From a platform raising the instruments to 9 feet above the floor, and at a distance of instrument centers of two feet or less inside the stone parapet, it is practicable to observe past the pillars through an arc from Point Judith to East Rock off Sakonnet Point. In an emergency, if permission to use this chapel tower is obtainable, two DPF's should be mounted here as auxiliary instruments; their effective range would be approximately 16,500 yards.

c. Spotters. By moving across the tower, spotters with field glasses can observe the water in all directions over a wide area, to the limit of visibility, including the Sakonnet River; across Sakonnet peninsula to Gooseberry Neck; and on the west across Brenton Point to Beavertail and the shore of Point Judith Neck. If the tower can be used, a spotter should be located here for each of the four major caliber batteries of the inner defense and for the 155-mm battery at Sakonnet Point.

d. An antiaircraft observer should be located here.

14. Baseline 7 - 8. This baseline from Sachuest Neck to Warren Point is 7,168 yards long and affords a view from a line tangent to Coggeshall Ledge Point, 4,000 yards east of Brenton Point, across the entrance of Narragansett Bay and thence through the south to the southeast. It also covers the Sakonnet River for some distance above and below the antisubmarine net.

a. Sachuest Neck. Two stations should be constructed, each with four rooms one above another. The stations should both have a view from a line tangent to Coggeshall Ledge Point east of Brenton Point, azimuth 64°, to a line across Sakonnet Point, aziiuth 291°; this arc of 133° is easily provided for. In addition, the observing rooms of one of the two stations should have a view up the Sakonnet River to azimuth approximately 215°. The batteries best suited to fire on the river being the major caliber batteries of the inner defense, the observing rooms which should be given this additional field of view to azimuth 215° are those pertaining to Batteries Varnum, Edgerton and Greene.

(1) In order to satisfy these conditions, the fire control station for the four long range batteries should be located approximately 100 yards from the other station, at azimuth 65°. With this disposition the observing rooms for the 16-inch and 8-inch batteries at Point Judith and Sakonnet Point will have a field of view from azimuth 64° counterclockwise to azimuth 291°; and the observing rooms for the heavy batteries of the inner defense (except Wheaton) will have a field of view from azimuth 64° counterclockwise to azimuth 215°.

(2) The southern half of Sachuest Neck is open grass land rising to a height of about 50 feet. Approximately two acres should be purchased; the cost is estimated as $500 an acre. A right of way should be provided for.

(3) The observing rooms of Batteries Varnum, Greene and Edgerton should be equipped with DPF's; all other stations with azimuth instruments. All stations should be equipped with spotters azimuth instruments. One antiaircraft observer should be provided for.

b. Warren Point. This location rather than one on Sakonnet Point is determined on because the view is equally good and the length of baseline greater, the presentation is better, and the baseline will operate farther toward the east. Two stations should be constructed, one with four observing rooms one above another, and the other with five. Two stations for the four

heavy batteries of the inner defense should have a view from a line to Sachuest Neck counterclockwise to the south, or from azimuth 110° to azimuth 5°. The stations for the four long range batteries and Battery Milliken should have a view from a line tangent to Brenton Point (azimuth 85°) to Gooseberry Neck (azimuth 258°). If the building provided for the long range batteries is approximately 50 yards at azimuth 345° from the other, interference will be avoided. One building should include a group command post for Group 3, which should be the lowest room.

(1) The location selected is open grass land, west of the house of Mrs. Gorham Parks. One acre should be obtained; the cost is estimated as $2,000.

(2) From a height of approximately 16 feet above ground the view extends across Sakonnet peninsula from Sachuest Neck counterclockwise to Gooseberry Neck; an instrument height of 12 feet above the ground will suffice since waterlining across Sakonnet peninsula is unnecessary. Each of the base end stations should be equipped with azimuth instrument.

(3) The shore of Sakonnet peninsula including Warren Point is built up with summer residences and the choice of sites is strictly limited.

15. Baseline 8 - 9. This baseline extends from Warren Point just described to Gooseberry Neck, a distance of 12,676 yards.

a. Gooseberry Neck. Replacing a lost survey mark of the Coast and Geodetic Survey, the Commanding Officer, Harbor Defenses of Narragansett Bay, in 1932 put in a concrete post with copper bolt, the location of which is given in the table of orientation data following; it is on the highest part of the Neck near the center. A 3-story station should be built, providing an observing room for the 16-inch and 8-inch batteries at Sakonnet Point and Battery Milliken at Fort Rodman. The arc of view is from Sakonnet Point through the south to Mishaum Point or from azimuth 74° to azimuth 247°. Each of the observing rooms should be equipped with an azimuth instrument for observer and one for spotter. An antiaircraft observer should be provided for, and a spotter for the 155-mm battery at Sakonnet Point.

(1) In an emergency arising before this station is built, azimuth instruments on tripods can be set up in line at about 50 yards interval.

(2) Gooseberry Neck is owned by the estate of Joseph McCormick of Providence, Rhode Island. It was held in 1931 for $80,000 but there is reason to believe that the valuation now is much less. One acre, near the south end of the Neck, should be purchased. The elevation here is approximately 20 feet above mean low water. The cost is estimated as $500.

16. Baseline 9 - 10. This baseline, 12,649 yards long, extends from Gooseberry Neck across the west entrance of Buzzards Bay to Cuttyhunk and may be used either to east or west.

a. Cuttyhunk. There is a Coast and Geodetic Survey station on the high point of the island from which the field of view is from a line tangent to the north shore of the Elizabeth Islands at azimuth 240° around through the north, west and south to a line tangent to the south shore of these islands, azimuth 271°, an angle of 329°. The summit of the hill must be occupied; the alternative would be to provide several stations instead of this one, in order to cover Vineyard Sound, Buzzards Bay and the sea area to the west. One and one-half acres should be obtained to prevent nearby building. The land is owned by C ornelius A. Wood, Shawsheen Village, Andover, Mass., to whom most of the island belongs. The price of one and one-half acres is estimated as $900.

(1) A 3-story structure should be built, to provide a base end station for the 16-inch and 8-inch batteries at Sakonnet and Battery Milliken at Fort Rodman. Each station should be equipped with a DPF and spotter's azimuth instrument. The lowest DPF at an instrument height three feet above ground level (which is approximately 166 feet above mean sea level) will have an effective radius of 13,500 yards. An antiaircraft observer should be provided for.

(2) If an emergency arises before this station has been provided, azimuth instruments on tripods can be used; but because of the wide arc desired, there will be some mutual interference.

17. Baseline 10 - 11. This baseline extending from Cuttyhunk to Gay Head is 12,577 yards long. It crosses the western entrance of Vineyard Sound, and may be used to east or west.

a. Gay Head. The fire control station here should be two stories high, providing a base end station for the 16-inch battery at Sakonnet Point and for Battery Milliken. The field of view from this location, near which there is a Coast and Geodetic Survey station "Gay Head-2", is from a line tangent to the north shore of Martha's Vineyard, azimuth 229°, through the north, west and south to a line tangent to the south shore, azimuth 295°, an arc of 294°. The station for the 16-inch battery should be equipped with DPF; at an instrument height eight feet above ground level or approximately 150 feet, the effective range is 12,000 yards. Each station should include provision for a spotter. An antiaircraft observer should be located here.

(1) If the station has not been constructed when an emergency occurs, azimuth instruments on tripods may be employed on the ground level; the two parties should be separated by about 50 yards to reduce interference with each other.

(2) Two acres of land should be purchased, to prevent nearby construction of buildings which would mask the station. The price is estimated as $400 an acre.

REQUIREMENTS OF EACH BATTERY.

16. Long Range Batteries near Point Judith.

a. It is proposed to provide the 16-inch battery at Point Judith Neck and the 8-inch railway battery at Narragansett Pier with the baselines shown in Exhibit 4-B; viz,

Noyes Point to Green Hill (1 - 2);
Green Hill to Point Judith (2 - 3);
Point Judith to Boston Neck (3 - 4);
Sachuest Neck to Warren Point (7 - 8).

b. Spotting stations are proposed as follows:
Noyes Point (1);
Green Hill (2);
Boston Neck (4);
Sachuest Neck (7).

c. The harbor defense commander shall prepare orientation data for the use of the railway battery commander, to be handed him on his arrival at the outbreak of an emergency. These data should be tied in with the harbor defense data and include distances and azimuths from one or more points which may be used to set up a transit with which to orient the guns, when in position at South Pier or at the alternative position.

d. Should the alternative plan of constructing an 8-inch fixed battery at Point Judith be carried into effect, the fire control provisions made for the 8-inch railway battery will be equally suitable for the fixed battery.

19. 155-mm Battery at Point Judith.

a. This battery should be provided with a 15-foot CRF, mounted on concrete block and so located near the guns as to have a field of view from the shore-line on the west counterclockwise to a line tangent to the shore-line near Narragansett Pier on the northeast. Temporary shelter for this instrument can be constructed when an emergency arises.

b. Spotting stations for this battery should be included in one of the base end stations at Green Hill (2), and at Hazard Tower (5).

20. Major Caliber Batteries of Inner Defense.

a. The existing baselines of these batteries are entirely inadequate; the base end stations are so low (with reference to the rugged topography of Narragansett Bay), and some of the baselines so short, that the greater part of the important fields of fire (lying between Point Judith Neck and Sakonnet peninsula) cannot be fired on. The fields of fire of which the guns as emplaced are capable are shown in Annex A, Seacoast Guns. In Exhibits 5-B to 7-B the dead spaces due to limitations of the position finding stations are shown. The areas which are covered by the present baselines are also shown, in color.

b. In place of the present baselines whose ends are located on the reservations of the inner defense and are thus generally perpendicular to the line of fire, it is proposed to substitute two baselines lying generally parallel to the line of fire and well advanced, as is practicable since Point Judith and Sakonnet Point are to be fortified. One of the new baselines will extend northeast from Point Judith to Boston Neck, facing east across the main field of fire of these four batteries; the other will extend northwest from Sakonnet peninsula to Sachuest Neck, facing southwesterly across the main field of fire. These two baselines, with DPF's at the north ends will cover the entire useful field of fire of all four batteries.

21. Battery Wheaton, two 12-inch DC, See Exhibit 5-B.

a. The present baseline extends from Prospect Hill (B^1S^1) (DPF) to Fort Wetherill (azimuth instrument) (B^2S^2) and is approximately 3,150 yards long. The limiting arc of 15° intersections is shown in the exhibit. The maximum range at which targets can be tracked is now 11,000 yards although the range of the guns is 17,300 yards; and due to masking of the observing stations it is possible for a hostile vessel to pass the defenses without coming under fire of Battery Wheaton. The masked areas are shown in the exhibit; the tinted areas, only, are now covered. The present baseline should be abandoned, the B^1 station with DPF being retained as an emergency station.

b. Two new baselines are required, as follows:

Point Judith to Boston Neck (3 - 4);
Sachuest Neck to Warren Point (7 - 8).

c. A plotting board which will take these baselines will be required.

d. Spotters in base end stations are proposed as follows:

Point Judith (3);
Boston Neck (4);
Sachuest Neck (7);
Auxiliary spotting stations at Hazard Tower (5);
St. George's School Tower (6).

If the last two stations, at Hazard Tower and St. George's School Tower, can be established, the other three will not be needed.

22. Battery Varnum, two 12-inch BC, See Exhibit 6-B.

a. The present baseline extends from B^1 at Prospect Hill to B^2 at Fort Wetherill, a distance of about 3,150 yards. The limiting arc of 15° intersections is shown in the exhibit. The maximum range at which targets can be tracked with the present baseline is 11,000 yards although the range of the guns is 17,300 yards. A vessel might pass the defenses to the interior to Narragansett Bay without coming under the fire of Battery Varnum. The masked areas are shown in the exhibit; the tinted areas, only, are now covered. The present baseline should be abandoned. The B^1 station with DPF should be retained as an emergency station.

b. Two new baselines are proposed, as follows:

Point Judith to Boston Neck (3 - 4);
Sachuest Neck to Warren Point (7 - 8).

c. A plotting board which will take these baselines will be required.

d. Spotting stations are proposed, to be included in base end stations at Point Judith (3);

Boston Neck (4);
Sachuest Neck (7);
Auxiliary spotting stations at Hazard Tower (5), and
St. George's School Tower (6).

If these two auxiliary stations can be established, the other three will not be required.

23. Battery Edgerton, four 12-inch mortars. See Exhibit 7-B.

a. This battery has no permanent primary station; its primary is temporarily housed in a wooden structure on the old redoubt at Fort Adams which is unsuitably located and is deteriorating. The battery has a B^2 with DPF at Prospect Hill, giving a baseline, 4,900 yards long, and a B^3 at Fort Wetherill with DPF which, in connection with B^1 gives a 2,600 yard baseline. All three stations are masked over wide sectors by high ground, buildings or considerable wooded area. The 2,600-yard baseline is too short to permit tracking beyond 9,000 yards, as shown in the exhibit. The B^1 - B^2 base is long enough but both stations are blinded over the sectors shown. The present baselines should be abandoned. The B^2 station with DPF should be retained as an emergency station for both Battery Edgerton and Battery Greene.

b. Two new baselines are proposed, as follows:

Point Judith to Boston Neck (3 - 4);
Sachuest Neck to Warren Point (7 - 8).

c. One or more plotting boards should be provided which will enable fire to be directed on the area from a line toward Boston Neck on the right to Sakonnet Point and the Sakonnet River on the left, or from azimuth 73° to azimuth 221°, an arc of 212°.

d. Spotting stations proposed are:

Boston Neck (4), and
Sachuest Neck (7);
Auxiliary stations at Hazard Tower (5), and
St. George's School Tower (6).

The last two, should they be established, will be sufficient.

24. Battery Greene, four 12-inch mortars. See Exhibit 7-B.

a. The primary station of this battery is in the same temporary frame structure as B^1 Edgerton. The secondary station is at Prospect Hill, is equipped with DPF, and provides a baseline approximately 4,900 yards long. The tertiary station equipped with azimuth instrument is at Fort Wetherill and in connection with B^1 provides a baseline 2,600 yards long. This shorter baseline is limited by the 15° intersection curve to the area shown, most of which is dead space. The longer baseline would be adequate for the western part of the Bay but more than half of its field is masked. The three stations (two of which are temporary) are blinded by higher ground, buildings or wooded areas. B^2 Edgerton at Prospect Hill with its DPF is to be retained for emergency use of both Greene and Edgerton, and the other stations abandoned.

b. Two new baselines are proposed:

Point Judith to Boston Neck (3 - 4);
Sachuest Neck to Warren Point (7 - 8).

c. One or more plotting boards should be provided which will cover the arc from due west to slightly north of east, and will permit of using the proposed baselines.

d. Spotting stations are planned as follows:

Boston Neck (4), and
Sachuest Neck (7);
Auxiliary spotting stations at Hazard Tower (5), and
St. George's School Tower (6).

If the last two can be established, the other will not be required.

RAPID FIRE BATTERIES OF INNER DEFENSE.

25. No important changes are needed to enable these six batteries to protect the mine fields and approaches thereto. There are three 6-inch and three 3-inch batteries in pairs; a 6-inch and a 3-inch battery at Fort Wetherill, covering the Eastern Passage; a 6-inch and a 3-inch battery at Fort Getty and a 6-inch and a 3-inch battery at Fort Kearney, these four batteries covering the Western Passage. Exhibits 8-B to 13-B show the field of fire covered by each battery.

26. Battery Dickenson, two 6-inch barbette guns at Fort Wetherill. The battery has a DPF at Fort Wetherill, with the field of view shown in Exhibit 10-B. The instrument height is 101 feet, giving an effective range with present instrument of 8,100 yards. This is scarcely half of the maximum range of the guns, 16,400 yards. As this battery is capable of a high rate of fire and covers a valuable field it should be equipped with an M-1 DPF and the older DPF employed elsewhere. An M-1 DPF will permit Battery Dickenson to fire up to its extreme range, over an arc of 72°.

27. Battery Crittendon, two 3-inch Pedestal Mounts at Fort Wetherill. There is a 9-foot CRF at the battery with the field of view shown in Exhibit 11-B. No change in the present installation is necessary.

28. Battery House, two 6-inch barbette guns at Fort Getty. The battery is capable of a high rate of fire, to a range of 16,400 yards. The present 15-foot CRF adequately covers the mine field of the Western Passage and the approaches thereto, and is reasonably satisfactory. See Exhibit 12-B.

29. Battery Whiting, two 3-inch Pedestal Mounts at Fort Getty. This battery is equipped with 9-foot CRF which is satisfactory. The battery covers the Western Passage mine field as shown in Exhibit 13-B.

30. Battery Cram, two 6-inch DC at Fort Kearney. See Exhibit 8-B. There is an unfinished CRF station at the battery, to complete which will cost approximately $1,500. A 15-foot CRF instrument is on hand. The station should be completed.

31. Battery Armistead, two 3-inch Pedestal Mounts at Fort Kearney. See Exhibit 9-B.

a. No fire control station has been provided. At the shorter ranges the higher ground of "The Bonnet" to the south of Fort Kearney obstructs fire; otherwise No. 1 gun could fire as far to the west as Lower Pier, the site of the 8-inch railway battery. The battery covers the eastern half, only, of the mine field, and as No. 2 gun could not fire closer to No. 1 than about 15° while the latter is manned (to azimuth 341°) this left gun cannot fire on the mine field at all. The battery covers the anti-submarine net effectively. As the mine field is covered by the two rapid fire batteries at Fort Getty, no action is necessary.

b. Battery Armistead should be provided with a station for 9-foot CRF, (the instrument is on hand), so located as to cover the mine field and to track boats approaching the field of fire of the guns from due south, enabling fire to be opened as soon as such vessels come into view of the guns. There is a suitable location on the parades, in rear of No. 2 gun.

32. Long Range Batteries near Sakonnet Point.

a. It is proposed to provide the following baselines for the 16-inch and 8-inch batteries on the Sakonnet peninsula, as shown in Exhibit 14-B:

Point Judith to Boston Neck (3 - 4);
Sachuest Neck to Warren Point (7 - 8);
Gooseberry Neck to Cuttyhunk (9 - 10).

b. There will incidentally be formed the baseline Warren Point to Gooseberry Neck (8 - 9) which may or may not be used, the area covered by this baseline being also covered by the two adjacent baselines.

c. For the 16-inch battery two additional baselines are required:

Green Hill to Point Judith (2 - 3);
Cuttyhunk to Gay Head (10 - 11).

d. Spotting stations are proposed for both batteries to be included in the base end stations at Boston Neck (4);

Sachuest Neck (7);
Gooseberry Neck (9), and
Cuttyhunk (10).

e. For the 16-inch battery, a spotter should be provided for in the base end stations at

Green Hill (2), and
Gay Head (11).

33. 155-mm Battery at Sakonnet Point.

a. A 15-foot CRF should be provided for this battery. No station isproposed, but a concrete platform should be located on the massive clump of rocks shown 400 yards from the end of the Point in Exhibit 6-A. Temporary shelter for the instrument can be erected at time of an emergency with storage at the 8-inch battery during periods when not required.

b. A spotter for this battery should be provided for at the battery, at the tower of St. George's School (6), and at Gooseberry Neck (9).

COMMAND POSTS

34. a. The H Station at Prospect Hill is suitably located but consists of an observing room only. It should be enlarged to provide six rooms each approximately 15 by 20 feet, or an over all size of approximately 30 by 60 feet. There is ample space available, with very little excavation. The floor level should be slightly below the floor of the present observing room. Trees should be planted to screen the station.

b. Group 4. A station for the antiaircraft group including the center of antiaircraft intelligence should be provided as a part of the H station and will require two of the six rooms.

c. Mine Group. The command post of the Mine Group has been located in an existing station at Prospect Hill, formerly the Group I station.

d. An auxiliary command post of the Mine Group, for convenience in controlling the secondary armament covering the Western Passage, has been established in a crows nest of the Battery Toussard emplacement at Fort Getty, above the casemate.

e. Group 2. The old G-2 station at Prospect Hill should continue as such. The old Group 2 included Batteries Wheaton, Varnum and Walbach. The new Group 2 includes Batteries Wheaton, Varnum, Edgerton and Greene.

f. Group 1. This group comprises all batteries, including antiaircraft batteries, at Point Judith and Narragansett Pier. A station has been provided in this project, in a fire control structure at Point Judith.

g. Group 3. This group comprises the batteries, including the antiaircraft batteries, on the Sakonnet peninsula and a command post has been provided in a Warren Point fire control station.

OBSERVING STATIONS ON BLOCK ISLAND

35. a. See Exhibit 3-B. It is approximately 19,000 yards from Point Judith to Block Island, and 25,000 yards from Montauk Point to Block Island. It is 45,000 yards from Sakonnet Point.

The arcs of fire of batteries at all three places pass near Block Island. Because the haze which prevails much of the time over New England waters premits observation as far as 20,000 yards on unusually clear days only, the opportunity of using these long range batteries beyond about half their range depends on airplane observation or position finders on Block Island. Airplane observation may be interfered with.

b. Foreign naval vessels are credited with an extreme range of about 40,000 yards which they are not apt to use (considering ammunition expenditure) beyond about 35,000 yards; but they must be held more than 35,000 yards off Point Judith if our Navy is to be able to pass freely, secure from hostile gunfire, between Narragansett Bay and Block Island Sound. If hostile vessels can lie closer than about 38,000 yards off Point Judith, our vessels cannot pass securely in and out of Narragansett Bay. Since visibility from the mainland is ordinarily limited to an extreme distance of 20,000 yards, observation from Block Island is essential. The arcs of fire of the long range batteries are shown in Exhibit 3-B.

(1) Great Salt Pond on Block Island has a channel depth of 23 feet at mean low water; it is probable that the Inshore Patrol will utilize it as a base. There is a second-rate airplane landing field at Block Island, in daily use during the tourist season. A photostat of the U. S. Coast and Geodetic Survey chart No. 356, dated November 1902, now out of print, is attached as Exhibit 15-B; on it are shown the proposed base end stations.

36. There are four points on Block Island, conveniently disposed, from each of which observation can be obtained over a very wide arc: Clayhead on the north, Beacon Hill in the center, "Paine" on the southeast and "Southwest" on that part of the island. Each one is the location of a Coast and Geodetic Survey station. By occupying these four places, a series of baselines can be formed which will give observation in all directions to a considerable distance. The limiting curves of these baselines are shown in Exhibit 3-B.

a. Clayhead. The field of view from the location of the Coast and Geodetic Survey station of this name is from a line tangent to the high ground 900 yards northwest of Beacon Hill on the southwest, clockwise to a line tangent to the southeast shore of Block Island or from azimuth 43° to azimuth 347°, a field of view of 304°. The station is on open grass land 142 feet high; its coordinates are given in attached table of orientation data. A DPF should be provided for this location. One house belonging to the Samuel Hayes estate at a distance of about 300 yards obstructs the view to the northeast through an arc of

about three degrees. The value of the land is estimated as $250. per acre. One acre should be purchased and an instrument base for DPF should be put in. No shelter need be erected until an emergency arises. An antiaircraft observer should be located at Clayhead.

b. Block Island ECC. The Coast and Geodetic Survey station of this name is in the center of a stone observation tower about 12 feet in diameter and 16 feet above ground level, at the corner of a small stone house occupying the summit of Beacon Hill, which is the high point of Block Island. The elevation of the observation platform of the tower is approximately 227 feet above sea level. The view is 360° uninterrupted except through an angle of about 5° by a hill 800 yards to the south and through an angle of about 2° by the hill on which "Paine" is located. A DPF should be provided for this location; it would be effective at this height to a distance of about 18,000 yards if visibility permitted waterlining. No preparation is needed except to level the base with cement at time of an emergency, when shelter can be erected. An antiaircraft observer should be located here.

(1) "Block Island ECC" is a primary triangulation station of the Coast and Geodetic Survey; the present station was established in 1932 and is tied in with the new 1927 North American Datum.

(2) The owner of this property is Thomas T. Daggett, Sandy Valley Road, Dedham, Mass.; an occasional employee of his is Selim F. Mitchell, Box 296, Block Island, Rhode Island.

c. "Paine" station, located by the Corps of Engineers in 1922 to replace a lost Coast and Geodetic Survey station, is on the top of a bald hill, 183 feet above high water, near the southeast corner of Block Island. The view from five feet above ground level is from the direction of "Clayhead" on the north around through the east and south to a line slightly north of west, or from azimuth 181° clockwise to azimuth 114°, an angle of 293°. The land is estimated at $250 an acre; one acre should be purchased. An observing station should be built because Pilot Hill 500 yards to the north cuts off a small part of the field of view from the ground; an instrument height of about 15 feet above ground should be provided. A DPF and an azimuth instrument for spotter should be provided.

d. "Southwest" is on an open, flat hilltop, 165 feet above sea level. This is the location of a Coast and Geodetic Survey station. The field of view is from a line slightly west of north counterclockwise to a line tangent to "Paine", or from azimuth 178° to azimuth 260°, an angle of 278°.

(1) Two acres should be purchased, to prevent nearby construction. The value of the land is estimated as $250 per acre.

37. Baselines.

a. It is proposed to form four baselines by use of the four stations described above; their approximate lengths are:

Clayhead to Paine, 6,885 yards;
Clayhead to Southwest, 8,213 yards;
Block Island ECC to Paine, 3,751 yards;
and Southwest to Paine, 3,250 yards.

The areas over which these baselines will operate are shown by the limiting arcs of intersections in Exhibit 3-B; the areas over which the DPF's at Clayhead and at Paine will operate effectively are also shown.

b. Because data obtained at Block Island will be required by the Harbor Defenses of Long Island Sound and also by four batteries of the Harbor Defenses of Narragansett Bay, and in order to avoid multiplication of fire control personnel and costs, it is proposed to operate this network of baselines as a function of harbor defense headquarters of Narragansett Bay, using but one set of instruments and personnel, the latter being a detail from the headquarters battery.

c. A practicable method of using the data obtained by the Block Island fire control stations will be to plot the range and azimuth of a target, from "Block Island ECC", and telephone these data to the mainland, to be replotted by such batteries as may be assigned to the target.

d. A Government reservation formerly used by the Bureau of Fisheries of the Department of Commerce, consisting of approximately 2 acres on Beach Avenue, Block Island, on the east shore of Trims Pond just east of Fort Island is to be transferred to the War Department; pending Congressional authorization for the transfer, the use of the tract is granted by license from the Department of Commerce to the War Department (3d Ind., WD AGO, June 7, 1934, AG 601.4 Block Is. RI; 5-21-34; Misc.). The location is shown in Exhibit 15-B. On this reservation should be located the

necessary temporary barracks for the fire control and searchlight personnel; and a plotting room and room for a small switchboard should be provided. There is a suitable beach nearby for landing the cable from Point Judith.

AREA BETWEEN BLOCK ISLAND AND GAY HEAD

38. Subaqueous Sound Ranging.

a. It is 68,000 yards from Block Island to Gay Head, between which there are no sites for observation stations. Observation from Block Island may cover 20,000 yards of this distance, from the west; and observation from Gay Head - Cuttyhunk may cover 20,000 yards from the east. There remains a gap of 28,000 yards. To provide for fire on this area, the center of which lies due south of Sakonnet Point at a distance of 21,000 yards, the installation of subaqueous sound ranging equipment is proposed.

b. A suitable location for the shore installation is the 16-inch reservation on Sakonnet peninsula.

c. The installation should lie at azimuth 0° from Sakonnet Point past the midway point of the Block Island - Gay Head line, to the maximum distance over which the subaqueous sound ranging equipment will function. When its further development permits, the installation should be continued to a distance of 23,000 yards south of that line or a total distance from Sakonnet Point of 44,000 yards.

39. Seacoast Director. Should the seacoast director now under development be adopted, its use is proposed with the two 16-inch and two 8-inch batteries provided for in this Project.

40. Cost Estimate. An estimate of cost and priority guide is appended as Exhibit 18-B. Those items which should be procured and installed in peactime are marked with an A. Those which should be procured in peace but whose installation may be deferred until an emergency arises are marked B. Those items to be procured and installed when an emergency arises are marked C.

FIRE CONTROL DIAGRAM—EVENTUAL STATUS—HARBOR DEFENSES OF NARRAGANSETT BAY

GROUPS	NO.1					NO. 2				NO. 3					NO. 4			MINE GROUP								
	POINT JUDITH					FORT WETHERILL		FORT ADAMS		SAKONNET POINT					FORT GETTY	FORT WETHERILL	FORT ADAMS	FORT KEARNEY		FORT GETTY			FORT WETHERILL			
BATTERIES				A.A. NO.1	A.A. NO.2	WHEATON	VARNUM	GREENE	EDGERTON				A.A. NO.5	A.A. NO.6	A.A. M.G. DET.	A.A. NO.3	A.A. NO.4	CRAM	ARMISTEAD	HOUSE	WHITING	MINE COMMAND	MINE COMMAND	DICKENSON	CRITTENDEN
TACTICAL NUMBER	2	3	1	1	2	8	11	12	13	14	15	16	5	6		3	4	4	5	6	7	1ST	2ND	9	10
ARMAMENT	2-16"	2-8"	4-155MM	3-3"	3-3"	2-12"	2-12"	4-12"M	4-12"M	2-16"	2-8"	4-155MM	3-3"	3-3"		3-3"	3-3"	2-6"	2-3"	2-6"	2-3"			2-6"	2-3"
CARRIAGE				MOBILE	MOBILE	1901-DIS.	1892-BAR	1896-M1	1896-M1				MOBILE	MOBILE		1917	1917	1903-DIS.	1903-BAR	1900-BAR	1903-BAR			1900-BAR	1902-BAR

BATTERY COMMAND POST
PLOTTING ROOM
B STATION
CRF
EMERGENCY STATION
S STATION
S STATION
6" STATION S STATION
8" STATION S STATION
8" STATION S STATION
8" STATION S STATION
8" STATION S STATION
8" STATION S STATION
8" STATION S STATION
8" STATION N.D. S STATION H.D.
GROUP COMMAND POST
FORT COMMAND POST
SUBSIDIARY COMMAND POST
HARBOR DEFENSE COMMAND POST
MINING CASEMATE
MINE LOADING ROOM
S.A.S.R. CASEMATE
COMBINATION POST TELEPHONE AND FIRE CONTROL SWB ROOM
FIRE CONTROL SWB ROOM
RADIO STATION
TIDE STATION
METEOROLOGICAL STATION
SIGNAL STATION
POWER HOUSE
SEARCHLIGHT
SEARCHLIGHT CONTROLLER BOOTH

AT PROSPECT
AT GETTY
BLOCK IS.
BONNET
ST. JUDITH
GUNNING ROCK
BRENTON PT.
BLOCK ISLAND
COGGESHALL LEDGE
WEST ISLAND
THE BONNET WETHERILL

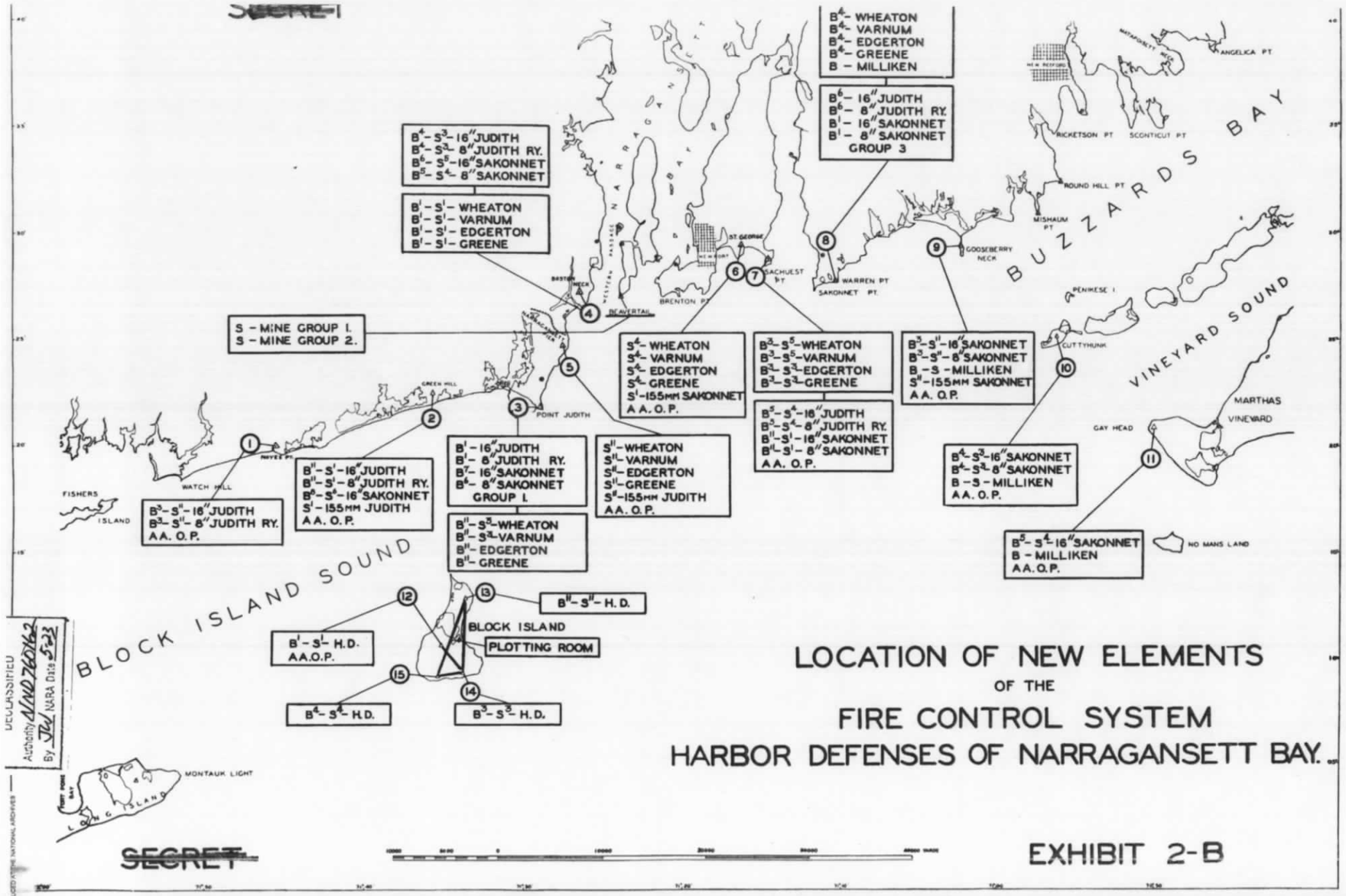
NO.	REVISIONS	DATE
2	TACTICAL NO'S. CHANGED	2/12/38
1	FT. GREBLE ABANDONED	6/30/37

SIGNAL OFFICE
FIRST CORPS AREA
H.D. OF NARRAGANSETT BAY
FIRE CONTROL DIAGRAM
EVENTUAL STATUS
DATE 1/30/36 DRAWN JC
CHKD. — APPROVED —
NO. 109.0 FC-1-2

EXHIBIT 1-B

DECLASSIFIED
Authority NND 760162
By JRE/NARA Date 5-23-11
REPRODUCED AT THE NATIONAL ARCHIVES

~~SECRET~~

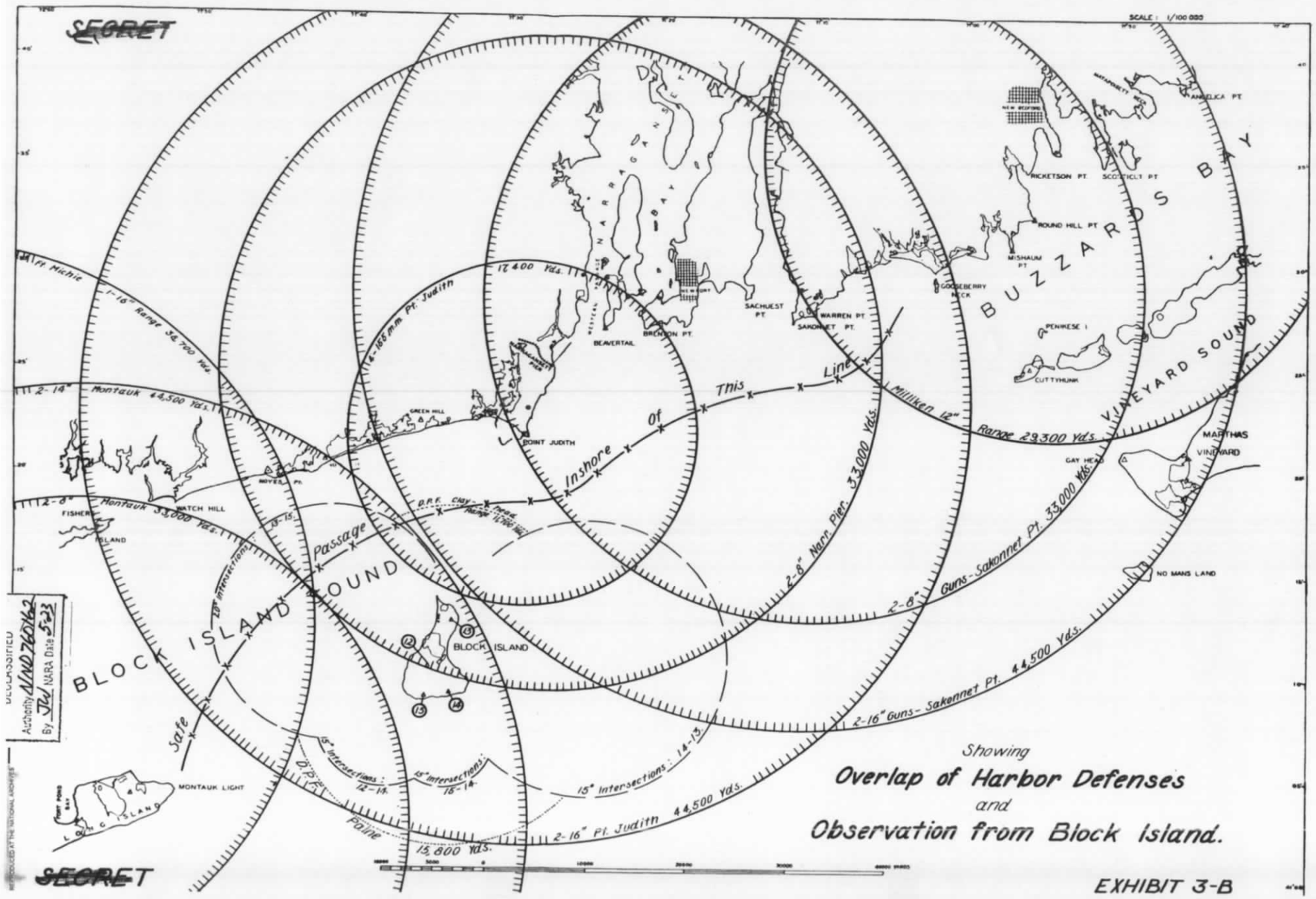


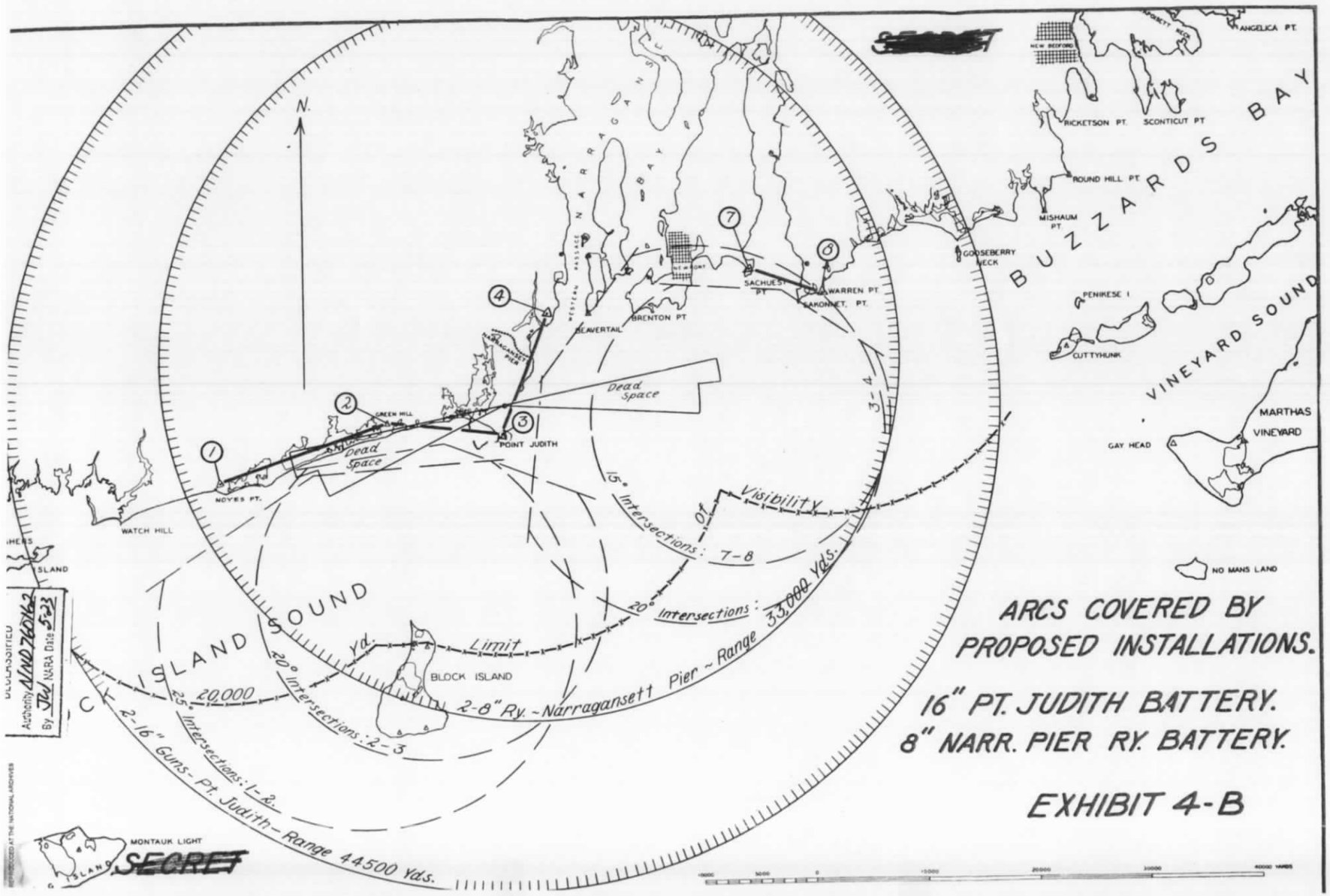
LOCATION OF NEW ELEMENTS
OF THE
FIRE CONTROL SYSTEM
HARBOR DEFENSES OF NARRAGANSETT BAY.

EXHIBIT 2-B

~~SECRET~~

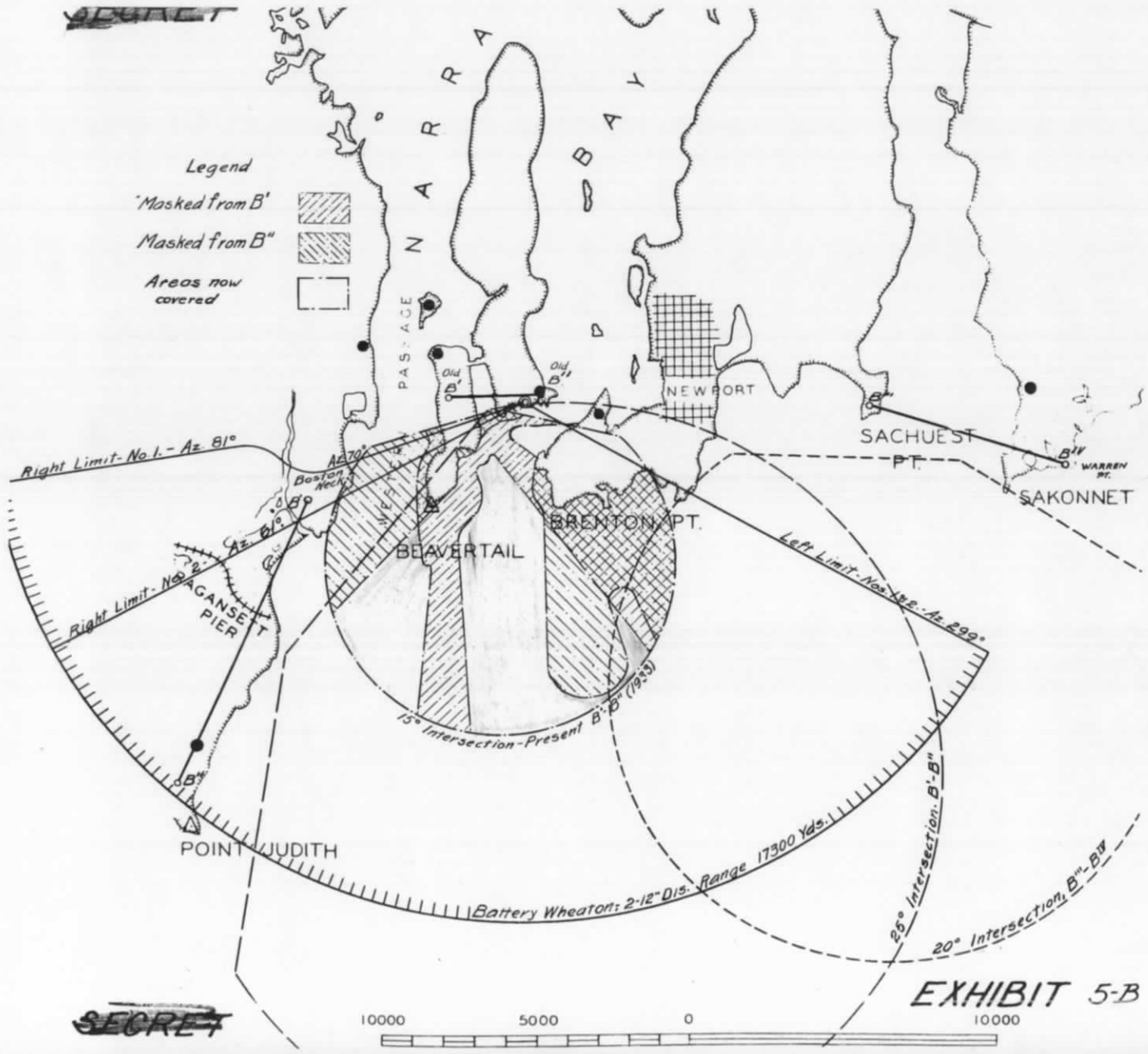
DECLASSIFIED
Authority NND 760162
By JTL NARA Date 5-23-23
REPRODUCED AT THE NATIONAL ARCHIVES

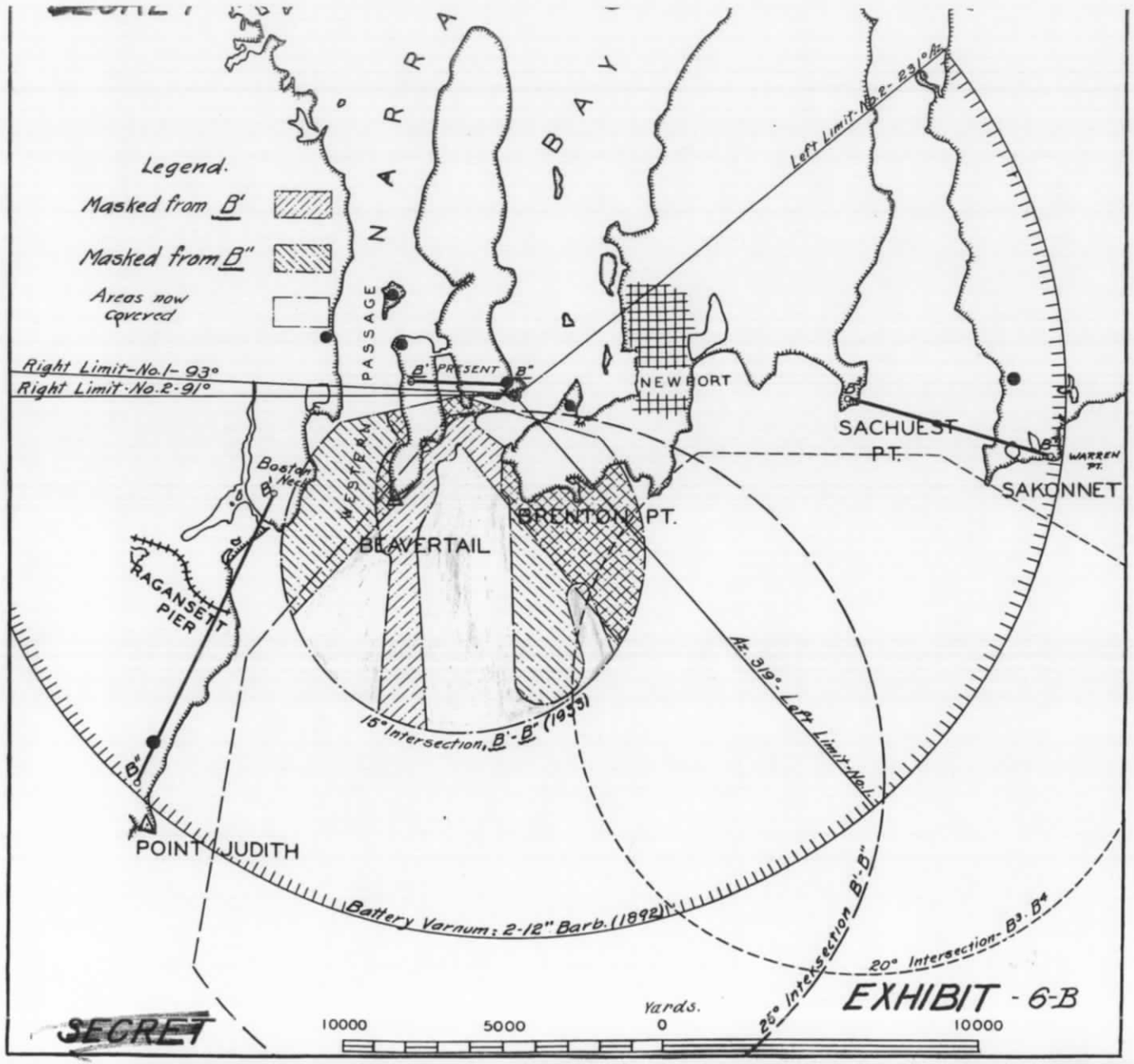

SECRET
SCALE : 1/100 000
Ft Michie
1-16" Range 36,700 Yds
2-14" Montauk 44,500 Yds.
2-8" Montauk 33,000 Yds.
6-16" Pt. Judith 12,400 Yds.
Inshore of This Line
Passage
Safe
Milliken 12" Range 29,300 Yds.
2-8" Narr. Pier. 33,000 Yds.
2-8" Guns-Sakonnet Pt. 33,000 Yds.
2-16" Guns-Sakonnet Pt. 44,500 Yds.
2-16" Pt. Judith 44,500 Yds.
15" Intersections: 14-13
15" Intersections: 12-14
15" Intersections: 18-14
18" Intersections: 20-15
15,800 Yds.
BLOCK ISLAND SOUND
NARRAGANSETT BAY
BUZZARDS BAY
VINEYARD SOUND
BLOCK ISLAND
MONTAUK LIGHT
POINT JUDITH
BEAVERTAIL
BRENTON PT.
SACHUEST PT.
WARREN PT.
SAKONNET PT.
GOOSEBERRY NECK
MISHAUM PT.
ROUND HILL PT.
RICKETSON PT.
SCOTCHLT PT.
ANGELICA PT.
PENIKESE I.
CUTTYHUNK
MARTHAS VINEYARD
NO MANS LAND
GAY HEAD
WATCH HILL
FISHER'S ISLAND
GREEN HILL
NOYES PT.
Showing
Overlap of Harbor Defenses
and
Observation from Block Island.
EXHIBIT 3-B
SECRET

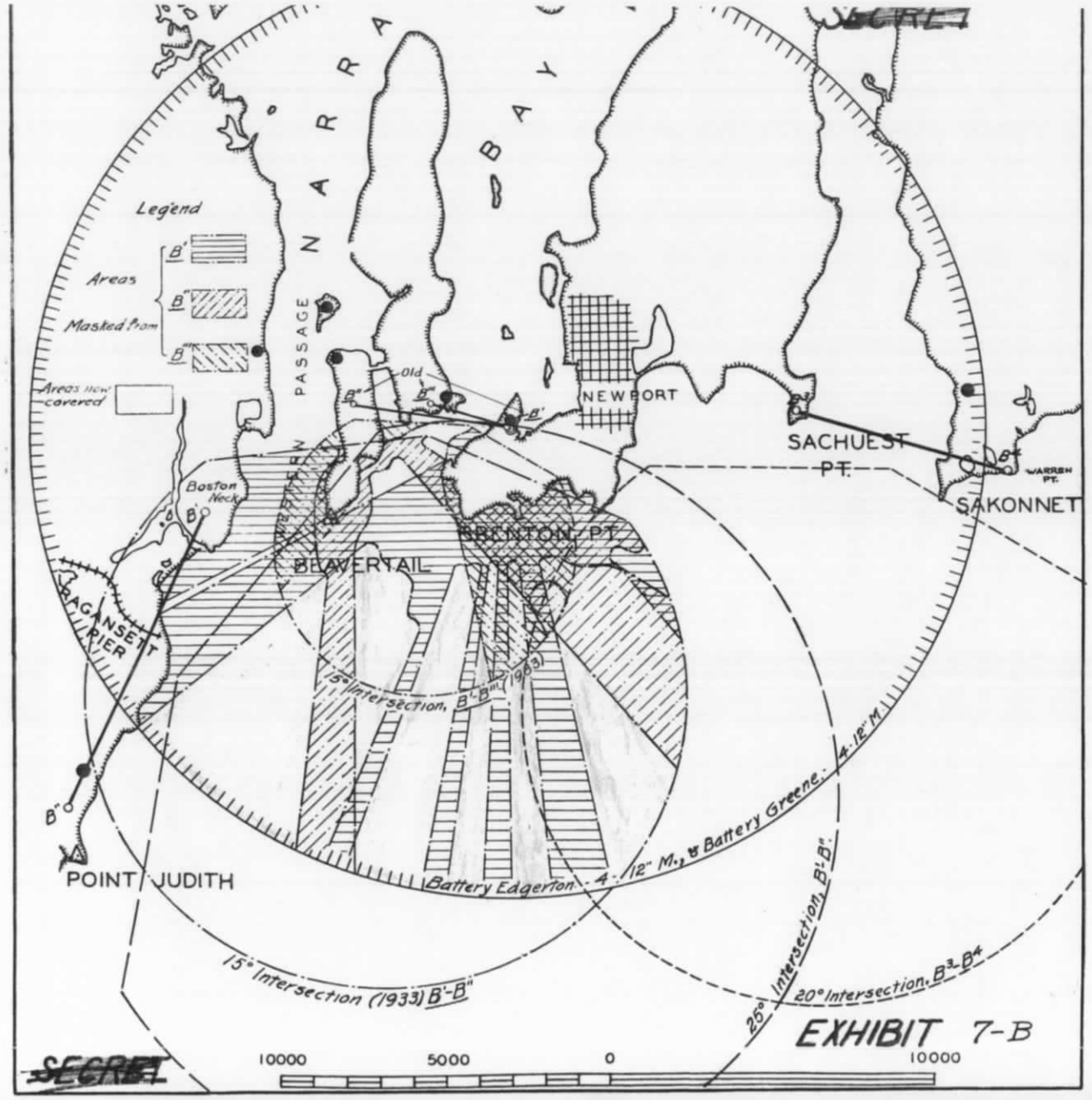


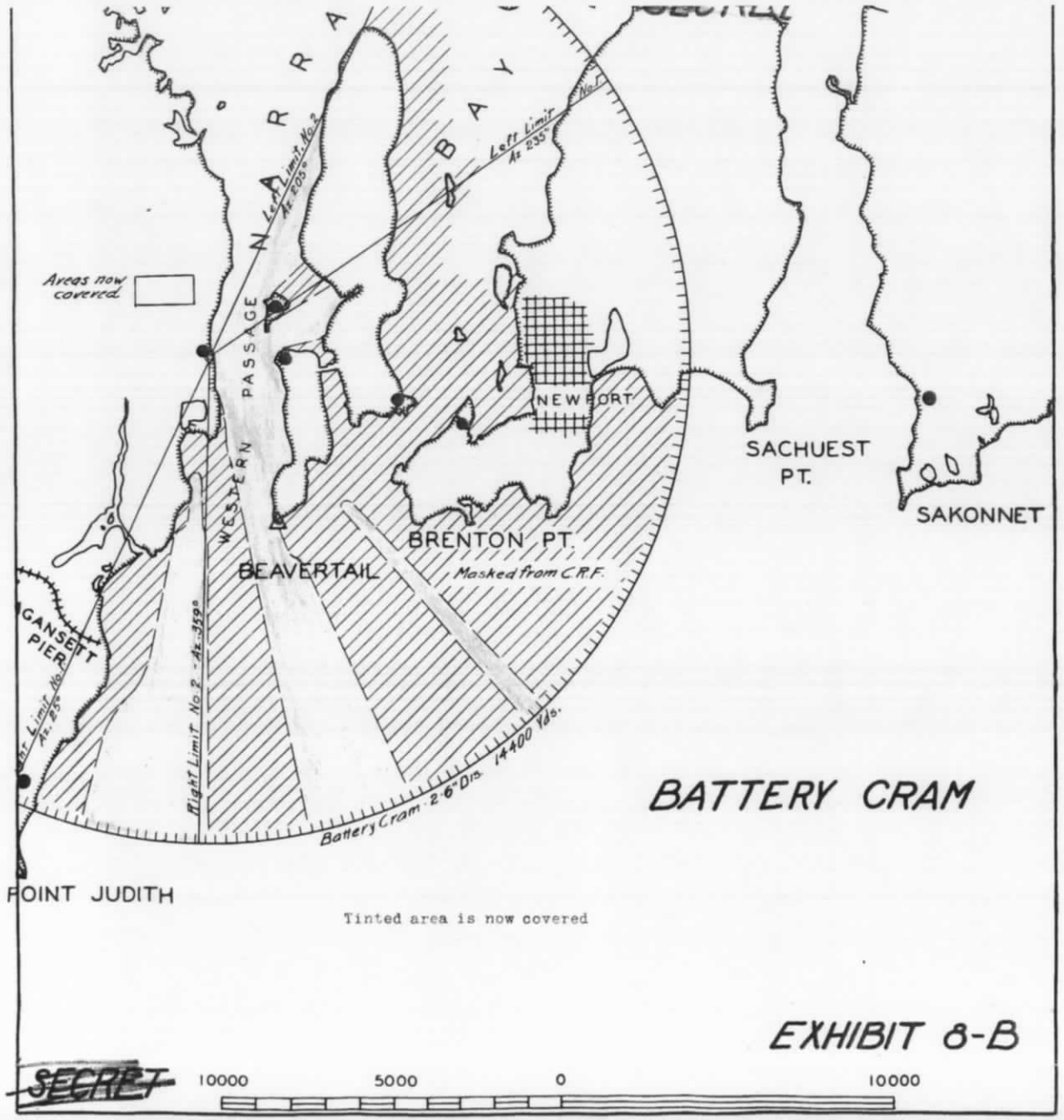
DECLASSIFIED
Authority NND 760162
By JW NARA Date 5-23

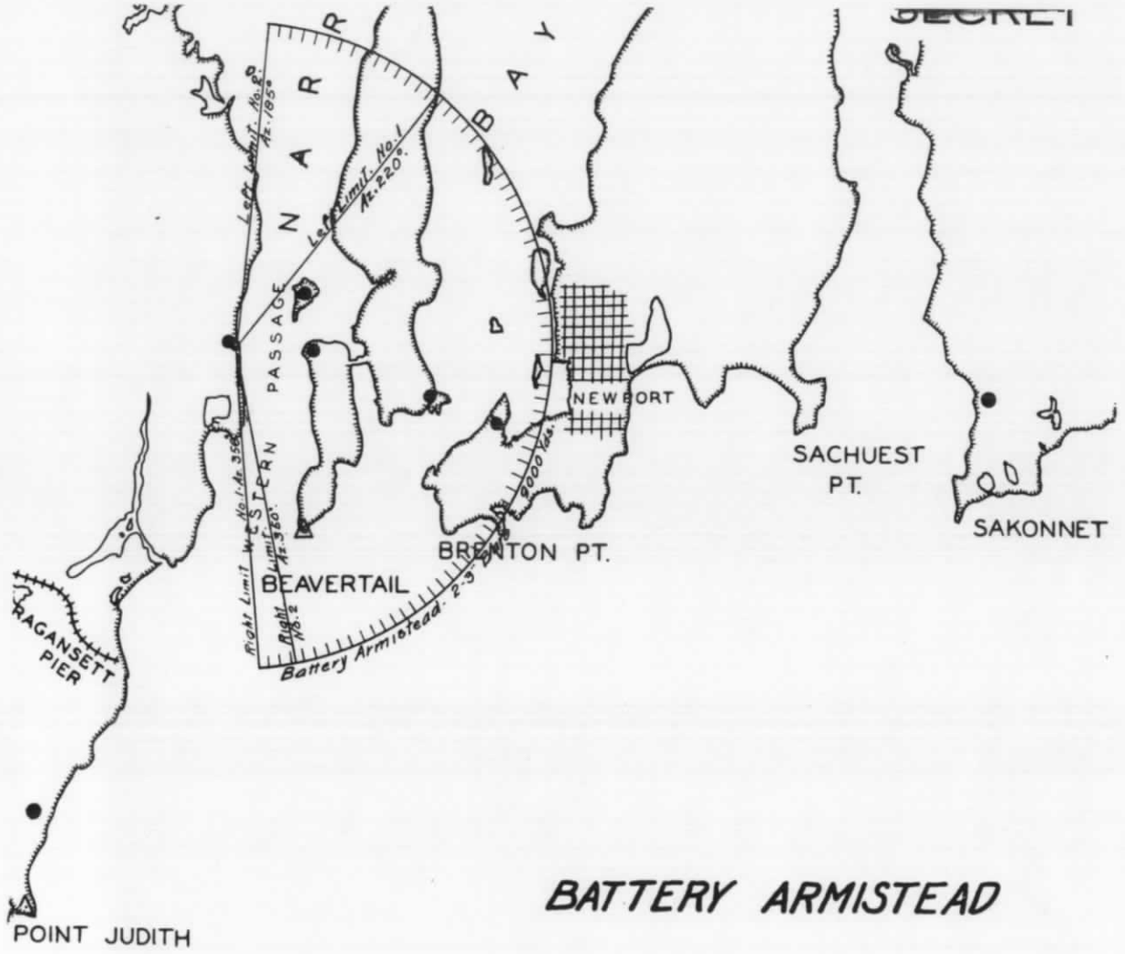
REPRODUCED AT THE NATIONAL ARCHIVES


SECRET
Legend
Masked from B'
Masked from B"
Areas now covered
NARRAGANSETT BAY
PASSAGE
Old B'
Old B"
NEWPORT
SACHUEST PT.
B IV
WARREN PT.
SAKONNET
Right Limit-No.1.-Az. 81°
Az. 70°
Boston Neck
B'
Az. 61°
BEAVERTAIL
BRENTON PT.
Left Limit-No.192.-Az. 299°
Right Limit-No.2.-Az. 27°
NARAGANSETT PIER
15° Intersection-Present B'-B" (1933)
B"
POINT JUDITH
Battery Wheaton: 2-12" Dis.- Range 17300 Yds.
25° Intersection B'-B"
20° Intersection B"-B IV
EXHIBIT 5-B
SECRET
10000
5000
0
10000


Legend.
Masked from B'
Masked from B"
Areas now covered
NARRAGANSETT BAY
WEST PASSAGE
Right Limit-No.1- 93°
Right Limit-No.2-91°
Left Limit-No.2- 231°
B' PRESENT B"
NEWPORT
SACHUEST PT.
WARREN PT.
SAKONNET
BRENTON PT.
BEAVERTAIL
Boston Neck
NARRAGANSETT PIER
POINT JUDITH
15° Intersection, B'-B" (1935)
Az. 319° Left Limit-No.1
Battery Varnum: 2-12" Barb. (1892)
20° Intersection- B3. B4
25° Intersection B'-B"
Yards.
10000
5000
0
10000
EXHIBIT - 6-B
SECRET

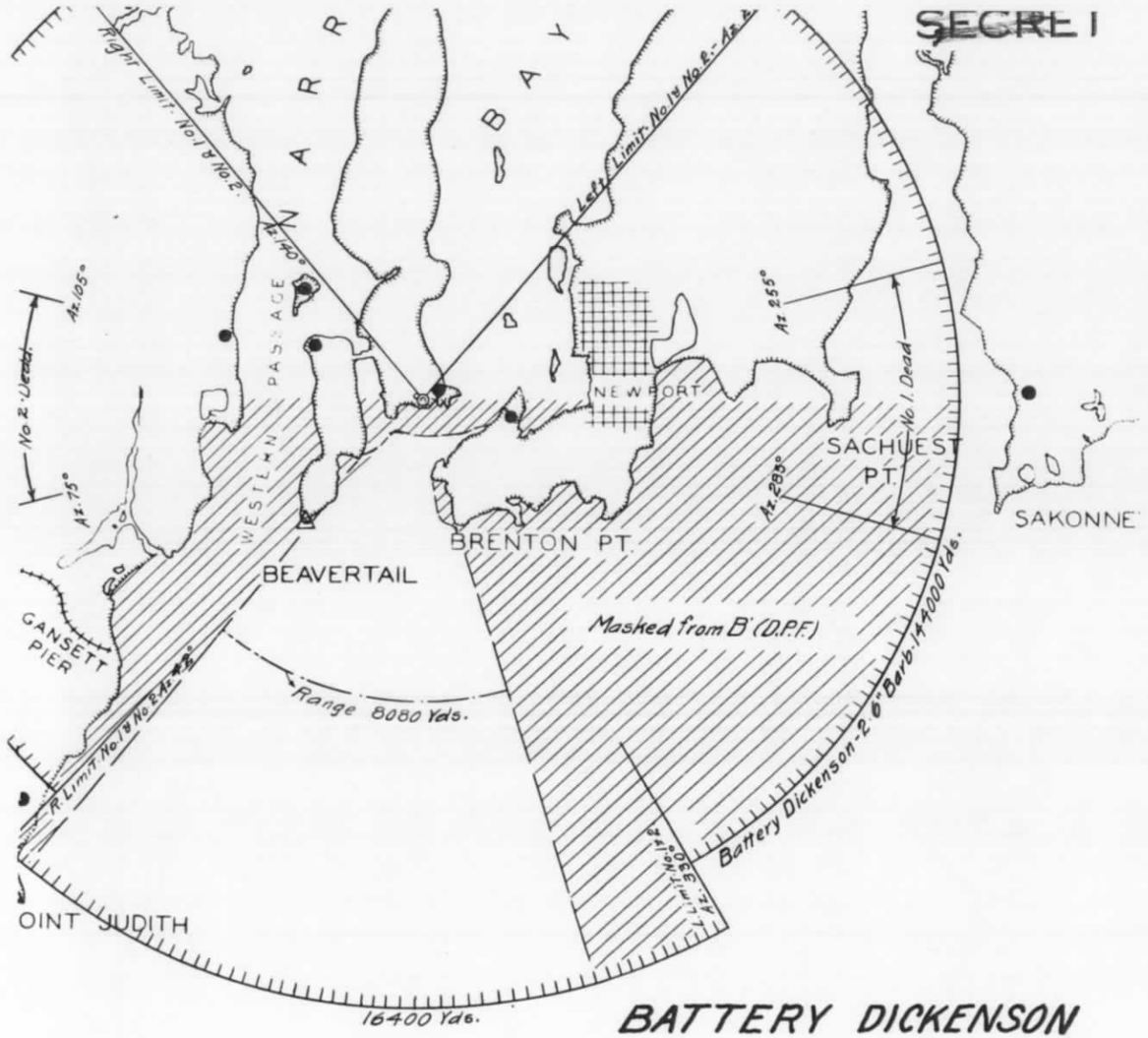

SECRET
NARRAGANSETT BAY
PASSAGE
Legend
Areas
Masked from
Areas now covered
Old
NEWPORT
SACHUEST PT.
WARREN PT.
SAKONNET
Boston Neck
BRENTON PT.
BEAVERTAIL
NARRAGANSETT PIER
15° Intersection, B'-B'' (1933)
POINT JUDITH
Battery Edgerton - 4-12" M.1 & Battery Greene - 4-12" M.
15° Intersection (1933) B'-B''
25° Intersection B'-B''
20° Intersection B3-B4
EXHIBIT 7-B
10000
5000
0
10000
SECRET

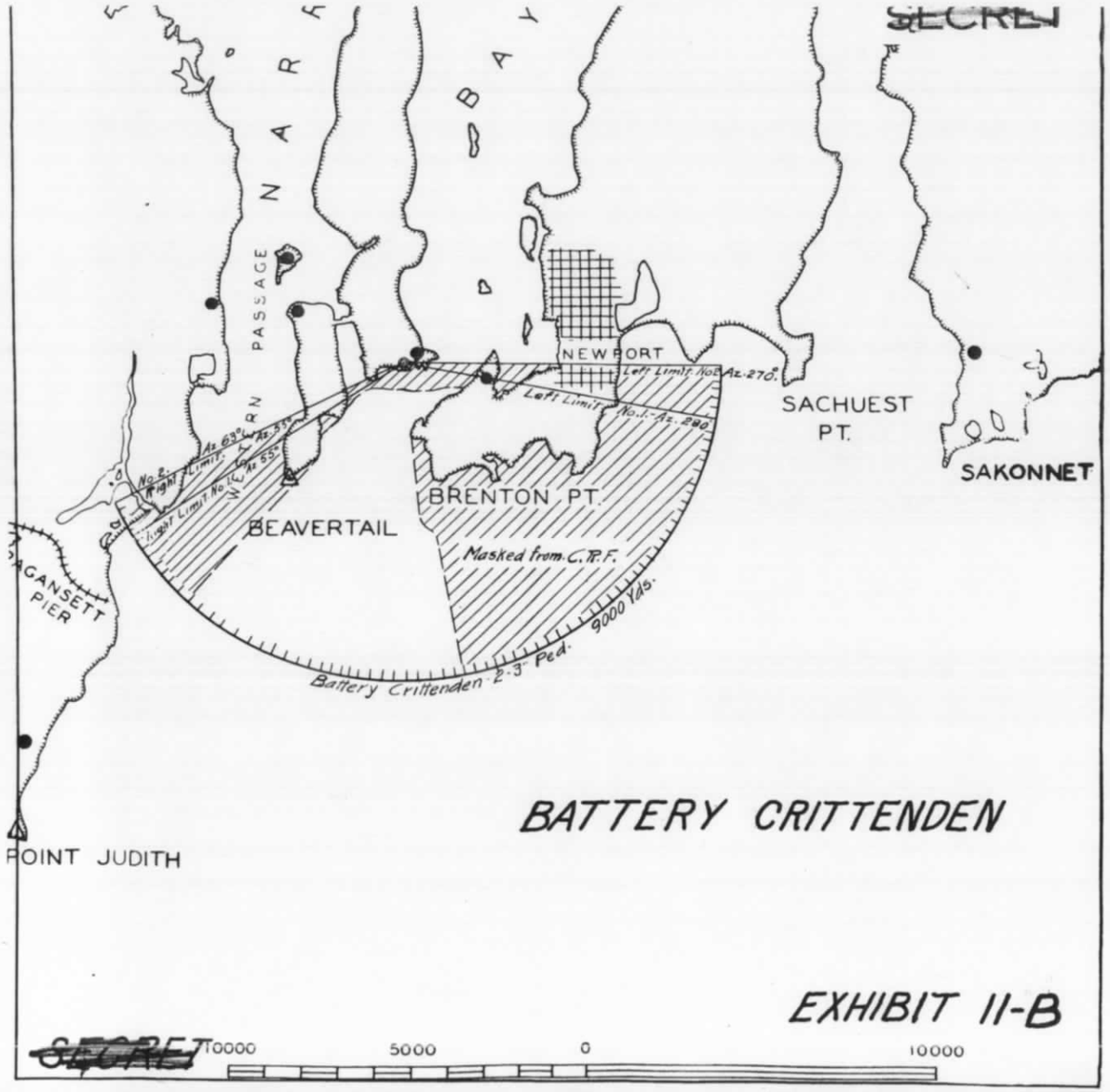

NARRAGANSETT BAY
Areas now covered
WESTERN PASSAGE
Left Limit No. 2 At. 205°
Left Limit At. 235°
NEWPORT
SACHUEST PT.
SAKONNET
BRENTON PT.
Masked from C.R.F.
BEAVERTAIL
GANSETT PIER
Left Limit No. 1 At. 275°
Right Limit No. 2 - At. 359°
Battery Cram - 2·6" Dia. 14400 Yds.
POINT JUDITH
BATTERY CRAM
Tinted area is now covered
EXHIBIT B-B
SECRET
10000
5000
0
10000

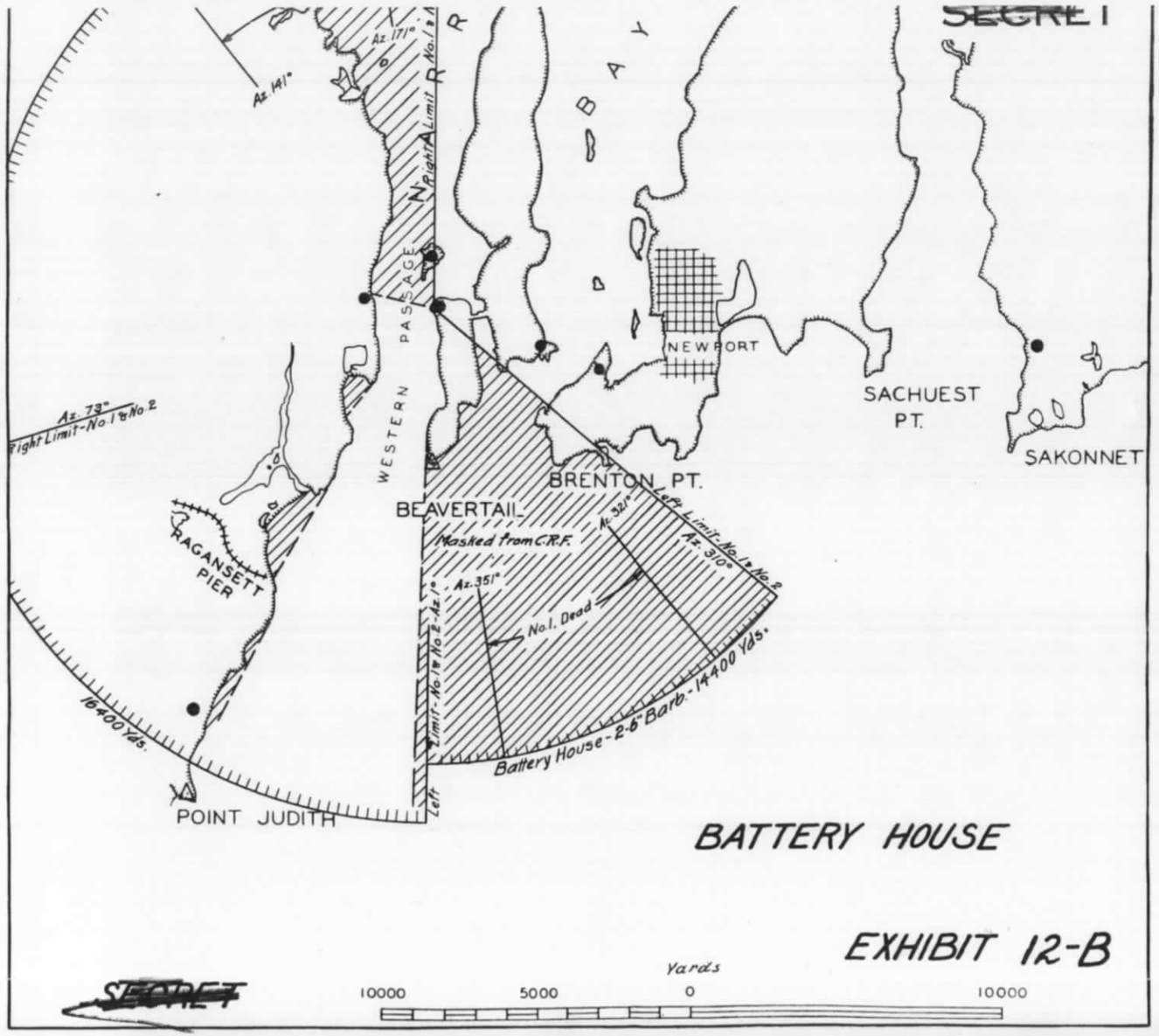


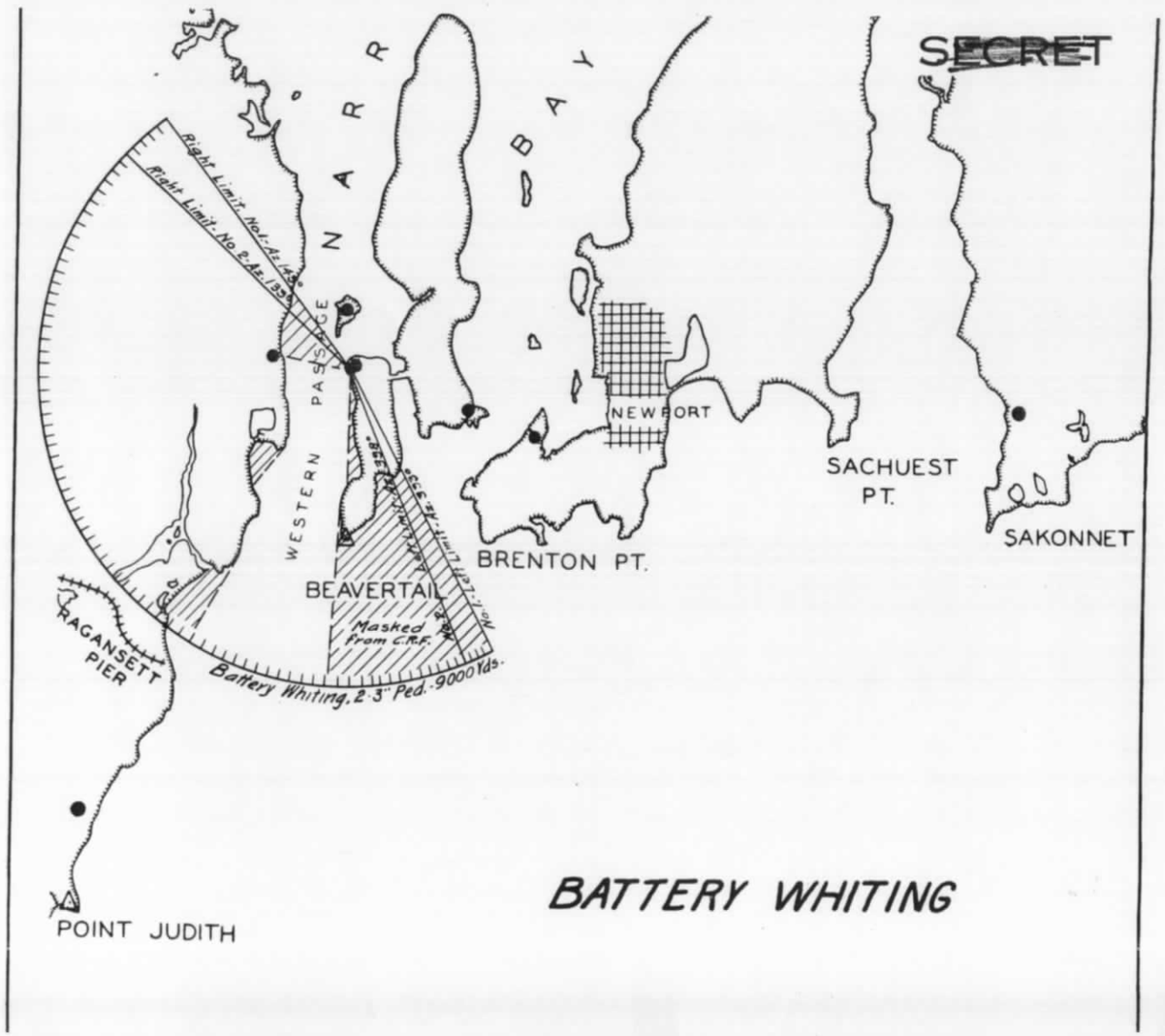
BATTERY ARMISTEAD

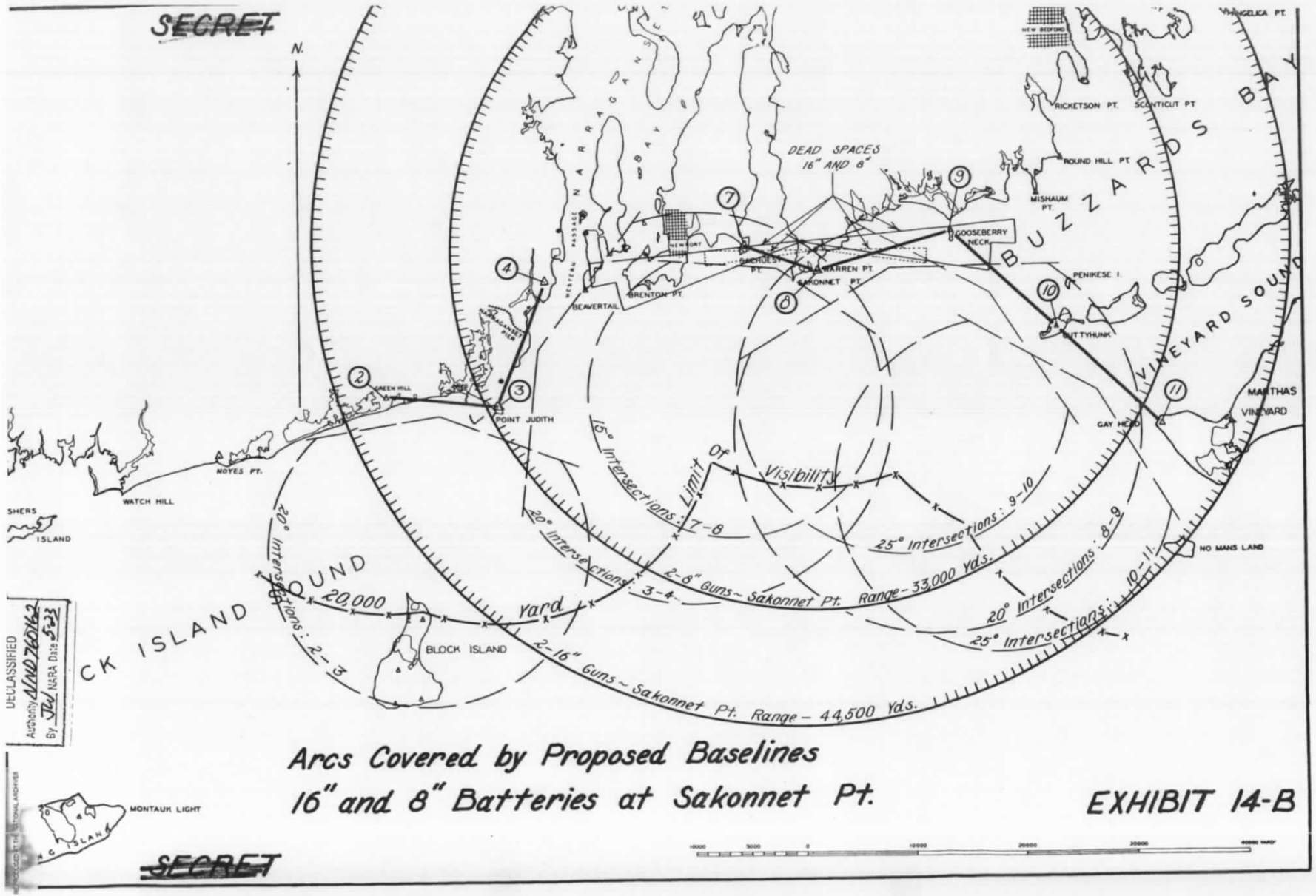
EXHIBIT 9-B


SECRET
NARR
BAY
Right Limit No 2 on Az 300°
Left Limit No 1 on No 2 - Az 2
Az 105°
No 2 Used
Az 75°
WESTERN PASSAGE
NEWPORT
Az 255°
No 1 Dead
SACHUEST PT.
SAKONNET
BRENTON PT.
Az 293°
BEAVERTAIL
GANSETT PIER
Masked from B' (D.P.F.)
Range 8080 Yds.
R. Limit No 1 on No 2 Az 42°
Battery Dickenson - 2 6" Barb - 14400 Yds.
L. Limit No 1 on Az 330°
POINT JUDITH
16400 Yds.
BATTERY DICKENSON
EXHIBIT 10-B
SECRET
10000
5000
0
10000


SECRET
NARRAGANSETT BAY
PASSAGE
NEWPORT
Left Limit No.2 Az. 270°
Left Limit No.1 Az. 280°
SACHUEST PT.
SAKONNET
BRENTON PT.
BEAVERTAIL
Masked from C.P.F.
Battery Crittenden 2-3" Ped.
9000 Yds.
NARRAGANSETT PIER
POINT JUDITH
BATTERY CRITTENDEN
EXHIBIT 11-B
SECRET
10000
5000
0
10000


SECRET
Az. 171°
Az. 141°
Right Limit-No. 1 & No. 2
R
BAY
WESTERN PASSAGE
NEWPORT
SACHUEST PT.
SAKONNET
Az. 73°
Right Limit-No. 1 & No. 2
BRENTON PT.
BEAVERTAIL
Left Limit-No. 1 & No. 2
Az. 321°
Az. 310°
Masked from C.R.F.
RAGANSETT PIER
Az. 351°
No. 1 Dead
Limit-No. 1 & No. 2-Az. 1°
16400 Yds.
Battery House-2-6" Barb.-14400 Yds.
Left
POINT JUDITH
BATTERY HOUSE
EXHIBIT 12-B
Yards
10000
5000
0
10000
SECRET

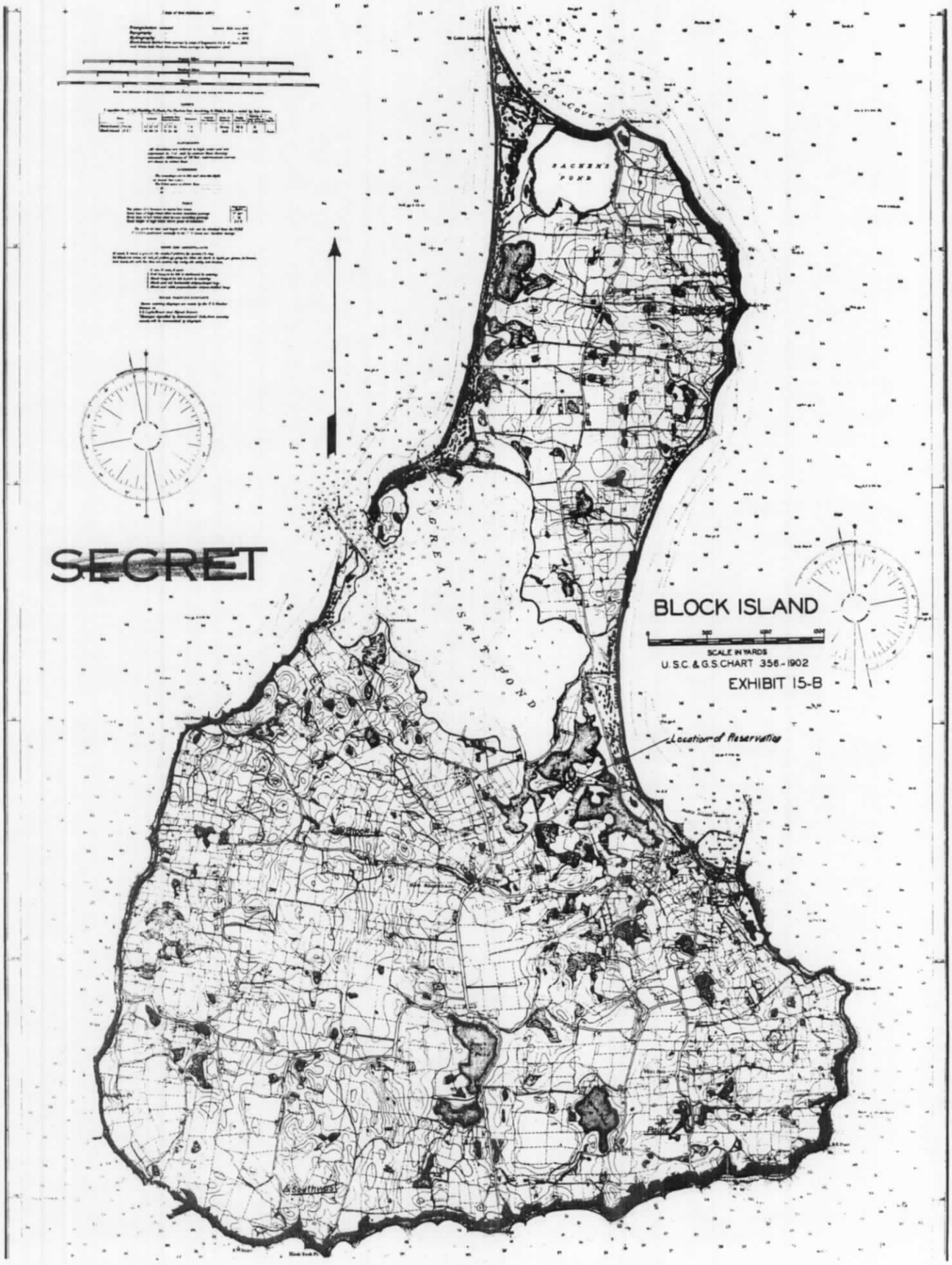

SECRET
NARR
BAY
Right Limit No. 1 Arc 180°
Right Limit No. 2 Arc 135°
WESTERN PASSAGE
NEWPORT
SACHUEST PT.
SAKONNET
BRENTON PT.
BEAVERTAIL
Masked From C.R.F.
RAGANSETT PIER
Battery Whiting, 2-3" Ped. 9000 Yds.
POINT JUDITH
BATTERY WHITING



DECLASSIFIED
Authority NND 760162
By JH NARA Date 5-23

Arcs Covered by Proposed Baselines
16" and 8" Batteries at Sakonnet Pt.

EXHIBIT 14-B


SECRET
BLOCK ISLAND
SCALE IN YARDS
U.S.C. & G.S. CHART 356 - 1902
EXHIBIT 15-B
GREAT SALT POND
Location of Reservation

SECRET

ORIENTATION DATA

U. S. COAST AND GEODETIC SURVEY

(To accompany Exhibit 16-B)

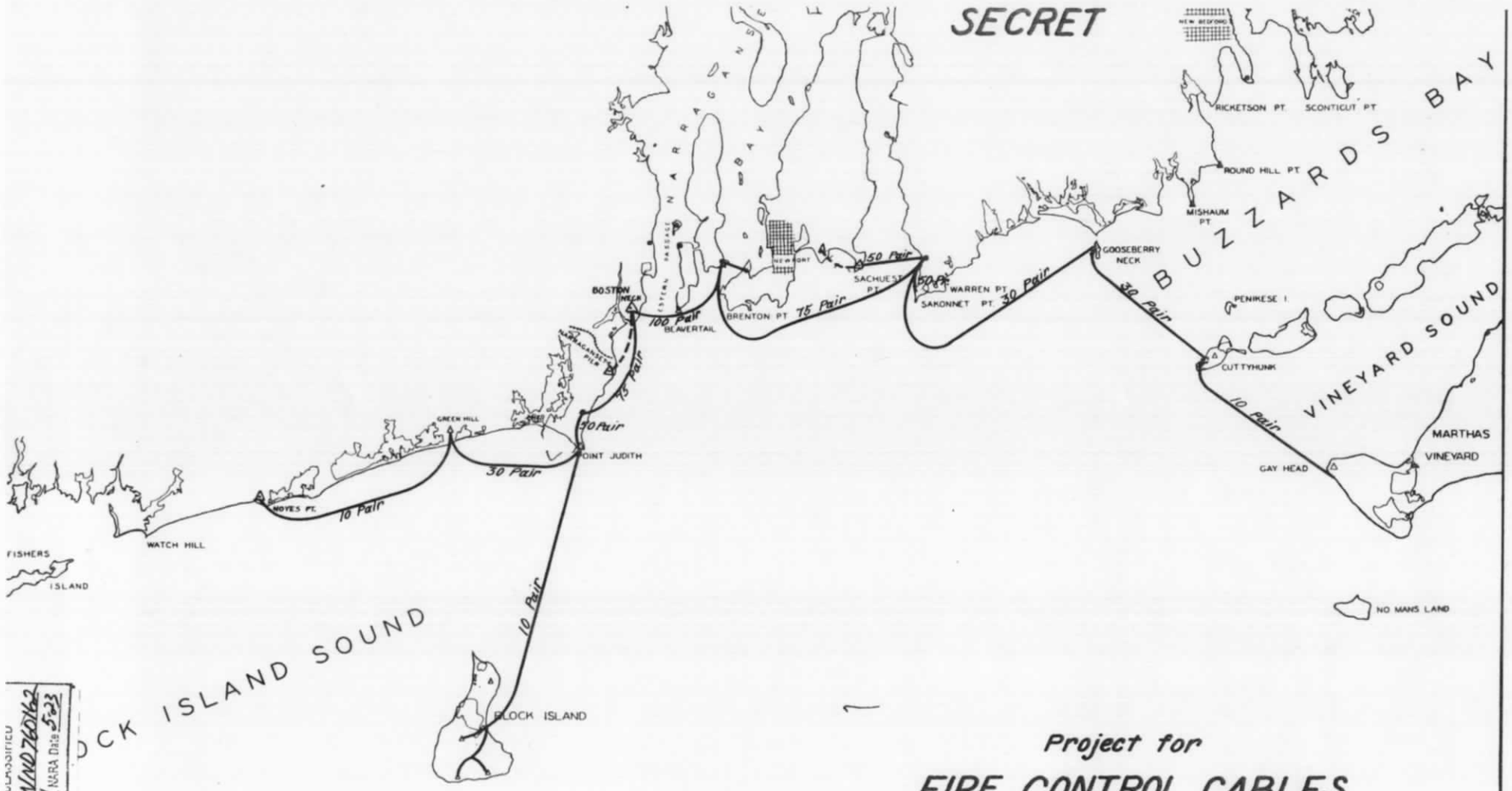
Name of Station	Latitude			Longitude		
	°	'	"	°	'	"
Montauk - 2*	41	03	53.829	71	54	18.669
Montauk Light	41	04	15.113	71	51	27.291
Watch Hill Lighthouse	41	18	13.646	71	51	32.555
Chapman (Noyes Point)	41	19	55.443	71	45	24.106
Quonochontaug Pond	41	19	55.962	71	43	39.742
Green Hill	41	22	24.700	71	35	51.593
Southwest	41	09	01.799	71	35	48.857
Block Island ECC*	41	10	31.430	71	35	30.904
Barlow's House cupola	41	08	57.13	71	34	44.32
Paine	41	09	18.840	71	33	44.968
Clayhead	41	12	44.106	71	33	40.383
Point Judith (1922)	41	22	18.452	71	29	22.844
White House W. Chimney	41	23	20.46	71	29	18.66
Point Judith Lighthouse	41	21	39.330	71	28	54.833
Hazard Tower	41	24	55.746	71	27	26.813
McSparren - 3	41	29	47.306	71	27	24.588
Narrow River East	41	26	27.883	71	26	21.652
Boston Neck	41	28	19.08	71	26	05.43
Beavertail Light	41	26	57.329	71	23	59.678
St. George's Academy (NW spire)	41	29	29.361	71	16	24.350
Sachuest Neck	41	28	59.371	71	14	54.544
East Rock	41	27	04.650	71	11	38.340
Sakonnet Point	41	27	16.36	71	11	46.09
Gooseberry Neck	41	29	20.083	71	02	19.612
Mishaum Point	41	30	56.112	70	57	16.438
Cuttyhunk	41	25	14.887	70	56	02.646
Round Hill	41	32	24.784	70	55	50.615
Clark's Point	41	35	34.154	70	54	03.713
Sconticut Point (Barn cupola 1913)	41	35	00.308	70	51	38.349
Gay Head	41	20	50.30	70	50	13.97
No Man's Land - 2	41	15	11.73	70	48	49.28

*New 1927 North American Datum.

To Accompany EXHIBIT 16-B

ORIENTATION DATA

SECRET



DECLASSIFIED
Authority NND 760162
By JW NARA Date 5-23

REPRODUCED AT THE NATIONAL ARCHIVES

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	1	A	Redetermination of Orientation Data, Narragansett Bay Sub-area and Surveys			$	$ 1,200	$ 6,000	$	$	$	$ 7,200
4	2	A	"H" STATION; HARBOR DEFENSE COMMAND POST, Prospect Hill			1,800	3,000	2,000		3,890	400	11,090
			Ordnance:									
			1 DPF (Sweasey)	On Hand								
			1 Azimuth Instrument, M-1910	$1,800	$1,800							
			Engineer:									
			Addition of 4 rooms to existing structure: Mat.	3,000								
			Lab.	2,000	5,000							
			Signal:									
			Additional Equipment:									
			2 Head & chest sets	80								
			2 Switchkey sets	60								
			1 Radio set SCR-177	3,450								
			Contingency	100	3,690							
			Wiring & installation: Mat.	200								
			Lab.	400	600							
			OBSERVING STATIONS, HARBOR DEFENSE COMMAND POST (Prospect) Block Island									
5	3		B_1S_1 (H.D.C.P.), Beacon Hill, Block Island			6,300	250	250	250	289	40	7,379
		B	Ordnance:									
			1 DPF M1	4,500								
			1 Azimuth Instrument M1910	1,800	6,300							
		C	Engineer:									
			Land, 1 acre	250								
			Base & shelter for DPF: Mat.	250								
			Lab.	250	750							
		B	Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
		C	Wiring & installation: Mat.	10								
			Lab.	40	50							
5	3		B_2S_2 (H.D.C.P.), Clayhead, Block Island			6,300	250	250	250	289	40	7,379
		B	Ordnance:									
			1 DPF M1	4,500								
			1 Azimuth Instrument M1910	1,800	6,300							
		C	Engineer:									
			Land, 1 acre	250								
			Base & shelter for DPF: Mat.	250								
			Lab.	250	750							
		B	Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
		C	Wiring & installation: Mat.	10								
			Lab.	40	50							

SECRET

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
5	3		B^3S^3 (H.D.C.P.) Paine, Block Island			$ 6,300	$ 250	$ 250	$ 250	$ 289	$ 40	$ 7,379
		B	Ordnance:									
			1 DFF M1	$4,500								
			1 Azimuth Instrument M1910	1,800	$6,300							
		C	Engineer:									
			Land, 1 acre	250								
			Base & shelter for DFF: Mat.	250								
			Lab.	250	750							
		B	Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
		C	Wiring & Installation: Mat.	10								
			Lab.	40	50							
5	3		B^4S^4 (H.D.C.P.), Southwest, Block Island			6,300	250	250	500	289	40	7,629
		B	Ordnance:									
			1 DFF M1	4,500								
			1 Azimuth Instrument M1910	1,800	6,300							
		C	Engineer:									
			Land, 2 acres	500								
			Base & shelter for DFF: Mat.	250								
			Lab.	250	1,000							
		B	Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
			Wiring & Installation: Mat.	10								
			Lab.	40	50							
5	2		PLOTTING ROOM (H.D.C.P.), Beach Avenue, Block Island			4,000	6,000	2,000		4,069	50	16,119
		B	Ordnance:									
			1 Board, Plotting, 110° type	1,500								
			1 Board, Spotting M2	2,500	4,000							
		C	Engineer:									
			Land (Government Reservation 2 acres)									
			Dormitory: Mat.	2,000								
			Lab.	1,000								
			Plotting & Switchboard Room: Mat.	4,000								
			Lab.	1,000	8,000							
		B	Signal:									
			6 Telephones with head & chest sets	480								
			1 T.I. Bell, small	9								
			1 Radio Set SCR-177	3,450								
			Contingency	100	4,039							
		C	Wiring & Installation: Mat.	30								
			Lab.	50	80							

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	5	A	C-1, GROUP COMMAND POST, Point Judith (Ref.Exh.2-B)	$ 1,800	$	$	$	$ 4,627	$	$ 6,427
			Controlling: 2-16" Btry., Pt. Judith; 2-8" Ry. Btry., Narr. Pier; 4-155 mm Btry., Pt. Judith; AA Btry. No. 1, Pt. Judith; AA Btry. No. 2, Narr. Pier							
			Ordnance: 1 BC Telescope Available; 1 Azimuth Instrument M1910 $1,800 — $1,800							
			Engineer: For cost of station see "Fire Control Stations," Pt. Judith.							
			Signal: 4 Telephones, desk, complete 200; 9 Telephones, wall with head & chest sets 720; 2 Hand sets 32; 2 Switchkey sets 60; 1 Radio set SCR-177 3,450; 1 Telephone Post System 15; Contingency 150 — 4,627							
			2-16" BATTERY, Point Judith							
4	5	A	BC STATION, vicinity of Battery, (2-16", Point Judith)	775	2,000	1,000	500	726	100	5,101
			Ordnance: 1 BC Telescope 775 — 775							
			Engineer: Construction of station: Mat. 2,000; Lab. 1,000; Land 500 — 3,500							
			Signal: 5 Telephones with head & chest sets 400; 2 Switchkey sets 60; 2 Hand sets 32; 1 Telephone Post System 15; 1 T.I. Bell, small 9; 1 Set, Firing Signal 60; Contingency 100 — 676; Wiring & Installation: Mat. 50; Lab. 100 — 150							
4	5	A	B[1] STATION, Point Judith (2-16", Point Judith)	3,600				279		3,879
			Ordnance: 2 Azimuth Instruments, M1910 3,600 — 3,600							
			Engineer: For cost of station see "Fire Control Station", Pt. Judith.							
			Signal: 3 Telephones with head & chest sets 240; 1 T.I. Bell, small 9; Contingency 30 — 279							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	4	A	B^2S^1, GREEN HILL, (2-16", Point Judith)	$ 3,600	$	$	$	$ 279	$	$ 3,879
			Ordnance: 2 Azimuth Instruments M1910 $3,600 $3,600							
			Engineer: For cost of station see "Fire Control Stations", Green Hill.							
			Signal: 3 Telephones with head & chest sets 240; 1 T.I. Bell, small 9; Contingency 30 279							
	1	B	B^3S^2, NOYES POINT, (2-16", Point Judith	3,600				279		3,879
			Ordnance: 2 Azimuth Instruments M1910 3,600 3,600							
			Engineer: For cost of station see "Fire Control Station", Noyes Point.							
			Signal: 3 Telephones with head & chest sets 240; 1 T.I. Bell, small 9; Contingency 30 279							
4	6	A	B^4S^3, BOSTON NECK, (2-16", Point Judith	6,300				279		6,579
			Ordnance: 1 DFF 4,500; 1 Azimuth Instrument M1910 1,800 6,300							
			Engineer: For cost of station see "Fire Control Station", Boston Neck.							
			Signal: 3 Telephones with head & chest sets 240; 1 T.I. Bell, small 9; Contingency 30 279							
4	7	A	B^5S^4, SACHUEST POINT, (2-16", Point Judith)	3,600				279		3,879
			Ordnance: 2 Azimuth Instruments M1910 3,600 3,600							
			Engineer: For cost of station see "Fire Control Station", Sachuest Point.							
			Signal: 3 Telephones with head & chest sets 240; 1 T.I. Bell, small 9; Contingency 30 279							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	8	A	B[6], WARREN POINT, (2-16", Point Judith			$ 3,600	$	$	$	$ 279	$	$ 3,879
			Ordnance:									
			2 Azimuth Instruments M1910	$3,600	$3,600							
			Engineer:									
			For cost of station see "Fire Control Station", Warren Point									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
5	4	A	PLOTTING ROOM, (2-16", Point Judith			39,960				4,785	300	45,045
			Ordnance:									
			1 Arm metal	25								
			1 Board, Plotting	4,000								
			1 Board, Deflection	1,900								
			1 Board, Range Correction	900								
			1 Corrector Percentage	125								
			1 Board, Spotting	2,500								
			1 Board, Fire Adjustment	250								
			1 Rule set forward	15								
			1 Indicator Wind Component	135								
			1 Director seacoast	30,000								
			4 Recorders, T. Interval	110	39,960							
			Engineer:									
			Construction included in cost of Battery Emplacement, Annex A.									
			Signal:									
			11 Telephones with head & chest sets	880								
			1 Hand set	16								
			1 Switchkey set	30								
			1 T.I. Bell, small	9								
			1 Switching Panel	100								
			1 Radio Set (SCR-177)	3,450								
			Contingency	150	4,635							
			Wiring & Installation: Mat.	150								
			Lab.	300	450							
5	4	A	GUN EMPLACEMENT, (2-16", Point Judith							900	300	1,200
			Ordnance:									
			Contained in Annex A.									
			Engineer:									
			Contained in Annex A.									
			Signal:									
			6 Telephones with head & chest sets	480								
			2 T.I. Bell, large	60								
			1 Set of firing signals	60								
			Contingency	100	700							
			Wiring & Installation: Mat.	200								
			Lab.	300	500							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
			8" RAILWAY BATTERY, Narragansett Pier			$	$	$	$	$	$	$
5	5		BC STATION, vicinity of Battery, (2-8" Railway, Narragansett Pier)			775	1,000	500		726	100	3,101
		B	Ordnance:									
			1 BC Telescope	$775	$775							
		C	Engineer:									
			Construction of station:									
			Mat.	1,000								
			Lab.	500	1,500							
		B	Signal:									
			5 Telephones with head & chest sets	400								
			2 Switchkey sets	60								
			2 Hand sets	32								
			1 Telephone Post System	15								
			1 T.I. Bell, small	9								
			1 Set, Firing Signal	60								
			Contingency	100	676							
		C	Wiring & Installation:									
			Mat.	50								
			Lab.	100	150							
4	5	B	B^1 - POINT JUDITH (8" Railway, Narragansett Pier)			3,600				279		3,879
			Ordnance:									
			2 Azimuth Instruments M1910	3,600	3,600							
			Engineer:									
			For cost of station see "Fire Control Stations" Point Judith.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	4	B	B^2 S^1, GREEN HILL (8" Railway, Narragansett Pier)			3,600				279		3,879
			Ordnance:									
			2 Azimuth Instruments M1910	3,600	3,600							
			Engineer:									
			For cost of station see "Fire Control Station" Green Hill.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
5	1	B	B^3 S^2, NOYES POINT (8" Railway, Narragansett Pier)			3,600				279		3,879
			Ordnance:									
			2 Azimuth Instruments M1910	3,600	3,600							
			Engineer:									
			For cost of station see "Fire Control Station", Narragansett Pier.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							

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EXHIBIT 18-B

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	6	B	B^4S^3, BOSTON NECK (8" Railway Narragansett Pier)	$ 3,600	$	$	$	$ 279	$	$ 3,879
			Ordnance:							
			2 Azimuth Instruments M1910 $3,600 $3,600							
			Engineer:							
			For cost of station see "Fire Constol Station" Boston Neck							
			Signal:							
			3 Telephones with head & chest sets 240							
			1 T.I. Bell, small 9							
			Contingency 30 279							
4	7	A	B^5S^4, SACHUEST POINT (8" Railway Narragansett Pier)	3,600				279		3,879
			Ordnance:							
			2 Azimuth Instruments M1910 3,600 3,600							
			Engineer:							
			For cost of station see "Fire Control Station" Sachuest Point.							
			Signal:							
			3 Telephones with head & chest sets 240							
			1 T.I. Bell, small 9							
			Contingency 30 279							
4	8	A	B^6, WARREN POINT (8" Railway Narragansett Pier)	3,600				279		3,879
			Ordnance:							
			2 Azimuth Instruments M1910 3,600 3,600							
			Engineer:							
			For cost of station see "Fire Control Station" Warren Point.							
			Signal:							
			3 Telephones with head & chest sets 240							
			1 T.I. Bell, small 9							
			Contingency 30 279							
5	5	B	PLOTTING ROOM (Plotting Car) Equipment, (8" Railway Narragansett Pier)	44,960				4,874	100	49,934
			Ordnance:							
			1 Army metal 25							
			1 Board, Plotting 4,000							
			1 Board, Deflection 1,900							
			1 Board, Range Correction 900							
			1 Corrector Percentage 125							
			1 Board, Spotting 2,500							
			1 Board Fire Adjustment 250							
			1 Rule set forward 15							
			1 Indicator Wind Component 135							
			1 Director seacoast 30,000							
			4 Recorders, T.I. 110 39,960							
			1 Plotting Car 5,000 5,000							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
						$	$	$	$	$	$	$
5	5	B	PLOTTING ROOM (CONT'D.)									
			Engineer:									
			Contained in Annex A									
			Signal:									
			12 Telephones with head & chest sets	$960								
			1 Hand set	16								
			1 Switchkey set	30								
			2 T.I. Bell, small	18								
			1 Switching Panel	100								
			1 Radio Set, SCR-177	3,450								
			Contingency	150	$4,724							
			Wiring & Installation: Mat.	150								
			Lab.	100	250							
5	5	B	8" RAILWAY BATTERY FIRING POSITION Narragansett Pier							700		700
			Ordnance:									
			Contained in Annex A									
			Engineer:									
			Contained in Annex A									
			Signal:									
			2 T.I. Bells, large	60								
			6 Telephones with head & chest sets	480								
			1 Set Firing Signal	60								
			Contingency	100	700							
			155-mm BATTERY, Point Judith									
4	14	B	BC STATION, near Battery (155-mm Battery, Point Judith)			900	1,000	500		555	100	3,055
			Ordnance:									
			1 BC Telescope	775								
			1 Corrector Percentage	125	900							
		C	Engineer:									
			Construction of station: Mat.	1,000								
			Lab.	500	1,500							
		B	Signal:									
			5 Telephones with head & chest sets	400								
			1 Switchkey set	30								
			1 Hand set	16								
			1 T.I. Bell, small	9								
			Contingency	50	505							
		C	Wiring & Installation: Mat.	50								
			Lab.	100	150							
4	14	B	CRF STATION, near Battery (155-mm Battery, Point Judith)			1,800	1,000	500		244	50	3,594
			Ordnance:									
			1 CRF, 15 ft.	Available								
			1 Azimuth Instrument M1910	1,800	1,800							
		C	Engineer:									
			Construction of Base & Shelter: Mat.	1,000								
			Lab.	500	1,500							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	14		GMF STATION (CONT'D.)			$	$	$	$	$	$	$
		B	Signal:									
			2 Telephones with head & chest sets	$160								
			1 T.I. Bell, small	9								
			Contingency	25	$194							
		C	Wiring & Installation:									
			Mat.	50								
			Lab.	50	100							
4	4	B	S1 - SPOTTING STATION, Green Hill (155-mm Battery, Point Judith)			1,800				100		1,900
			Ordnance:									
			1 Azimuth Instrument M1910	1,800	1,800							
			Engineer:									
			For construction of station see "Fire Control Station" Green Hill.									
			Signal:									
			1 Telephone with head & chest set	80								
			Contingency	20	100							
4	14	B	S2 - SPOTTING STATION, Hazard Tower (155-mm Battery, Point Judith)			1,800				100		1,900
			Ordnance:									
			1 Azimuth Instrument M1910	1,800	1,800							
			Engineer:									
			No construction, existing Tower. Private property. See text of Annex B, paragraph 12 and Station "5".									
			Signal:									
			1 Telephone with head & chest set	80								
			Contingency	20	100							
4	14		GUNS (4, 155-mm) Point Judith			9,200				910	100	10,210
		B	Ordnance:									
			4 Sights for 155-mm gun at $2,300 each	9,200	9,200							
		B	Signal:									
			8 Telephones with head & chest sets	640								
			4 T.I. Bells, large	120								
			Contingency	100	860							
		C	Wiring & Installation:									
			Mat.	50								
			Lab.	100	150							
			AA BATTERY NO. 1, Pt. Judith) AA BATTERY NO. 2, Narr. Pier)			See Annex "E".						

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
5	16		G-2, GROUP COMMAND POST. Prospect Hill	$ 775	$	$	$	$ 640	$ 50	$ 1,465
			Controlling: Btry. Wheaton, 2-12" DC, Ft. Wetherill; Btry. Warnum, 2-12" DC, Ft. Wetherill; Btry. Greene, 4-12" M, Ft. Adams; Btry. Edgerton, 4-12" M, Ft. Adams							
		B	Ordnance: 1 BC Telescope $775 — 775							
			Engineer: Existing Structure							
			Signal: Additional Equipment Required: 6 Telephones with head & chest sets 480; 2 Switchkey sets 60; Contingency 75 — 615							
		C	Wiring & Installation: Mat. 25; Lab. 50 — 75							
			BATTERY WHEATON, (2-12" DC, Fort Wetherill)							
4	17	A	BC STATION, near Battery, Fort Wetherill					40		40
			Ordnance: 1 Azimuth Instrument On Hand							
			Engineer: Existing Structure							
			Signal: Equipment installed, except: 1 Switchkey set 30; Contingency 10 — 40							
4	6	A	B-Sgl - BOSTON NECK, (2-12" DC, Battery Wheaton	1,800				279		2,079
			Ordnance: 1 DPF Available; 1 Azimuth Instrument M1910 1,800 — 1,800							
			Engineer: For construction of station see "Fire Control Station" Boston Neck.							
			Signal: 3 Telephones with head & chest sets 240; 1 T.I. Bell, small 9; Contingency 30 — 279							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	5	A	B^2S^3, POINT JUDITH (2-12" DC, Battery Wheaton) Ordnance: 2 Azimuth Instruments M1910 $3,600 $3,600 Engineer: For construction of station see "Fire Control Station" Point Judith. Signal: 3 Telephones with head & chest sets 240 1 Bell, T.I.,small 9 Contingency 30 279	$ 3,600	$	$	$	$ 279	$	$ 3,879
4	7	A	B^3S^5, SACHUEST POINT, (2-12" DC, Battery Wheaton) Ordnance: 2 Azimuth Instruments M1910 3,600 3,600 Engineer: For construction of station see "Fire Control Station" Sachuest Point. Signal: 3 Telephones with head & chest sets 240 1 T.I. Bell, small 9 Contingency 30 279	3,600				279		3,879
4	8	A	B^4, WARREN POINT, (2-12" DC, Battery Wheaton Ordnance: 2 Azimuth Instruments M1910 3,600 3,600 Engineer: For construction of station see "Fire Control Station" Warren Point. Signal: 3 Telephones with head & chest sets 240 1 T.I. Bell, small 9 Contingency 30 279	3,600				279		3,879
4	17	B	S^2, HAZARD TOWER, (2-12" DC, Battery Wheaton Ordnance: 1 Azimuth Instrument M1910 1,800 1,800 Engineer: No construction. Existing Tower. Private Property. See text of Annex B, paragraph 12 Auxiliary Station "5". Signal: 1 Telephone with head & chest set 80 Contingency 20 100	1,800				100		1,900

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	17	B	S[4], St. GEORGE's SCHOOL TOWER (2-12" DC, Battery Wheaton)			$ 1,800	$	$	$	$ 100	$	$ 1,900
			Ordnance:									
			1 Azimuth Instrument M1910	$1,800	$1,800							
			Engineer:									
			Private Tower. See text of Annex B, paragraph 13 Auxiliary Station "S".									
			Signal:									
			1 Telephone with head & chest set	80								
			Contingency	20	100							
			E - EMERGENCY STATION, Old B[1]Station (2-12" DC, Battery Wheaton)									
			Ordnance:									
			1 DFF (Swasey)	On Hand								
			Engineer:									
			Existing Structure									
			Signal:									
			Equipment installed.									
4	17	A	PLOTTING ROOM, Fort Wetherill (2-12" DC, Battery Wheaton)			4,390				130	20	4,540
			Ordnance:									
			1 Board, Plotting & Relocating	1,500								
			1 Board, Deflection, M1905	On Hand								
			1 Board, Range Correction, M1905	On Hand								
			1 Percentage Corrector	125								
			1 Board, Spotting	2,500								
			1 Board, Fire Adjustment	250								
			1 Rule set forward	15								
			1 Rule Prediction	On Hand								
			1 Wind Component Indicator	On Hand	4,390							
			Engineer:									
			Existing Structure									
			Signal:									
			1 Switching Panel	100	100							
		C	Wiring & Installation: Mat.	30								
			Lab.	20	50							
			GUN EMPLACEMENT - FORT WETHERILL, (2-12" DC, Battery Wheaton)									
			Existing Battery:									
			Ordnance:									
			Equipment installed									
			Engineer:									
			Existing Structure									
			Signal:									
			Equipment installed									

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
						$	$	$	$	$	$	$
			BATTERY VARNUM (2-12" BC Fort Wetherill)									
			BC STATION, near Battery, Fort Wetherill							40		40
			Ordnance:									
			1 Azimuth Instrument	On Hand								
			Engineer:									
			Existing Structure									
			Signal:									
			Equipment installed except:									
			1 Switchkey set	$30								
			Contingency	10	$40							
4	6	A	B^1S^1, BOSTON NECK, (2-12" BC, Battery Varnum							279		279
			Ordnance:									
			1 DPF	Available								
			1 Azimuth Instrument	Available								
			Engineer:									
			For construction of station see "Fire Control Station" Boston Neck.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	5	A	B^2S^3, POINT JUDITH, (2-12" BC, Battery Varnum)			3,600				279		3,879
			Ordnance:									
			2 Azimuth Instruments M1910	3,600	3,600							
			Engineer:									
			For construction of station see "Fire Control Station" Point Judith.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	7	A	B^3S^5, SACHUEST POINT (2-12" BC, Battery Varnum)			1,800				279		2,079
			Ordnance:									
			1 Azimuth Instrument M1910	1,800								
			1 DPF (Sweasey)	Available	1,800							
			Engineer:									
			For construction of station see "Fire Control Station" Sachuest Point.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	B	A	B[4], WARREN POINT, (2-12" DC Battery Varnum Ordnance: 2 Azimuth Instruments $3,600 3,600 Engineer: For construction of station see "Fire Control Station" Warren Point. Signal: 3 Telephones with head & chest sets 240 1 T.I. Bell, small 9 Contingency 30 279	$ 3,600	$	$	$	$ 279	$	$ 3,879
4	18	B	S[2], HAZARD TOWER, (2-12" BC, Battery Varnum) Ordnance: 1 Azimuth Instrument Available Engineer: No construction. Existing Tower. Private Property. See text, Annex B, paragraph 12, Auxiliary Station "5". Signal: 1 Telephone with head & chest set 80 Contingency 20 100					100		100
4	18	B	S4, St. GEORGE's SCHOOL TOWER, (2-12" BC Battery Varnum) Ordnance: 1 Azimuth Instrument Available Engineer: Existing Tower, Private Property. See text, Annex B, paragraph 13, Auxiliary Station "6". Signal: 1 Telephone with head & chest set 80 Contingency 20 100					100		100
			E - EMERGENCY STATION, Old B Station, Prospect Hill (2-12" BC, Battery Varnum) Ordnance: 1 DPF (Swasey) Available Engineer: Existing Structure Signal: Equipment installed							

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	18	A	PLOTTING ROOM, Fort Wetherill (2-12" BC, Battery Varnum)	$ 4,375	$	$	$	$ 130	$ 20	$ 4,525
			Ordnance:							
			1 Board, Plotting & Relocating $1,500							
			1 Board, Deflection M1905 On Hand							
			1 Board, Range Correction On Hand							
			1 Corrector Percentage 125							
			1 Board, Spotting 2,500							
			1 Board Fire Adjustment 250							
			1 Rule set forward On Hand							
			1 Rule Prediction On Hand							
			1 Wind Component Indicator On Hand $4,375							
			Engineer:							
			Existing Structure							
			Signal:							
			Equipment installed except:							
			1 Switching Panel 100 100							
			Wiring & Installation:							
			Mat. 30							
			Lab. 20 50							
			GUN EMPLACEMENT, Fort Wetherill (2-12" BC, Battery Varnum)							
			Existing Battery:							
			Ordnance:							
			Equipment installed							
			Signal:							
			Equipment installed							
			BATTERY GREENE, (4-12" M, Fort Adams)							
4	19	A	BC STATION, near Battery, Fort Adams					40		40
			Ordnance:							
			1 Azimuth Instrument M1910 On Hand							
			Engineer:							
			Existing Structure							
			Signal:							
			Equipment installed except:							
			1 Switchkey set 30							
			Contingency 10 40							
4	6	A	B1S1, BOSTON NECK (4-12" M, Battery Greene)	1,800				279		2,079
			Ordnance:							
			1 DPF Available							
			1 Azimuth Instrument M1910 1,800 1,800							
			Engineer:							
			For construction of station see "Fire Control Station" Boston Neck.							
			Signal:							
			3 Telephones with head & chest set 240							
			1 T.I. Bell, small 9							
			Contingency 30 279							

SECRET

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	5	A	B^2, POINT JUDITH (4-12" M, Battery Greene)			$ 1,800	$	$	$	$ 279	$	$ 2,079
			Ordnance:									
			1 Azimuth Instrument M1910	Available								
			1 Azimuth Instrument M1910	$1,800	$1,800							
			Engineer:									
			For construction of station see "Fire Control Station" Point Judith.									
			Signal:									
			3 Telephones with head & chest set	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	7	A	B^3S^3, SACHUEST POINT, (4-12" M, Battery Greene)			1,800				279		2,079
			Ordnance:									
			1 DPF	Available								
			1 Azimuth Instrument	1,800	1,800							
			Engineer:									
			For construction of station see "Fire Control Station" Point Judith.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	8	A	B^4, WARREN POINT, (4-12" M, Battery Greene)			1,800				279		2,079
			Ordnance:									
			1 Azimuth Instrument	Available								
			1 Azimuth Instrument	1,800	1,800							
			Engineer:									
			For construction of station see "Fire Control Station" Warren Point.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	19	B	S^2, HAZARD TOWER, (4-12" M, Battery Greene)			1,800				100		1,900
			Ordnance:									
			1 Azimuth Instrument M1910	1,800	1,800							
			Engineer:									
			No construction. Existing Tower. Private Property. See text of Annex B, paragraph 12, Auxiliary Station "S".									
			Signal:									
			1 Telephone with head & chest set	80								
			Contingency	20	100							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	19	B	S[4], St. GEORGE's SCHOOL TOWER, (4-12" M, Battery Greene) Ordnance: 1 Azimuth Instrument Available Engineer: Private Tower. See text of Annex B, paragraph 13, Auxiliary Station "6". Signal: 1 Telephone with head & chest set $80 Contingency 20 $100	$	$	$	$	$ 100	$	$ 100
			E - EMERGENCY STATION, (Old B[2], Battery Edgerton at Prospect Hill) (4-12" M, Battery Greene) Ordnance: 1 DPF Available Engineer: Existing Structure Signal: Equipment installed.							
4	19	A	PLOTTING ROOM, Fort Adams, (4-12" M, Battery Greene) Ordnance: 1 Board, Plotting & Relocating 1,500 1 Board, Plotting 110° M1915 On Hand 1 Board, Deflection M1906 On Hand 1 Board, Range Correction M1905 On Hand 1 Percentage Corrector M1 On Hand 1 Board, Spotting 2,500 1 Board, Fire Adjustment 250 1 Rule set forward On Hand 1 Rule Prediction On Hand 1 Indicator Wind Component On Hand 4,250 Engineer: Existing Structure Signal: 7 Telephones wall with head & chest sets 560 1 Switching Panel 100 660 Wiring & Installation: Mat. 25 Lab. 75 100	4,250				685	75	5,010
4	19	A	GUN EMPLACEMENT, Fort Adams (4-12" M, Battery Greene) Existing Battery. All equipment installed except: Signal: 6 Telephones with head & chest sets 480 480					480		480

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
			BATTERY EDGERTON, (4-12" M, Fort Adams)			$	$	$	$	$	$	$
4	20	A	BC STATION, near Battery, Fort Adams							40		40
			Ordnance:									
			1 Azimuth Instrument M1910	On Hand								
			Engineer:									
			Existing Structure									
			Signal:									
			Equipment installed except:									
			1 Switchkey set	$30								
			Contingency	10	$40							
4	6	A	B[1]S[1], BOSTON NECK (4-12" M, Battery Edgerton)			1,800				279		2,079
			Ordnance:									
			1 DPF	Available								
			1 Azimuth Instrument M1910	1,800	1,800							
			Engineer:									
			For construction of station see "Fire Control Station" Boston Neck.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	5	A	B[2], POINT JUDITH, (4-12" M, Battery Edgerton)			1,800				279		2,079
			Ordnance:									
			1 Azimuth Instrument M1910	Available								
			1 Azimuth Instrument M1910	1,800	1,800							
			Engineer:									
			For construction of station see "Fire Control Station" Point Judith.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	7	A	B[3]S[3], SACHUEST POINT, (4-12" M, Battery Edgerton)			1,800				279		2,079
			Ordnance:									
			1 DPF	Available								
			1 Azimuth Instrument M1910	1,800	1,800							
			Engineer:									
			For construction of station see "Fire Control Station" Sachuest Point.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	8	A	H[4], WARREN POINT, (4-12" M, Battery Edgerton) Ordnance: 2 Azimuth Instruments $3,600 $3,600 Engineer: For construction of station see "Fire Control Station" Warren Point. Signal: 3 Telephones with head & chest sets 240 1 Bell, T.I. small 9 Contingency 30 279	$ 3,600	$	$	$	$ 279	$	$ 3,879
4	20	B	S[2], HAZARD TOWER, (4-12" M, Battery Edgerton) Ordnance: 1 Azimuth Instrument M1910 1,800 1,800 Engineer: No construction. Existing Tower. Private Property. See text of Annex B, paragraph 12, Auxiliary Station "5". Signal: 1 Telephone with head & chest set 80 Contingency 20 100	1,800				100		1,900
4	20	B	S[4], St. GEORGE's SCHOOL TOWER (4-12" M, Battery Edgerton) Ordnance: 1 Azimuth Instrument M1910 1,800 1,800 Engineer: Private Property. Existing Tower. See text See text of Annex B, paragraph 13, Auxiliary Station "6". Signal: 1 Telephone with head & chest set 80 Contingency 20 100	1,800				100		1,900
			E - EMERGENCY STATION, (Old B[4], Battery Edgerton at Prospect Hill) (4-12" M, Battery Edgerton) Ordnance: 1 DPF Available Engineer: Existing Structure Signal: Equipment installed							

SECRET

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	20	A	PLOTTING ROOM, Fort Adams (4-12" M, Battery Edgerton)			$ 4,250	$	$	$	$ 685	$ 75	$ 5,010
			Ordnance:									
			1 Board, Plotting & Relocating	$1,500								
			1 Board, Plotting 110° M1915	On Hand								
			1 Board, Deflection M1906	On Hand								
			1 Board, Range Correction, M1905	On Hand								
			1 Percentage Corrector, M1	On Hand								
			1 Board, Spotting	2,500								
			1 Board, Fire Adjustment	250								
			1 Rule set forward	On Hand								
			1 Rule Prediction	On Hand								
			1 Wind Component, Indicator	On Hand	$4,250							
			Engineer:									
			Existing Structure									
			Signal:									
			7 Telephones wall with head & chest sets	560								
			1 Switching Panel	100	660							
			Wiring & Installation:									
			Mat.	25								
			Lab.	75	100							
4	20	A	GUN EMPLACEMENT, Fort Adams, (4-12" M, Battery Edgerton)							480		480
			Existing Battery. All equipment installed except:									
			Signal:									
			6 Telephones with head & chest sets	480	480							
4	8	A	C-3, GROUP COMMAND POST, Warren Point			1,800				4,627		6,427
			Controlling:									
			2 - 16" Btry., Sakonnet Pt.									
			2 - 8" (Fixed) Sakonnet Pt.									
			4 - 155mm Btry., Sakonnet Pt.									
			AA Btry. # 5, near Sakonnet Pt.									
			AA Btry. # 6, near Warren Pt.									
			Ordnance:									
			1 Azimuth Instrument M1910	1,800								
			1 BC Telescope	Available	1,800							
			Engineer:									
			For construction see "Fire Control Station" Warren Point.									
			Signal:									
			4 Telephones, desk, complete	200								
			9 Telephones with head & chest set	720								
			2 Hand sets	32								
			2 Switchkey sets	60								
			1 Radio SCR-177	3,450								
			1 Telephone Post System	15								
			Contingency	150	4,627							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
			16" BATTERY (2-16" Guns), Sakonnet Point			$	$	$	$	$	$	$
4	1	A	BC STATION, vicinity of Battery, (2-16", Sakonnet Point)			775	2,000	1,000	500	726	100	5,101
			Ordnance:									
			1 BC Telescope	$775	3775							
			Engineer:									
			Construction of Station:									
			Mat.	2,000								
			Lab.	1,000								
			Land	500	3,500							
			Signal:									
			5 Telephones with head & chest sets	400								
			2 Switchkey sets	60								
			2 Hand sets	32								
			1 Telephone Post System	15								
			1 T.I. Bell, small	9								
			1 Set Firing Signals	60								
			Contingency	100	676							
			Wiring & Installation:									
			Mat.	50								
			Lab.	100	150							
4	8	A	B^1, WARREN POINT (2-16", Sakonnet Point)			3,600				279		3,879
			Ordnance:									
			2 Azimuth Instruments M1910	3,600	3,600							
			Engineer:									
			For construction of station see "Fire Control Station" Warren Point.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	7	A	B^2S^1, SACHUEST POINT, (2-16", Sakonnet Point)			3,600				279		3,879
			Ordnance:									
			2 Azimuth Instruments M1910	3,600	3,600							
			Engineer:									
			For construction of station see "Fire Control Station" Sachuest Point.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	9	C	B^3S^2, GOOSEBERRY NECK, (2-16", Sakonnet Point)			$ 3,600	$	$	$	$ 279	$	$ 3,879
			Ordnance:									
			2 Azimuth Instruments M1910	$3,600	$3,600							
			Engineer:									
			For construction of station see "Fire Control Station" Gooseberry Neck.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
	10		B^4S^3, CUTTYHUNK, (2-16", Sakonnet Point)			6,300				279		6,579
		B	Ordnance:									
			1 DPF	4,500								
			1 Azimuth Instrument M1910	1,800	6,300							
			Engineer:									
			For construction of station see "Fire Control Station" Cuttyhunk.									
		B	Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	11		B^5S^4, GAY HEAD, (2-16", Sakonnet Point)			6,300				279		6,579
		B	Ordnance:									
			1 DPF	4,500								
			1 Azimuth Instrument M1910	1,800	6,300							
			Engineer:									
			For construction of station see "Fire Control Station" Gay Head.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	6	A	B^6S^5, BOSTON NECK, (2-16", Sakonnet Point)			6,300				279		6,579
			Ordnance:									
			1 DPF	4,500								
			1 Azimuth Instrument M1910	1,800	6,300							
			Engineer:									
			For construction of station see "Fire Control Station" Boston Neck.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	5	A	B^{7}, POINT JUDITH, (2-16", Sakonnet Point			$ 3,600	$	$	$	$ 279	$	$ 3,879
			Ordnance:									
			2 Azimuth Instruments M1910	$3,600	$3,600							
			Engineer:									
			For construction of station see "Fire Control Station" Point Judith.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	4	B	B^{8}B^{6}, GREEN HILL, (2-16", Sakonnet Point)			3,600				279		3,879
			Ordnance:									
			2 Azimuth Instruments M1910	3,600	3,600							
			Engineer:									
			For construction of station see "Fire Control Station" Green Hill.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	12	A	PLOTTING ROOM, Sakonnet Point (2-16", Sakonnet Point)			39,960				4,785	300	45,045
			Ordnance:									
			1 Arm metal	25								
			1 Board, Plotting	4,000								
			1 Board, Deflection	1,900								
			1 Board, Range Correction	900								
			1 Corrector Percentage	125								
			1 Board, Spotting	2,500								
			1 Board, Fire Adjustment	250								
			1 Rule set forward	15								
			1 Indicator Wind Component	135								
			1 Director Seacoast	30,000								
			4 Recorders, T.I.	110	39,960							
			Engineer:									
			Construction included in cost of Battery Emplacement. See Annex "A".									
			Signal:									
			11 Telephones with head & chest sets	880								
			1 Hand set	16								
			1 Switchkey set	30								
			1 T.I. Bell, small	9								
			1 Switching Panel	100								
			1 Radio set, SCR-177	3,450								
			Contingenc	150	4,635							
			Wiring & Installation: Mat.	150								
			Lab.	300	450							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	12	A	GUN EMPLACEMENT, Sakonnet Point	$	$	$	$	$ 900	$ 300	$ 1,200
			Ordnance: Contained in Annex "A"							
			Engineer: Contained in Annex "A"							
			Signal:							
			6 Telephones with head & chest sets $480							
			2 T.I. Bell, large 60							
			1 Set Firing Signal 60							
			Contingency 100 $700							
			Wiring & Installation:							
			Mat. 200							
			Lab. 300 500							
			8" (Fixed) BATTERY, (2-8" Guns, Sakonnet Point)							
4	2	A	BC STATION at Battery, Sakonnet Point	1,800				625	100	2,525
			Ordnance:							
			1 Azimuth Instrument M1910 1,800 1,800							
			Engineer:							
			Construction included in Emplacement. See Annex "A".							
			Signal:							
			5 Telephones with head & chest sets 400							
			1 Switchkey set 60							
			1 Hand set 16							
			1 Telephone Post System 15							
			1 T.I. Bell, small 9							
			Contingency 75 575							
			Wiring & Installation:							
			Mat. 50							
			Lab. 100 150							
4	8	A	B^1, WARREN POINT, (2-8", Fixed, Sakonnet Point)	3,600				279		3,879
			Ordnance:							
			2 Azimuth Instruments M1910 3,600 3,600							
			Engineer:							
			For construction of station see "Fire Control Station" Warren Point.							
			Signal:							
			3 Telephones with head & chest sets 240							
			1 T.I. Bell, small 9							
			Contingency 30 279							
4	7	A	$B^{2}3^{1}$, SACHUEST POINT, (2-8", Fixed, Sakonnet Point)	3,600				279		3,879
			Ordnance:							
			2 Azimuth Instruments M1910 3,600 3,600							
			Engineer:							
			For construction of station see "Fire Control Station" Sachuest Point.							
			Signal:							
			3 Telephones with head & chest sets 240							
			1 T.I. Bell, small 9							
			Contingency 30 279							

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	9		B^3S^2, GOOSEBERRY NECK, (2-8", Sakonnet Point)			$ 3,600	$	$	$	$ 279	$	$ 3,879
		B	Ordnance:									
			2 Azimuth Instruments M1910	$3,600	$3,600							
		B	Engineer:									
			For construction of station see "Fire Control Station" Gooseberry Neck									
		B	Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	10		B^4S^3, CUTTYHUNK, (2-8", Sakonnet Point)			6,300				279		6,579
		B	Ordnance:									
			1 DFT	4,500								
			1 Azimuth Instrument M1910	1,800	6,300							
			Engineer:									
			For construction of station see "Fire Control Station" Cuttyhunk.									
		B	Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	6	A	B^5S^4, BOSTON NECK, (2-8", Sakonnet Point)			6,300				279		6,579
			Ordnance:									
			1 DFT	4,500								
			1 Azimuth Instrument M1910	1,800	6,300							
			Engineer:									
			For construction of station see "Fire Control Station" Boston Neck.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							
4	5	A	B^6, POINT JUDITH, (2-8", Sakonnet Point)			3,600				279		3,879
			Ordnance:									
			2 Azimuth Instruments M1910	3,600	3,600							
			Engineer:									
			For construction of station see "Fire Control Station" Point Judith.									
			Signal:									
			3 Telephones with head & chest sets	240								
			1 T.I. Bell, small	9								
			Contingency	30	279							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	13	A	PLOTTING ROOM, Sakonnet Point, (2-8", Fixed, Sakonnet Point)			$ 39,960	$	$	$	$ 4,785	$ 300	$ 45,045
			Ordnance:									
			1 Arm metal	$25								
			1 Board, Plotting	4,000								
			1 Board, Deflection	1,900								
			1 Board, Range Correction	900								
			1 Corrector Percentage	125								
			1 Board, Spotting	2,500								
			1 Board, Fire Adjustment	250								
			1 Rule set forward	15								
			1 Indicator Wind Component	135								
			1 Director seacoast	30,000								
			4 Recorders, T.I.	110	$39,960							
			Engineer:									
			Construction included in cost of Battery Emplacement. See Annex "A".									
			Signal:									
			11 Telephones with head & chest sets	880								
			1 Hand set	16								
			1 Switchkey set	30								
			1 T.I. Bell, small	9								
			1 Switching Panel	100								
			1 Set, Radio SCR-177	3,450								
			Contingency	150	4,635							
			Wiring & Installation: Mat.	150								
			Lab.	300	450							
4	13	A	GUN EMPLACEMENT, (2-8", Fixed, Sakonnet Point)							715	200	915
			Ordnance:									
			Contained in Annex "A"									
			Engineer:									
			Contained in Annex "A"									
			Signal:									
			6 Telephones with head & chest sets	480								
			2 T.I. Bells, large	60								
			Contingency	75	615							
			Wiring & Installation: Mat.	100								
			Lab.	200	300							
			155-mm BATTERY, Sakonnet Point									
4	15	B	BC STATION, near Battery, (155-mm, Sakonnet Point)			900	1,000	500		555	100	3,055
			Ordnance:									
			1 BC Telescope	775								
			1 Corrector Percentage	125	900							
		C	Engineer:									
			Construction of station: Mat.	1,000								
			Lab.	500	1,500							
		B	Signal:									
			5 Telephones with head & chest sets	400								
			1 Switchkey set	30								
			1 Hand set	16								
			1 T.I. Bell, small	9								
			Contingency	50	505							
			Wiring & Installation: Mat.	50								
			Lab.	100	150							

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	15	B	CRF STATION near Battery, (155-mm, Sakonnet Point)	$ 1,800	$ 1,000	$ 500	$	$ 244	$ 100	$ 3,644
			Ordnance:							
			1 CRF, 15 ft. Available							
			1 Azimuth Instrument M1910 $1,800 $1,800							
		C	Engineer:							
			Construction of Base & Shelter: Mat. 1,000							
			Lab. 500 1,500							
		B	Signal:							
			2 Telephones with head & chest sets 160							
			1 T.I. Bell, small 9							
			Contingency 25 194							
		C	Wiring & Installation:							
			Mat. 50							
			Lab. 50 100							
4	15	B	S^1, St. GEORGE's SCHOOL TOWER, (155-mm, Sakonnet Point)	1,800				100		1,900
			Ordnance:							
			1 Azimuth Instrument M1910 1,800 1,800							
			Engineer:							
			Private Tower. See text of Annex "B", paragraph 13, Auxiliary Station "6".							
			Signal:							
			1 Telephone with head & chest set 80							
			Contingency 20 100							
4	9		S^2, GOOSEBERRY NECK (155-mm, Sakonnet Point)	1,800				100		1,900
		B	Ordnance:							
			1 Azimuth Instrument M1910 1,800 1,800							
			Engineer:							
			For construction of station see "Fire Control Station" Gooseberry Neck.							
		B	Signal:							
			1 Telephone with head & chest set 80							
			Contingency 20 100							
4	15	B	GUNS (4-155-mm), Sakonnet Point	9,200				910	100	10,210
			Ordnance:							
			4 Sights for 155-mm guns 9,200 9,200							
		B	Signal:							
			8 Telephones with head & chest sets 640							
			4 T.I. Bells, large 120							
			Contingency 100 860							
		C	Wiring & Installation:							
			Mat. 50							
			Lab. 100 150							

AA BATTERY No. 5, Sakonnet Point) See Annex "E"
AA BATTERY No. 6, Warren Point)

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
			G-4, AA GROUP COMMAND POST See Annex "E"	$	$	$	$	$	$	$
4	21	A	MD, MINE GROUP COMMAND POST, Prospect Controlling: Auxiliary Command Post, Ft. Getty: MC-1, 1st Mine Command, Prospect MC-2, 2d Mine Command, Ft. Wetherill Btry. Dickinson, 2-6" BC, Ft. Wetherill Btry. Crittenden, 2-3", Ft. Wetherill Ordnance: 1 DPF (Swasey) Available Engineer: Existing structure Signal: Equipment installed except: 2 Switchkey sets $60 2 Hand sets 32 Contingency 25 $117					117		117
4	21	A	AUXILIARY MD, COMMAND POST, Fort Getty Controlling: Btry. Cram, 2-6" DC, Ft. Kearney Btry. Armistead, 2-3", Ft. Kearney Btry. House, 2-6" BC, Ft. Getty Btry. Whiting, 2-3", Ft. Getty Ordnance: 1 Azimuth Instrument Available Engineer: Existing Structure Signal: Equipment installed except: 2 Switchkey sets 60 2 Hand sets 32 Contingency 25 117					117		117
			BATTERY CRAM, 2-6" DC, Fort Kearney							
4	21	A	BC STATION, Fort Kearney, (Battery Cram, 2-6" DC) Ordnance: 1 Azimuth Instrument Available 1 Corrector Percentage 125 125 Engineer: Existing Structure Signal: Equipment installed	125						125
			CRF STATION, Fort Kearney (Battery Cram, 2-6" DC) Ordnance: 1 CRF, 15 ft. On Hand Engineer: Existing Construction Signal: Equipment installed							
			GUN EMPLACEMENT (Battery Cram, 2-6" DC) All Equipment Installed.							

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordinance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
			BATTERY ARMISTEAD, (2-3", Fort Kearney)	$	$	$	$	$	$	$
			BC STATION, Fort Kearney, (2-3", Battery Armistead) Ordnance: 1 Azimuth Instrument Available Engineer: Existing Construction Signal: Equipment installed							
			CRF STATION, Fort Kearney, (2-3", Battery Armistead) Ordnance: 1 CRF, 9 ft. On Hand Engineer: Existing Construction Signal: Equipment installed							
			GUN EMPLACEMENT (2-3", Battery Armistead) All Equipment Installed.							
			BATTERY HOUSE, (2-6" BC, Fort Getty)							
4	21	A	BC STATION, Fort Getty, (2-6" BC, Battery House) Ordnance: 1 Azimuth Instrument Available 1 Corrector Percentage $125 $125 Engineer: Existing Structure Signal: Equipment installed	125						125
			GUN EMPLACEMENT (2-6" BC, Battery House) All Equipment Installed.							
			BATTERY WHITING, (2-3", Fort Getty)							
			BC STATION, Fort Getty, (2-3", Battery Whiting) Ordnance: 1 Azimuth Instrument Available Engineer: Existing Construction Signal: Equipment installed							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
				$	$	$	$	$	$	$
			CRF STATION, Fort Getty. (2-3", Battery Whiting)							
			Ordnance:							
			1 CRF, 9 ft. On Hand							
			Engineer:							
			Existing Construction							
			Signal:							
			Equipment installed							
			GUN EMPLACEMENT, (2-3", Battery Whiting)							
			All Equipment Installed.							
			MC-1, 1st MINE COMMAND 4 Groups - Western Passage controlled from Casemate, Fort Getty.							
4	21	A	BC - M_2^1, PROSPECT					2,610	75	2,685
			Ordnance:							
			1 DFF Available							
			1 Azimuth Instrument Available							
			Engineer:							
			Existing Structure							
			Signal:							
			3 Radio Sets(Mine) $1,800							
			8 Telephones with head & chest sets 640							
			1 Telephone Post System 15							
			1 Hand set 16							
			1 Switchkey set 30							
			1 T.I. Bell, small 9							
			Contingency 100 $2,610							
			Wiring & Installation 75 75							
4	21	B	M_1^2, at The "BONNET"		1,000	1,000		185	20	2,205
			Ordnance:							
			1 DFF Available							
		C	Engineer:							
			Construction of Station:							
			Mat. 1,000							
			Lab. 1,000 2,000							
		B	Signal:							
			2 Telephones with head & chest sets 160							
			Contingency 25 185							
			Wiring & Installation: 20 20							
4	21		SPOTTING STATION, Beavertail		250	250				500
			Ordnance:							
			1 Azimuth Instrument Available							
		C	Engineer:							
			Shelter to be constructed in an emergency:							
			Mat. 250							
			Lab. 250 500							
			Signal:							
			Equipment on hand							
			Cable connection installed							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
			PLOTTING ROOM, Fort Getty	$	$	$	$	$	$	$
			Ordnance: Equipment on hand Engineer: Existing Structure Signal: Equipment installed							
			MINE CASEMATE, Fort Getty							
			Existing installation, suitable and adequate.							
			MC-2, 2d MINE COMMAND							
			8 Groups, Eastern Passage controlled from Casemate, Fort Wetherill.							
4	21	A	BC - M_2^1 - M_2^1, Fort Wetherill					2,610	75	2,685
			Ordnance: 2 DFF's Available Engineer: Existing Structure Signal: 3 Radio sets,(Mine) $1,800; 8 Telephones with head & chest sets 640; 1 Telephone Post System 15; 1 Hand set 15; 1 Switchkey set 30; 1 T.I. Bell, small 9; Contingency 100 $2,610; Wiring & Installation: 75 75							
			M_2^2 - M_2^2, Fort Wetherill							
			Ordnance: 2 DFF's Available Engineer: Existing Structure Signal: Equipment installed							
			SPOTTING STATION, Beavertail							
			Ordnance: 1 Azimuth Instrument Available Engineer: Shelter to be constructed in an emergency, See M_1^2 1st MINE COMMAND. Signal: Equipment on hand; Cable connection installed							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
			PLOTTING ROOM, Fort Wetherill	$	$	$	$	$	$	$
			Ordnance: Equipment on hand Engineer: Existing Structure Signal: Equipment installed							
			MINE CASEMATE, Fort Wetherill							
			Existing installation, suitable and adequate.							
			BATTERY DICKENSON, (2-6" BC, Fort Wetherill)							
4	21	A	BC STATION, Fort Wetherill, (2-6" BC, Battery Dickenson)	4,625						4,625
			Ordnance: 1 Azimuth Instrument On Hand 1 DFF $4,500 1 Corrector Percentage 125 $4,625 Engineer: Existing Structure Signal: Equipment installed							
			GUN EMPLACEMENT, (2-6" BC, Battery Dickenson)							
			All Equipment installed.							
			BATTERY CRITTENDEN, (2-3", Fort Wetherill)							
			BC STATION, Fort Wetherill							
			Ordnance: 1 Azimuth Instrument Available Engineer: Existing Structure Signal: Equipment installed							
			CRF STATION, Fort Wetherill (2-3", Battery Crittenden)							
			Ordnance: 1 CRF, 9 ft. On Hand Engineer: Existing Construction Signal: Equipment installed							
			GUN EMPLACEMENT (2-3", Battery Crittenden)							
			All Equipment Installed.							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
			FIRE CONTROL STATIONS	$	$	$	$	$	$	$
5	1		NOYES POINT, (Loc. 1, Ex. 2-B)		2,500	1,250	400	100	200	4,450
			Containing: B^3S^2, 16" Judith; B^3S^2, 8" Ry. Narragansett Pier; AAOP							
		C	Engineer: Land, 1 acre $400							
		B	1 Station, 2-story (Tower): Mat. 2,500							
		C	Erection Lab. 1,250 $4,150							
		C	Signal: Complete wiring of Tower: Mat. 100							
			Lab. 200 300							
4	4		GREEN HILL (Loc. 2, Ex. 2-B)		2,700	1,300	450	150	300	4,900
			Containing: B^2S^1, 16" Judith; B^2S^1, 8" Ry. Narragansett Pier; B^8S^6, 16" Sakonnet; S^1 - 155-mm, Pt. Judith							
		A	Engineer: Land, 1 acre 450							
			1 Station, 3-story (Tower): Mat. 2,700							
			Erection Lab. 1,300 4,450							
		A	Signal: Complete wiring of Station: Mat. 150							
			Lab. 300 450							
4	5		POINT JUDITH (Loc. 3, Ex. 2-B)		9,900	3,500	800	450	900	15,550
			1, 5-room Station Containing: C-1; B^1, 16" Pt. Judith; B^1, 8" Ry. Narragansett Pier; B^7, 16" Sakonnet; B^6, 8" Sakonnet							
			1, 4-room Station Containing: B^2S^3, Wheaton, 2-12" DC; B^2S^3, Varnum, 2-12" BC; B^2, Edgerton, 4-12" M; B^2, Greene, 4-12" M							
		A	Engineer: Land, 2 acres 800							
			2 Stations Mat. 9,900							
			Erection Lab. 3,500 14,200							
		A	Signal: Complete Wiring of Stations: Mat. 450							
			Lab. 900 1,350							
		C	HAZARD TOWER, 1/2 mile south of Narr. Pier (Loc. 5, Ex. 2-B)							
			Auxiliary Station: S^2, Wheaton; S^2, Varnum; S^2, Edgerton; S^2, Greene; S^2, 155-mm Pt. Judith; AAOP							
			Privately owned tower; no construction involved. See text paragraph 12, Annex "B".							

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	6		BOSTON NECK (Loc. 4, Ex. 2-B) 1, 4-room Station Containing: B^4S^3, 16" Pt. Judith B^4S^3, 8" Ry. Narr. Pier B^6S^5, 16" Sakonnet B^5S^4, 8" Sakonnet 1, 4-room Station Containing: B^1S^1, Wheaton B^1S^1, Varnum B^1S^1, Edgerton B^1S^1, Greene	$	$ 6,400	$ 3,200	$ 600	$ 400	$ 800	$ 11,400
		A	Engineer: Land, 1½ acres $600 2 Station: Mat. 6,400 Erection Lab. 3,200 $10,200							
		A	Signal: Complete wiring of Stations: Mat. 400 Lab. 800 1,200							
4	14	C	ST. GEORGE's SCHOOL TOWER (Loc. 6, Ex. 2-B) Auxiliary Station: S^4, Wheaton S^4, Varnum S^4, Edgerton S^4, Greene S^1, 155-mm Sakonnet AAOP		250	250				500
		C	Engineer: Erection of Platform etc. in an Emergency: Mat. 250 Lab. 250 500							
4	7		SACHUEST POINT (Loc. 7, Ex. 2-B) 1, 4-room Station Containing: B^5S^4, 16" Judith B^5S^4, 8" Ry. Narr. Pier B^2S^1, 16" Sakonnet B^2S^1, 8" Fixed, Sakonnet AAOP 1, 4-room Station Containing: B^3S^3, Wheaton B^3S^3, Varnum B^3S^3, Edgerton B^3S^3, Greene		6,400	3,200	1,000	400	800	11,800
		A	Engineer. Land, 2 acres 1,000 2 Stations: Mat. 6,400 Erection Lab. 3,200 10,600							
		A	Signal: Complete wiring of Stations: Mat. 400 Lab. 800 1,200							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	8		WARREN POINT (Loc. 8, Ex. 2-B)	$	$ 7,400	$ 3,700	$ 2,000	$ 450	$ 900	$ 14,450
			1, 5-room Station Containing: B^6, 16" Judith B^6, 8" Ry. Narr. Pier B^1, 16" Sakonnet B^1, 8" Sakonnet C-3 1, 4-room Station Containing: B^4, Wheaton B^4, Varnum B^4, Edgerton B^4, Greene (B - Milliken, H.D. of New Bedford)							
		A	Engineer: Land, 1 acre $2,000 2 Stations Mat. 7,400 Erection Lab. 3,700 $13,100							
		A	Signal: Complete wiring of Stations: Mat. 450 Lab. 900 1,350							
4	9		GOOSEBERRY NECK (Loc. 9, Ex. 2-B)		3,200	1,600	500	150	350	5,800
			1, 3-room Station Containing: B^3S^2, 16" Sakonnet B^3S^2, 8" (Fixed) Sakonnet (BS - 12" Milliken, H.D. of New Bedford) S^2 - 155-mm Sakonnet AAOP							
		C	Engineer: Land, 1 acre 500 1 Station Mat. 3,200 Erection Lab. 1,600 5,300							
		C	Signal: Complete wiring of Station: Mat. 150 Lab. 350 500							
4	10		CUTTYHUNK (Loc. 10, Ex. 2-B)		2,700	1,350	900	150	300	5,400
			1, 3-story Station, Containing: B^4S^3, 16" Sakonnet B^4S^3, 8" (Fixed) Sakonnet (BS - 12" Milliken, H.D.of New Bedford) AAOP							
		A	Engineer: Land, 1½ 900							
		B	1 Station Mat. 2,700							
		C	Erection Lab. 1,350 4,950							
		C	Signal: Complete wiring of Station Mat. 150 Lab. 300 450							
4	11		GAY HEAD (Loc. 11, Ex. 2-B)		2,500	1,250	800	100	200	4,850
			1, 2-story Station, Containing: B^5S^4, 16" Sakonnet (B - Milliken, H.D. of New Bedford) AAOP							
		A	Engineer: Land, 2 acres 800							
		B	1 Station Mat. 2,500							
		C	Erection Lab. 1,250 4,550							
		C	Signal: Complete wiring of Station Mat. 100 Lab. 200 300							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
			FIRE CONTROL SWITCHBOARD ROOMS	$	$	$	$	$	$	$
4	41		POINT JUDITH FIRE CONTROL SWITCHBOARD ROOM					3,900	1,000	4,900
			Engineer: Construction included in Emplacement of Battery.							
		A	Signal:							
			1 Switchboard, BD-74 $1,600							
			1 Panel, BD-75 150							
			1 Rectifier 60							
			1 Motor Generator 200							
			1 Battery, Storage, 30 volts 250							
			1 T.I. Apparatus 365							
			1 Power Panel 75							
			Miscellaneous material 200							
			Contingency 1,000 $3,900							
			Labor 1,000 1,000							
5	22	A	SAKONNET POINT FIRE CONTROL SWITCHBOARD ROOM					3,900	1,000	4,900
			Engineer: Construction included in Emplacement of Battery.							
			Signal:							
			1 Switchboard, BD-74 1,600							
			1 Panel, BD-75 150							
			1 Rectifier 60							
			1 Motor Generator 200							
			1 Battery, Storage, 30 volts 250							
			1 T.I. Apparatus 365							
			1 Power Panel 75							
			Miscellaneous material 200							
			Contingency 1,000 3,900							
			Labor 1,000 1,000							
5	23	C	BLOCK ISLAND FIRE CONTROL SWITCHBOARD ROOM					3,900	1,000	4,900
			Engineer: Construction included under "Plotting Room"(5-2-B/C)							
			Signal:							
			1 Switchboard, BD-74 1,600							
			1 Panel, BD-75 150							
			1 Rectifier 60							
			1 Motor Generator 200							
			1 Battery, Storage, 30 volts 250							
			1 T.I. Apparatus 365							
			1 Power Panel 75							
			Miscellaneous 200							
			Contingency 1,000 3,900							
			Labor 1,000 1,000							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
			RADIO STATIONS			$	$	$	$	$	$	$
			HARBOR DEFENSE RADIO STATION, Fort Adams									
			Existing & Equipped									
4	23	A	FORT RADIO STATION, Fort Adams							4,200		4,200
			Signal:									
			1 SCR-177	$4,200	$4,200							
4	23	A	FORT RADIO STATION, Fort Wetherill							4,200		4,200
			Signal:									
			1 SCR-177	4,200	4,200							
			METEOROLOGICAL & SIGNAL STATION, Fort Adams									
			Existing & Equipped									
			TIDE STATIONS, Fort Wetherill									
			Existing & Equipped									
			CABLES									
			SUBMARINE CABLES									
5	6		NOYES POINT - GREEN HILL							25,275	600	25,875
		B	59,400', 10 pr. WC-321									
			@ $.37 per foot	21,978								
			Contingency 15%	3,297	25,275							
		C	Cable Terminal Mat.	350								
			Noyes Point Lab.	150								
			Miscellaneous	100	600							
4	24		GREEN HILL - POINT JUDITH							22,425	600	23,025
			155-mm Position									
		A	39,000', 25 pr. WC-325									
			@ $.50 per foot	19,500								
			Contingency	2,925	22,425							
		A	Cable Terminal Mat.	350								
			Greenhill Lab.	150								
			Miscellaneous	100	600							
5	7		BLOCK ISLAND - POINT JUDITH							42,435	1,100	43,535
		B	73,800', 25 pr. WC-325									
			@ $.50 per foot	36,900								
			Contingency 15%	5,535	42,435							
		C	Cable Terminal) Mat.	350								
			Point Judith) Lab.	150								
		C	Cable Terminal) Mat.	350								
			Block Island) Lab.	150								
		C	Miscellaneous	100	1,100							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	25		16" JUDITH - NARRAGANSETT PIER 8" Railway			$	$	$	$	$ 19,958	$ 1,100	$ 21,058
		A	26,700', 75 pr. WC-328 @ $.65 per foot	$17,355								
			Contingency 15%	2,603	$19,958							
		A	Cable Terminal, 16" Pt. Judith: Mat.	350								
			Lab.	150								
		A	Cable Terminal, 8" Railway: Mat.	350								
			Lab.	150								
		A	Miscellaneous	100	1,100							
4	26		8" NARRAGANSETT PIER - BOSTON NECK							13,455	600	14,055
		A	18,000', 75 pr. WC-328 @ $.65 per foot	11,700								
			Contingency 15%	1,755	13,455							
		A	Cable Terminal, Boston Neck: Mat.	350								
			Lab.	150								
		A	Miscellaneous	100	600							
4	27		BOSTON NECK - FORT WETHERILL							22,425	100	22,525
		A	30,000', 75 pr. WC-328 @ $.65 per foot	19,500								
			Contingency 15%	2,925	22,425							
		A	Miscellaneous	100	100							
4	28		FORT WETHERILL - 16" SAKONNET POINT							58,305	800	59,105
		A	78,000', 75 pr. WC-328 @ $.65 per foot	50,700								
			Contingency	7,605	58,305							
		A	Cable Terminal, 16" Sakonnet Point: Mat.	350								
			Lab.	150								
			Miscellaneous	300	800							
4	29		16" SAKONNET POINT - 155-mm BATTERY, SAKONNET POINT							6,325	650	6,975
		A	11,000', 25 pr. WC-325 @ $.50 per foot	5,500								
			Contingency	825	6,325							
		A	Cable Terminal, 155-mm Sakonnet Point: Mat.	350								
			Lab.	150								
			Miscellaneous	150	650							
4	30		16" SAKONNET POINT - SACHUEST POINT							12,334	800	13,134
		A	16,500', 75 pr. WC-328 @ $.65 per foot	10,725								
			Contingency	1,609	12,334							
		A	Cable Terminal, Sachuest Point: Mat.	350								
			Lab.	150								
			Miscellaneous	300	800							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	31		155-mm SAKONNET POINT - WEST ISLAND			$	$	$	$	$ 1,659	$ 625	$ 2,284
		A	3,900', 10 pr. WC-321 @ $.37 per foot	$1,443								
			Contingency	216	$1,659							
		A	Cable Terminal, West Island: Mat.	350								
			Lab.	150								
			Miscellaneous	125	625							
4	32		WARREN POINT - GOOSEBERRY NECK							24,150	625	24,775
		B	42,000', 25 pr. WC-325 @ $.50 per foot	21,000								
			Contingency	3,150	24,150							
		C	Cable Terminal, Gooseberry Neck: Mat.	350								
			Lab.	150								
			Miscellaneous	125	625							
5	8		GOOSEBERRY NECK - CUTTYHUNK ISLAND							23,805	650	24,455
		B	41,400', 25 pr. WC-325 @ $.50 per foot	20,700								
			Contingency	3,105	23,805							
		C	Cable Terminal, Cuttyhunk Island: Mat.	350								
			Lab.	150								
			Miscellaneous	150	650							
5	9		CUTTYHUNK ISLAND - GAY HEAD							20,169	700	20,869
		B	47,400', 10 pr. WC-321 @ $.37 per foot	17,538								
			Contingency	2,631	20,169							
		C	Cable Terminal, Gay Head: Mat.	350								
			Lab.	150								
			Miscellaneous	200	700							
4	33		FORT GETTY - THE "BONNET"							4,488	650	5,138
		B	10,550', 10 pr. WC-321 @ $.37 per foot	3,903								
			Contingency	585	4,488							
		C	Cable Terminal, The Bonnet: Mat.	350								
			Lab.	150								
			Miscellaneous	150	650							
5	10		BLOCK ISLAND HARBOR - CLAY HEAD (Block Island)							6,893	600	7,493
		B	16,200', 10 pr. WC-321 @ $.37 per foot	5,994								
			Contingency	899	6,893							
		C	Cable Terminal, Clay Head: Mat.	350								
			Lab.	150								
			Miscellaneous	100	600							

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Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
5	11		BLOCK ISLAND HARBOR - "PAINE" (Block Island)			$	$	$	$	$ 9,478	$ 600	$ 10,078
		B	22,275', 10 pr. WC-321 @ $.37 per foot	$8,242								
			Contingency	1,236	$9,478							
		C	Cable Terminal, Paine: Mat.	350								
			Lab.	150								
			Miscellaneous	100	600							
5	12		"PAINE" - "SOUTH WEST" (Block Island)							6,032	600	6,632
		B	14,175', 10 pr. WC-321 @ $.37 per foot	5,245								
			Contingency	787	6,032							
		C	Cable Terminal, "South West" Mat.	350								
			Lab.	150								
			Miscellaneous	100	600							
			LAND CABLES									
4	34		CABLE HUT, JUDITH - 155 mm Battery							185	250	435
		A	500', 50 pr. Subterranean Armored, WC-367 @ $.32 per foot	160								
			Contingency	25	185							
		A	Trenching & Installation	250	250							
4	35		155-mm BATTERY - FIRE CONTROL STATIONS							1,325	855	2,180
		A	3,600', 50 pr. Subterranean Armored, WC-367 @ $.32 per foot	1,152								
			Contingency	173	1,325							
		A	Trenching & Installation	780								
			Miscellaneous	75	855							
4	36		155-mm BATTERY - 16" POINT JUDITH							4,657	3,150	7,807
		A	9,000', 75 pr. Subterranean Armored, @ $.45 per foot	4,050								
			Contingency	607	4,657							
		A	Trenching & Installation	2,900								
			Miscellaneous	250	3,150							
4	37		SWITCHBOARD ROOM, 16" POINT JUDITH - CABLE HUT, 16" Point Judith							1,319	1,350	2,669
		A	2,550', 75 pr. Subterranean Armored, @ $.45 per foot	1,147								
			Contingency	172	1,319							
		A	Trenching & Installation	1,275								
			Miscellaneous	75	1,350							

SECRET

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
4	38		SACHUEST NECK - ST. GEORGE			$	$	$	$	$ 1,725	$ 5,300	$ 7,025
		B	10,000', 10 pr. Subterranean Armored, WC-364 @ $.15 per foot	$1,500								
			Contingency	225	$1,725							
		C	Trenching & Installation	5,000								
			Miscellaneous	300	5,300							
5	13		NOYES POINT - FIRE CONTROL STATIONS.							569	1,600	2,169
		B	3,300', 10 pr. Subterranean Armored, WC-364 @ $.15 per foot	495								
			Contingency	74	569							
		C	Trenching & Installation	1,600	1,600							
4	39		CABLE HUT, GREEN HILL - FIRE CONTROL STATIONS							834	1,600	2,434
		A	3,300', 25 pr. Subterranean Armored, WC-366 @ $.22 per foot	726								
			Contingency	108	834							
		A	Trenching & Installation	1,600	1,600							
5	14		CABLE HUT, BLOCK ISLAND - SWITCHBOARD ROOM							662	1,000	1,662
		B	1,800', 50 pr. Subterranean Armored, WC-367 @ $.32 per foot	576								
			Contingency	86	662							
		C	Trenching & Installation	1,000	1,000							
5	15		CABLE HUT, CLAY HEAD - FIRE CONTROL STATIONS (Block Island)							310	900	1,210
		B	1,800', 10 pr. Subterranean Armored, WC-364 @ $.15 per foot	270								
			Contingency	40	310							
		C	Trenching & Installation	900	900							
5	16		CABLE HUT "SOUTHWEST" - FIRE CONTROL STATIONS (Block Island)							210	600	810
		B	1,200', 10 pr. Subterranean Armored, WC-364 @ $.15 per foot	180								
			Contingency	30	210							
		C	Trenching & Installation	600	600							

SECRET

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
5	17		CABLE HUT "PAINE" - FIRE CONTROL STATIONS			$	$	$	$	$ 310	$ 900	$ 1,210
		B	1,800', 10 pr. Subterranean Armored, WC-364 @ $.15 per foot	$270								
			Contingency	40	$310							
		C	Trenching & Installation	900	900							
5	18		BLOCK ISLAND "ECC" to SWITCHBOARD ROOM (Block Island)							1,513	4,400	5,913
		B	8,775', 10 pr. Subterranean Armored, WC-364 @ $.15 per foot	1,316								
			Contingency	197	1,513							
		C	Trenching & Installation	4,400	4,400							
4	40		CABLE HUT 16" SAKONNET - SWITCHBOARD ROOM							736	2,600	3,336
		A	3,200', 100 pr. Lead Covered, WC-419 $.20 per foot	640								
			Contingency	96	736							
		A	Installation (in ducts)	Mat. 800								
				Lab. 1,800	2,600							
5	19		SWITCHBOARD ROOM, SAKONNET - MH 16"							368	2,800	3,168
		A	1,600', 100 pr. Lead Covered WC-419 @ $.20 per foot	320								
			Contingency	48	368							
		A	Installation (in ducts)	2,800	2,800							
5	20		MH 16" SAKONNET - 8" SAKONNET							759	1,070	1,829
		A	3,000', 25 pr. Subterranean Armored, WC-366 @ $.22 per foot	660								
			Contingency	99	759							
		A	Trenching & Installation incl. MH	1,070	1,070							
5	21		MH 16" SAKONNET - FIRE CONTROL STATIONS							4,295	4,440	8,735
			8,300', 75 pr. Subterranean Armored, $.45 per foot	3,735								
			Contingency	560	4,295							
			Trenching & Installation	4,240								
			Miscellaneous	200	4,440							
			TOTALS			$414,080	$65,400	$37,350	$9,700	$430,819	$55,735	$1,013,084

Class A - To be procured and installed in peacetime.
Class B - To be procured in peacetime and installed when an emergency arises.
Class C - To be procured and installed when an emergency arises.

SECRET

ANNEX C

SEARCHLIGHTS

1. The maximum dependable range of the 60-inch searchlight in clear weather is assumed to be 9,000 yards or less. In Exhibit 1-C are shown the areas illuminated by the existing and proposed lights.

2. a. There are two standard searchlights now installed in the Harbor Defenses of Narragansett Bay. One of these, located at Fort Wetherill, is suitably placed as a mine field light for the Eastern Passage. The other light, now installed at Fort Greble, is not required in its present location and is available for installation at one of the new positions described below, or as a reserve.

b. One portable searchlight unit should be provided for use at The Bonnet to illuminate the mine field of the Western Passage.

3. Twelve fixed lights are to be installed in positions described below. One of these units is now on hand at Fort Greble. A portable searchlight unit is to be provided as a reserve.

4. Telephone connection shall be from the group or other commander to whom the searchlight is assigned, to the location of the controller. Between controller and searchlight and between searchlight and power plant, local battery or sound power telephones shall be provided.

5. Two lights near Sakonnet Point.

a. On West Island 500 yards off Sakonnet Point, there is a location suitable for two lights which will permit of their use from the direction of Gooseberry Neck on the east clockwise to the east shore of the Sakonnet River. The island is easily accessible by boat (or barge for landing the lights) from Sakonnet Point artificial harbor. On the western extremity there is a high platform or rock, large enough to permit placing the two lights 50 yards apart. The only masks from this location are Sakonnet Lighthouse, approximately one degree; and the high point of East Island, approximately three degrees. The elevation of the ground at the point described is 35 feet above mean low water.

b. On West Island there are four ruined buildings pertaining to a former hotel; they are of little present value. The island and its buildings belong to Marion Eppley, Newport, Rhode Island.

c. If shelter were constructed for the lights at their operating positions, the shelter would mask the adjacent light. It is proposed to mount the lights on small railroad cars and construct a light track from the lower level of the island to the operating positions, the necessary shelter being constructed on the lower level. The power plants should also be on the lower level.

d. The same field of illumination should be obtained for both lights.

e. The cost of the island is estimated as $5,000. It should be acquired and all provision for the searchlights made in peace except shelter for lights and power plants, which may be made and the lights and power plants installed when an emergency arises.

f. The wide field of view from this position, the possibilities of concealment and protection and the accessibility of the island make it a valuable location.

g. These searchlights, Nos. 13 and 14, may have their controllers on West Island and with telephone connection to Group 3 at Warren Point, to which they are assigned.

6. Two lights at Coggeshall Ledge.

a. There are two rocky points jutting out to the south at Coggeshall Ledge, approximately 175 yards apart. From both there is a view from a line tangent to Brenton Point on the west to a line tangent to Sachuest Neck on the northeast. The east point is the property of Robert Livingston Beekman. The west point is the property of John Russell Pope. It is probable that neither plot can be purchased for any reasonable price but at the time of an emergency, semi-mobile (portable) lights can be emplaced there.

b. These two lights, Nos. 11 and 12, should be mounted on demountable steel towers as the ground level is not over 20 feet above mean low water. For this reason the lighter antiaircraft searchlight unit (less comparator) should be provided.

c. Light frame shelter can be provided at the time of the emergency.

d. Both lights should have the same field.

e. The controllers should be nearby, with telephone connection to the Fire Control Switchboard at Fort Adams and thence to Group 3 CP at Warren Point, to which group these searchlights are assigned. Commercial leased lines may be employed between the controllers and Fort Adams.

7. Two lights at Brenton Point.

a. The view at this location extends from a line tangent to Castle Hill on the northwest counterclockwise to a line tangent to Coggeshall Ledge. The land is owned by Milton J. Budlong and is not to be purchased for any reasonable price. The ground slopes up from an elevation of approximately 20 feet at the Point to an elevation of approximately 35 feet 50 yards inland.

b. The two lights, Nos. 9 and 10, should be mounted on demountable steel towers, one light being located approximately 50 yards inland from and thus overlooking the other. Both should cover the same field. On account of their lighter weight, antiaircraft type searchlight units (less comparator) are prescribed.

c. In this location the lights will cover the eastern mine field and the approach to the western mine field as well as a large part of the outer bay.

d. The controllers should be nearby, with telephone connection to the Fire Control Switchboard at Fort Adams and thence to Group 2 at Prospect Hill to which group these searchlights are assigned. Commercial leased lines may be employed between the controllers and Fort Adams.

8. Two lights at Gunning Rock.

a. This location is 1,500 yards south of Lower Pier at Narragansett Pier. It is at the shore end of Newton Avenue which branches off from Point Judith Road (Ocean Avenue) 0.9 mile south of Lower Pier. The house of Harold Knowlton, West Upton, Massachusetts, is close by. It is probably unnecessary to purchase land at this location, as it is unlikely to be built on and in an emergency can be leased.

b. The arc of view is from Point Judith Light around through the east to a line tangent to Boston Neck. The elevation is approximately 35 feet. Both lights, which are designated Nos. 5 and 6, should cover the entire arc.

c. Portable lights should be provided for this location, frame shelter for lights and power plant being constructed at time of emergency.

d. The controller should be near the lights, with commercial leased telephone lines to Group 1 CP at Point Judith, the searchlights being assigned to that group.

9. Two lights at Point Judith.

a. These lights, Nos. 3 and 4, should be located in front of the lighthouse so as to avoid interference by the lighthouse. They should be fixed lights, with power plants in splinterproof shelter behind the lighthouse. This shelter should provide also for the lights, which can be run out to their operating position when required.

(1) Authorization of the Department of Commerce will be required to place these lights and their power plant in the position designated. The installation need not interfere with activities pertaining to the lighthouse.

b. The lights should be so arranged that both will bear on the water area from the shore on the west to the shore on the north.

c. While the lights in this location will be lower than is desirable (the ground level is approximately 25 feet above mean low water), it is probably unwise to place them on towers because of the conspicuous location.

d. The controllers should be near the lights. With permission of the Department of Commerce they may be placed on the platform which runs around the lighthouse just below the lamp, frame shelter being provided for the operators. Telephone connection should be provided to Group 1 CP at Point Judith, to which Lights 3 and 4 are assigned.

10. Two lights at Clayhead on Block Island.

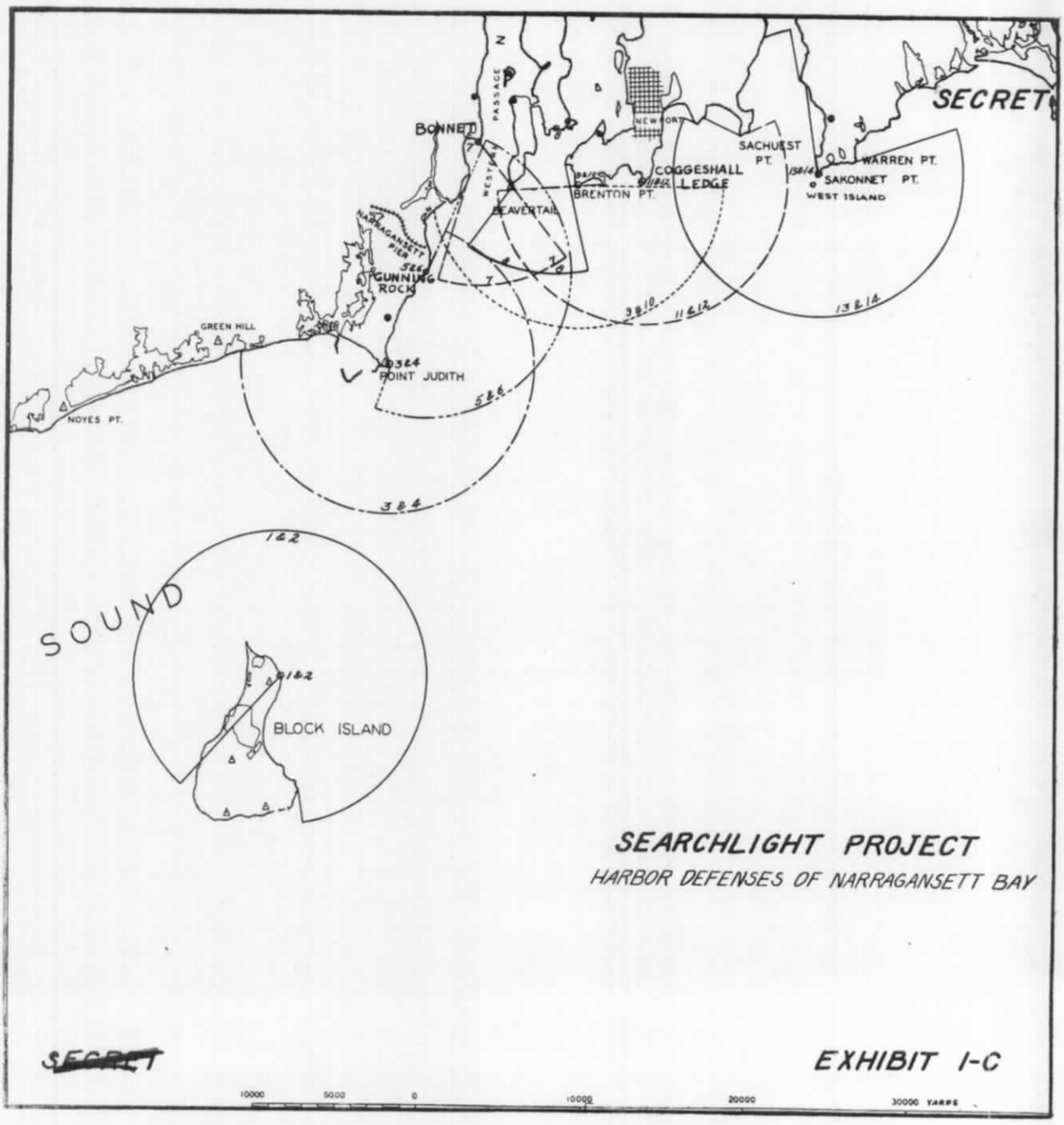
a. Block Island is approximately 19,000 yards off Point Judith. Searchlights on the northern part of the island, about 400 yards northeast of the proposed fire control station at Clayhead (see Exhibit 15-B) will have a field extending from

the southwest clockwise to the south, an arc of over 300 degrees. The lights should be approximately 100 yards apart. Vessels may be tracked by the Block Island baselines if within about 9,000 yards of Clayhead; or if silhouetted, may be observed from some of the fire control stations of the Harbor Defenses of Long Island Sound as well as those at Point Judith, Green Hill, and Noyes Point.

b. Portable lights should be provided for this location.

c. These lights, designated as Nos. 1 and 2, should be operated under the general instructions of the Harbor Defense Commander by a searchlight officer at Block Island. One telephone line should be provided from each controller, located near the light, to the Block Island Fire Control Switchboard. One line should be provided through the Point Judith Fire Control Switchboard to the H Station.

11. Cost Estimate. An estimate of cost and priority guide is appended as Exhibit 2-C. Those items which should be procured and installed in peacetime are marked with an A. Those which should be procured in peace but whose installation may be deferred until an emergency arises are marked B. Those items to be procured and installed when an emergency arises are marked C.


SECRET
N
BONNET
WEST PASSAGE
NEWPORT
SACHUEST PT.
WARREN PT.
SAKONNET PT.
WEST ISLAND
COGGESHALL LEDGE
BRENTON PT.
BEAVERTAIL
NARRAGANSETT PIER
GUNNING ROCK
GREEN HILL
POINT JUDITH
NOYES PT.
SOUND
BLOCK ISLAND
SEARCHLIGHT PROJECT
HARBOR DEFENSES OF NARRAGANSETT BAY
SECRET
EXHIBIT I-C
10000
5000
0
10000
20000
30000 YARDS

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Mat.	Lab.	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
2	6		SEARCHLIGHTS NOS. 1 & 2, Block Island			$ 42,840	$	$	$ 619	$ 75	$ 43,534
			Control: H.D.C.P. (Prospect) by telephone to Controller Station, Block Island.								
		B	Engineer:	Mat.	Lab.						
			2 Portable searchlight units (AA type)	$42,000							
			1,200' Power cable	600							
			400' Controller cable	240							
				42,840							
		B	Signal:								
			6 Telephones with head and chest sets	480							
			4 Hand sets	64							
			Contingency	75							
				619							
		C	Installation		$75						
2	5		SEARCHLIGHTS NOS. 3 & 4, Point Judith Lighthouse Reservation			8,000	2,000		619	75	10,694
			Control: G-1, (Point Judith) by telephone to Controller near searchlight.								
		A	Engineer:								
			Combined power plant and searchlight shelter	$,000	2,000						
			2 Searchlights, Seacoast 60" from Depot Stock, overhaul & shipment	1,300							
			2 - 25 KW sets from Depot Stock, overhaul & shipment	1,800							
			2,000' Power cable	1,000							
			1,500' Controller cable	900							
				8,000	2,000						
		A	Signal:								
			6 Telephones with head and chest sets	480							
			4 Hand sets	64							
			Contingency	75							
				619							
			Installation		75						
2	2		SEARCHLIGHTS NOS. 5 & 6, Gunning Rock (near Narragansett Pier)			42,840			619	75	43,534
			Control: G-1 (Point Judith) by telephone to Controller near searchlight.								
		B	Engineer:								
			2 Portable searchlight units (AA type)	42,000							
			1,200' Power cable	600							
			400' Controller cable	240							
				42,840							
		B	Signal:								
			6 Telephones with head and chest sets	480							
			4 Hand sets	64							
			Contingency	75							
				619							
		C	Installation		75						

SECRET

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
2	7		SEARCHLIGHT NO. 7, at "The Bonnet"	$ 21,420	$	$	$ 312	$ 50	$ 21,782
			Control: MG (Mine Group) Prospect by telephone to Controller near searchlight.						
		B	Engineer:						
			1 Portable searchlight unit — Mat. $21,000						
			600' Power cable — Mat. 300						
			200' Controller cable — Mat. 120						
			Mat. 21,420						
		B	Signal:						
			3 Telephones with head and chest sets — Mat. 240						
			2 Hand sets — Mat. 32						
			Contingency — Mat. 40						
			Mat. 312						
		C	Installation — Lab. $50						
			SEARCHLIGHT NO. 8, Fort Wetherill (installed)						
			Control: MG (Mine Group) Prospect by telephone to Controller Station ($M_2^1 - M_2^1$)						
			Engineer and Signal equipment installed.						
2	1		SEARCHLIGHTS NOS. 9 & 10, Brenton Point	44,840			619	75	45,534
			Control: G-2 (Prospect) by telephone to Controller near light.						
		B	Engineer:						
			2 Portable searchlight units (AA type) — Mat. 42,000						
			1,200' Power cable — Mat. 600						
			400' Controller cable — Mat. 240						
			2 Towers, steel, demountable — Mat. 2,000						
			Mat. 44,840						
		B	Signal:						
			6 Telephones with head and chest sets — Mat. 480						
			4 Hand sets — Mat. 64						
			Contingency — Mat. 75						
			Mat. 619						
		C	Installation — Lab. 75						

SECRET

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	Mat.	Lab.	Engineer Material	Engineer Labor	Engineer Land	Signal Material	Signal Labor	Total
2	3		SEARCHLIGHTS NOS. 11 & 12, Coggeshall Ledge			$ 44,840	$	$	$ 619	$ 75	$ 45,534
			Control: C-3, (Warren Point) by telephone to Controller near light.								
		B	Engineer:								
			2 Portable searchlight units (AA type)	$42,000							
			1,200' Power cable	600							
			400' Controller cable	240							
			2 Towers, steel, demountable	2,000							
				44,840							
		B	Signal:								
			6 Telephones with head and chest sets	480							
			4 Hand sets	64							
			Contingency	75							
				619							
		C	Installation		$75						
2	4		SEARCHLIGHTS NOS. 13 & 14, West Island (South of Sakonnet Point)			13,600	3,000	5,000	619	75	22,294
			Control: C-3 (Warren Point) by telephone to Controller near light.								
		A	Engineer:								
			Land - Purchase of West Island	5,000							
		C	Combined shelter for searchlight & power plant.	5,500	3,000						
			Contingency	2,450							
				7,950	3,000						
		B	450' Trackage for SL	1,200							
			2 Push cars	1,000							
			450' Cable duct	1,350							
			1 Winch electric	500							
			1 SL 60" seacoast from Depot Stock, overhaul and shipment	650							
			1 25-KW set from Depot Stock, overhaul and shipment	900							
			1 Controller Depot Stock, overhaul	50							
			1 SL and 1 25-KW set available for transfer from Ft. Greble where now installed. -								
				5,650							
		B	Signal:								
			6 Telephones with head and chest sets	480							
			4 Hand sets	64							
			Contingency	75							
				619							
		C	Installation		75						
2	8		RESERVE SEARCHLIGHT			21,420					21,420
			Engineer:								
			1 Portable searchlight unit (AA type)	21,000							
			600' Power cable	300							
			200' Controller cable	120							
				21,420							
			TOTALS			$239,800	$5,000	$5,000	$4,026	$500	$254,326

Class A - To be procured and installed in peacetime.
Class B - To be procured in peacetime and installed when an emergency arises.
Class C - To be procured and installed when an emergency arises.

SECRET

ANNEX D

UNDERWATER DEFENSE

1. The present underwater defense project was approved by the Secretary of War, January 17, 1929, and provides for eight groups of mines in the Eastern Passage and four groups of mines in the Western Passage. The groups in the Eastern Passage are controlled from Fort Wetherill. The groups in the Western Passage are controlled from Fort Getty.

2. a. The mine cases, anchors, cable, tools and other material required, as well as the panels, generators and other electrical equipment (all of which material of both classes is enumerated in Tables of Allowances - Submarine Mine Equipment) should be stored at Fort Wetherill.

b. This material should be kept on hand, complete and in serviceable condition.

3. In addition to the material comprised in the Table of Allowances, the mine project requires adequate shore installations and boats.

4. Shore Installations.

a. Casemates. The casemates at Forts Wetherill and Getty are suitable and adequate.

b. Loading Room. The loading room and wharf at Fort Wetherill will be used for both mine fields.

c. Cable Tanks. The cable tank at Fort Wetherill has a capacity of 30 reels of single conductor cable. The project requires about 53 reels. When cable is furnished in excess of the capacity of the tank at Fort Wetherill, it will be stored in the tank at Fort Greble until military stores are removed from that post, when the cable tank at Fort H. G. Wright will be used.

d. Storage. The present storage facilities at Fort Wetherill are inadequate. An additional storehouse, 43 x 90 feet, of two stories, is required for the mine material of the two fields. Pending the construction of this storehouse, the material for the Western Passage groups will be kept at Fort Greble.

e. Explosives. Dry and adequate storage space for explosives is available in the emplacement of Battery Toussard at Fort Getty.

5. Fire Control System.

a. Eastern Passage. A double station baseline at Fort Wetherill is provided for the Eastern Passage mine field. It is too short to provide the desired accuracy in plotting, but an emergency base end could readily set up on the eastern shore.

b. Western Passage. The primary station and plotting room for the Western Passage have been installed in a double base end station at Prospect Hill formerly assigned to Batteries Toussard and Sedgwick. A suitable location should be selected on The Bonnet for the M^2 station. In an emergency the station should be constructed and a 10-pair submarine cable laid from the cable hut at Fort Getty to The Bonnet.

c. To supplement observation from the Group station, two instrument pillars and cable connections have been installed on the lighthouse reservation at Beavertail. Shelter should be provided for the observers at time of an emergency.

6. Boats. It is considered that two mine planters, four DB boats and twelve motor mine yawls are required to plant and maintain the submarine mines included in the project. In addition, for use during the period of planting there should be provided a third mine planter as substitute.

a. Mine Planters.

(1) The USAMP "Baird is the only mine planter in the Corps Area; it may be considered available for use in the Harbor Defenses of Narragansett Bay.

(2) A lighthouse tender should be designated by name for service as an emergency mine planter. The necessary deck fittings as specified in the Table of Allowances, and the specified planting equipment necessary to be installed on this vessel should be kept on hand in the harbor defenses.

(3) A tug with barge may be employed as the third (substitute) mine planter.

b. DB Boats.

(1) There is one L boat in the harbor defenses and one in the Harbor Defenses of Long Island Sound which may be considered available.

(2) In Narragansett Bay and in the vicinity of Woods Hole, Massachusetts, there is a common type of power boat usually between 50 and 60 feet in length, with hoisting boom; these boats are used for seining. Two "seiners" may be employed as DB boats.

c. Mine Yawls. In addition to the six yawls now on hand in the harbor defenses, the necessary additional launches can be obtained locally.

7. The acquisition of land is not involved in this Annex.

8. Cost Estimate. An estimate of cost and priority guide is appended as Exhibit 1-D. Those items which should be procured and installed in peacetime are marked with an A. Those which should be procured in peace but whose installation may be deferred until an emergency arises are marked B. Those items to be procured and installed when an emergency arises are marked C.

ANNEX D EXHIBIT 1-D COST ESTIMATE AND PRIORITY GUIDE H. D. OF NARRAGANSETT BAY

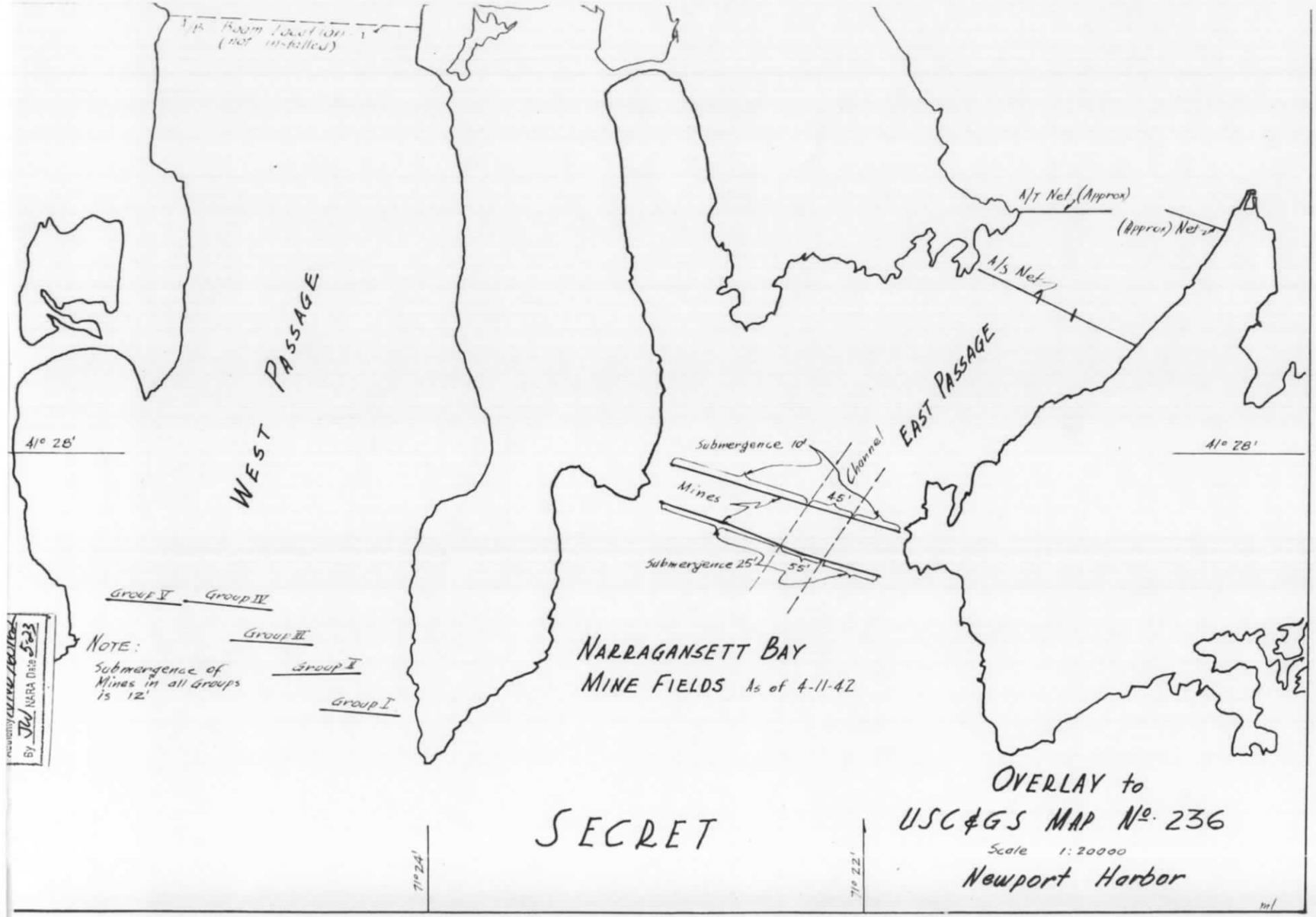
Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Coast Artillery	Engineer Material	Engineer Labor	Total
1	1	A	To complete MINE PROJECT (OCCA 111/GJ-31,Insl.1)			$ 99,817	$	$	$ 99,817
			COAST ARTILLERY						
			Single Conductor System	$18,296					
			Miscellaneous Equipment	19,921					
			Single Conductor Cable	61,600	$99,817				
8	1	A	FORT WETHERILL:				17,250	20,250	37,500
			Engineer:						
			Construction of Mine Storehouse 43' x 90', 2-Story, at Ft. Wetherill.						
			Mat.	13,500					
			Lab.	20,250					
			Contingency	3,750	37,500				
					TOTALS	$ 99,817	$17,250	$20,250	$137,317

Class A - To be procured and installed in peacetime.
Class B - To be procured in peacetime and installed when an emergency arises.
Class C - To be procured and installed when an emergency arises.

Note: No expenditure of funds by the Ordnance Department, Signal Corps, Engineers, Chemical Warfare Service, or for land, is contemplated in this Annex.

SECRET


Net Boom Section 1
(not installed)
WEST PASSAGE
EAST PASSAGE
A/T Net (Approx)
(Approx) Net
A/S Net
41° 28'
41° 28'
Submergence 10'
Channel
Mines
45'
Submergence 25'
55'
Group V
Group IV
Group III
Group II
Group I
NOTE:
Submergence of Mines in all Groups is 12'
NARRAGANSETT BAY
MINE FIELDS As of 4-11-42
SECRET
71° 24'
71° 22'
OVERLAY to
USC&GS MAP No. 236
Scale 1:20000
Newport Harbor

ANNEX E

ANTIAIRCRAFT GUN DEFENSE

1. a. Guns. The antiaircraft gun defense of the Harbor Defenses of Narragansett Bay is shown in Exhibit 1-E. In this diagram the assumptions are made that the target is travelling at 200 miles an hour, at an altitude of 15,000 feet, and that the effective horizontal range of the guns at that altitude is 6,000 yards.

b. Machine Guns. The number of machine guns which may reasonably be required, and provided, is conditioned on the expectation of simultaneous attack by more than one flight. This project calls for 24 machine gun platoons.

(1) The exact location of the machine guns is to be determined by the harbor defense commander, considering the availability, at the time when an emergency arises, of sites which will give all-around fire, as nearly down to the horizon as is practicable.

c. Searchlights. The disposition of the antiaircraft searchlights is shown in Exhibit 1-E. To the extent permitted by the coast line, the lights have been pushed out from the batteries to such distance that targets may be illuminated before they come within range of the guns. While the searchlights are regarded as an accessory of the particular gun battery which they are provided to serve, their locations have been modified to secure the best illumination of the area covered by the seven batteries as a whole. Unless so located, the 18 lights would be insufficient.

2. Organization.

a. The antiaircraft batteries are each composed of a gun detachment. The two batteries at Fort Wetherill and Adams, together with the separate machine gun detachment, form the antiaircraft group (Group 4) with command post at the H station. This is the center of the antiaircraft intelligence service not only for Group 4 but also for Group 1 at Point Judith and Group 3 at Sakonnet Point, these latter two being seacoast gun groups which because of their isolation include the local antiaircraft defense. Information is to be telephoned direct to the nearest one of these groups by all antiaircraft observers, and by Group 1 and Group 3 to the antiaircraft group 4. Conversely information received at Group 4 is disseminated to batteries, and the alarm service of the garrisons is notified.

b. Antiaircraft observers have been provided for at several of the outlying fire control stations, each observer being provided with telephone direct to the antiaircraft intelligence center, or to Group 1 or Group 3, whichever is nearer. These fire control stations are:

Noyes Point;	Gooseberry Neck;
Green Hill;	Cuttyhunk, and
Sachuest Neck;	Gay Head.

An antiaircraft observer is also provided for at Clayhead and at Beacon Hill on Block Island. Should it be practicable to establish a station at Hazard Tower and at St. George's School Tower, an antiaircraft observer should be located at each place.

(1) In addition to the antiaircraft observers above who are specially designated as such, antiaircraft intelligence will originate with each antiaircraft gun battery, machine gun platoon and searchlight. An observer should be placed aboard a vessel of the Inshore Patrol. Information may be received from the adjacent Harbor Defenses of Long Island Sound and of New Bedford.

(2) Provision for intelligence from more distant sources such as the Offshore Patrol, the Coast Guard and lighthouses is the function of the sub-sector commander and does not form a part of this project.

3. Machine Gun Detachment, Fort Getty. Three platoons or 12 machine guns are proposed, one to be located west of Fort Kearney, one on The Bonnet and one at Fort Getty. The first two will be connected by field wire to the nearest submarine cable to Fort Getty, thence by field wire to the platoon at that place. The Fort Getty platoon will be connected by field wire to the fire control switchboard, thence to the G-4 station. 5,000 feet of field wire will be required.

4. AA Battery No. 3, Fort Wetherill.

a. Gun Detachment. The three guns of this battery have been emplaced. The three carriages have not been altered for data transmission and the data transmission mechanisms are not installed. The director should be placed on the knoll 205 yards northeast of the battery. The director and height finder may be stored in the Ordnance Storehouse at Fort Wetherill when not in use.

Distance of director to directing point: 620 feet;
Length of cable, director to junction box:
680 feet;
Length of cable, height finder to director:
50 feet;
Length of cables, junction box to guns: 75 feet,
75 feet, 75 feet.

A sketch of the battery position is shown in Exhibit 2-E.

b. Machine Gun Detachment. Three platoons or 12 machine guns are proposed, to be located with distance of about 1,500 yards between platoons and so placed as to cover Batteries Wheaton and Varnum, the submarine mine installation and the seacoast and antiaircraft searchlights. Communication should be by field wire to the gun battery. 8,000 feet of field wire are required.

c. Searchlight Detachment. Three lights with sound locators and portable power plants are to be provided. They should be located as follows:

AA SL No. 7 - On Beavertail, one-half mile north of the lighthouse, approximately 4,500 yards southwest of the battery. Communication should be by the Beavertail fire control cable to Prospect Hill and the Battery.

AA SL No. 8 - About midway between Prospect Hill and Fort Getty. Telephone communication should be by field wire to Fort Getty, thence by the fire control system to the Battery.

AA SL No. 9 - Near Hill 135 on Conanicut Island, about 7,500 yards north of the battery. Commercial telephone lines, supplemented by field wire, will be used.

About 4,000 feet of field wire will be required.

5. AA Battery No. 4, Fort Adams.

a. Gun Detachment. The three guns of this battery have been emplaced. Carriages have not been altered for data transmission and data transmission mechanisms have not been installed. The director will be placed on the old redoubt, within 100 yards of the center of the battery. The director and height finder will be stored in a gallery of the old redoubt when not in use.

Distance of director to directing point: 125 feet;
Length of cable, director to junction box: 100 feet;
Length of cable, height finder to director: 30 feet;
Length of cables, junction box to guns: 115 feet, 75 feet, 75 feet.

A sketch of the battery position is shown in Exhibit 3-E.

b. Machine Gun Detachment. Three platoons or 12 machine guns are proposed, two to be disposed so as to protect the two mortar batteries and the third to protect the two seacoast searchlights at Brenton Point and the antiaircraft searchlight near Castle Hill. The first two platoons should be connected by field wire with the gun battery. The third should be connected by commercial leased line to Fort Adams. 2,000 feet of field wire will be required.

c. Searchlight Detachment. Three lights with sound locators and portable power plants are to be provided. They should be located as follows:

AA SL No. 10 - Near Castle Hill, approximately 2,900 yards southwest of the gun battery.
AA SL No. 11 - Near Ochre Point, approximately 3,700 yards southeast of the gun battery.
AA SL No. 12 - On Miantonomy Hill, approximately 5,000 yards northeast of the battery. As this vicinity is gradually being built up, Hill 140, one-half mile to the east, may be a better location in the future.

Telephone connections between each of the three lights and the gun battery may be provided by commercial lines to Fort Adams, supplemented by field wire. 3,000 feet of field wire will be required.

ANTIAIRCRAFT DEFENSE AT POINT JUDITH NECK

6. The two antiaircraft batteries at Point Judith Neck, each composed of a gun detachment, a machine gun detachment and a searchlight detachment, form a part of Group 1.

7. AA Battery No. 1, Point Judith.

a. Gun Detachment. This battery is to be located on the high ground 300 yards west of the old Point Judith road which borders the 16-inch reservation on the west, on the C. L. Bidwell farm near the ruins of a farmhouse. The director will be located within 200 yards of the center of the battery. For orientation purposes, the coordinates of the west chimney of this old farmhouse are given.

Latitude	41°	23'	20.46".
Longitude	71°	29'	18.66".

b. Machine Gun Detachment. Four platoons of 16 machine guns are proposed. They should be located so as to protect the seacoast and antiaircraft searchlights at Point Judith, the 155-mm battery and the 16-inch battery. The platoons should be disposed to cover the peninsula as a whole and be placed approximately 1,500 yards apart. Connection with the gun battery may be provided by field wire. 12,000 feet of field wire will be required.

c. Searchlight Detachment. Three searchlights with sound locators and portable power plants are to be provided.

AA SL No. 3 - Near the shore of Narragansett Bay, approximately 1,500 yards north of Point Judith Light, south of the 16-inch battery and 1,550 yards southeast of the antiaircraft gun battery. Telephone connection with the gun battery may be by field wire.

AA SL No. 2 - On an island in Point Judith Pond 1,500 yards west of the gun battery. A one-pair cable and field wire may be employed to connect this light and the gun battery.

AA SL No. 1 - Near station "Wooden" of the Coast and Geodetic Survey, 6,000 yards west of the battery. Commercial leased telephone line may be used for connection with the gun battery.

12,000 feet of field wire will be required.

8. AA Battery No. 2, Point Judith.

a. Gun Detachment. This battery is to be located in an open field belonging to John McHale, approximately 400 yards south of Hazard Tower.

(1) Should the Narragansett Pier 8-inch railway battery be located in the alternative position 450 yards west of the railway station, there is open ground 500 yards to the southeast which affords a suitable site for the antiaircraft battery (see Exhibit 5-A).

(2) The director, at either site, may be within 200 yards of the center of the battery.

b. Machine Gun Detachment. Three platoons or 12 machine guns are proposed. They should be located so as to protect the seacoast lights at Gunning Rock as well as the railway battery. Telephone connection with the gun battery may be by field wire. 10,000 feet of field wire will be required.

c. Searchlight Detachment. Three searchlights with sound locators and portable power plants are to be provided. They should be located as follows:

AA SL No. 5 - Light near the shore of Narragansett Bay, approximately one mile outh of South Pier at Narragansett Pier; within 800 yards of the antiaircraft battery. Telephone connection may be by field wire.

AA SL No. 4 - On Broad Hill near Coast and Geodetic Survey station of that name, approximately 9,000 yards west of the battery and one mile northeast of Perryville. Commercial telephone line may be used for connection with the gun battery.

AA SL No. 6 - At Meethinghouse Hill also called Tower Hill, one mile east of Wakefield and approxmiately 3,800 yards northwest of the battery. Commercial leased line may be employed for connection with the gun battery.

3,000 feet of field wire will be required.

ANTIAIRCRAFT DEFENSE OF SAKONNET POINT.

9. The two antiaircraft batteries at Sakonnet Point are composed, like the others of the harbor defense, of a gun, a machine gun and a searchlight detachment; these two batteries form a part of Group 3.

10. AA Battery No. 5, Sakonnet Point.

a. Gun Detachment. This battery is to be located on the high ground overlooking the Sakonnet River, on the west portion of the 16-inch gun plot. The director may be located within 200 yards of the center of the battery.

b. Machine Gun Detachment. Four platoons or 16 machine guns should be provided. They should be so located as to protect the 16-inch battery, the three antiaircraft searchlights referred to below, and the fire control stations at Sachuest Neck. For telephone connection with the gun battery, field wire (and cable to Sachuest Neck) should be used. 12,000 feet of field wire will be required.

c. Searchlight Detachment. Three portable searchlight units are to be provided. The following are suitable locations:

AA SL No. 15 - At Hill 100, 1,400 yards north of Little Compton and 4,700 yards northeast of the antiaircraft battery. Commercial leased line may be employed for connection with the battery.

AA SL No. 14 - Near the Sakonnet River, north of Church Point, near a Coast and Geodetic Survey station named "Church Point - 3" and approximately 3,000 yards northwest of the battery. Telephone connection may be by field wire.

AA SL No. 13 - On Sachuest Neck, 4,600 yards west of the battery. Telephone connection may be by field wire and fire control cable.

12,000 feet of field wire will be required.

11. AA Battery No. 6, Sakonnet Point.

a. Gun Detachment. This battery is to be located in the northeast portion of the 10-acre plot which is the site of the 8-inch gun battery. The director may be well located on a rocky knoll at the north edge of the plot, within 200 yards of the center of the battery.

b. Machine Gun Detachment. Four platoons or 16 machine guns should be provided. They should be located so as to protect the 8-inch battery, the 155-mm battery, the seacoast searchlights on West Island and the Warren Point fire control stations. The four platoons should be disposed to cover the area of the peninsula and should be placed approximately 1,500 yards apart. Telephone connection with the gun battery should be by field wire. 20,000 feet of field wire will be required.

c. Searchlight Detachment. Three portable searchlight units are to be provided. They should be located as follows:

AA SL No. 16 - On the west side of Round Point, 1,400 yards north of the end of Sakonnet Point and approximately 2,400 yards southeast of the antiaircraft battery.

AA SL No. 17 - On the east side of the swamp which lies east of the 8-inch plot; this searchlight position is 1,200 yards east of the antiaircraft battery.

AA SL No. 18 - Approximately 400 yards north of Tumpus Beach and 4,400 yards northeast of the battery.

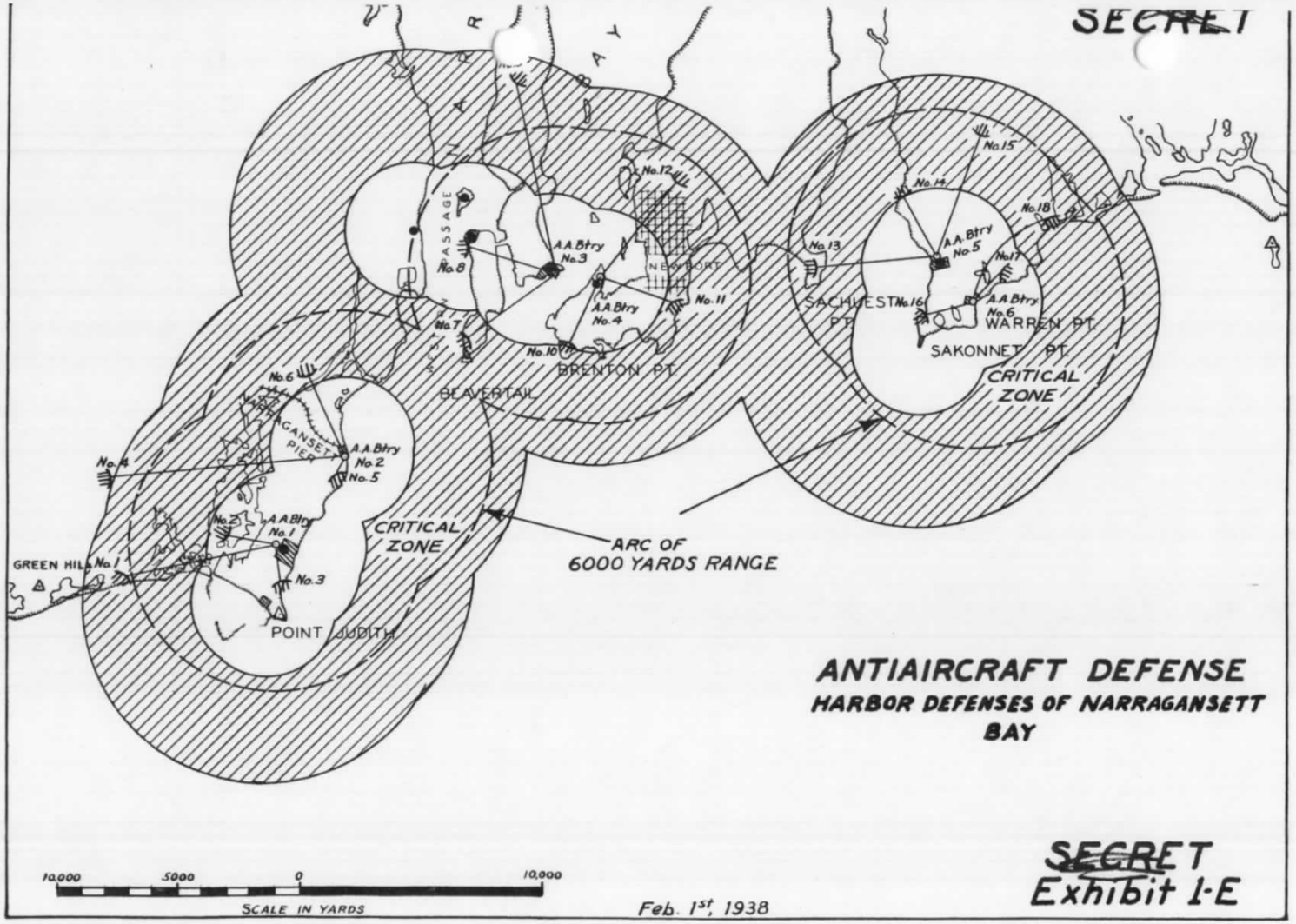
(1) Field telephone wire should be used to connect these three searchlights with the gun battery. 30,000 feet of field wire will be required.

12. The locations prescribed in this Annex for individual antiaircraft guns and for antiaircraft gun batteries were approved by the War Department in 12th Indorsement, WD AGO, August 31, 1933 (AG 660.2 (1-30-33) (Misc.) E).

13. The acquisition of land is not involved in this Annex.

14. Cost Estimate. An estimate of cost and priority guide is appended as Exhibit 5-E. Those items which should be procured and installed in peacetime are marked with an A. Those which should be procured in peace but whose installation may be deferred and installed until an emergency arises are marked B. Those items to be procured and installed when an emergency arises are marked C.

SECRET



ANTIAIRCRAFT DEFENSE

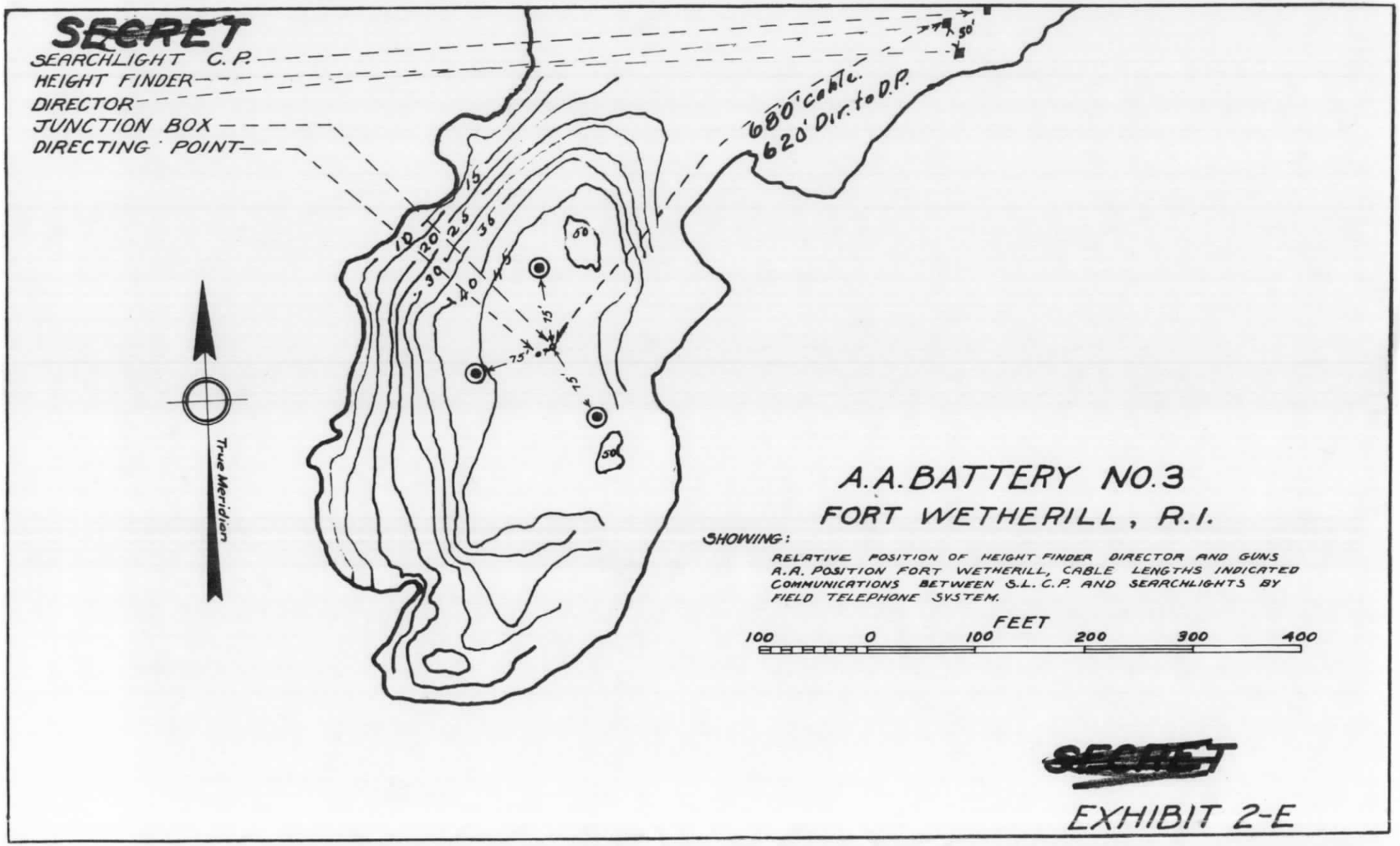
HARBOR DEFENSES OF NARRAGANSETT BAY

Feb. 1st, 1938

SECRET

Exhibit 1-E

SECRET



A.A. BATTERY NO. 3
FORT WETHERILL, R.I.

SHOWING:

RELATIVE POSITION OF HEIGHT FINDER DIRECTOR AND GUNS A.A. POSITION FORT WETHERILL, CABLE LENGTHS INDICATED COMMUNICATIONS BETWEEN S.L. C.P. AND SEARCHLIGHTS BY FIELD TELEPHONE SYSTEM.

FEET

100 0 100 200 300 400

SECRET

EXHIBIT 2-E

SECRET

A.A. BATTERY NO. 4
FORT ADAMS, R.I.

SHOWING:

RELATIVE POSITIONS OF HEIGHT FINDER, DIRECTOR AND GUNS, WITH CABLE LENGTHS INDICATED.
TELEPHONE COMMUNICATIONS BETWEEN S.L.C.P. AND S.L. BY F.C. CARLEOR FIELD TELEPHONE SYSTEM.

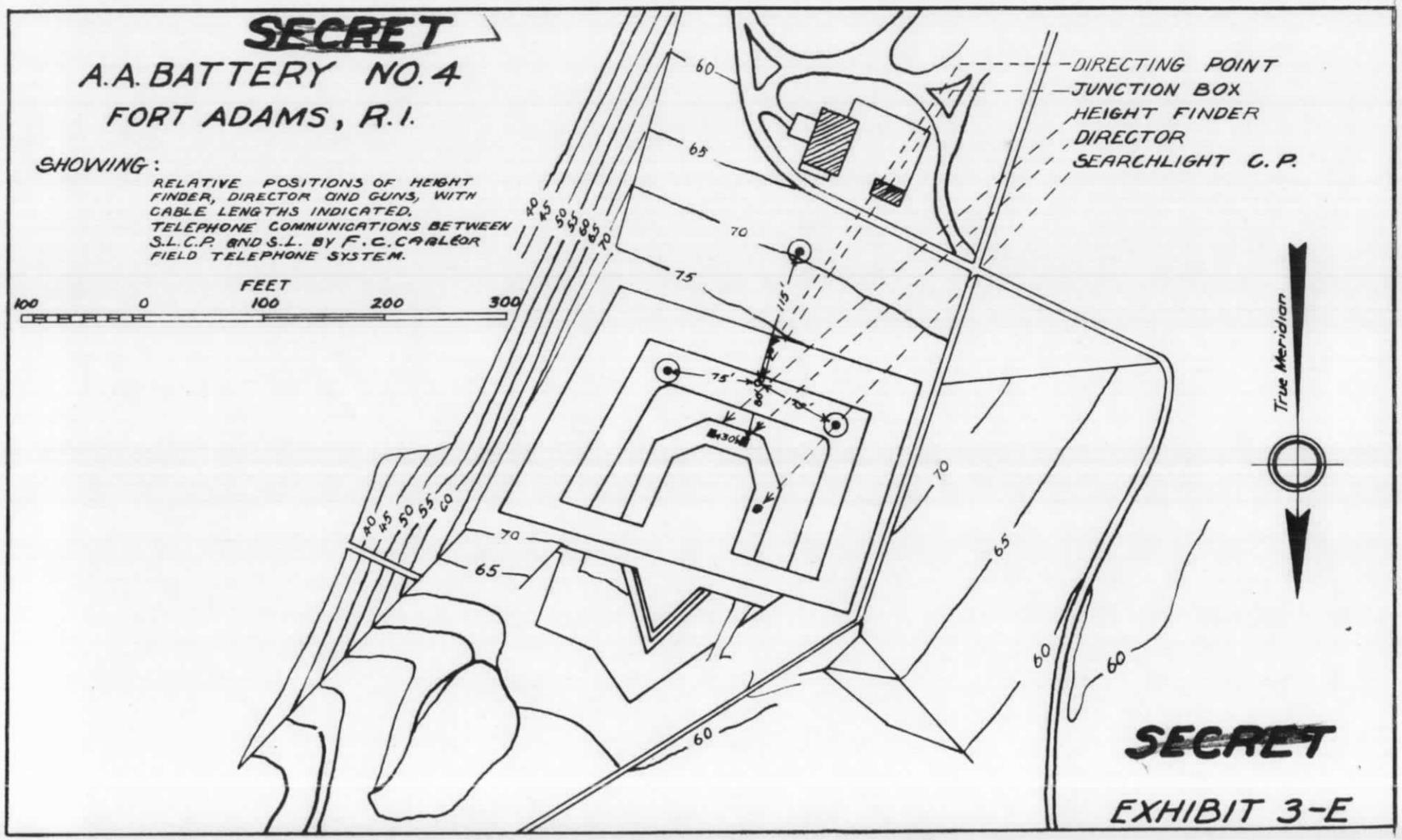


EXHIBIT 3-E

ANNEX E

EXHIBIT 4-E

WAR RESERVE AND BATTLE ALLOWANCE
OF
ANTIAIRCRAFT AMMUNITION

HARBOR DEFENSES OF NARRAGANSETT BAY

Approved by the Secretary of War in 5th Indorsement, WD AGO., March 28, 1933
(AG 381.4; 2-16-33; Misc. E).

Batteries	Type	Rounds W.R.	Central Storage	B.A.	Remarks
No. 1 - Point Judith, North	Mobile	3600	3600	-	1800 rounds to be forwarded with 8" Ry. Btry.
No. 2 - Point Judith, South	Mobile	3600	1800	1800	B.A. to be stored in Fort Adams or held in Central Storage until 16" Btry. is built.
No. 3 - Fort Wetherill	Fixed	3600	1800	1800	Store in Btry. Walbach.
No. 4 - Fort Adams	Fixed	3600	1800	1800	~~Store in Btry. Bankhead.~~ Store in Redoubt (See WPR 29-63 Aug 28, 1940)
No. 5 - Sakonnet Point	Mobile	3600	1800	1800	B.A. to be stored in Fort Adams or held in Central Storage until 16" Btry. is built.
No. 6 - Sakonnet Point	Mobile	3600	1800	1800	

EXHIBIT 4-E

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Signal Material	Total
7	6		O-1 STATION, POINT JUDITH			$ 55	$	$ 245	$ 300
			Control: AA No. 1, Pt. Judith AA No. 2, Pt. Judith						
		B	Ordnance:						
			1 Field Glass	$55	$55				
		B	Engineer:						
			For Construction of Station see Annex "B", Fire Control Station.						
		B	Signal:						
			1 Telephone, Field	35					
			1 Switchboard, BD-72	160					
			Contingency	50	245				
7	4		AA BATTERY NO. 1, POINT JUDITH (Mobile)			251,400	63,000	1,289	315,689
			Guns: 3-3" Mobile Machine Guns: 16 - .50 cal. Searchlights: 3-AA SL Units, (Portable)						
		B	Ordnance:						
			3 Guns AA (Mobile) complete	120,000					
			1 Director incl. Data Transmission System	32,000					
			1 Height finder	20,000					
			1 Stereoscopic Tester	100					
			5 BC Telescopes, AA	8,500					
			16 AA Machine Guns complete .50 cal.	52,800					
			3 Sound Locators	18,000	251,400				
		B	Engineer:						
			3 Searchlights AA (complete)	63,000	63,000				
		B	Signal:						
			21 Telephones, Field	735					
			1 Head Set	20					
			1 Switchboard, BD-71	125					
			1 Switchboard, BD-72	160					
			29,000', Field Wire @ $.006 per foot	174					
			Contingency	75	1,289				
7	5		AA BATTERY NO. 2, POINT JUDITH (Mobile)			238,200	63,000	1,223	302,423
			Guns: 3-3" Mobile Machine Guns: 12 - .50 cal. Searchlights: 3-AA SL Units, (Portable)						
		B	Ordnance:						
			3 Guns AA (Mobile) complete	120,000					
			1 Director incl. Data Transmission System	32,000					
			1 Height finder	20,000					
			1 Stereoscopic Tester	100					
			5 BC Telescopes, AA	8,500					
			12 AA Machine Guns complete .50 cal.	39,600					
			3 Sound Locators	18,000	238,200				
		B	Engineer:						
			3 Searchlights AA (Complete)	63,000	63,000				
		B	Signal:						
			21 Telephones, Field	735					
			1 Head set	20					
			1 Switchboard, BD-71	125					
			1 Switchboard, BD-72	160					
			18,000', Field Wire @ $.006 per foot	108					
			Contingency	75	1,223				

SECRET

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Signal Material	Total
3	2		G-4 STATION, PROSPECT			$ 55	$ -	$ 245	$ 300
			Control: 12 - .50 cal. Machine Guns, Ft. Getty AA Battery No. 3, Ft. Wetherill, 3 - 3" Fixed. AA Battery No. 4, Ft. Adams, 3 - 3" Fixed.						
		A	Ordnance:						
			1 Field Glass	$55	$55				
			Engineer: Existing Structure						
		A	Signal:						
			1 Telephone, Field	35					
			1 Switchboard, BD-72	160					
			Contingency	50	245				
1	1	A	MACHINE GUN DETACHMENT, FORT GETTY			39,600		610	40,210
			Ordnance:						
			12 AA Machine Guns complete .50 cal.	39,600	39,600				
		A	Signal:						
			11 Telephones, Field	385					
			1 Head set	20					
			1 Switchboard, BD-71	125					
			5,000', Field Wire @ $.006 per foot	30					
			Contingency	50	610				
3	3		AA BATTERY NO. 3, FORT WETHERILL (Fixed)			126,800	63,000	1,217	191,017
			Guns: 3-3" Fixed Machine Guns: 12 - .50 cal. Searchlights: 3-AA SL Units, (Portable)						
		A	Ordnance:						
			3 Guns (Fixed) installed						
			1 Director incl. Data Transmission System	32,000					
			1 Height finder	20,000					
			1 Stereoscopic Tester	100					
			4 BC Telescopes, AA	6,800					
			3 On-carriage Alterations & Equipment	6,900					
			4 Fuze Setters	3,400					
			12 AA Machine Guns .50 cal.	39,600					
			3 Sound Locators	18,000	126,800				
		A	Engineer:						
			3 Searchlights AA (complete)	63,000	63,000				
		A	Signal:						
			21 Telephones, Field	735					
			1 Head set	20					
			1 Switchboard, BD-71	125					
			1 Switchboard, BD-72	160					
			17,000', Field Wire @ $.006 per foot	102					
			Contingency	75	1,217				
3	4		AA BATTERY NO. 4, FORT ADAMS (Fixed)			126,800	63,000	1,175	190,975
			Guns: 3-3" Fixed Machine Guns: 12 - .50 cal. Searchlights: 3-AA SL Units, (Portable)						

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Signal Material	Total
			AA BATTERY NO. 4, FORT ADAMS (CONT'D) (Fixed)			$	$	$	$
		A	Ordnance:						
			3 Guns (Fixed) installed						
			1 Director with Data Transmission System	$32,000					
			1 Height finder	20,000					
			1 Stereoscopic Tester	100					
			4 BC Telescopes, AA	6,800					
			3 On-carriage Alterations & Equipment	6,900					
			4 Fuze Setters	3,400					
			12 AA Machine Guns .50 cal.	39,600					
			3 Sound Locators	18,000	$125,800				
		A	Engineer:						
			3 Searchlights AA (complete)	63,000	63,000				
		A	Signal:						
			21 Telephones, Field	735					
			1 Head set	20					
			1 Switchboard, BD-71	125					
			1 Switchboard, BD-72	160					
			10,000', Field Wire	60					
			Contingency	75	1,175				
7	3		O-3 STATION, WARREN POINT			55		245	300
			Control: AA Battery No. 5, Sakonnet Point; AA Battery No. 6, Sakonnet Point						
		A	Ordnance:						
			1 Field Glass	55	55				
			Engineer: For Construction of Station See Annex "B" Fire Control Station, Warren Point.						
		A	Signal:						
			1 Telephone, Field	35					
			1 Switchboard, BD-72	160					
			Contingency	50	245				
7	1		AA BATTERY NO. 5, SAKONNET POINT			251,400	63,000	1,289	315,689
			Guns: 3-3" Mobile; Machine Guns: 16 - .50 cal.; Searchlights 3-AA SL Units, (Portable)						
		A	Ordnance:						
			3 Guns AA (Mobile) complete	120,000					
			1 Director with Data Transmission System	32,000					
			1 Height finder	20,000					
			1 Stereoscopic Tester	100					
			5 BC Telescopes, AA	8,500					
			16 AA Machine Guns	52,800					
			3 Sound Locators	18,000	251,400				
		A	Engineer:						
			3 Searchlights AA (complete)	63,000	63,000				
		A	Signal:						
			21 Telephones, Field	735					
			1 Head set	20					
			1 Switchboard, BD-72	160					
			1 Switchboard, BD-71	125					
			29,000, Field Wire @ $.006 per foot	174					
			Contingency	75	1,289				

SECRET

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project			Ordnance	Engineer Material	Signal Material	Total
7	2		AA BATTERY No. 6, SAKONNET POINT			$ 251,400	$ 63,000	$ 1,445	$ 315,845
			Guns: 3-3" Mobile Machine Guns: 16 - .50 cal. Searchlights: 3-AA SL Units, (Portable)						
		A	Ordnance:						
			3 Guns AA (Mobile) complete	$120,000					
			1 Director with Data Transmission System	32,000					
			1 Height finder	80,000					
			1 Stereoscopic Tester	100					
			5 BC Telescopes, AA	8,500					
			16 AA Machine Guns	52,800					
			3 Sound Locators	18,000	$251,400				
		A	Engineer:						
			3 Searchlights AA (complete)	63,000	63,000				
		A	Signal:						
			21 Field Telephones	735					
			1 Head set	20					
			1 Switchboard, BD-72	160					
			1 Switchboard, BD-71	125					
			55,000', Field Wire @ $.006 per foot	330					
			Contingency	75	1,445				
7	7		ANTIAIRCRAFT OBSERVERS			495		820	1,315
		B	Ordnance:						
			9 Field Glasses	495	495				
			Engineer:						
			None						
			Signal:						
			9 Telephones with head & chest sets	720					
			Contingency	100	820				
				TOTALS		$1,286,260	$378,000	$9,805	$1,674,065

SECRET

ANNEX F

SUPPORTING AIRCRAFT.

1. Mission: To furnish observation and surveillance missions for gun defenses of Forts Adams, Getty, Wetherill and Kearney; and Sakonnet Point and Point Judith.

2. Equipment required: One (1) Observation Flight; three planes equipped with radio.

3. Landing Fields:

a. Operating:

(1) Newport Airport - 3½ miles north of Newport, Rhode Island.

b. Emergency:

(1) State Camp Grounds, Quonset Point, Rhode Island (northeast of Wickford, Rhode Island).

(2) Atlantic Airport - 9 miles east of Westerly, Rhode Island.

(3) Marthas Vineyard Airport - 1½ miles south of Edgartown, Massachusetts.

(4) Block Island, Rhode Island (inferior).

4. Gas and Oil. To be secured locally at the specified airports.

5. Communications:

a. Commercial telephone to airport.

b. Radio between planes on missions and the Harbor Defense command post.

ANNEX G

GAS DEFENSE.

1. a. This project contemplates use of the Collective Protector Unit M-1 or later model, costing $780, with four reserve canisters at $270 each, a total of $1,860 per unit; this unit has a rated capacity of 200 cubic feet per minute. Three cubic feet per minute per person not physically active, and ten cubic feet for personnel of plotting rooms is required. Therefore one unit will supply a maximum of 20 persons actively engaged or 67 persons not active. There are the further conditions that one unit will supply the necessary slight positive air pressure to a room of no more than 10,000 cubic feet capacity; and each person requires 150 cubic feet of space.

b. The basis for providing reserve canisters is that the life of the canister is 40 hours; and the assumption that there may be two gas attacks of eight hours each, each week for three months. This is a very ample allowance.

c. Only permanent and bombproof structures should, in general, be gas-proofed. Power plants do not require protection, nor do isolated fire control stations. Class C batteries and short range batteries of the secondary armament are not protected. Provision for gas defense is to be made whenever new emplacements are constructed.

d. For personnel outside of gas-proofed rooms, reliance is placed on gas masks, protective clothing and the employment of trained squads of men using chloride of lime to neutralize mustard gas. All this personnel and organizational equipment is outside the scope of this project.

2. a. Attack by gas must ordinarily be carried out by airplanes since otherwise the expenditure of naval ammunition would be excessive. The fire of antiaircraft guns and machine guns will be a deterrent to effective gas attack.

b. Attack with persistent gas is the chief concern.

3. Provision is made herein for complete gas-proofing of the plotting rooms, and a rest room at each battery where a room is available without undertaking new construction. Aid stations

may be established in the rest rooms. Evacuation should be first to military and then to civil hospitals.

4. The acquisition of land is not involved in this Annex.

5. Cost Estimate. An estimate of cost and priority guide is appended as Exhibit 1-C. Those items which should be procured and installed in peacetime are marked with an A. Those which should be procured in peace but whose installation may be deferred until an emergency arises are marked B. Those items to be procured and installed when an emergency arises are marked C.

Priorities subject to change based on availability of funds.

Priority	Item	Class	Description of Project	No. of Cubic Feet	No. of Persons	No. of Collective Prots.	No. of Reserve Canisters	Chemical Warfare Service	Engineer Material	Engineer Labor	Total
10			FORT WETHERILL, R. I.								
	1	A	Fire Control Switchboard Room	5,400	3	1	4	$ 1,860	$ 300	$ 75	$2,235
	2	A	Mine Casemate	8,600	4	1	4	1,860	300	75	2,235
	3	A	Mine Plotting Room	1,970	15	1	4	1,860	300	75	2,235
	4	A	Battery Wheaton Plotting Room	1,690	12	1	4	1,860	300	75	2,235
	5	B	Battery Wheaton Rest Room at Walbach	6,400	42	1	4	1,860	300	75	2,235
	6	A	Battery Vernum Plotting Room	1,920	13	1	4	1,860	300	75	2,235
	7	B	Battery Vernum Rest Room	1,890	12	1	4	1,860	300	75	2,235
	8	A	Battery Dickenson Plotting Room	1,211	9	1	4	1,860	300	75	2,235
	9	B	Battery Dickenson Rest Room at Zook	5,040	34	1	4	1,860	300	75	2,235
			FORT ADAMS, R. I.								
	10	A	Battery Edgerton Plotting Room	1,700	12	1	4	1,860	300	75	2,235
	11	A	Battery Greene Plotting Room	1,700	12	1	4	1,860	300	75	2,235
	12	B	Batteries Edgerton and Greene Rest Room	6,300	42	1	4	1,860	300	75	2,235
			FORT GETTY, R. I.								
	13	A	Battery House Plotting Room	1,300	9	1	4	1,860	300	75	2,235
	14	B	Battery House Rest Room at Toussard	3,600	24	1	4	1,860	300	75	2,235
			FORT GREBLE, R. I.								
	15	A	Mine Casemate	1,750	4	1	4	1,860	300	75	2,235
	16	A	Mine Plotting Room	1,680	13	1	4	1,860	300	75	2,235
			FORT KEARNEY, R. I.								
	17	A	Battery Cram Plotting Room	1,100	8	1	4	1,860	300	75	2,235
	18	B	Battery Cram Rest Room at Prescott	3,600	24	1	4	1,860	300	75	2,235
						TOTALS		$33,480	$5,400	$1,350	$40,230

Class A - To be procured and installed in peacetime.
Class B - To be procured in peacetime and installed when an emergency arises.
Class C - To be procured and installed when an emergency arises.

Note: No expenditure of funds by the Ordnance Department, Signal Corps, Coast Artillery Corps, or for land, is contemplated in this Annex.

SECRET

EXHIBIT 1-G

ANNEX H

ENGINEERS, CHIEF OF ENGINEERS

Annex	Priority	Item	Class A	Class B	Class C	Total
A	4	1	$ 793,362	$	$	$ 793,362
		2	165,220			165,220
		3	14,755			14,755
	5	1	862,375			862,375
		2	23,700			23,700
		3			7,000	7,000
	Total		1,859,412		7,000	1,866,412
B	4	1	10,700			10,700
		2	5,000			5,000
		4	4,450			4,450
		5	17,700			17,700
		6	10,200			10,200
		7	10,600			10,600
		8	13,100			13,100
		9			5,300	5,300
		10	900	2,700	1,350	4,950
		11	800	2,500	1,250	4,550
		14			3,500	3,500
		15			3,000	3,000
		21			2,500	2,500
	5	1		2,500	1,650	4,150
		2			8,000	8,000
		3			3,250	3,250
		5			1,500	1,500
	Total		73,450	7,700	31,300	112,450
C	2	1		44,840		44,840
		2		42,840		42,840
		3		44,840		44,840
		4	5,000	5,650	10,950	21,600
		5	10,000			10,000
		6		42,840		42,840
		7		21,420		21,420
		8		21,420		21,420
	Total		15,000	223,850	10,950	249,800

ANNEX H

Annex	Priority	Item	Class A	Class B	Class C	Total
D	8	1	$ 37,500	$	$	$ 37,500
	Total		37,500			37,500
E	3	3	63,000			63,000
		4	63,000			63,000
	7	1	63,000			63,000
		2	63,000			63,000
		4	63,000			63,000
		5	63,000			63,000
	Total		378,000			378,000
G	10	1	375			375
		2	375			375
		3	375			375
		4	375			375
		5		375		375
		6	375			375
		7		375		375
		8	375			375
		9		375		375
		10	375			375
		11	375			375
		12		375		375
		13	375			375
		14		375		375
		15	375			375
		16	375			375
		17	375			375
		18		375		375
	Total		4,500	2,250		6,750
GRAND TOTAL			$2,330,362	$233,800	$49,250	$2,613,412

Approved by Chief of Engineers,
November 29, 1939.

ANNEX J

ESTIMATES, CHIEF OF ORDNANCE

Annex	Priority	Item	Class A	Class B	Class C	Total
A	4	1	$1,040,000	$	$	$1,040,000
		2	250,000			250,000
		3	10,000			10,000
	5	1	1,040,000			1,040,000
		2	10,000			10,000
		3		443,300		443,300
Total			2,350,000	443,300		2,793,300
B	4	2	1,800			1,800
	5	3	6,300			6,300
		3		6,300		6,300
		3		6,300		6,300
		3		6,300		6,300
		2		4,000		4,000
	4	5	1,800			1,800
		5	775			775
		5	3,600			3,600
		4	3,600			3,600
		1		3,600		3,600
		6	6,300			6,300
		7	3,600			3,600
		8	3,600			3,600
	5	4	39,960			39,960
		5		775		775
	4	5		3,600		3,600
		4		3,600		3,600
	5	1		3,600		3,600
	4	6		3,600		3,600
		7	3,600			3,600
		8	3,600			3,600
	5	5		44,960		44,960
	4	14		900		900
		14		1,800		1,800
		4		1,800		1,800
		14		1,800		1,800
		14		9,200		9,200
	5	16		775		775

ANNEX J

Annex	Priority	Item	Class A	Class B	Class C	Total
B	4	6	$ 1,800	$	$	$ 1,800
		5	3,600			3,600
		7	3,600			3,600
		8	3,600			3,600
		17		1,800		1,800
		17		1,800		1,800
		17	4,390			4,390
		5	3,600			3,600
		7	1,800			1,800
		8	3,600			3,600
		18	4,375			4,375
		6	1,800			1,800
		5	1,800			1,800
		7	1,800			1,800
		8	1,800			1,800
		19		1,800		1,800
		19	4,250			4,250
		6	1,800			1,800
		5	1,800			1,800
		7	1,800			1,800
		8	3,600			3,600
		20		1,800		1,800
		20		1,800		1,800
		20	4,250			4,250
		8	1,800			1,800
		1	775			775
		8	3,600			3,600
		7	3,600			3,600
		9			3,600	3,600
		10		6,300		6,300
		11	6,300			6,300
		6	6,300			6,300
		5	3,600			3,600
		4		3,600		3,600
		12	39,960			39,960
		2	1,800			1,800
		8	3,600			3,600
		7	3,600			3,600
		9		3,600		3,600
		10		6,300		6,300
		6	6,300			6,300
		5	3,600			3,600

ANNEX J

Annex	Priority	Item	Class A	Class B	Class C	Total
B	4	13	$ 39,960	$	$	$ 39,960
		15		900		900
		15		1,800		1,800
		15		1,800		1,800
		9		1,800		1,800
		15		9,200		9,200
		21	125			125
		21	125			125
		21	4,625			4,625
Total			263,270	147,210	3,600	414,080
E	7	6		55		55
		4		251,400		251,400
		5		238,200		238,200
	3	2	55			55
	1	1	39,600			39,600
	3	3	126,800			126,800
		4	126,800			126,800
	7	3	55			55
		1	251,400			251,400
		2	251,400			251,400
		7		495		495
Total			796,110	490,150		1,286,260
GRAND TOTAL			$3,409,380	$1,080,660	$ 3,600	$4,493,640

Approved by Chief of Ordnance,
November 22, 1939.

ANNEX K

ESTIMATES, CHIEF OF CHEMICAL WARFARE SERVICE

Annex	Priority	Item	Class A	Class B	Total
G	10	1	$ 1,860	$	$ 1,860
		2	1,860		1,860
		3	1,860		1,860
		4	1,860		1,860
		5		1,860	1,860
		6	1,860		1,860
		7		1,860	1,860
		8	1,860		1,860
		9		1,860	1,860
		10	1,860		1,860
		11	1,860		1,860
		12		1,860	1,860
		13	1,860		1,860
		14		1,860	1,860
		15	1,860		1,860
		16	1,860		1,860
		17	1,860		1,860
		18		1,860	1,860
GRAND TOTAL			$ 22,320	$ 11,160	$ 33,480

Approved by the Chief of Chemical Warfare Service,

November 28, 1939.

ANNEX L

ESTIMATES, CHIEF SIGNAL OFFICER

Annex	Priority	Item	Class A	Class B	Class C	Total
B	4	1	$ 826	$ 279	$	$ 1,105
		2	5,015			5,015
		4	729	658		1,387
		5	8,756	279		9,035
		6	3,153	279		3,432
		6	40			40
		7	3,432			3,432
		8	8,209			8,209
		9		379	779	1,158
		10		558	450	1,008
		11		279	300	579
		12	6,285			6,285
		13	6,000			6,000
		14		1,659	400	2,059
		15		1,809	250	2,059
		17	40	200	150	390
		18	150	200		350
		19	1,280	200		1,480
		20	1,280	200		1,480
		21	5,604	205		5,809
		23	8,400			8,400
		24	23,025			23,025
		25	21,058			21,058
		26	14,055			14,055
		27	22,525			22,525
		28	59,105			59,105
		29	6,975			6,975
		30	13,134			13,134
		31	2,284			2,284
		32		24,150	625	24,775
		33		4,488	650	5,138
		34	435			435
		35	2,180			2,180
		36	8,707			8,707
		37	2,669			2,669
		38		1,725	5,300	7,025
		39	2,434			2,434
		40	3,336			3,336
		41	4,900			4,900

ANNEX L

Annex	Priority	Item	Class A	Class B	Class C	Total
B	5	1	$	$ 279	$ 300	$ 579
		2		4,039	80	4,119
		3		1,166	150	1,316
		4	6,285			6,285
		5		6,350	150	6,500
		6		25,275	600	25,875
		7		42,435	1,100	43,535
		8		23,805	650	24,455
		9		20,169	700	20,869
		10		6,893	600	7,493
		11		9,478	600	10,078
		12		6,032	600	6,632
		13		569	1,600	2,169
		14		662	1,000	1,662
		15		310	900	1,210
		16		210	1,290	1,500
		17		310	900	1,210
		18		1,513	4,400	5,913
		19	3,168			3,168
		20	1,829			1,829
		21	8,735			8,735
		22	4,900			4,900
		23			4,900	4,900
Total			270,038	187,042	29,424	486,504

Note: On page 26 Annex B, Priority 4, Item 15, Class C, $100 is entered in the "labor" column instead of $50 as indicated in the itemization on the left. Subtracting this $50 from the total "$486,554" shown on page 41 leaves $486,504 which checks this figure.

ANNEX L

Annex	Priority	Item	Class A	Class B	Class C	Total
C	2	1	$	$ 619	$ 75	$ 694
		2		619	75	694
		3		619	75	694
		4		619	75	694
		5	694			694
		6		619	75	694
		7		312	50	362
	Total		694	3,407	425	4,526
E	1	1	610			610
	3	2	245			245
		3	1,217			1,217
		4	1,175			1,175
	7	1	1,289			1,289
		2	1,445			1,445
		3	245			245
		4		1,289		1,289
		5		1,223		1,223
		6		245		245
		7		820		820
	Total		6,226	3,577		9,803
GRAND TOTALS			$ 276,958	$ 194,026	$ 29,849	$ 500,833

Approved by the Chief Signal Officer,
November 23, 1939.

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ANNEX M

ESTIMATE, CHIEF OF COAST ARTILLERY

Annex	Priority	Item	Class A	Total
D	1	1	$ 99,817	$ 99,817

Approved by the Chief of Coast Artillery,
December 21, 1939.

R E C A P I T U L A T I O N

Annex	Procuring Service	Class A	Class B	Class C	Total
A	Engineers	$1,859,412	$	$ 7,000	$1,866,412
	Ordnance	2,350,000	443,300		2,793,300
	TOTAL	4,209,412	443,300	7,000	4,659,712
B	Engineers	73,450	7,700	31,300	112,450
	Ordnance	263,270	147,210	3,600	414,080
	Signal Corps	270,038	187,042	29,424	486,504
	TOTAL	606,758	341,952	64,324	1,013,034
C	Engineers	15,000	223,850	10,950	249,800
	Signal Corps	694	3,407	425	4,526
	TOTAL	15,694	227,257	11,375	254,326
D	Coast Artillery	99,817			99,817
	Engineers	*37,500			37,500*
	TOTAL	137,317			137,317
E	Engineers	378,000			378,000
	Ordnance	796,110	490,150		1,286,260
	Signal Corps	6,226	3,577		9,803
	TOTAL	1,180,336	493,727		1,674,063
G	Engineers	4,500	2,250		6,750
	Chemical Warfare Service	22,320	11,160		33,480
	TOTAL	26,820	13,410		40,230
GRAND TOTAL		$6,176,337	$1,519,646	$82,699	$7,778,682

*Completed with 1940 F.Y. Funds.

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