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Register No. 7

ANNEXES TO HARBOR DEFENSE PROJECT
HARBOR DEFENSES OF KEY WEST

The short title of this document is CCA-AN-KW

Under the provisions of A.R. 350-5 (paragraph 17 c), 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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Authority NND 73503L
By JA NARA Date 6/6/00

AUTHORITIES

1. This Annex was prepared April 25, 1936, by a Board of Officers appointed under the provisions of paragraph 1 d, AR 100-20.

2. Approved by the Secretary of War in the 15th Indorsement, AG 660.2 (10-7-35) (misc.) E, dated September 16, 1936.

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with the base increment charge the extreme range is 9,300 yards. The use of the 700 lb. projectile is recommended for this battery.

b. For the war reserve and battle allowance of ammunition see Exhibit 3-A.

6. Battery Mahlon Ford, 2 - 3" R. F. guns.

a. This battery will normally be used for beach defense and against ships of light draft entering the Southeast and Main Ship Channels and the water area inside the reefs.

b. These guns are pedestal mounted, and are capable of all-around fire. However, the city of Key West prevents observation in the northern half of the field of fire. This is negligible as the water area in that locality is only 1 to 3 feet deep. Heights of site 20.11 feet, range 11,000 yards.

c. For the war reserve and battle allowance of ammunition see Exhibit 3-A.

7. Battery Inman, 2 - 3" R. F. guns.

a. This battery will normally be used for beach defense and against ships of light draft entering the Southeast Channel, the Main Ship Channel and the water area inside the reefs. It is located at West Martello Tower, 2,200 yards on the left flank of the Fort Taylor Reservation.

b. These guns are pedestal mounted and are capable of all-around fire. However, the city of Key West prevents observation in the northern half of the field of fire. This is negligible as the water in that locality is only 1 to 3 feet deep. Height of site 17.8 feet, range 11,350 yards. Increase over Battery Ford due to increase in elevation of which guns are capable.

c. For the war reserve and battle allowance of ammunition see Exhibit 3-A.

8. Additional armament.

a. One battery (4 - 155 mm. G.P.F.). These guns are now in storage at Fort Taylor. The Site Board appointed by Special Orders No. 174, Hq. 4th Corps Area, December 5, 1933, selected a site for these guns on the parapet of Battery DeLeon. This location was approved by the Secretary of War by the 13th Indorsement to the proceedings of this board, dated July 5, 1934 (AG 660.2 (2-3-34) (Misc.) E.).

b. This project contemplates the construction of four concrete emplacements on the parapet of Battery DeLeon.

c. A concrete ramp from the battery parade to the parapet on the right flank of Battery DeLeon, and a road-way immediately in front of the concrete emplacements, will be necessary in order to emplace and withdraw these guns.

d. The gallery extension to the loading platform of Battery DeLeon, the parapet of which is to be used for the 155 mm. gun emplacements, is in poor condition for a distance of 365 feet; numerous cracks appear and large flakes of concrete have fallen; the supporting beams

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and columns are badly deteriorated and the whole gallery has settled an average of three inches at its outer edges. This entire gallery should be replaced.

e. In order to permit ready access to the guns from the magazines and battery parade of Battery DeLeon, steps should be provided from the present gun level of DeLeon to the top of the parapet wall.

f. A railing along the top rear trace of Battery DeLeon in rear of the 155 mm. emplacement is essential as a safeguard for the men manning the 155 mm. guns.

g. With the present installation of baselines for this battery dead space exists due to observation. For a discussion on this see paragraph 13 a, Annex B, and Exhibit 4-A.

9. The storage of all ammunition complies with the requirements of Technical Regulations 1370-A, January 2, 1935, to include Change No. 4. All magazines are in the emplacements of seacoast batteries, location of which is shown in Exhibit 2-A, and sufficient space is available for all allowances.

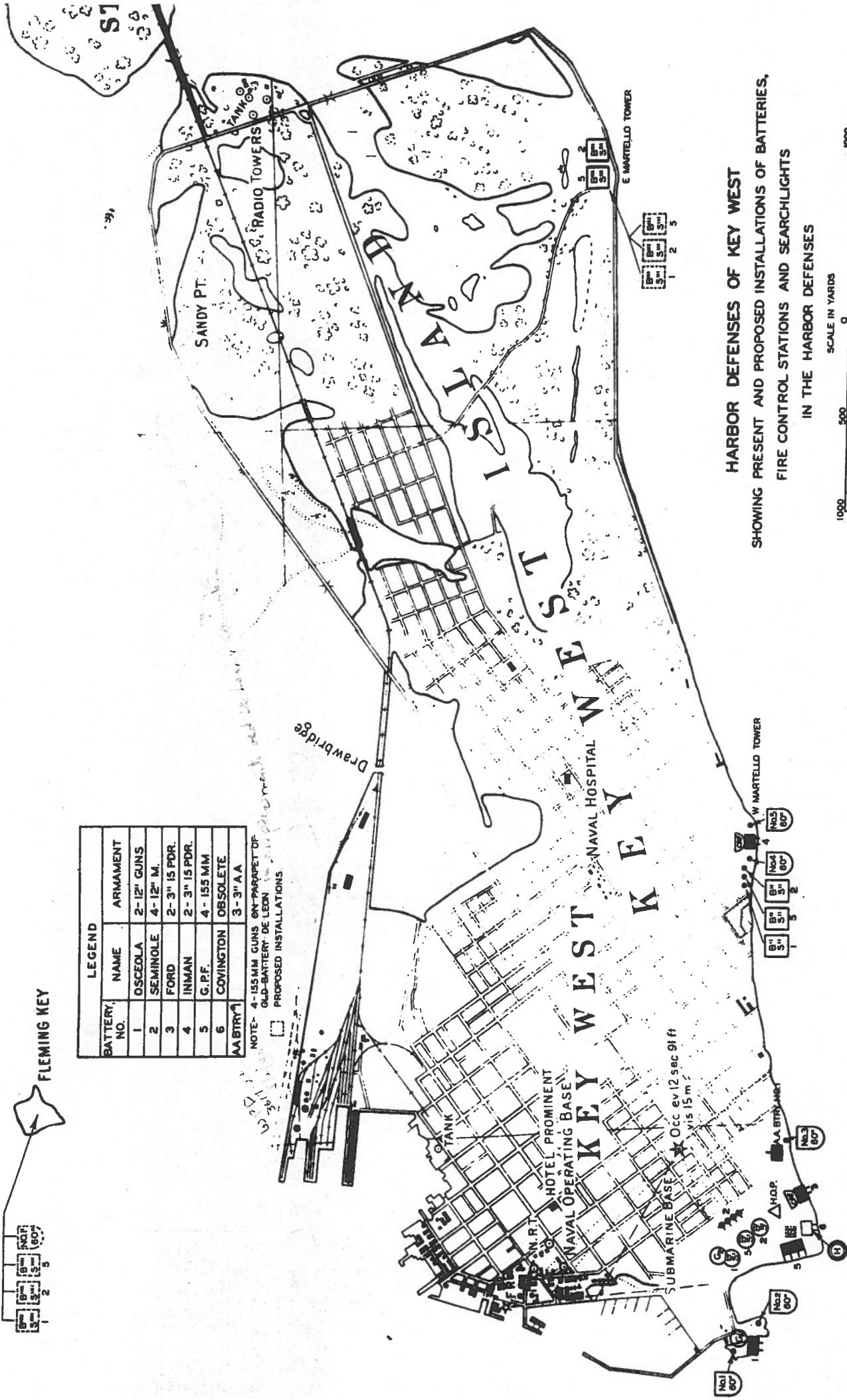
10. Cost estimate. An estimate of cost and priority guide is appended as Exhibit 5-A. Those items which should be procured and installed in peace are marked with an A. Those which should be procured in peace but whose installation may be deferred until an emergency arises are marked B. The items which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



FLEMING KEY

LEGEND		
BATTERY NO.	NAME	ARMAMENT
1	OSCEOLA	2-12" GUNS
2	SEMINOLE	4-12" M.
3	FORD	2-3" 15 PDR.
4	INMAN	2-3" 15 PDR.
5	G.P.F.	4-155 MM
6	COVINGTON	OBSOLETE
AA BTRY		3-3" A.A.

NOTE- 4-155 MM GUNS ON PARAPET OF OLD BATTERY DE LEON
 PROPOSED INSTALLATIONS



HARBOR DEFENSES OF KEY WEST
 SHOWING PRESENT AND PROPOSED INSTALLATIONS OF BATTERIES,
 FIRE CONTROL STATIONS AND SEARCHLIGHTS
 IN THE HARBOR DEFENSES



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WAR RESERVE AND BATTLE ALLOWANCE OF AMMUNITION

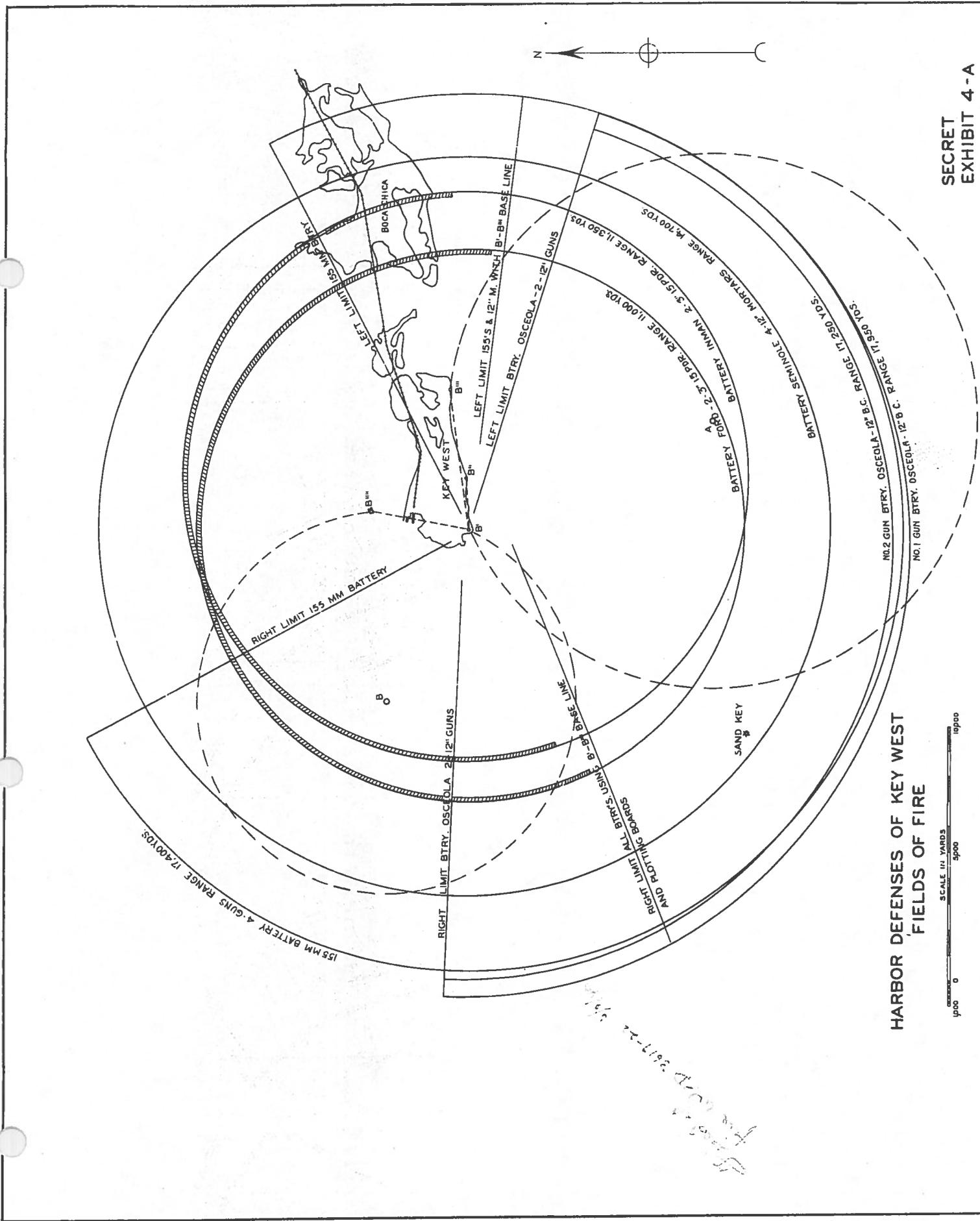
HARBOR DEFENSES OF KEY WEST

(Approved by the Secretary of War in 12th Indorsement, A.G.O.,
June 19, 1934 (AG 381.4 (7-3-33) (Misc.) E.)

Battery	Guns	Caliber & Type	Project- tile	Rounds		Place of Storage
				W.R.	B.A.	
Osceola	2	12" BC M1892	1070 # AP	288	288	At battery.
Seminole	4	12" M. M1890MI	700# DP	288	288	" "
Inman	2	3" 15pd BC M1903	HE Fixed	480	480	" "
Ford	2	3" 15pd BC M1903	HE Fixed	480	480	" "
155 mm.	4	GPF M- 1918 MI	HE CS Mk I	960	960	" "
A.A.	3	3" AA Fixed M1917	Fixed AA Shell	2160	1080	Battery DeLeon.

EXHIBIT 3-A

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HARBOR DEFENSES OF KEY WEST
FIELDS OF FIRE



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EXHIBIT 4-A

Priorities subject to change based on availability of funds

Priority	Item	Class	Annex	Par.	Description of Project	Engineer		Total
						Material	Labor	
4	1	A			CONSTRUCTION OF IMPLACEMENTS - 155 mm.			
			8 b		Construction of 4 concrete 155 mm. gun emplacements on parapet of Btry. DeLeon.	7,000	5,000	12,000
			8 e		Construction of steps from DeLeon gun level to top of parapet wall. <i>Demolish sand water, etc.</i>	300	400	700
			8 f		Construction of a guard rail on parapet wall DeLeon.	640	305	945
			8 d		Repair of gallery extension Btry. DeLeon.	2,000	1,000	3,000
			8 c		Construction of ramp and roadway leading to gun level. <i>new walkways</i>	2,500	2,000	4,500
					Total	12,440	8,705	21,145

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, Signal Corps, Chemical Warfare Service, or Coast Artillery Corps, is contemplated in this annex.

*Changed as indicated by 5/3/40
 approved S/W, 21st and 610 2/ mile E -
 WTD 3617-22 5/3/40
 EXHIBIT 5-A*

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A N N E X B

FIRE CONTROL INSTALLATIONS

1. This annex refers to the fire control installations now installed, to new proposed installations required, and to the installations required for the 155 mm. battery which is to be installed.

2. The installations covered by this annex as well as the tactical organization of these installations is shown in Exhibit 1-A.

3. The circuit requirements for this harbor defense are shown in Exhibit 2-B.

4. The location on the ground of the elements of the fire control system, both old and proposed, provided for in this plan is shown in Exhibits 2-A and 1-B. The structures provided for their housing are enumerated below.

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

a. The angle of intersection at the target should be 15 degrees or greater (15 degrees is taken as a reasonable limit).

Therefore, a circle passing through the base end stations may be described within which the angle of intersection at the target will be 15 degrees or greater. A target coming closer than 15 degrees to the baseline (as measured from either base-end) can not be located with the desired accuracy by that baseline. All points within this circle give intersections greater than 15 degrees. Any area lying within 15 degrees of the baseline is to be excluded as dead space because the construction of plotting board arms does not permit utilizing this area.

b. The atmosphere at this station is clear the greater part of the year with visibility up to 12 miles.

c. Since no standard system of airplane tracking has as yet been adopted a discussion of this is eliminated entirely. However, four observation planes should be based here and assigned to the Harbor Defenses. Suitable landing field and hangar space is now available on the East Martello Reservation. The field is at present leased from the Government by the Pan-American Airways. Necessary facilities are now installed.

6. a. The orientation data of this harbor defense is now based on rectangular coordinates whose origin is the Key West Lighthouse. For orientation data of the harbor defenses now available see Exhibit 4-B. A survey will be necessary to establish the stations and baselines for the proposed stations on Fleming Key; as well as the installations at Seminole, the 155 mm. battery, and B³ stations. See Exhibit 5-B for cost estimate.

b. The fire control diagram required for satisfactory control of all areas is shown in Exhibit 3-B.

7. The next succeeding paragraphs are concerned with locations on the ground of new fire control installations and the requirements of each battery.

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8. Battery Osceola, 2 - 12" B. C. Guns.

a. The B. C. station for this battery consists only of small crows nests on each flank, this arrangement gives no cover, is inadequate and extremely hot during the heat of the day. A suitable B. C. station should be constructed, with protective coverage, mid-way between the two guns. This position would be directly over the plotting room and accessible from the gun loading platform. Height of instrument axis to be about 35 feet. Height of gun trunnions now 33 feet.

b. The battery is now provided with a primary and secondary baseline, both originating in the primary station, a wooden tower with elevation of the observing instrument axis 40 feet above mean low water. The B¹ station is located in a 4-story wooden structure with Group 2 Command Station. Both stations (G-2 and B¹ Osceola) are provided with D.P.F. instruments, mounted on concrete columns. The station was originally designed as a mine station and plotting room. It is badly damaged by termites and should be demolished. A steel tower supporting both of these stations should be erected. The elevation of axis for the D.P.F. instruments and spotting instruments required is 45 feet above mean low water. The ground level is about 4 feet above mean low water. The B² station is located in a steel tower at West Martello Tower, with elevation of the instrument axis 32.25 feet above mean low water. The terminating end of the secondary baseline, or the B³ station, was located at East Martello Tower. It was demolished by a hurricane and must be replaced by a station capable of housing both observing and spotting instruments. The elevation of the instrument axis should be 45 feet above mean low water. The ground elevation at this point is about 4 feet above mean low water. For location of stations see Exhibits 1-B and 2-A.

c. Spotting stations are and should be provided for within the base end stations, being the only locations of sufficient height.

d. The horizontal base system now established should be retained. For a diagrammatic analysis of the fire control station locations, see Exhibit 4-A. Using the baseline B¹ - B³ (B³ at East Martello Tower) the entire field of fire except that part in the West Channel can be covered. Due to the nature of this channel it is believed essential that further provision be made to cover it by a horizontal base. An additional station should be erected on Fleming Key for this battery. (See paragraph 13 a (3) below). The plotting room equipment for the horizontal base system is incomplete; items needed are listed in Exhibit 5-B.

e. The present plotting room of this battery is 10' x 30 $\frac{1}{2}$ ' in size. It will accommodate satisfactorily the horizontal base equipment without undue crowding. No further alterations will be required.

9. Battery Seminole, 4 - 12" Mortars.

a. The B. C. station consists of a concrete shell mid-way between A and B pits. This location makes it extremely hazardous to fire upon either flank. The plotting room is temporarily located in an oil room in the rear of the battery. A combined 3-story B.C. station and plotting room should be constructed immediately in rear of the battery.

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Elevation of the axis of B. C. instrument to be 53 feet above mean low water. Elevation of the ground at this location is about 4 feet above mean low water.

b. This battery is now provided with a primary and secondary baseline, both originating in the primary station, a steel tower with the elevation of the observing instrument axis 42.19 feet above mean low water. The B" station is located in a steel tower at West Martello Tower with the elevation of the instrument axis 32.06 feet above mean low water. The terminating end of the secondary baseline or the B³ station is located in a temporary structure at East Martello Tower. The original observing station at this location was demolished by a hurricane and must be replaced by a building capable of housing both observing and spotting instruments. The elevation of the instrument axis at this new station to be 45 feet above mean low water. The elevation of ground at this location is about 4 feet above mean low water. For location of these stations see Exhibit 2-A.

c. In an emergency occurring before the B³ station has been constructed or for use during the summer training period the temporary station now established at this location may be used.

d. Spotting stations are and should be provided for within the base end stations, which provide the only height of site sufficient for observation.

e. Objectionable dead spaces exist to the west and north due to observation limitations. This will be remedied somewhat by the establishment of a tertiary baseline. For further comment on this see paragraph 13 a (3) below.

f. The use of the horizontal base system now established should be retained. For a diagrammatic analysis of the fire control station locations see Exhibit 4-A. Using baseline B' - B³ (already established, B³ at East Martello Tower) the Southeast, the Main Ship and the Southwest Channels will be covered satisfactorily. It is essential that the West and Northwest channels be covered. Therefore, an additional station should be erected at Fleming Key for this battery. There is an area in the north and northeast of the field of fire which can not be covered by either baseline. However, this area is negligible, having a water depth from 1 - 3 feet. The plotting room equipment for the horizontal base system is incomplete. Items needed are listed in Exhibit 5-B.

10. Battery Mahlon Ford, 2 - 3" R. F. Guns.

a. The B. C. and range finder station is now located on a wooden platform erected against the rear wall and midway between the guns. This station should be constructed on the right rear flank of the battery on a 20 foot steel tower. Height of ground about 4 feet above mean low water.

b. Although this battery is capable of all-around fire there are dead spaces due to land masks. See Exhibit 4-A. However, these spaces are of no importance and no provision need be made for their removal.

c. For fire control equipment needed for this battery see Exhibit 5-B.

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11. Battery Inman, 2 - 3" R. F. Guns.

a. The B. C. and range finder station is erected in the rear and midway between the guns. It is satisfactory.

b. Although this battery is capable of all-around fire there are dead spaces due to land masks and buildings. See Exhibit 4-A. However, these spaces are of no importance and no provision need be made for their removal.

c. For fire control equipment needed for this battery see Exhibit 5-B.

12. Additional Armament: G.P.F. Battery, 4 - 155 mm. Guns.

a. This battery will use the stations and fire control installations previously installed for Battery DeLeon in so far as they are adequate.

b. There is no suitable plotting room in Battery DeLeon.

c. The B. C. station of Battery DeLeon will be masked by the emplacement of the 155 mm. guns and therefore can not be used.

d. To remedy b and c above a combined plotting room and B.C. station should be constructed 120 feet directly in rear of a point midway between Guns Nos. 2 and 3. It is placed in this location so as not to mask No. 4 gun in firing in the Northwest Channel. This station will also house the post radio station. The roof of the B. C. station is to be so constructed that it may be used as a C.R.F. station. The axis of the B. C. instrument to be 42 feet above mean low water level. The ground elevation is about 3 feet above mean low water level at this location. For station fire control equipment needed see Exhibit 5-B.

e. This battery is now provided with primary and secondary baselines, both lines originating in the primary station, a steel tower with the elevation of the observing instrument axis 42.19 feet above mean low water. The B³ station is located in a steel tower at West Martello Tower with elevation of instrument axis 32.18 feet above mean low water. The terminating end of the secondary baseline or the B³ station is located in a temporary structure at East Martello Tower. A permanent observing station located here was demolished by a hurricane and must be rebuilt by a station capable of housing both observing and spotting instruments. The elevation of the observing instrument axis at this new station should be 45 feet above mean low water; ground level at this point is about 4 feet above mean low water. This station should also have a top suitable for an antiaircraft machine gun nest. See Exhibit 5-B for fire control equipment needed.

f. In an emergency occurring before the B³ station has been constructed, or for use in the summer training period, the temporary structure now established at East Martello Tower may be used.

g. Spotting stations are and should be provided for within the base end stations, being the only location of sufficient height.

h. The horizontal base system now established for Battery DeLeon should be retained for this battery. For a diagrammatic analysis of the fire control station locations, see Exhibit 4-A. The plotting room equipment is incomplete; for items needed see Exhibit 5-B.

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13. a. (1) Exhibit 4-A shows the fields of fire of all batteries. The hatched areas of the 2 - 3" batteries (Mahon Ford and Inman) show the dead spaces of these two batteries due entirely to ground masks (see paragraphs 10 b and 11 b above). Dead spaces of the other three batteries, viz., Osceola, Seminole and the 155 mm. battery, are due to plotting board construction and are also shown. For discussion of this type of dead space see paragraph 5 a (1) above.

(2) The circle with center at A and passing through B¹ and B³ embraces the area which gives angles of intersection greater than 15 degrees. Using B¹ - B³ baseline there is an area in the right part of the traverse of all batteries which is dead space because the construction of plotting board will not permit utilizing these areas. See Exhibit 4-A.

(3) To permit more satisfactory covering of the West and Northwest channels another baseline is required, B¹ - B⁴, with B⁴ on Fleming Key. The circle with center at B and passing through B¹ and B⁴ embraces the area which gives angles of intersection greater than 15 degrees. This baseline permits the mortar battery and the 155 mm. battery to completely cover the Northwest and Southwest channels, and also the 12" gun battery to completely cover the West channels.

b. The Island of Fleming Key is part of the Naval Reservation and could be secured without cost to the Government. Three separate permanent steel observing towers capable of housing both observing and spotting instruments should be constructed. The axis of these instruments to be 45 feet above low water. These stations should be so constructed as to provide for antiaircraft machine gun nests on their roofs.

c. The construction of observing towers on Fleming Key is essential for the proper covering of all fields of fire using the horizontal base system. This gives a baseline of about 4,000 yards. Consideration was given to the establishment of a group of stations on the mainland in the vicinity of the railroad yards and docks, but was considered inadvisable because of the masks to be encountered, the vulnerability of this location, and shortness of baseline.

d. Spotting stations are and should be provided within the base end stations, there being no other location of suitable height.

e. For fire control equipment needed in Fleming Key station see Exhibit 5-B.

14. Harbor Defense Station.

There is no structure provided for this station. The magazines of Battery Covington offer an excellent solution and are included in this project. See Exhibit 1-B for locations. The Command Post and message center for the antiaircraft defense should also be located here. See Exhibit 5-B for cost estimate.

15. H - OP Harbor Defense Commander's Observation Station.

a. This station is on a 60 foot steel tower in rear of Battery DeLeon, it is provided with communication to all parts of the

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harbor defense and will answer all requirements of an observation station for the harbor defense commander.

b. Searchlight direction is conducted from this station. Any or all searchlights may be released to the groups at the will of the harbor defense commander. The remote control of Searchlight No. 3 is located in this station and the light has been designated as a searching light.

c. The fire control system for this station is complete in every detail.

d. Certain station refinements are required, such as observation table, benches, charts, etc.

16. (G-1) Group 1 - Batteries Osceola and Seminole.

a. This station is located in a wooden structure on a mound in rear of Battery Osceola. It was originally designed as a signal station, is poorly constructed and should be replaced by a modern concrete station. Certain fire control equipment should be provided to permit efficient fire direction by the Group Commander. See paragraph 19 below. Equipment needed is listed in Exhibit 5-B.

b. The remote control of Searchlight No. 1 is located in this station. It is under the direct control of G-1, but may be released to any of the several elements at his pleasure.

17. (G-2) Group 2 - Command Station - Batteries G.P.F. (155 mm.), Ford and Inman.

a. This station is located in a 4-story wooden structure with B' Battery Osceola. Both stations are provided with D.P.F. instruments mounted on concrete columns.

b. The station was originally designed as a mine station and plotting room. It is badly damaged by termites and should be demolished.

c. A steel tower supporting both of these stations (B' Osceola and G-2) should be erected. The elevation of axis for the D.P.F. instruments and spotting instruments required is 45 feet above mean low water. The ground level at this location is about 4 feet above mean low water.

d. The remote control of Searchlight No. 2 is located in this station. The light is under the direct control of G-2 but may be released to any of the several elements of the harbor defense.

18. Post Radio Station.

a. This station is at present located on the lower floor of the G-2 station, a 4-story wooden structure originally designated as a mine station and plotting room. It is badly damaged by termites and should be demolished.

b. There are no towers for aerial. There is no radio set in the harbor defense powerful enough to tie in with the Corps Area Army radio system.

c. A set of towers, aerial, and a new post radio set with suitable housing facilities should be provided. Radio transmitters

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should radiate on high frequency and be of suitable power for operation in the Fourth Corps Area radio net - transmitter listed in Signal Corps Master Stock List No. 2-C-6801 or equal will be satisfactory.

d. The room in which this radio transmitting equipment is located should be of sufficient size to provide suitable housing for the radio transmitting equipment required for harbor defense communication with target towing boats and with out-posts of the antiaircraft defense referred to in Annex D. This radio equipment should be located in the 3-story combined B.C. station and plotting room of 155 mm. battery referred to in paragraph 12 d. One antenna support should be mounted on the top of the building and the other antenna support on the top of H OP station. As high frequency equipment will be used the antenna supports need not be more than approximately 60 feet in height.

19. Miscellaneous.

a. There is no meteorological station or tide station now established. In the construction of the G-1 station, paragraph 16 a above, arrangements should be made to include the meteorological station. The tide station is of no importance in this harbor defense, the greatest difference in the tide being about two feet.

b. Due to the fact that high winds of hurricane proportions prevail in this locality at certain seasons, demountable towers for observation station purposes are not considered to be advisable for this locality.

c. Additional cable facilities will be required as follows:

(1) The present 30 pair submarine cable No. 452 between Fort Taylor and West Martello Tower and the present 10 pair submarine cable No. 453 between West Martello and East Martello do not provide adequate circuit facilities to meet the communication requirements contemplated in this Annex. These cables should be replaced by 50 pair and 25 pair submarine cables, respectively. The Fort Taylor end of the 50 pair submarine cable to West Martello should be terminated in TM-88 terminal strips mounted on type FM-7 frame to be installed in Battery Ford plotting room (see subparagraph (2) below).

(2) Additional communication facilities will be required from the fire control switchboard room to complete the continuity of conductors in the 50 pair submarine cable serving West Martello (see subparagraph (1) above), and also to serve the harbor defense station in magazine of Battery Covington (paragraph 14) and the new plotting room, B.C. station, and CRF of the GPF battery (see paragraph 12 d above). To meet these requirements a 100 pair double steel, tape-armored, subterranean cable (Type WC-368) should be installed from fire control switchboard room to plotting room in Battery Ford and there terminated in type TM-88 terminal strips mounted on FM-7 frame, and a 50 pair subterranean cable (Type WC-367) installed from this frame to a similar frame in the magazine in Battery Covington. A 30 pair cable to be installed between the terminal frame in Battery Covington to plotting room GPF (see paragraph 12 b above). This cable to be recovered between plotting room, DeLeon and B' Seminole.

(3) The 20 pair cable from Cable Hut No.3 to terminal in Searchlight No. 4 power plant, West Martello, does not provide sufficient circuits. It is proposed to recover sufficient amount of 30 pair cable to make replacement.

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(4) At West Martello there is a 10 pair cable from the terminal at Searchlight No. 4 power plant to B" Seminole and thence to B" GPF and to B" Osceola. Since 13 pairs are required for these three stations it is planned to install a 30 pair cable to B" Seminole where it will be spliced to Cable No. 54 to GPF with a 10 pair lateral into B" Seminole. Since it is necessary to run all communication circuits to the switchboard room and return, the one pair cables now installed between searchlights and their power plants must be replaced with two pair cables.

d. This annex contemplates the use of telephone and T.I. bell equipment at present in service, and such equipment included in the cost estimate and priority guide (Exhibit 5-B) is in addition to that now on hand and available.

20. Antiaircraft Intelligence.

a. For communication of antiaircraft intelligence within its own installations and in conjunction with the harbor defense the following resume is given:

(1) For communication between the two exterior observation posts and the antiaircraft message center the following equipment will be needed:

(a) One two-way radio voice set at Northwest Channel Light, observation post B, and one at the message center.

(b) Observation post A is connected directly to Fort Taylor requiring only to be connected to message center.

(c) Communication between guns, message center, ammunition magazine and director.

(2) For equipment needed for communication between the interior elements of the antiaircraft defense see Exhibit 5-B.

21. In order to communicate with the proposed installations at Fleming Key a 25 pair fire control cable, about 5000 yards in length will be required, running from the cable hut at Fort Taylor to cable hut on Fleming Key. See Exhibit 5-B.

22. Necessary cable, wiring and telephone equipment will be provided and installed in fixed searchlight No. 1 and its associated power plant and controller booth on Fleming Key referred to in paragraph 6 a, Annex C.

23. The present fire control switchboard equipment is of an obsolete design and does not provide facilities which will permit ready changes in the interconnection of fire control communication circuits. The present equipment should be replaced by two units of Signal Corps type BD-74 switchboard and one panel type BD-75. One unit of the BD-74 switchboard should be equipped in accordance with circuit combination A with 90 common battery circuits as listed in Signal Corps Master Stock List No. 409974-A1 and the other unit equipped with 48 common battery circuits and 144 through circuits as listed in Signal Corps Master Stock List 409974-G2.

24. In addition to the increased facilities contemplated in this annex, it will be necessary to re-arrange and re-wire some of the existing communication facilities, rehabilitate existing cable terminals and recover abandoned cables.

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25. Cost estimate. An estimate of cost and priority guide is appended as Exhibit 5-B. Those items which should be procured and installed in peace 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. The items which are to be procured and installed when an emergency arises are marked C.

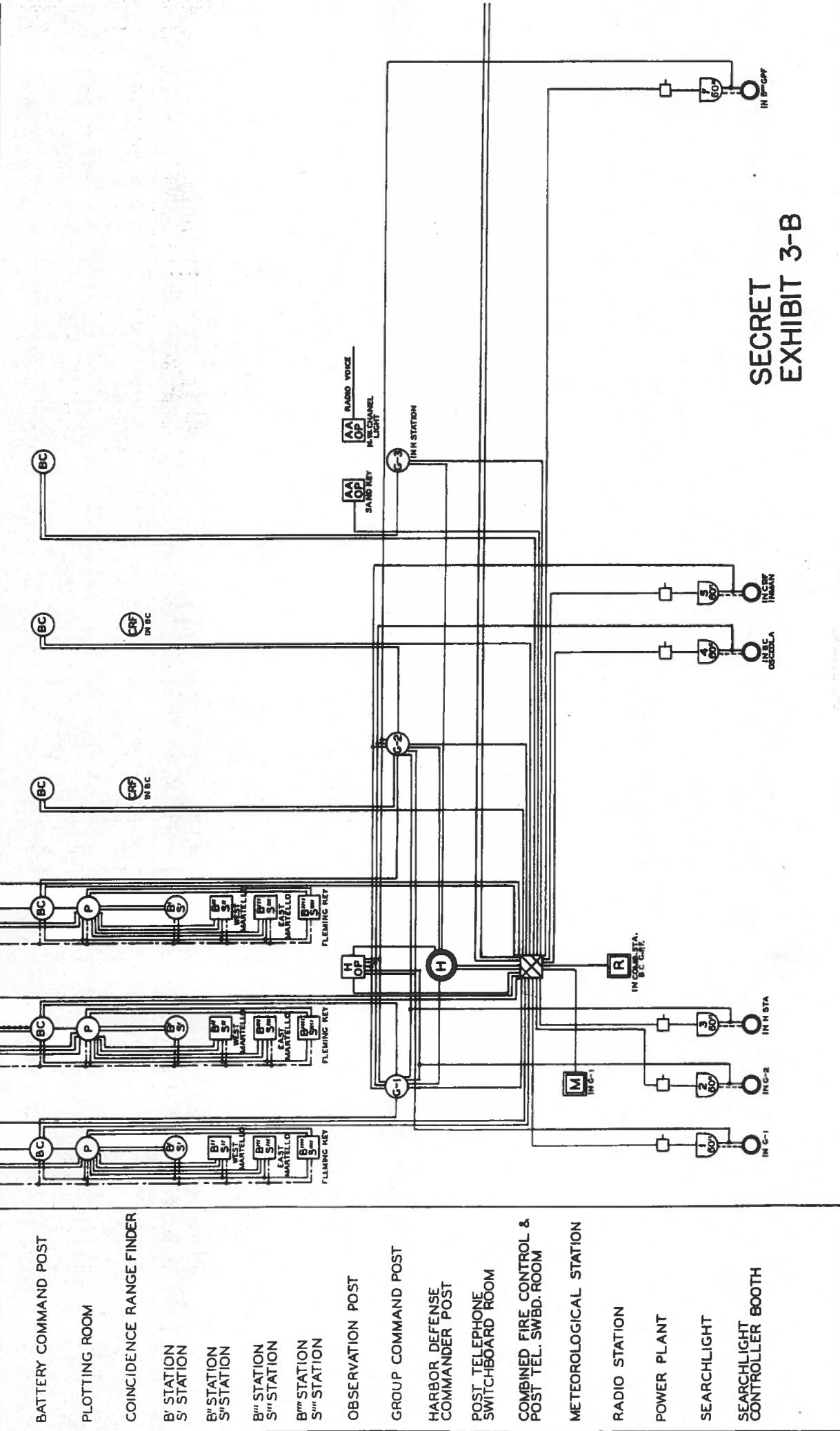
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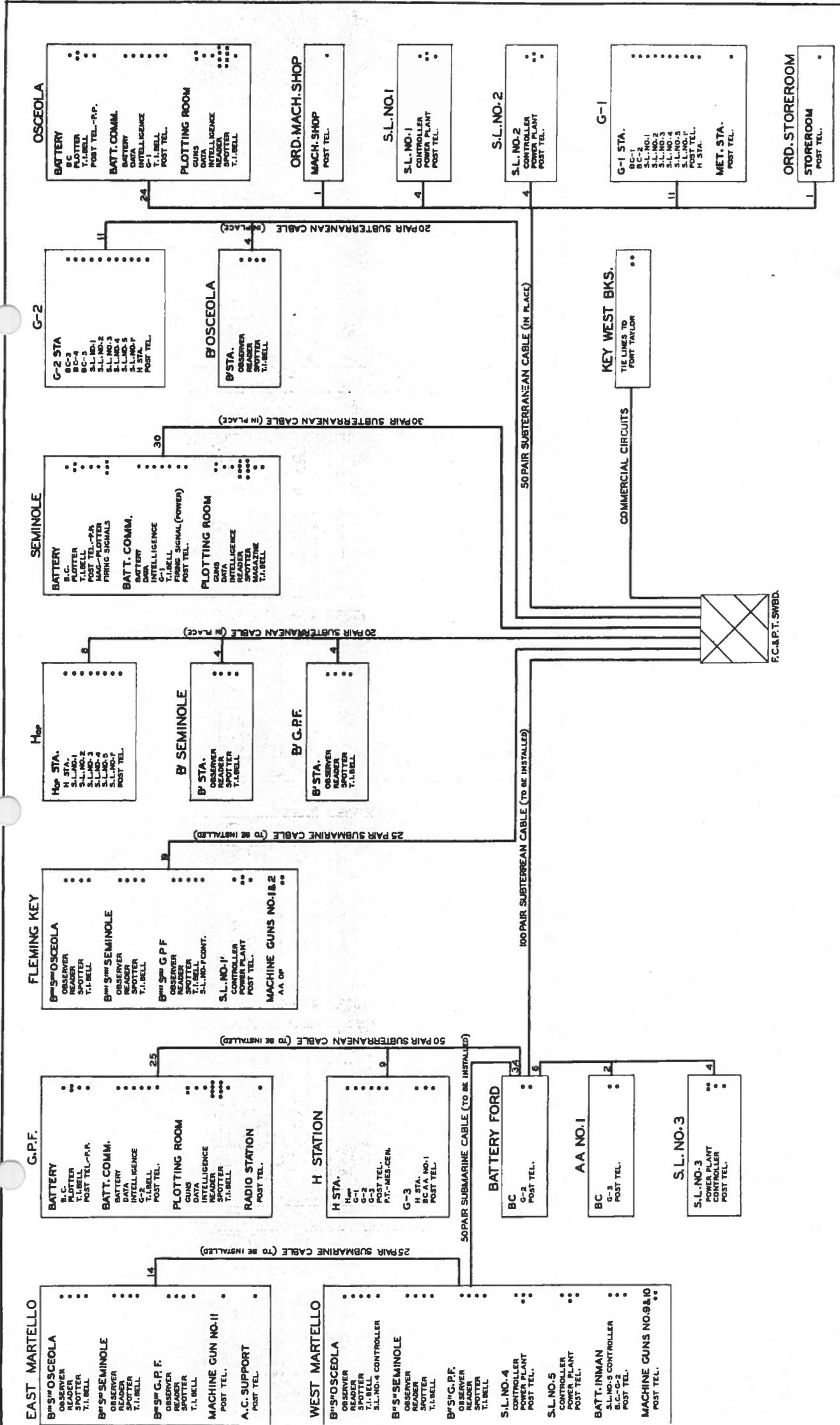
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FIRE CONTROL DIAGRAM-EVENTUAL STATUS-HARBOR DEFENSES OF KEY WEST FLO

GROUP	1		2		3	
FORTS	TAYLOR		TAYLOR		W. MARTELLO	
BATTERIES	OSCEOLA	SIMINOLE	GPF	FORD	INMAN	A A NO.1
TACTICAL NUMBER	1	2	5	3	4	
ARMAMENT	2-12"BLR		4-155MM		2-3"15PDR	
CARRIAGE	M1888 MI	M1892 BAR	M1890 MI	M1896 MI	M1903 BAR	M1903 BAR
	M1888 MI		M1892 BAR		M1903 BAR	
	M1890 MI		M1896 MI		M1903 BAR	
	M1892 BAR		M1903 BAR		M1903 BAR	
	M1903 BAR		M1903 BAR		M1903 BAR	



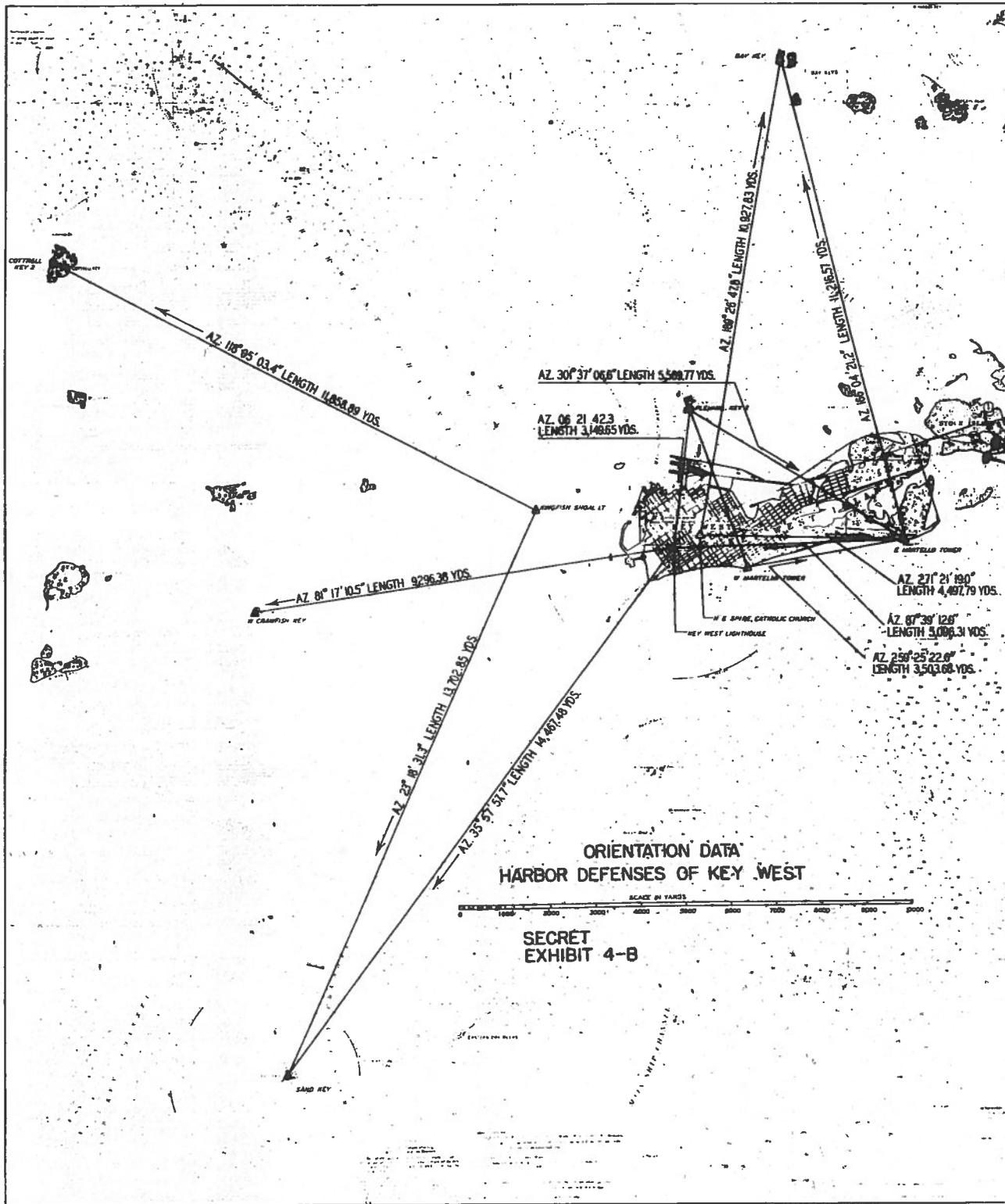
SECRET EXHIBIT 3-B



NOT TO SCALE	REVISIONS	DATE
1	1	
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	
8	8	
9	9	
10	10	

FOURTH CORPS AREA
KEY WEST, FLA.
CABLE PAIR ASSIGNMENT

SECRET
EXHIBIT 2-B



ANNEX B

EXHIBIT 5-B

COST ESTIMATE AND PRIORITY GUIDE

H. D. OF KEY WEST

Priorities subject to change based on availability of funds

Prior-ity	Item	Class	Par.	Annex	Description of Project	Ordnance	Engineer	Signal Corps	Total	
						Material	Labor	Material	Labor	
1	1	A			<u>FIRE CONTROL FOR BATTERY SEMINOLE</u>					
			9 a		Combined 3-story B.C. station and plotting room, Seminole.	5,000	5,500			
			9 f		Plotting room, Seminole; Deflection Board, M1.	1,900			1,900	
					Fire adjustment board, M1.	250			250	
					Spotting board, M2.	1,950			1,950	
					Percentage corrector, M1.	125			125	
					Range correction board, M1.	800			800	
					Prediction scale, M1.	19			19	
					Packing and shipping.	300			300	
					Modifying plotting board for B ⁴ station.	50			50	
			9 a		Communication facilities including cable, terminal, wiring, and installation of equipment for combined BC station and plotting room for Btry.Seminole.			934	375	
2		A			<u>FIRE CONTROL FOR BATTERY OSCEOLA</u>					
			8 a		Construction of BC station, Btry.Osceola.		400			
			8		Plotting room, Osceola; percentage corrector, M1.	125			1,000	
					Deflection board, M1.	1,900			125	
					Fire adjustment board, M1.	250			1,900	
					Spotting board, M2.	1,950			250	
					Modifying plotting board for B ⁴ station.	50			1,950	
					Range correction board, M1.	800			50	
					Predictor scale, M1.	19			800	
					Packing and shipping.	300			19	
									300	
					Sub-totals	10,788	5,400	934	375	23,597

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 Authority NND 735036
 BY JA NARA Date 6/1/00

SECRET

ORIENTATION DATA

(To accompany Exhibit 4-B)

STATION	AZIMUTH	TO STATION	FEET
	0		
HOP	36.256	Sand Key Light	41,860.62
HOP	208.433	Key West Light	1,543.14
HOP	125.367	B' DeLeon	957.63
HOP	269.067	B" DeLeon	5,002.86
HOP	124.805	B' Seminole	492.81
HOP	268.663	B" Seminole	5,195.94
HOP	125.272	B' Osceola	1,212.24
HOP	268.792	B" Osceola	4,812.15
BC Osceola	34.354	Sand Key Light	41,121.15
BC Osceola	246.0848	B' Osceola	1,278.22
BC Osceola	270.725	B" Osceola	6,964.29
B' Osceola	34.596	Sand Key Light	41,870.22
B' Osceola	249.198	Key West Light	1,833.51
B' Osceola	275.976	B" Osceola	5,826.91
B" Osceola	41.13	Sand Key Light	44,953.29
B" Osceola	107.129	Key West Light	4,270.71
B' DeLeon	34.928	Sand Key Light	41,860.32
B' DeLeon	241.957	Key West Light	1,711.74
B' DeLeon	274.379	B" DeLeon	5,800.35
B" DeLeon	41.304	Sand Key Light	45,037.06
B" DeLeon	106.278	Key West Light	4,451.07
B ³ DeLeon	48.778	Sand Key Light	54,249.36
B ³ DeLeon	87.64	Key West Light	15,330.21
BC Seminole	35.131	Sand Key Light	42,203.4
BC Seminole	243.39	Key West Light	1,343.88
BC Seminole	351.83	B' Seminole	471.75
BC Seminole	276.403	B" Seminole	5,701.77
BC Seminole	265.787	B ³ Seminole	16,486.02
B' Seminole	35.574	Sand Key Light	41,861.55
B' Seminole	226.71	Key West Light	1,558.62
B' Seminole	271.73	B" Seminole	5,601.72
B' Seminole	264.148	B ³ Seminole	16,460.92
B" Seminole	41.479	Sand Key Light	45,221.34
B" Seminole	105.496	Key West Light	4,633.05
B" Seminole	260.271	B ³ Seminole	11,532.48
B ³ Seminole	48.742	Sand Key Light	54,176.97
B ³ Seminole	87.71	Key West Light	15,253.56

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 Authority NND 735031
 By JA NARA Date 6/1/00

Priorities subject to change based on availability of funds

Prior- ity	Item:	Class:	Par.:	Annex:	Description of Project	Ordnance	Engineer	Signal Corps	Total	
						Material:	Labor:	Material:	Labor:	
1	2	A			BROUGHT FORWARD	\$ 10,788	\$ 5,400	\$ 934	\$ 375	\$ 23,597
					FIRE CONTROL FOR BATTERY OSCEOLA, Cont'd.					
			17 c		Steel 2-story fire control, B' Osceola and G-2 Station.		1,800			3,700
					Communication facilities including extension of cable, installation of terminal wiring and station equipment for B' Osceola and G-2.			691	150	841
			8 a		Communication facilities including cable, terminal and wiring BC Osceola.			357	100	457
	3	A			CONSTRUCTION OF STATION					
			16 a		Construction of G-1 and signal station and meteorological station.		2,000			4,000
			16		Communication facilities including cable, terminal, wiring, installation of equipment for combined G-1, meteorological station, and thence to searchlight No. 1 power plant.			460	200	660
	4	A			FIRE CONTROL FOR 155 MM. BATTERY					
			12 d		Combined 3-story C.R.F.; B.C. radio station and plotting room tower for 155 mm. battery.		2,900			6,800
			19c(2)		Communication facilities including cable, terminal, wiring, and equipment for combined BC, plotting room and range finder for GPF.			2,504	850	3,354
			12 h		Cloke, M1923 plotting & relocating board.	2,300				2,300
					Deflection board, M1.	1,900				1,900
					Fire adjustment board, M1.	250				250
					Percentage corrector, M1.	125				125
					Sub-totals	\$ 15,363	\$ 12,100	\$ 13,900	\$ 4,946	\$ 47,984

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Authority NND 735036
By JA
NARA Date 6/1/00

COST ESTIMATE AND PRIORITY GUIDE

ANNEX B EXHIBIT 5-B

Priorities subject to change based on availability of funds

Priority	Item	Class	Annex	Par.	Description of Project	Engineer		Signal Corps		Total	
						Material	Labor	Material	Labor		
1	4	A		12 h	<u>FIRE CONTROL FOR 155 MM. BATTERY</u> Range correction board, M1.					800	
					Scale, prediction, M1.		800			19	
					Packing and shipping.		300			300	
	5	A			<u>FIRE CONTROL FOR BATTERY FORD</u>						
				10 c	Battery Ford BC station: 1 azimuth instrument, M1910, spotters.		1,800			1,800	
					Communication facilities including cable, terminal, wiring and installation of equipment.			230	100	330	
	6	A			<u>FIRE CONTROL FOR BATTERY INMAN</u>						
				11 c	Battery Inman BC station: Communication facilities. 1 azimuth instrument, M1910, spotters.		1,800		230	100	
					<u>AUXILIARY STATIONS AT MARTELLO TOWER, EAST</u>						
				8 b	Construction of 45 ft. fire control tower B3, Seminole.			1,800		3,600	
					Construction of 45 ft. fire control tower B3, Osceola.			1,800		3,600	
				12 e	Construction of 45 ft. fire control tower B3, 155 mm. Btry.			1,800		3,600	
				19c(1)	Installation of 30 pair submarine cable, type VE 325 (approximately 13,500 ft.) from West Martello to East Martello and recovery of the present 10 pair submarine cable No.453, including work to be done by cable ship to replace present 10 pair submarine cable No.453.				8,280	8,280	
					Sub-totals		\$ 20,082	\$ 17,500	\$ 19,300	\$ 13,686	\$ 72,443

DECLASSIFIED
 Authority NND 735036
 By JA
 WPA Date 6/1/00

COST ESTIMATE AND PRIORITY GUIDE

ANNEX B EXHIBIT 5-B

Priorities subject to change based on availability of funds

Priority	Item	Class	Annex Par.	Description of Project	Engineer		Signal Corps		Total								
					Material	Labor	Material	Labor									
1	7	A	19c(1)	BROUGHT FORWARD AUXILIARY STATIONS AT MARTELLO TOWER, EAST, Cont'd. Installation of 50 pair submarine cable, type WC-327 (approximately 8000 ft.) from terminal to be installed in plotting room of Battery Ford to West Martello to replace present 30 pair submarine cable No. 452, including work performed by cable ship. 100 pair, 19 gauge, subterranean cable (approximately 1800 ft.) type WC-368, from fire control switchboard room to terminal in plotting room of Battery Ford including terminals. Replace present 30 pair subterranean cable. 50 pair subterranean cable (approximately 600 ft.) (WC-367) from terminal in plotting room in Battery Ford and terminated in magazine of old Battery Covington. Communication facilities including 25 pair cable from Sl.#4 power plant to B" Seminole, 2 pair cables to Sl.#4 and 5, rearranging cables to provide laterals at B" Seminole and B" GPF, installation of 50 pair cable from Cable Hut No.3 to Sl.#4 power plant terminals and wiring. B3 station, GPF: azimuth instrument, M1918, spotters. Communication facilities including cable, terminal wiring and installation of equipment for 3 B3 stations (Seminole, Osceola, (GPF) at E.Martello.)	\$ 20,082	\$ 17,500	\$ 13,686	\$ 1,875	\$ 72,443	5,900	1,955	625	650	1,800	779	300	1,079
Sub-totals					\$ 21,882	\$ 17,500	\$ 22,305	\$ 3,465	\$ 84,452								

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 Authority NND 735036
 By JA
 WPA Date 6/6/00

Priorities subject to change based on availability of funds

Priority	Item	Class	Annex: Par.:	Description of Project	Engineer		Signal Corps		Total	
					Material:	Labor:	Material:	Labor:		
				BROUGHT FORWARD	\$ 21,882	\$ 17,500	\$ 22,305	\$ 3,465	\$ 84,452	
1	E	A	18 c	RADIO TRANSMITTING EQUIPMENT			7,500	575	8,075	
				1 KW crystal control high frequency transmitter						
				MSL No. 206801 or equal, antenna system.						
9	A		14	HARBOR DEFENSE STATION	400	600			1,000	
				Preparation of magazines at Battery Covington for a harbor defense station and antiaircraft message center.						
				Communication facilities including wiring and installation of equipment.						
10	A			B.C. STATION, BATTERY FORD	1,200	800			2,000	
				Combined 2-story BC and CRF station.						
11	A			AUXILIARY STATIONS AT FLEMING KEY		5,400			10,800	
				Construction of 3 - 45 ft. fire control towers, Fleming Key, for 155 mm. btry., and Seminole.						
				B ⁴ station: 2 azimuth instruments, M1918, to be used by spotter and observer, 155 mm. Btry.						
				Necessary surveys required to establish new stations and baselines.		100	500		600	
				Installation of 25 pair submarine cable, type VC-325 from Cable Hut No.1 at Ft. Taylor to Fleming Key (approximately 15,000 ft.)				7,935	7,935	
				B ⁴ station at Fleming Key: 2 azimuth instruments, M1910, observers.					2,250	
				2 azimuth instruments, M1910, spotters.					2,250	
				Sub-totals	\$ 29,982	\$ 24,600	\$ 26,600	\$ 38,349	\$ 4,340	\$ 123,871

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 Authority NND 735036
 BY JA
 NARA Date 6/1/99

COST ESTIMATE AND PRIORITY GUIDE

ANNEX B EXHIBIT 5-B

Priorities subject to change based on availability of funds

Priority	Item	Class	Annex	Par.	Description of Project	Engineer		Signal Corps		Total
						Material	Labor	Material	Labor	
					BROUGHT FORWARD:	\$ 25,020	\$ 26,980	\$ 43,243	\$ 5,940	\$ 131,165
2	9	B			ANTI-AIRCRAFT INTELLIGENCE, Cont'd.					
			20	a	AA intelligence lines: 2 two-way radio voice sets complete, type SCR 177.			5,000		5,000
3	2	A			SEARCHLIGHT AT FLEMING KEY				400	500
					Communication facilities including, cable, wiring and telephone equipment for searchlight and power plant at Fleming Key.					
					Total	\$ 29,982	\$ 26,980	\$ 48,643	\$ 6,040	\$ 136,665

- 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 Chemical Warfare Service, or Coast Artillery Corps is contemplated in this annex.

DECLASSIFIED
 Authority NND 735036
 By JA NARA Date 1/1/10

SECRET

A N N E X C

SEARCHLIGHTS

1. This annex refers to the 60" seacoast searchlights now installed and to any proposed installations of new lights.

2. Due to the unlimited visibility which prevails in this latitude the dependable range of the 60" searchlight is assumed to be limited only by the height of site and normal range of the light.

3. There are five fixed lights in the harbor defenses. For their location and fields of illumination see Exhibit 1-C.

4. A general discussion as to the suitability of each light for the mission it is required to accomplish, as well as the practicability of its present location follows:

a. Light No. 1.- Height of site $51\frac{1}{2}$ feet. Remote control in G-1 station. Located on a parapet on the right flank of Battery Osceola. Satisfactory.

b. Light No. 2. - Height of site $46\frac{1}{2}$ feet. Located on left flank of Battery Osceola. Remote control in G-2 station. Satisfactory.

c. Light No. 3. - Height of site $45\frac{1}{2}$ feet. Located on southeast corner of Fort Taylor reservation. Remote control in HOP station. Main use, that of a searching light in main fields of fire. Satisfactory.

d. Light No. 4. - Height of site $62\frac{1}{4}$ feet. Located at West Martello Tower. Remote control in B" Osceola. Satisfactory when using B' - B" baseline. However, if B' - B³ baseline is used it becomes an interior light.

e. Light No. 5. - Height of site 46-10/12 feet. Located at West Martello Tower. Satisfactory when using B' - B" baseline. However, if B' - B³ baseline is used it becomes an interior light.

5. Any or all of these lights may be released by the harbor defense commander to either of the group commanders of Groups 1 or 2, who in turn may release illuminating lights to the batteries of their commands. This is accomplished by a system of telephone switches operated in the fire control switchboard room upon orders from the harbor defense or group commander. Practical demonstration of this system has proven its efficiency in obtaining the maximum coordination in the use of the searchlight system.

6. After an analysis of the present installations the following is recommended:

a. That a 60" seacoast searchlight and power plant be established on Fleming Key to be used as a flank light for the B' - B⁴ baseline, with controller station in B⁴ station of the 155 mm. battery.

b. That no change be made in the position of seacoast searchlight No. 3. It is a mask for the antiaircraft battery for low angle fire at a horizontal range greater than 7,000 yards. But

- 2 -

SECRET

Authority NND 73503E
By JA NARA Date 6/16/00

SECRET

since at no time is more than one gun masked at the same moment, it is not considered to be a detrimental mask.

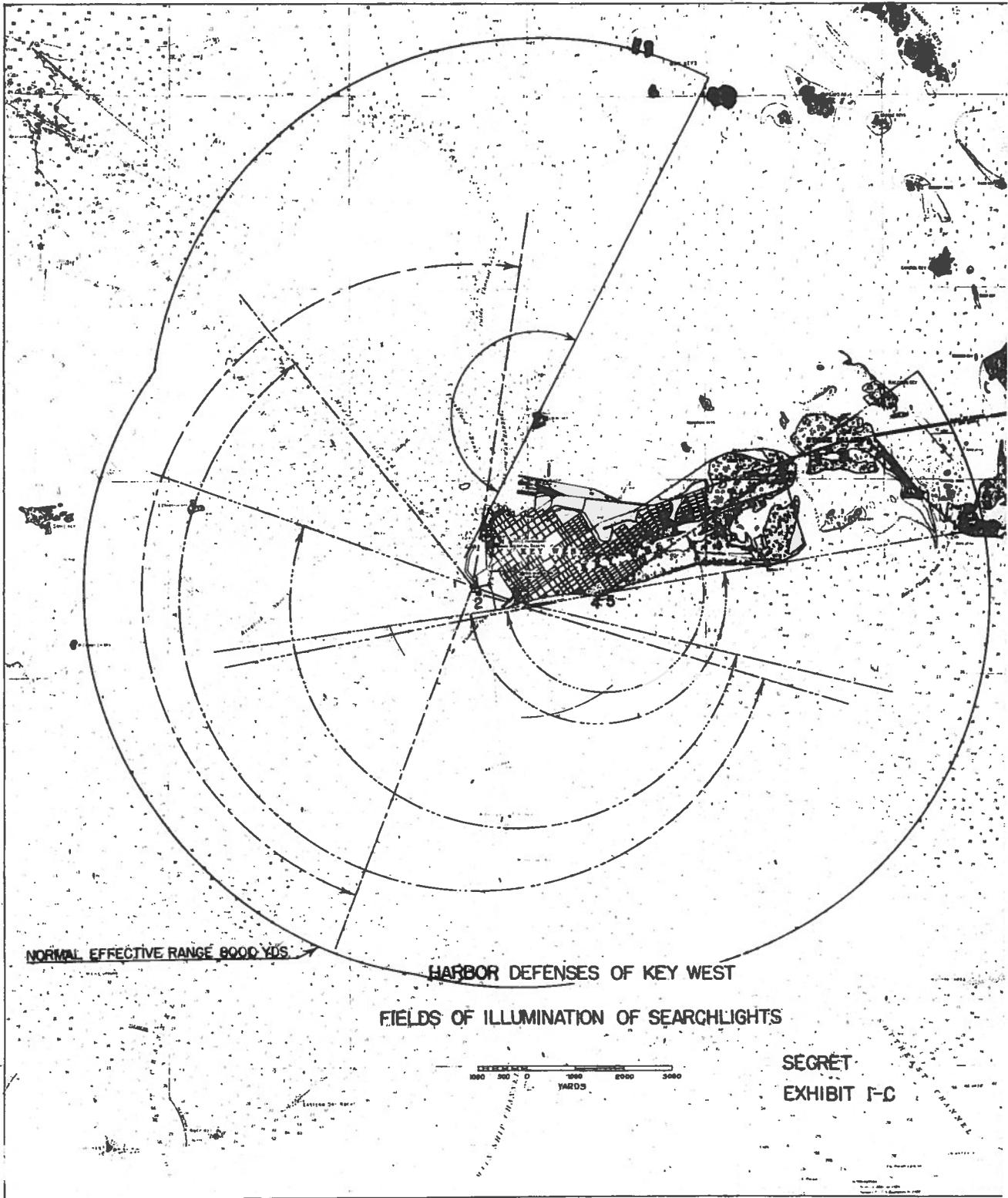
c. That remote control be established for light No. 5 at CRF Inman.

7. After a further analysis of the searchlight problem it develops that the baseline, B¹ - B³, with B³ at East Martello Tower, is not practical for use at night using searchlight illumination. The range of the light is not great enough to permit satisfactory illumination of a target in vulnerable locations for the B³ stations. Therefore, it is not considered essential that flank lights be installed on the B³ end of the secondary baseline.

8. Cost estimate. An estimate of cost and priority guide is appended as Exhibit 2-C. Those items which should be procured and installed in peace 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. The items which are to be procured and installed when an emergency arises are marked C.

- 3 -
SECRET

Authority NND 735036
By JA MRA Date 6/6/00



SECRET
EXHIBIT I-C

Authority NND 93503L
By JA MARA Date 6/1/10

Priorities subject to change based on availability of funds

Priority	Item	Class	Annex Par.	Description of Project	Engineer			Total
					Material	Labor		
3	1	B	6 a	Installation of 60" SC fixed searchlight and power plant on Fleming Key on a 32 ft. fixed steel tower:				
				Searchlight.	6,000			6,000
				Overhaul.		250		250
				Packing and shipping.		250		250
				32 ft. fixed tower.		2,250	1,750	4,000
				300 ft. controller cable.		330		330
				Total	8,830	2,000		10,830

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, Signal Corps, Chemical Warfare Service, or Coast Artillery Corps, is contemplated in this annex.

Authority NND 735036
By JA WPA Date 6/6/50

SECRET

A N N E X D

ANTI-AIRCRAFT GUN DEFENSE

1. The annex refers to the anti-aircraft defense now established and to any proposed installations required in order to properly complete the anti-aircraft defense of the Harbor Defenses of Key West.

2. The tactical organization of the anti-aircraft defense as well as the installations required are shown in Exhibit 1-A.

3. a. This project contemplates one fixed gun battery of three guns, one searchlight and sound locator platoon of four anti-aircraft searchlights and four sound locators, respectively, one machine gun battery with twelve .50 caliber machine guns. The present installations include only one gun battery of two guns, with fire control equipment of two altimeters and one R. A. corrector.

b. The location of the different elements of the interior defense is shown in Exhibit 1-D. However, these positions are merely tentative and may be moved to any position the local commander considers best.

c. The exterior observation posts are shown in Exhibit 2-D.

4. a. For guns located on the southeast corner of the Fort Taylor reservation see Exhibit 3-D. A Harbor Defense Site Board appointed February 9, 1934, selected a position for the installation of a third gun. Its selection was approved by the Secretary of War April 28, 1934, under the 15th Indorsement to the proceedings of this board. The location selected is marked on Exhibit 3-D, together with the position of the new gun block with director and director shelter.

b. Visibility. A slight dead space exists to the east for low angle fire due to the presence of searchlight No. 3. See paragraph 6 b., Annex C for a discussion of this.

c. For ammunition allowances see Exhibit 3-A. This ammunition could be stored in the magazines of Battery DeLeon 400 yards on the right flank.

5. a. There is no shelter provided for any of the fire control instruments for the anti-aircraft battery. It is recommended that the director position be located on the left flank of the parapet of Battery Covington, a distance of about 400 yards from the guns. (See Exhibit 3-D for location). It will be necessary that concrete base platforms be built on the parapet to hold the fire control instruments. A storage room in Battery Covington can be used to house the power plant as well as other fire control equipment which could be moved there when not in use.

b. The fire control equipment which will be needed is listed in Exhibit 4-D.

c. The amount of power cable needed in this installation is listed in Exhibit 4-D.

d. A one-story concrete building, 15 feet by 20 feet, should be constructed in the vicinity of the guns to be used for the purpose of storage of emergency ammunition and gun tools.

- 2 -

SECRET

Authority NND 735036
By JA NARA Date 6/16/00

SECRET

e. The command post and message center to be located in the magazines of Battery Covington, close to Harbor Defense Station.

6. For machine gun locations see Exhibit 1-D. There are no .50 caliber machine guns in the harbor defenses. No ammunition has been allotted for antiaircraft machine guns in the Harbor Defense Projects. Twelve machine gun platforms will have to be constructed to mount these guns.

7. For location of the antiaircraft searchlights see Exhibit 1-D. In view of the fact that no high degree of mobility is required of the antiaircraft searchlights in this harbor defense, it is recommended that the portable antiaircraft searchlight unit (60-inch) complete with comparator, 25 foot demountable steel tower, portable power plant and sound locator be supplied. The locations are near those proposed for seacoast searchlights but no other suitable places are available.

8. A storage shed to be built at Fort Taylor near the present cable tank will be needed to house the four portable antiaircraft searchlight units and sound locators.

9. The location of the exterior observation posts is shown on C. & G. S. Chart No. 1251, Exhibit 2-D. The stations and necessary equipment essential to secure communication to these outlying stations are listed below:

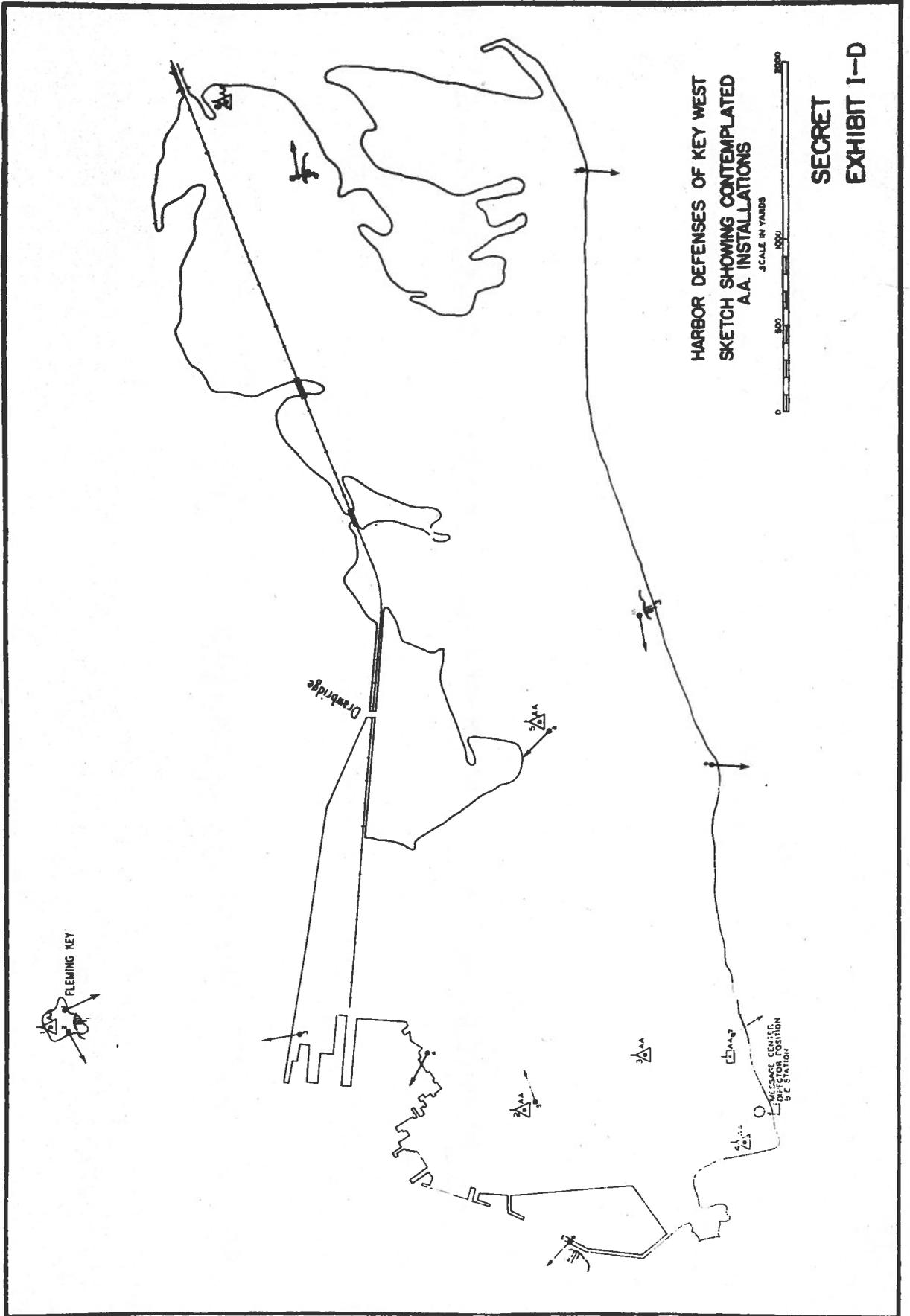
a. Observation post A - Sand Key Light - 7 miles southwest; this light is provided with telephone and cable to Fort Taylor.

b. Observation post B - Tower - Old Northwest Channel Light - 7 miles northwest; this structure will require some repair and a radio voice set to connect with Army net.

10. Cost estimate. An estimate of cost and priority guide is appended as Exhibit 4-D. Those items which should be procured and installed in peace 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. The installation and procurement of items marked C may be deferred until an emergency arises.

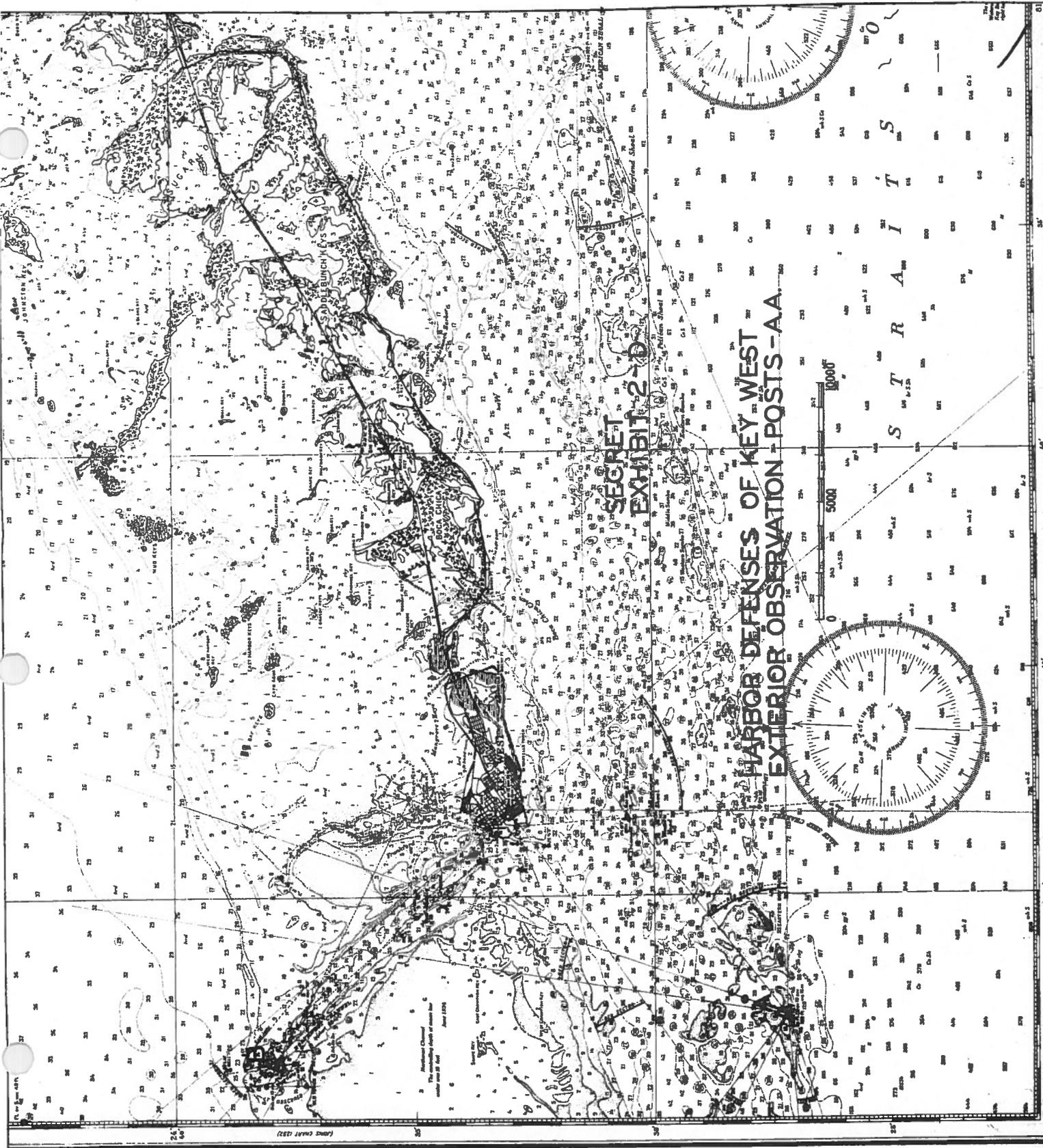
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Authority NND 735036
By JA NARA Date 6/1/00



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EXHIBIT I-D

Authority NND 755036
By JA NARA Date 6/1/00



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EXHIBIT 2-D

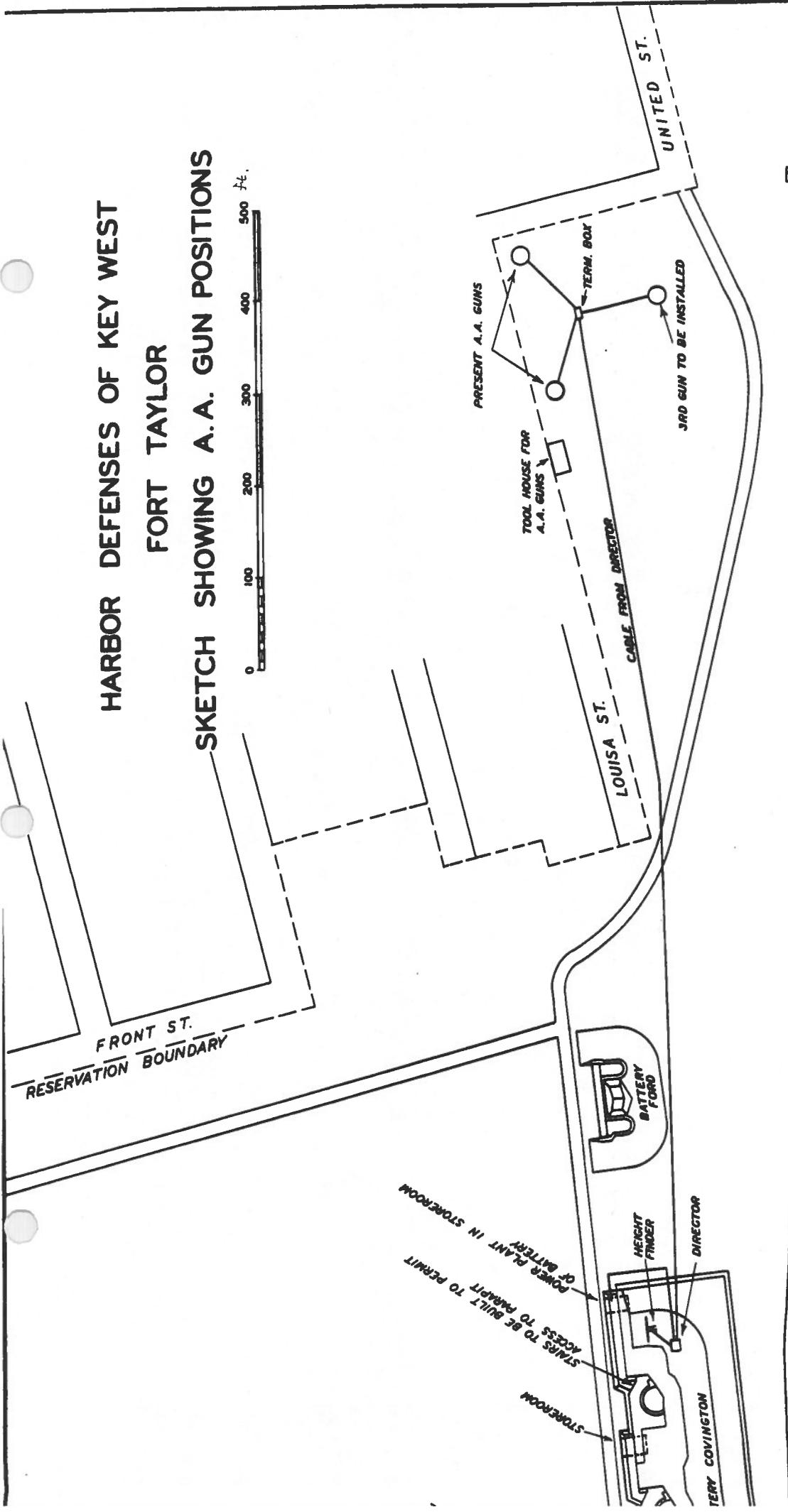
HARBOR DEFENSES OF KEY WEST
EXTERIOR OBSERVATION POSTS-AA

Authority NND 735031
By JA NARA Date 6/1/00

HARBOR DEFENSES OF KEY WEST

FORT TAYLOR

SKETCH SHOWING A.A. GUN POSITIONS



L A N T I C O C E A N

SECRET

EXHIBIT 3-D

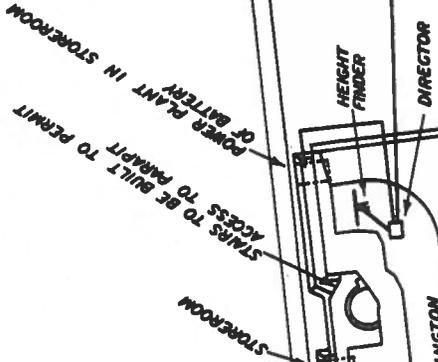
HARBOR DE
FR

SKETCH SHOW



FRONT ST.
RESERVATION BOUNDARY

LOUISA ST.
CABLE FROM DIRECTOR

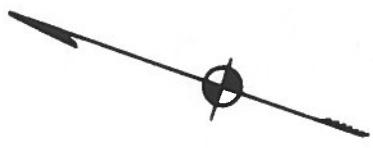


BATTERY COVINGTON

AMMUNITION STORAGE
FOR A. BTRY.

BATTERY DELEON

ATLANTIC OCEAN



SECRET

ANNEX E

ESTIMATES, CHIEF OF COAST ARTILLERY

There is no submarine mine defense for this Harbor Defense and therefore no funds required for procurement of equipment by the Coast Artillery Corps.

The following is a recapitulation of the total cost of all annexes:

Annex:	Procuring Service:	Class A :	Class B :	Class C :	Total
A	:Engineers	:\$ 21,145	:	:	\$ 21,145
	:	:	:	:	
B	:Engineers	: 52,000	:	:\$ 52,000	
	:Ordnance	: 29,982	:	: 29,982	
	:Signal Corps	: 48,078	:\$ 6,605	:	54,683
	Total	:\$130,060	:\$ 6,605	:	\$136,665
C	:Engineers	:	: 10,830	:	\$ 10,830
	:	:	:	:	
D	:Engineers	: 5,700	: 98,400	:\$ 1,700	105,800
	:Ordnance	: 84,979	: 24,000	: 37,620	146,599
	Total	:\$ 90,679	:\$122,400	:\$ 39,320	\$252,399
		:	:	:	
	GRAND TOTAL	:\$241,884	:\$139,835	:\$ 39,320	\$421,039
		:	:	:	

Approved by Chief of Coast Artillery,
October 20, 1936.

SECRET

Authority NND 75503L
By JA NARA Date 6/1/00

SECRET

ANNEX F

ESTIMATES, CHIEF OF ENGINEERS

Annex:	Priority:	Item:	Annex :	Class A :	Class B :	Class C :	Total
:	:	:	Par. :	:	:	:	:
A	4	1	8	\$ 21,145	:	:	\$21,145
B	1	1	9a	10,500	:	:	\$10,500
:	:	2	8a & 17c	4,700	:	:	4,700
:	:	3	16a	4,000	:	:	4,000
:	:	4	12d	6,800	:	:	6,800
:	:	7	8b & 12e	10,800	:	:	10,800
:	:	9	14	1,000	:	:	1,000
:	:	10	10a	2,000	:	:	2,000
:	:	11	6a & 13c	11,400	:	:	11,400
:	:	12	15b	800	:	:	800
Total				\$ 52,000	:	:	\$52,000
C	3	1	6a	:	\$ 10,830	:	\$10,830
D	2	1	4a	600	:	:	600
:	:	6	5a	700	:	:	700
:	:	7	5d	2,200	:	:	2,200
:	:	8	8	2,200	:	:	2,200
:	:	4	7	:	98,400	:	98,400
:	:	5	6	:	:	\$ 1,700	1,700
Total				\$ 5,700	\$ 98,400	\$ 1,700	\$105,800
GRAND TOTAL				\$ 78,845	\$ 109,230	\$ 1,700	\$189,775

Approved by Chief of Engineers,
October 9, 1936.

SECRET

Authority NND 735036
BY JA NARA Date 6/1/00

SECRET

ANNEX G

ESTIMATES, CHIEF OF ORDNANCE

Annex:	Priority:	Item:	Annex :	Class A :	Class B :	Class C :	Total
:	:	:	Par. :	:	:	:	:
B	1	1	9	\$ 5,394	:	:	\$ 5,394
:	:	2	8	5,394	:	:	5,394
:	:	4	12 h	5,694	:	:	5,694
:	:	5	10 c	1,800	:	:	1,800
:	:	6	11 c	1,800	:	:	1,800
:	:	7	12 d	1,800	:	:	1,800
:	:	11	13 e	8,100	:	:	8,100
Total				\$ 29,982	:	:	\$29,982
D	2	1	4 a	22,025	:	:	22,025
:	:	2	5 b	60,710	:	:	60,710
:	:	3	5 c	2,244	:	:	2,244
:	:	4	7	:	\$ 24,000	:	24,000
:	:	5	6	:	:	\$ 37,620	37,620
Total				\$ 84,979	\$ 24,000	\$ 37,620	\$146,599
GRAND TOTAL				\$114,961	\$ 24,000	\$ 37,620	\$176,581

Approved by Chief of Ordnance,
October 20, 1936.

SECRET

Authority NND 735036
By JA NARA Date 6/6/00

SECRET

ANNEX H

ESTIMATES, CHIEF SIGNAL OFFICER

Annex	Priority	Item	Annex Par.	Class A	Class B	Total
B	1	1	9a	\$ 1,309		\$ 1,309
		2	17c	841		841
			8a	457		457
		3	16	660		660
		4	19c(2)	3,354		3,354
		5	10c	330		330
		6	11c	330		330
		7	19c(1)	8,280		8,280
				5,900		5,900
			19c(2)	1,955		1,955
				625		625
			19c(3) & (4)	650		650
			8b, 9b & 12e	1,079		1,079
		8	18c	8,075		8,075
		9	14	909		909
		11	21	7,935		7,935
			13e	1,639		1,639
		13	24	850		850
		14	23	2,400		2,400
	2	9	20a		\$ 1,605	1,605
					5,000	5,000
	3	2	22	500		500
GRAND TOTAL				\$ 48,078	\$ 6,605	\$54,683

Approved by Chief Signal Officer,
October 14, 1936.

SECRET

Authority NND 735036
By JA NARA Date 6/16/00

SECRET

SECRET

HEADQUARTERS
HARBOR DEFENSES OF KEY WEST
Key West Barracks, Florida

4 June 46

CHANGE NO. 1
to
SUPPLEMENT TO THE
HD PROJECT, HDKW.
(HDKW AN-45 & AP-45)

1. The following changes will be made to subject documents:

✓ a. Annex B, Page 5: Change Length of Baseline for Stock Island Location #204 to read - "B₄² B₄³ 7,854.2 yards".

✓ b. Annex B, Exhibit 10-B: Following notation should be added to the face of exhibit - "Two Radio Sets SCR-543 are allocated to the HD Command Post for air and naval communication. They are shown on the exhibit as allocated to the 6" batteries which may be one of the contemplated radio nets, but not necessarily the standard procedure".

✓ c. Annex G, Exhibit 1-G: Following should be added as a footnote - "NOTE: In addition to nine (9) portable SC searchlights listed above, five (5) portable searchlights are being retained in the HD as AA lights pending approval of the installation of an AA Gun Battery".

✓ d. Annex G, Exhibit 4-G: Following should be added as a footnote - "NOTE: Five (5) of the searchlights 60" portable are being retained in the HD as AA lights pending approval of the installation of an AA Gun Battery".

✓ e. Annex G, Exhibit 6-G: The totals of allowance of gun, machine, cal. .30, should be changed to read -

TOTAL	120mm AA BTRY	TOTAL LESS AA
36	10	26

✓ d. Appendix III: Delete Item 15-0

[Signature]
R. E. TERRY, JR.
Colonel, CAC (HD),
Commanding.

*Changes made in
basic - 12 June 46
jff.*

SECRET

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Authority: NND 75 036
By: R6 NARA Date: 6/8/00

Note:
see CCA-P.SCF.
Part IV Appendix II.

S E C R E T

REGISTER NO. 5

SUPPLEMENT
to
THE HARBOR DEFENSE PROJECT
HARBOR DEFENSES
of
KEY WEST

1. This is a REGISTERED DOCUMENT (AR 380-5), and consists of 8 Annexes and 6 Appendices.
2. The SHORT TITLE of this document is HDKW-AN-45 (AR 380-5).
3. This document will be accounted for on June 30 and December 31 of each year to the Commanding Officer, Harbor Defenses of Key West, Fort Taylor, Key West, Florida, (AR 380-5).
4. Prompt report will be submitted when this document is transferred from one person to another (AR 380-5).
5. This document, when approved, supersedes the document with Short Title: CCA-AN-KW and local board proceedings.

Revision Date JUN 30 1945

Character
with new sheets
at Ft. Key West
31 Apr 45
Approved

I

S E C R E T

Authority 6735036
By KG NARA Date 6/8/00

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S E C R E T

DISTRIBUTION LIST

<u>REGISTER NUMBER</u>	<u>ISSUED TO</u>
1.	Chief of Engineers.
2.	Commanding General, Army Ground Forces, (Attn: Ground Requirements Section).
3.	Commanding General, Army Service Forces, (Attn: Planning Division).
4.	Commanding Officer, Harbor Defenses of Key West
5.	The Adjutant General (For Assistant Chief of Staff, Operations Division).
6.	Chief of Ordnance.
7.	Chief Signal Officer.
8.	Chief of Chemical Warfare Service.
9.	Commanding General, Army Ground Forces, (Attn: Coast Artillery Board).
10.	Commanding General, Eastern Defense Command.
11, 12.	Commanding General, Fourth Service Command.
13.	District Engineer.
14.	Division Engineer.
15,16,17,18.	Commanding Officer, Harbor Defenses of Key West

II

S E C R E T

Authority NNS 705 036
By K6 NARA Date 6/8/00

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S E C R E T

TABLE OF CONTENTS

- Annex A - ARMAMENT
Exhibits 1-A to 5-A, incl.
- Annex B - FIRE CONTROL
Exhibits 1-B to 19-B, incl.
- Annex C - SEACOAST SEARCHLIGHTS
Exhibits 1-C and 2-C.
- Annex D - UNDERWATER DEFENSE
- Annex E - ANTI AIRCRAFT ARTILLERY (Harbor Defense)
Exhibits 1-E to 6-E, incl.
- Annex F - GAS DEFENSE
- Annex G - EQUIPMENT
Exhibits 1-G to 7-G incl.
- Annex H - REAL ESTATE REQUIREMENTS

APPENDICES

Under Separate Cover, Short Title HDKW-AP-45

- APPENDIX I - Cost Estimate and Priority Guide
Corps of Engineers
- APPENDIX II - Signal Corps
- APPENDIX III - Ordnance
- APPENDIX IV - Chemical Warfare
- APPENDIX V - Real Estate Procurement
- APPENDIX VI - Consolidation of Appendices

III

S E C R E T

Authority NNS 735 036
By: NARA Date 6/8/00

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S E C R E T

SUPPLEMENT

to

HARBOR DEFENSE PROJECT

HARBOR DEFENSES OF KEY WEST

1945

AUTHORITIES

1. This document is a supplement to the document entitled "Harbor Defense Projects for Harbor Defenses included in the Southern Coastal Frontier, Parts I to IV", (Short Title CCA-P-SCF), as approved by the Secretary of War in 1st Indorsement, AG 660.2 (3-30-33) (Misc.) E, dated 16 June 1933, and modified by the following:
 - (1) Letter, War Department, AGO, AG 660.2 (9-14-40), 27 September 1940, subject: "Modernization of Harbor Defense Projects, Continental United States."
 - (2) Letter, War Department, AGO, AG 660.2 (4-12-43)OB-S-SPDDO-M, 17 April 1943, subject: "Defense of Harbors Against Motor Torpedo Boats."
 - (3) 1st Indorsement, War Department, AGO, AG 472.93 (5 Nov 43)OB-S-E, 26 November 1943, on letter, Headquarters, Eastern Defense Command, ORD 472.93/1097, 5 November 1943, subject: "Disposition of 3-Inch AA Gun Materiel", which eliminated the 3-Inch AA batteries from the harbor defense project and included a 120mm AA battery to replace it.
 - (4) Letter, War Department, AGO, AG 660.2 (10-23-40)M-OCCA, 1 November 1940, subject: "Revision of Antiaircraft Annex, Harbor Defense Project."
 - (5) Letter, Army Service Forces, SPOPS 671.1, 18 May 45, subject: "Reserve Water Tanks for Modernization Program Batteries."
2. The original annexes to Harbor Defense Project, Harbor Defenses of Key West were prepared by a Board of Officers appointed by paragraph 1b, S.O. No. 174, Headquarters Fourth Corps Area, dated 5 December 1933, as amended by paragraph 3, S.O. No. 131, Headquarters Fourth Corps Area, dated 1 July 1935, under the provisions of paragraph 1a, (3) and d, Army Regulations 100-20, 26 August 1932. The original Annexes were approved by the Secretary of War in 15th Indorsement, AG 660.2 (10-7-35) (Misc.) E, dated 16 September 1936. Short Title of the approved annexes was "CCA-AN-KW".
3. Proceedings of a local Board of Officers, appointed by paragraph 5, S.O. No. 99, Headquarters Eastern Defense Command and First Army, dated 29 June 1942, were approved by the Chief of Engineers in 8th Indorsement, C of E 662 B (Key West) CM 8248 SPEOF, 22 December 1942, on letter subject, "Local Board Proceedings, Harbor Defenses of Key West, Florida", dated Headquarters Southern Sector, 334, 3 August 1942.
4. This revision of annexes to Harbor Defense Project, Harbor Defenses of Key West was directed in 1st Indorsement, dated Headquarters Southern Sector, 12 July 1943, on letter, subject: "Preparation of Supplement to Harbor Defense Basic Projects", dated Headquarters Eastern Defense Command & First Army, 10 July 1943, CA-660.2/992. These supplements were approved in letter Headquarters Army Service Forces, 3 May 45, file SPOPS 660, subj: "Supplement to the Harbor Defense Project, HDKW".

IV

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Authority NNS 735 036
By R6 NARA Date 6/18/00

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S E C R E T

ANNEX A

ARMAMENT

SECTION I. - GENERAL

SECTION II - SEACOAST ARTILLERY

SECTION III - MISCELLANEOUS

S E C R E T

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Authority: NND 6725 036
By: K6/NARA Date: 6/8/00

S E C R E T

SECTION I - GENERAL

1. Reference to Basic Project: The basic project together with modifying actions, is cited in par. 1 under "Authorities".
2. Purpose of Supplement: This supplement amplifies the Basic Project and is intended to furnish a concise record of the status both of existing harbor defense fortification construction and equipment, and of new or modified construction which has been approved by the War Department for future accomplishment. One of the principal purposes is to provide the basis for advance procurement of funds and materials necessary to complete approved items. A second important purpose is to make available, to those concerned, information of a technical and tactical nature which is not otherwise available in usable form.
3. Mission of Harbor Defenses:
 - a. To protect harbor facilities, naval shore installations, and shipping in Key West harbor from gun fire in minor naval attacks.
 - b. To deny to the enemy the use of the harbor.
 - c. To support the defense against landing attacks within the range of armament installed.
4. a. The tactical organization, under the Harbor Defense Command, upon completion of the project, will consist of: One battalion of two 6-inch, 2-gun, batteries; one Battalion of two 3-inch, 2-gun, batteries; two 90mm batteries (2 fixed guns and 2 mobile guns); nine seacoast searchlights; and one 120mm AA battery with five mobile searchlights. See exhibits No. 1-A and 4A. It is noted that there are no immediate plans for furnishing the 120mm AA battery. Hereinafter the symbol G represents a battalion.
 - b. (1) Cooperative arrangements with the Navy are made by higher Headquarters.
 - (2) Cooperative arrangements with the Air Corps are made by higher Headquarters.

- 2 -

S E C R E T

Authority NNS 735 036
 By R6 NARA Date 6/8/00

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S E C R E T

<u>ANNEX A, Index</u>	Par.	Page
SECTION I - GENERAL		
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Purpose of Supplement	2	2
Mission	3	2
Tactical Organization	4a	2
Cooperative arrangements with Navy	4b (1)	2
Cooperative arrangements with Air Corps	4b (2)	2
List of Armament	4c	3
SECTION II - SEACOAST ARTILLERY		
Armament	5	4
Tabulation	5a	4
Battery Mahlon Ford	5b (1) (a)	5
Battery Inman	5b (1) (b)	5
Battery Const. No. 231	5b (2) (a)	5
Battery Const. No. 232	5b (2) (b)	5
Abandoned or to be abandoned	5c	6
War Reserve and Battle Allowances of Ammunition	6	7
SECTION III - MISCELLANEOUS		
Defense Against Motor Torpedo Boats	7	7
Authority	7a	7
Tabulation	7b	7
Protective Concealment	8	8
Government-owned or Leased Reservations	9	8
Land Acquisition	10	8
EXHIBITS		
	No.	
All elements of the Harbor Defense	1 - A	
Directrices and arcs of fire for all batteries of less than 8-inch caliber, except anti-motor torpedo boat armament.	2 - A	
Directrices and arcs of fire for anti-motor torpedo boat batteries	3 - A	
Tactical Organization	4 - A	
Army owned or controlled land	5 - A	

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By R6 NARA Date 6/8/00

S E C R E T

c. Armament listed in order of tactical importance:

Tactical No.	Name	Caliber	No. of Guns	Location	Remarks
3	Const. 231	6"	2	Ft. Taylor Loc. #200	Complete except for tubes and M-8 data computer.
4	Const. 232	6"	2	Salt Ponds Loc. #203	Complete except M-8 computer.
5		90mm	4	Ft. Taylor Loc. #200	2 fixed guns, 2 mobile guns.
6		90mm	4	W. Martello Loc #201	2 fixed guns, 2 mobile guns.
1	Mahlon Ford	3" S C	2	Ft. Taylor Loc. #200	
2	Inman	3" S C	2	W. Martello Loc. #201	

- 3 -

S E C R E T

Authority: NNS 725 036
By: K6/NRA Date: 6/8/00

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SECTION II - SEACOAST ARTILLERY

5. Armament.

a. Tabulation of seacoast armament required by basic project follows:

Tactical No.	Name	No. Guns	Gaiber and Model	Model of Mount	Range for Maximum Elevation Yards	Location	Current Status*	Exhibit number showing directrix and field of fire
1	Mahlon Ford	2	3" M1903	M1903	10,900	Ft. Taylor Loc. #200	E AE	2 - A
2	Truman	2	3" M1903	M1903	10,900	W. Martello Loc. #201	E AE	2 - A
3	Const. 231	2	6" M-1	M-4	27,100	Ft. Taylor Loc. #200	E I (a)	2 - A
4	Const. 232	2	6" M-1	M-3	27,100	Salt Ponds	E AE	2 - A

* E - Existing. AE - Armament emplaced. I - Incomplete.

(a) - Supply of guns deferred pending availability of industrial manufacturing facilities.

- 4 -

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 Authority NNS735 036
 By K6 NARA Date 6/8/00

S E C R E T

b. (1) For existing armament.

- (a) Tactical No. 1, Battery Mahlon Ford. A Battery Commander's Station should be erected to complete this installation. No action has been taken to obtain the above, pending determination of post war employment of the armament.
- (b) Tactical No. 2, Battery Inman. A Battery Commander's Station should be erected to complete this installation. No action has been taken to obtain the above, pending determination of post war employment of the armament.

(2) Projected fixed armament.

- (a) Tactical No. 3, Battery Construction 231. 1. This Battery was authorized by Letter WD, AGO, AG 660.2 (9-14-40)M-WPD-M, 27 September 1940, subject: "Modernization of Harbor Defense Projects, Continental United States". 2. The battery is now complete with exception of tubes for guns, M-8 data computer, and Reserve Water Tank, the delivery date of which is indefinite.
- (b) Tactical No. 4, Battery Construction 232. 1. This battery was authorized by Letter WD, AGO, AG 660.2 (9-14-40)M-WPD-M, 27 September 1940, subject: "Modernization of Harbor Defense Projects, Continental United States". 2. The battery is complete with exception of M-8 data computer and Reserve Water Tank, delivery date of which is indefinite.

S E C R E T

By KG NARA Date 6/8/00
 Authority NN6735 036

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- c. Tabulation of seacoast armament abandoned or to be abandoned upon completion of modernization program follows:

Name	No. Guns	Caliber and Model	Model of Mount	Location	Remarks
Seminole	4	Armament removed	Armament removed	Ft. Taylor Loc. #200	See Note 1
Osceola	2	Armament removed	Armament removed	Ft. Taylor Loc. #200	See Note 2

Note 1. Abandoned per 3rd Indorsement, WD, AGO, AG 660.2 (10-29-42) OB-S-E, 19 November 1942, on letter Headquarters Eastern Defense Command & First Army, CA 381, 29 October 1942, subject: "Category of Defense."
Disposition of armament authorized by 4th Indorsement, Headquarters Eastern Defense Command and First Army CA 381, 25 November 1942, on letter Headquarters Eastern Defense Command and First Army, CA 381, 29 October 1942, subject: "Category of Defense."
Referred to Commanding General, Fourth Service Command for disposition by 7th Indorsement, Headquarters Harbor Defenses of Key West, CA 381, 4 December 1942, on letter Headquarters Eastern Defense Command and First Army CA 381, 29 October 1942, subject: "Category of Defense". Ammunition shipped to Milan Ordnance Depot, Shipment completed 15 February 1943. Armament sold for salvage and removed 15 December 1944.

Note 2. Abandoned per letter WD, AGO, AG 660.2 (9-14-40)M-WPD-M, 27 September 1940, subject: "Modernization of Harbor Defense Projects, Continental United States".
Disposition of armament authorized by "Disposition Form" from Operations Division, War Department General Staff, dated 4 December 1943, subject: "Abandonment and Disposal of Guns and Carriages of Battery Osceola, Key West, Florida", bearing file number AG G-OPD 400.74 (30 November 1943). Ammunition shipped to Red River Ordnance Depot, Defense, Texas, 26 February 1944. Armament sold for salvage and removed 16 October 1944.

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S E C R E T

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 Authority: NND 735 036
 By: R/S NARA Date: 6/8/00

S E C R E T

6. War Reserve and Battle Allowances of Ammunition. Authority: WD Ltr, AGO AG 471 (28 Jan 44)OB-S-D, 11 Feb 44, subj: "War Reserve Ammunition, Seacoast Artillery".

War Reserve and Battle Allowances of Ammunition, Seacoast Artillery.

Battery	No. Guns	Caliber and Model	Projectile	Rounds		Place of Storage	
				W.R.	B.A.	Btry Emplacement	Central* Reserve
Mahlon Ford	2	3"-M1903	HE Fixed	600	400	400	200
Inman	2	3"-M1903	HE Fixed	600	400	400	200
Const 231	2	6"-M1	90# HE	300	200	200	100
			105# AP	400	300	300	100
Const 232	2	6"-M1	90# HE	300	200	---	300
			105# AP	400	300	---	400

* Remains under control of the Chief of Ordnance in such central depot storage as he may designate.

Storage regulations provided by Technical Manual 9-1900, dated 3 July 1942, including changes thereto, are being complied with. Allowances of ammunition for AMTB Weapons are governed per current WD Directives as authorized by WD Ltr, AGO 471 (9 Jun 44)OB-S-DM, 10 Jun 44, subj: "Day of Supply for Ammunition".

SECTION III - MISCELLANEOUS

7. Defense against motor torpedo boats.

a. The two anti-motor torpedo boat batteries of these Harbor Defenses were authorized by letter WD, AGO, AG 660.2 (4-12-43)OB-S-SPDDO-M, 17 Apr 43, subj: "Defense of Harbors Against Motor Torpedo Boats".

b. Tabulation of anti-motor torpedo boat armament follows:

Tactical No.	No. Guns	Caliber	Type of Mount	Status	Site	Exhibit No. showing arc of fire & range
5	2 fixed	90mm	M3	Emplaced	Ft. Taylor Loc. #200	3 - A
	2 mobile	37mm	M1A1 M3	Storage Emplaced	"	3 - A
6	2 fixed	90mm	M3	Emplaced	W. Martello Loc. #201	3 - A
	2 mobile	37mm	M1A1 M3	Storage Storage	Ft. Taylor Loc. #200	3 - A

- 7 -

S E C R E T

Authority: NNS 6735 036
 By: R6 NARA Date: 6/8/00

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8. Protective Concealment. Camouflage and concealment as authorized by 2d Indorsement, Office Chief of Engineers to District Engineer, Jacksonville, Fla., dated 23 Jul 43, File #CE 618.33 (Key West) CM 46511 SPEKM was completed except as noted below. The project in brief called for, (1) the netting of towers in tree form and painting towers a mist gray color above the netting, (2) throw nets over the fixed 90mm AMTB guns, fixed netting at rear and throw nets in front of mobile 90mm AMTB guns, (3) fixed netting to rotate with guns for .50 caliber machine guns, (4) netting to conceal shadow of deep revetment of Battery Osceola, (5) vertical netting attached to inside walls of old Fort Taylor, (6) planting around the battery area and throw nets over the guns of Battery Const 231, (7) umbrella type netting clamped to existing shield of 3" seacoast batteries, (8) tone down painting and grassing of height finder and director mounds for 3" AA battery, (9) tone down grassing and tree planting for West Martello Tower, (10) for Battery Const 232 the barracks and other buildings resemble low cost housing projects in vicinity, dummy courts, dummy house included near gun, netting over emplacement and (11) SCR 268's to have netting over equipment platform and trucks and screen to reduce silhouette where necessary.

Items No. (5), (6), were not completed.

Items No. (1), (2), (3), (4), were destroyed insofar as the netting was concerned during the hurricane of October, 1944.

9. Government-owned or leased Reservations.

The following tabulation shows tracts of government-owned and leased land pertaining to the harbor defense. See also Exhibit 5-A.

Designation	Acreage	Date of Procurement	Authority	Purpose	Status
Ft. Taylor Loc. #200	80.1	1845 1942		Military Sub- post	Owned
West Martello Loc. #201	12.5	1897		Military Sub- post	Owned
East Martello Loc. #202	12.0	1897		S. L. Station	Owned
Salt Ponds Loc. #203	85.8	1942		Battery Emplacement	Owned
Stock Island Loc. #204	0.86	1942		Fire Control Station	Owned
Key West Barracks Loc. #205	28.62	1833 1933		Military Post	Owned
Fleming Key Loc. #206	None	1942	Letter Sec/Navy, JAG: U:CKP;er, (SC) N8-4/ QA, Doc. 48703, 28 Apr 42, and Letter Sec/Navy, (SC) NB5/ N8-4, 12 Oct 42.	Fire Control Station	Navy Dept Permit
S. Roosevelt Boul.	None	1943	Monroe County, 7 Jul 43, and City of Key West, 31 Aug 43.	Cable R/way	Local Permit
Salt Ponds Loc. #203	None	1943		Utilities R/way	Easement

10. Land acquisition. No additional real estate is required.

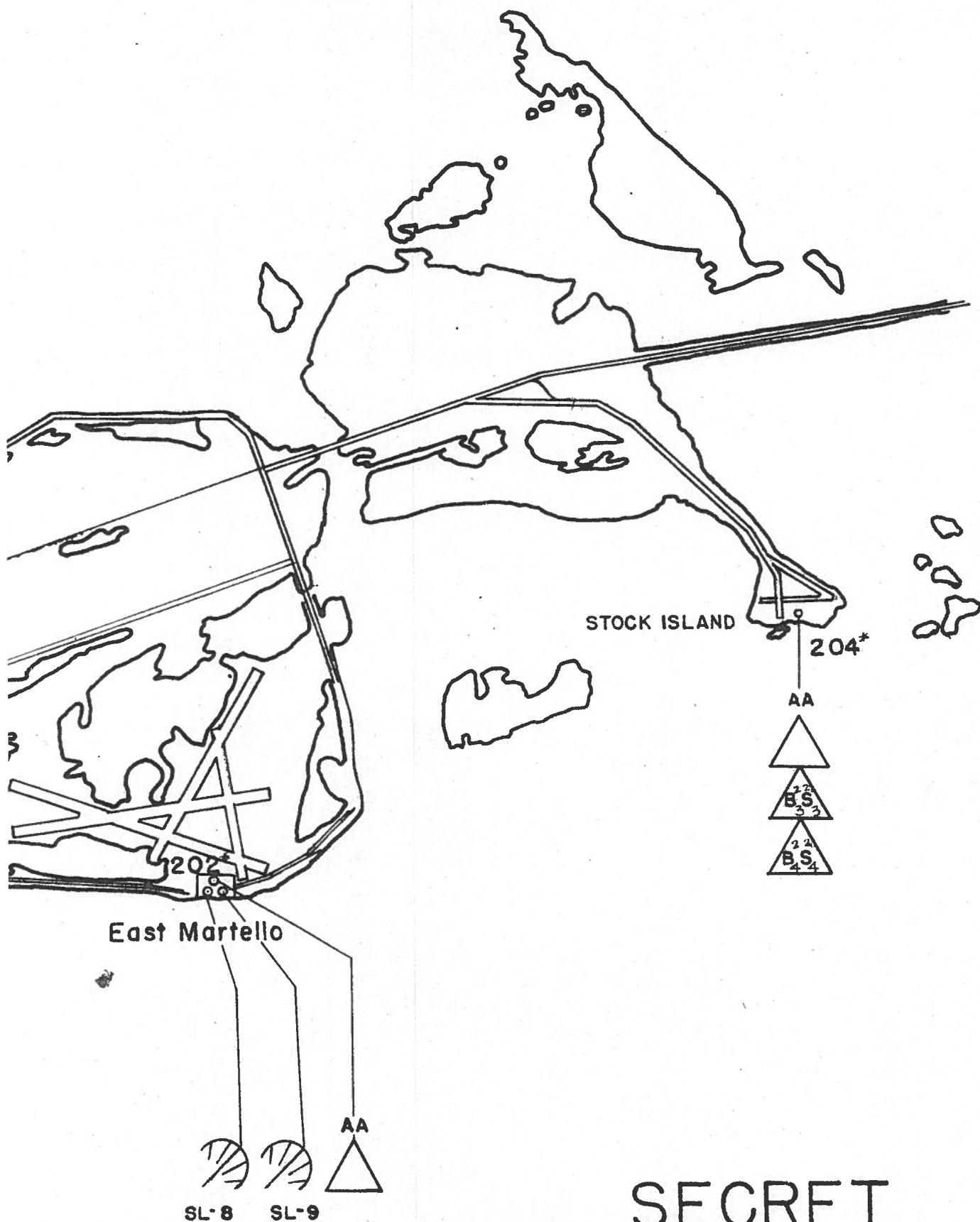
- 8 -

S E C R E T

By: *RG* N/P/A Date: *6/8/00*
Authority: *NN5735 036*

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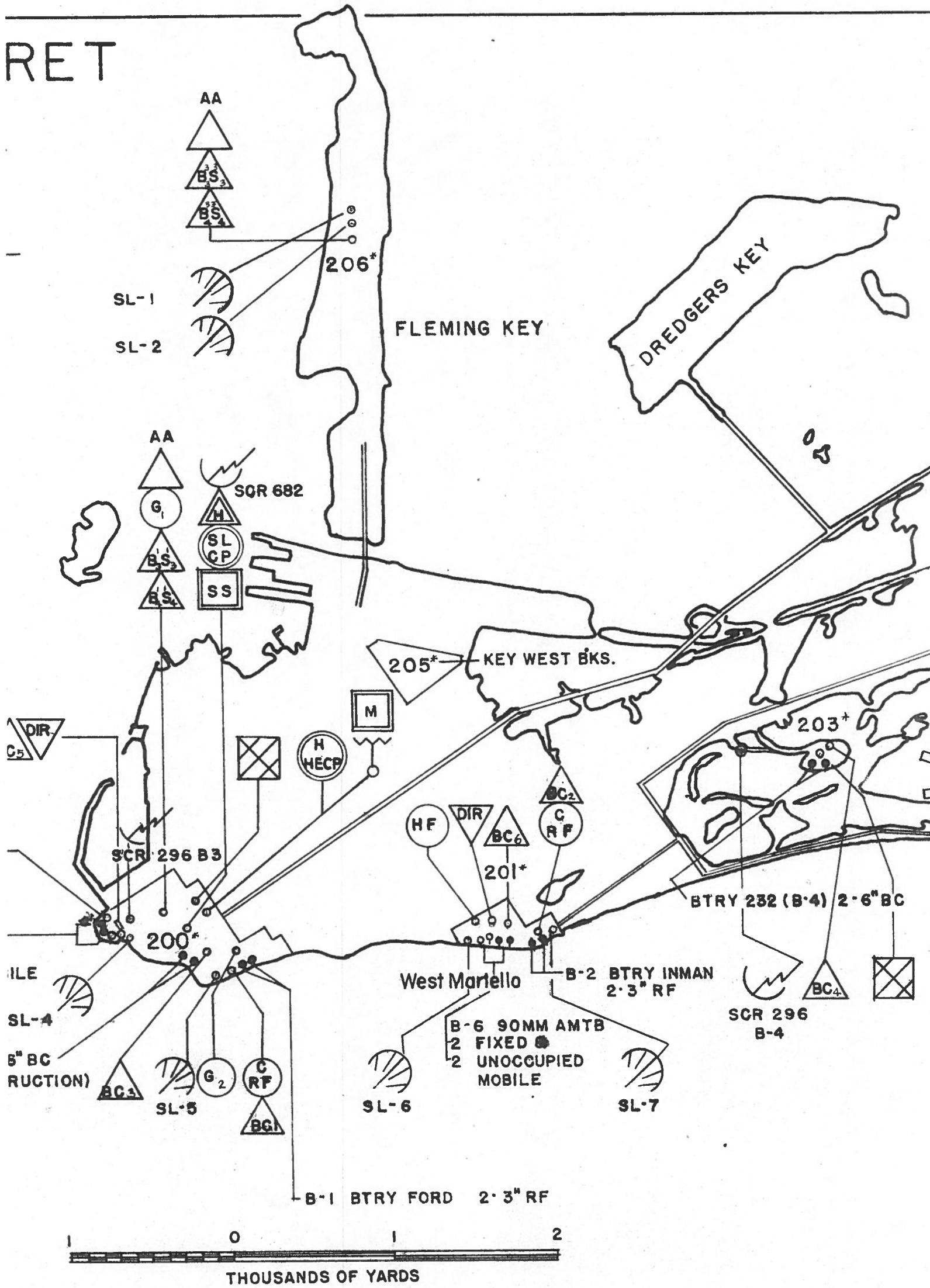
SECRET

HARBOR DEFENSES of KEY WEST PRESENT & PROPOSED INSTALLATIONS		Revised Date
Prepared By: HQ. H.D.K.W.	31 March 1945 EX. NO. I-A	

NOTE :
 * LOCATION NUMBERS
 NO LOCATION HAS BEEN
 CHOSEN FOR THE 120MM
 AA BTRY.

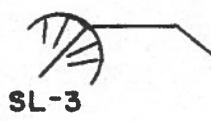
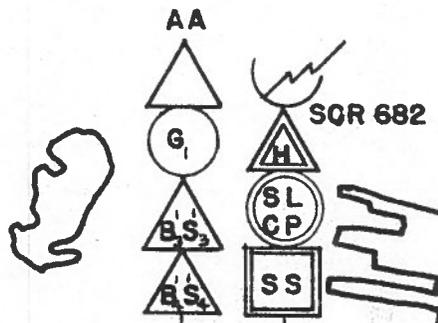
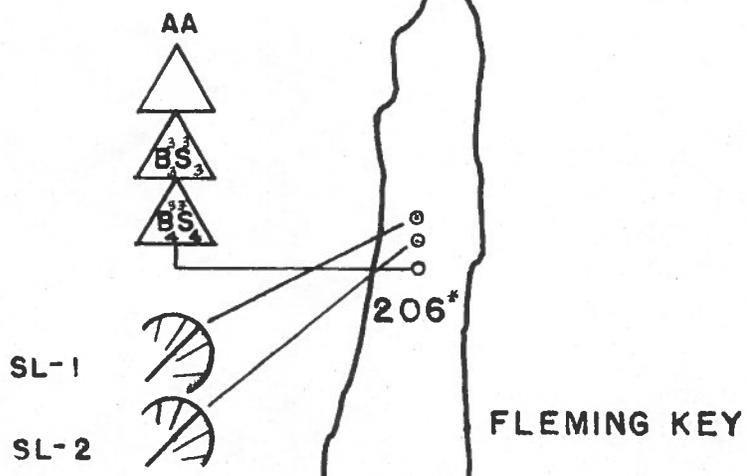
Authority AND760162
 Py 6 NARA Date 4-25-65

RET



Authority AIND766162
 Py 16 NARA Date 4-7505

SECRET



SCR 296 B3



201*

B-5 90MM AMTB
2 FIXED @
2 UNOCCUPIED MOBILE

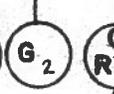
200*

SL-4

West Martello

B-2 BTRY II
2-3" RF

BTRY 231 (B-3) 2-6" BC
(NOW UNDER CONSTRUCTION)



B-6 90MM AMTB
2 FIXED @
2 UNOCCUPIED MOBILE



B-1 BTRY FORD 2-3" RF

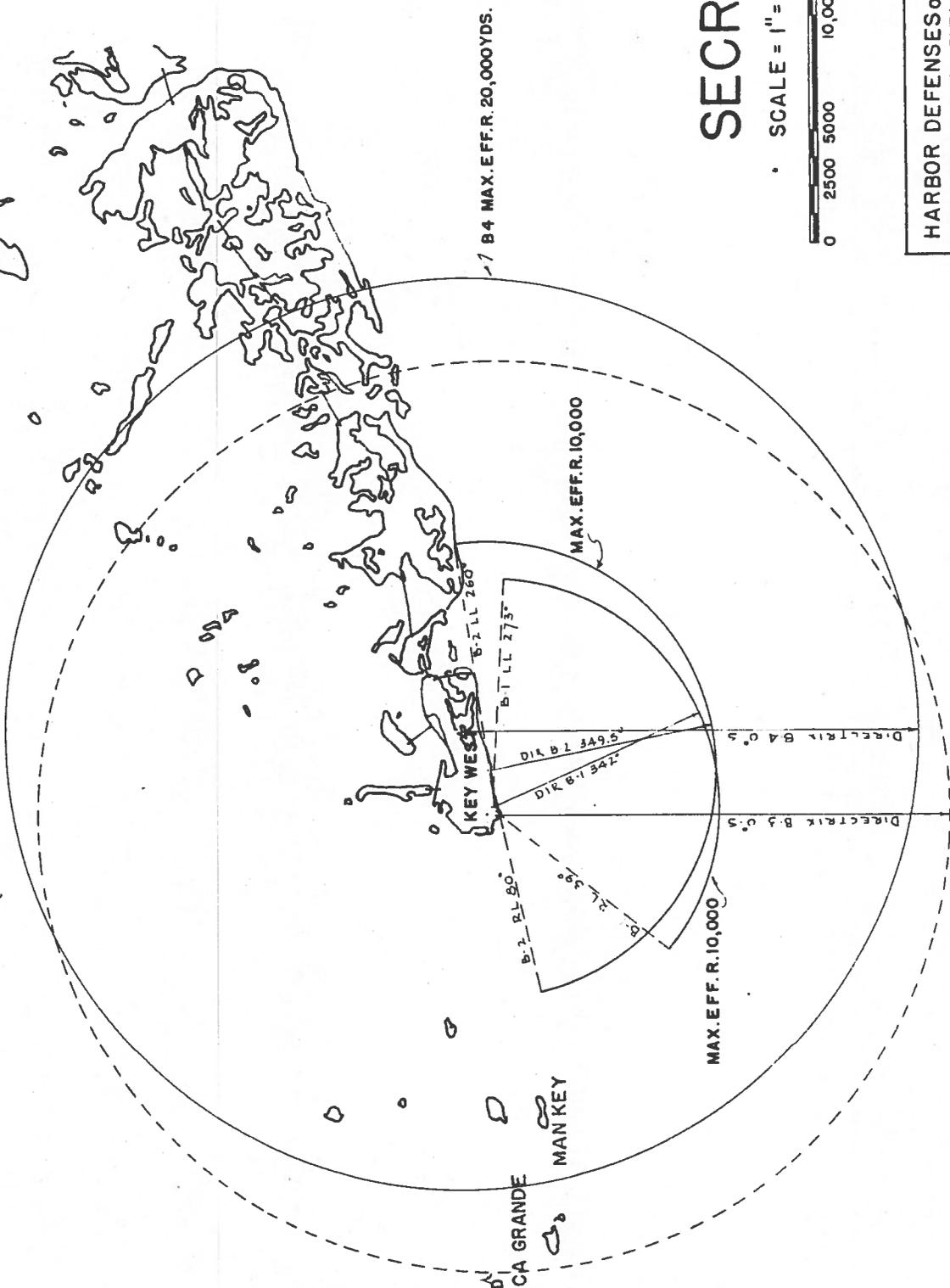


Authority AWD760102
Py 16 NARA Date 4-25-05

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SCALE = 1" = 5000yds.



B3 MAX. EFF. R. 20,000 YDS.

BOCZA GRANDE

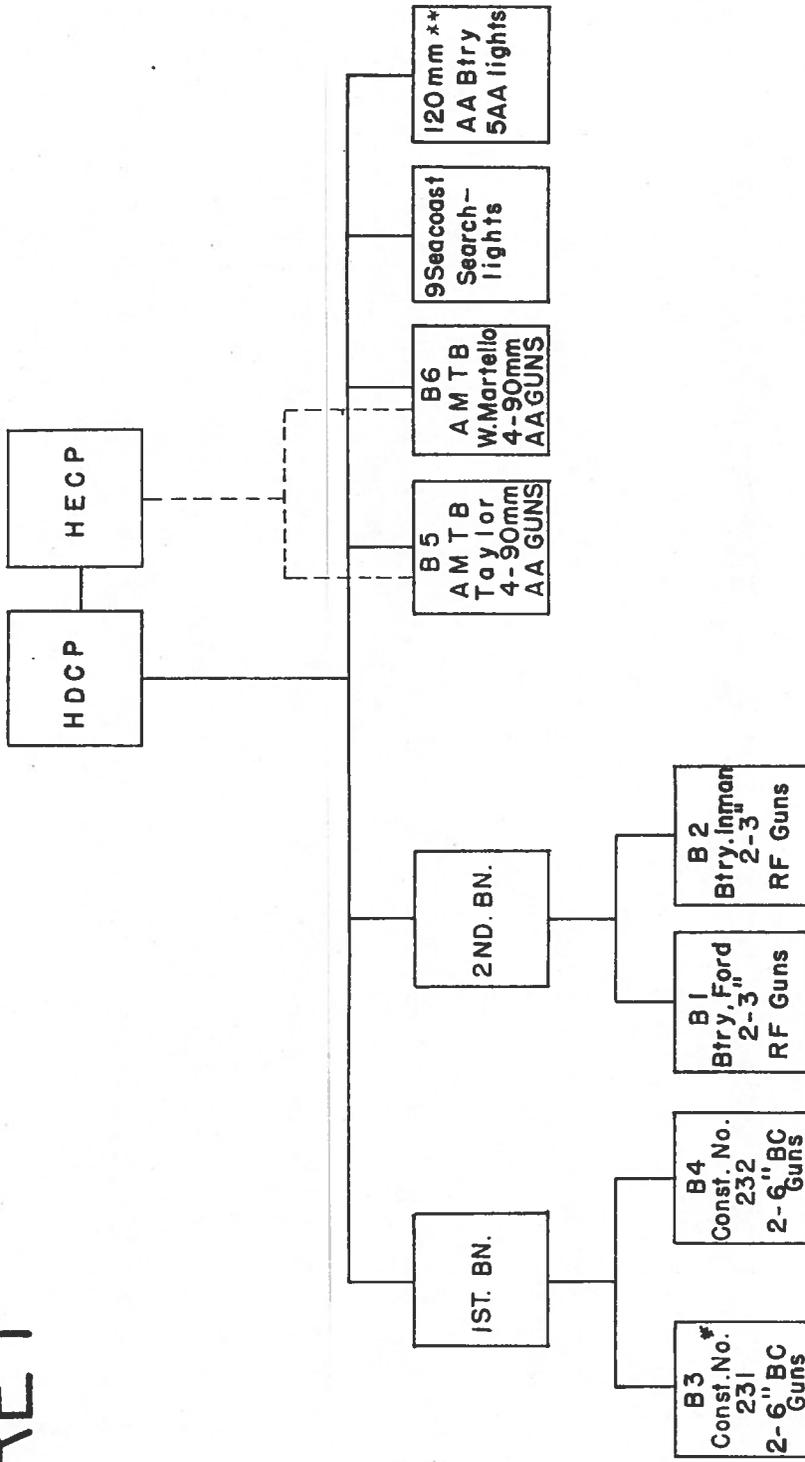
MAN KEY

B4 MAX. EFF. R. 20,000 YDS.

3 & B 4 6 IN. MAX. FIRING TABLE
 RANGE IS 27,100 YDS.
 1 & B 2 3 IN. MAX. FIRING TABLE
 RANGE IS 10,900 YDS.

HARBOR DEFENSES OF KEY WEST DIRECTRICES & FIELDS OF FIRE BTRY'S OF LESS THAN 8" CAL. OTHER THAN AMTB BATTERIES	Revised Date
	Prepared By : HQ. H.D.K.W.
28 March 1945	EX. NO. 2 A

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---Note: Indicates control of Btrys. by HECP until they are released to groups by HDOP as the situation develops; also indicates intelligence to groups and Btrys at all times.

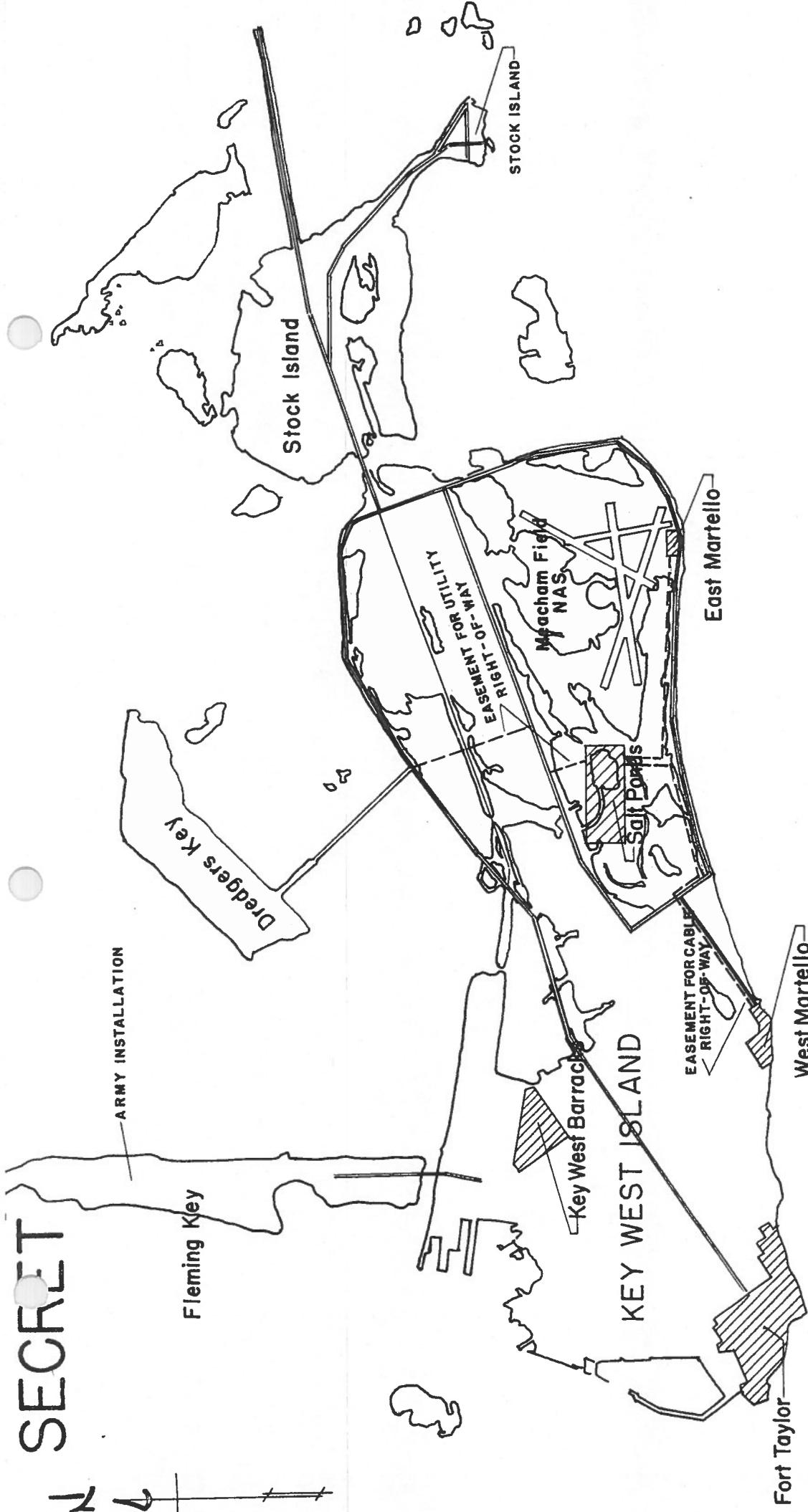
* Not Completed
* * Authorized but no immediate plan for construction

SECRET

HARBOR DEFENSES of KEY WEST		Revised Date
TACTICAL ORGANIZATION		
Prepared By :	19 March 1945	
HQ. H.D.K.W.	EX. NO. 4 A	

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Authority: NND 705 036
By: K6-NPA Date: 6/8/00

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HARBOR DEFENSES of KEY WEST	Revised Date
ARMY CONTROLLED PROPERTY	
Prepared By : HQ. H.D.K.W.	19 March 1945 EX. NO. 5-A

RF 1:25000



THOUSANDS OF YARDS

S E C R E T

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HDOP	3	3
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SCR 682	3	3
IFF	3	3
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G-2	3	3
Meteorological Station	3	3
Fire Control SWBD Stations	3	3
Tide Station	3	3
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Cable Huts	3	3
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EXHIBITS	No.
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Battery Mahlon Ford	1 - B
Battery Inman	2 - B
Battery Construction No. 231	3 - B
Battery Construction No. 232	4 - B
Battery Tactical No. 5	5 - B
Battery Tactical No. 6	6 - B
Circuit Diagram	7 - B
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Location Sketch of Fire Control Installations:	
Fort Taylor, Loc. #200	13 - B
West Martello, Loc. #201	14 - B
East Martello, Loc. #202	15 - B
Salt Ponds, Loc. #203	16 - B
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Fleming Key, Loc. #206	18 - B
Radar, arcs of detection, etc.	19 - B

- 1 -

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Authority: NNS 735 036
 By: K6 NARA Date: 6/8/00

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1. General. General limitations of equipment and of local conditions which determine the nature and extent of the fire control system are:
 - a. When a horizontal base-line system of position finding is employed for fire control, the angle of intersection of lines of sight from base end stations should be 15 degrees or greater at the target in order to meet with minimum accuracy considerations. Therefore, a circle passing through the base end stations may be described within which the angle of intersection at the target will be 15 degrees or greater. All points within this circle give intersections greater than 15 degrees. A target coming closer than 15 degrees to the base line (as measured from either base-end) cannot be located with the desired accuracy by that baseline. Any area lying within 15 degrees of the baseline is to be excluded as dead space because the construction of plotting board arms does not permit utilizing this area.
 - b. The M3 plotting board to be supplied for the 6" batteries has an azimuth circle of 260°, but this will cover the more important fields of fire of each battery.
 - c. The atmosphere at this station is clear the greater part of the year with visibility up to 12 miles. Fog is practically unknown.
 - d. The island is very flat, the highest point being only 16 feet above sea level.
 - e. No provision is made for airplane tracking or spotting. Normal emergency methods of fire control will be employed.
 - f. No need exists for coordination with Navy, Air Forces, or Coast Guard in connection with fire control.
2. Orientation Data. Orientation data is based on a Special Lambert Grid projection, prepared from a survey made by the U. S. Coast and Geodetic Survey of the principal elements of the fire control system in the spring of 1943.

- 2 -

S E C R E T

Authority NNP735 036
 By ~~KG~~ NARA Date 6/8/02

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3. Command and fire control elements other than battery fire control systems.

COMMAND AND FIRE CONTROL ELEMENTS, EXCLUDING BATTERIES

Loc. No.	Site No.	Station	Gas & Bomb Prtn	Elev	H.I.	Type of Inst.	Arc of View		Men	Type of Structure	Exhibit
							LL	RL			
200	---	HDCP	BP G	4.5'	----	----	----	----	35	Casement(a)	1-
200	---	HDOP	SP	4.5'	108.6	----	360°	0°	2	Steel Tower(b)	1
200	---	HESS	---	4.5'	100.5	----	360°	0°	2	Steel Tower	1-
200	460	SCR682	SP	4.5'	123.9	----	360°	0°	2	Steel Tower	1-A
200	460	IFF	SP	4.5'	130.5	----	360°	0°	2	Steel Tower	1-
200	---	Group 1 CP	---	4.19'	146.96'	----	360°	0°	8	Steel Tower (c)	1-
200	---	Group 2 CP	---	5'	60'	----	281°	153°	8	Steel Tower (c)	1-
200	---	Meteorological	---	4.5'	39.7'	----	360°	0°	3	Wooden tower on top of cottage(e)	1-
200	---	Fire Control SWBD Room	SP G	5'	----	----	----	----	3	Old mine casement	8-i
203	---	Fire Control SWBD	SP G	----	----	----	----	----	---	Magazine of Btry Constr 232	8-i
---	---	Tide Station	See note (d)								
200	---	Searchlight CP	SP	----	----	----	360°	-0°	3	Steel Tower	1-
200	---	Cable Hut #1	SP	4.5'	----	----	----	----	---	Cement Hut	9
200	---	Cable Hut #2	SP	4.5'	----	----	----	----	---	Cement Hut	9-i
200	---	Cable Hut #3	SP	4.5'	----	----	----	----	---	Cement Hut	9-B
203	---	Cabel Hut #4	SP	5.0'	----	----	----	----	---	Cement Hut	9-P
202	---	Cable Hut #5	SP	5.0'	----	----	----	----	---	Cement Hut	9-i
204	---	Cable Niche	---	6.3	----	----	----	----	---	Cement Niche	9-E
206	---	Cable Niche	---	6.0	----	----	----	----	---	Cement Niche	9-E

BP = Bombproof
 SP = Splinterproof
 G = Gasproof

- (a) Radio Sta #1 is in HDCP. HECP Sta is in HDCP.
 (b) HEOP is same as HDOP.
 (c) Splinter proofing is to be provided but has not been accomplished.
 (d) There is no tide station provided as the maximum tide in this locality does not exceed two feet.
 (e) Temporary.

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S E C R E T

By *KG* NARA Date *6/8/00*
 Authority *NN5735036*

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4. Post Telephone System. There are two private branch exchange switchboards in the Harbor Defenses. These switchboards and those of the local Naval facilities are easily connected through the use of facilities rented from the Southern Bell Telephone and Telegraph Company.

PERTINENT DATAFort Taylor Switchboard

Site - Splinter-proof, gas-proof, structure in west wing of old Battery Seminole

Line Capacity - One hundred

Number of positions - one

Type of Board - Manual

Mfg. of board - Kellogg Co.

Commercial Trunk Connections - three two-way trunks

Trunk connections with other Post Switchboards - Three to Key West Barracks

Degree of Protection - Splinterproof, gasproof

Key West Barracks Switchboard
Second floor, east wing of Post Headquarters building, Key West Barracks

Two Hundred

Two

Manual

Western Electric Co.

Three two-way trunks

Three to Fort Taylor

None

5. Teletype. There is one commercial teletype machine in the Harbor Defenses. It is a TWX machine. Any TWX station in the continental United States may be reached with it.
6. Radio Communications. Frequency assignments are governed by letter, War Department, AGO, AG311.23 (21 Jun 43)OB-S-SPSCLAM, 25 Jun 43, subject: "Frequency Assignments - Coast Artillery, Harbor Defense Communications" and Signal Operating Instructions issued by higher Headquarters. A schematic diagram showing the Harbor Defense radio net can be found in Exhibit 10B.
7. Battery fire control elements.
- a. Battery Mahlon Ford. This is a two-gun, 3" rapid fire battery. At present, the BC station and CRF station is located in a wooden tower 30 yards West of the battery at a ground elevation of 7' above sea level. The height of instrument of the CRF and of the BC instrument is 30'. Arc of view is 267° to 45°. This station is of local temporary construction, is too close to the guns, is too far forward and should be replaced. See Exhibit #13B. See Exhibit 1B for Field of Fire. Requirements of a new station contingent upon decision as to the post-war employment of 3 in. S. C. Batteries.
- b. Battery Inman. This is a two-gun, 3" rapid fire battery. The BC and CRF station consists of a splinterproof, steel, cottage-type structure, built on top of a brick column which is a portion of the original West Martello Tower. Atop the steel station which houses the CRF, there has been constructed locally a temporary wooden second story which serves as the BC station. The supporting brick column is not reinforced and has a bad fault where the entire upper quarter of the column is separating from the body; it is believed to be structurally unsound, and should be demolished. See Exhibit #14B. See Exhibit 2B for Field of Fire. Requirements of a new station contingent upon decision as to the post-war employment of 3 in. S. C. Batteries.

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S E C R E T

By KG NARA Date 6/8/00
Authority NN6735036

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- c. Battery Construction No. 231. This is a two-gun, 6" battery, now under construction. The Battery Commander's station, and three base end stations which house both observers and spotters, have been constructed. They are all steel towers, with an all around field of view. The BC station is splinterproof. The following tabulation gives pertinent information on these stations. See also Exhibit #13B and 17B. See Exhibit 3B for Field of Fire.

Station	Site	Grnd. Elev.	Ht. of Instr.	No. of Instruments Az. M910A1	DPF	Combd with	Length/Baselines
B C	Fort Taylor Loc. #200	3.5'	92.5'	1	1M2A1 CI-2	AAOP G-1	
B ¹ ₃ S ¹ ₃	Fort Taylor Loc. #200	4.19'	138.96'	1	1-M2A1 CI-2	AAOP G-1 B ¹ ₄ S ¹ ₄	B ¹ ₃ B ² ₃ ... 8,803.0 yds.
B ² ₃ S ² ₃	Stock Island Loc. #204	5.27'	140.05'	1	1-M2A1 CI-2	AAOP B ² ₄ S ² ₄	B ² ₃ B ³ ₃ 7,854.2 yds.
B ³ ₃ S ³ ₃	Fleming Key Loc. #206	8.05'	118.82'	1	1-M2A1 CI-2	AAOP B ³ ₄ S ³ ₄	B ³ ₃ B ¹ ₃ 4,058.5 yds.

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SECRET

Authority: NNS 6735 036
By: K6 NARA Date: 6/8/00

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S E C R E T

- d. Battery Construction No. 232. This is a two-gun, 6" battery. The Battery Commander's station, and three base end stations, which house both observers and spotters, are all steel towers, with an all around field of view. The BC station is splinterproof. The following tabulation gives pertinent information on these stations. See also Exhibit #16B and 17B. See Exhibit 4B for Field of Fire.

Station	Site	Grnd. Elev.	Ht. of Instr.	No. of Instruments		Combd with	Length/Baseline
				Az. M1910A1	DPF		
B C	Salt Ponds Loc. #203	6.5'	107.5'	1	1-M2A1 CL-2	AAOP	
B ¹ S ¹ ₄	Fort Taylor Loc. #200	4.19'	130.84'	1	1-M2A1 CL-2	G-1 B ¹ S ¹ ₃	B ¹ B ² ₄ 8,803.0 yds.
B ² S ² ₄	Stock Island Loc. #204	5.27'	131.93'	1	1-M2A1 CL-2	AAOP B ² S ² ₃	B ² B ³ ₄ 7,854.2 yds.
B ³ S ³ ₄	Fleming Key Loc. #206	8.05'	110.70'	1	1-M2A1 CL-2	AAOP B ³ S ³ ₃	B ³ B ¹ ₄ 4,058.5 yds.

S E C R E T

Authority: NNB705036
By: KG NFA Date: 6/8/02

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- e. Battery Tactical No. 5. This is a four-gun, 90mm AMTB battery, two guns fixed and two mobile. The two mobile guns are in storage at location No. 200. Seacoast and Antiaircraft defense make up a dual mission of this battery. The fire control system consists of an M2 Height Finder and an M9A1 Director. Spotting is axial from the BC station. A combined BC, Height Finder and Director tracker station is located 25 yards to the rear of the battery, it is a wooden tower 33 feet high 50 feet long and 18 feet wide, open top with a wooden rail around it. The heights of instruments on this tower are as follows: Height Finder 45.91, BC Scope 46.53, Tracker 45.98. The arc of view is 360°. See Exhibit #13B. See Exhibit 5B for Field of Fire.
- f. Battery Tactical No. 6. This is a four-gun, 90mm AMTB battery, 2 guns fixed and 2 guns mobile. The two guns mobile are in storage at location #200. Seacoast and Antiaircraft defense make up a dual mission for this battery. The fire control system consists of an M2 Height Finder and M9A1 Director. The BC station, 70 yards to the rear of the battery, is a 30', 2-deck, temporary wooden tower, at a ground elevation of 3.5'. The height of instrument in the lower deck, which is used as a BC station, is 36.12' and the upper deck which is used as a spotting station has a height of instrument of 45.93'. The height finder is on a 30' steel braced, open cement top tower, the height of instrument is 34.66'; the Director tracker is on a 30' steel braced, open cement top tower; the height of instrument being 35.42'. The arc of view is LL 300°, RL 71°. See Exhibit #14B. See Exhibit 6B for Field of Fire. This battery is in a class C maintenance status. The M2 Height Finder and Director tracker is stored at location 200. The computer, altitude converter and rectifier are stored at location 201.
8. Datum Points. Datum points for the elements of the Harbor Defenses are well established lights and other channel markers in the waters surrounding Key West and easily located and well defined towers, spires, etc., in the City of Key West. The location of such points and their local plane coordinates are shown in Exhibit 12B. See also Exhibit #11B
9. Land Acquisition. No additional land is required.
10. Radar equipment other than antiaircraft.
- a. The following radar equipment is authorized for this harbor defense by T/O & E 4-260-1:

No. Item	Basis
2 SCR-296	2 SC Btry cal. 6-in.
*1 SCR-682	1 HD OP

*As authorized in letter WD, AGO, AG 413.44 (24 Jul 43)OB-S-SPRMS, 26 Jul 43, subj: "Issue of Instructions on Replacement of SCR-582 Radar Set by SCR-682 Radar Set".

- b. Tabulation of sets.

	Site Loc. No.	Primary Assgmt.	Secondary Assgmt.	Height at Ant. Site	Gnd. Site	Height Antenna
SCR-682	200	HDOP	None	4.5'		127.5'
SCR-296	200	B-3	B-4	31'		109'
SCR-296	203	B-4	B-3	7'		110'

For areas of detection, etc., see Exhibit #19B.

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S E C R E T

By *RG* NARA Date *6/8/00*
Authority *NNP705036*

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S E C R E T

11. Six Generating Units M-6 have been supplied these Harbor Defenses for furnishing electrical power and light for fire control stations at sites where fortification power and commercial power is not available and for auxiliary power where fortification power or commercial power is available. Two of these units are installed at the Fleming Key base end station, one each at the G-1 station and at the G-2 station at Fort Taylor and two are stored at Key West Barracks. The last two are for the base end stations at Stock Island.

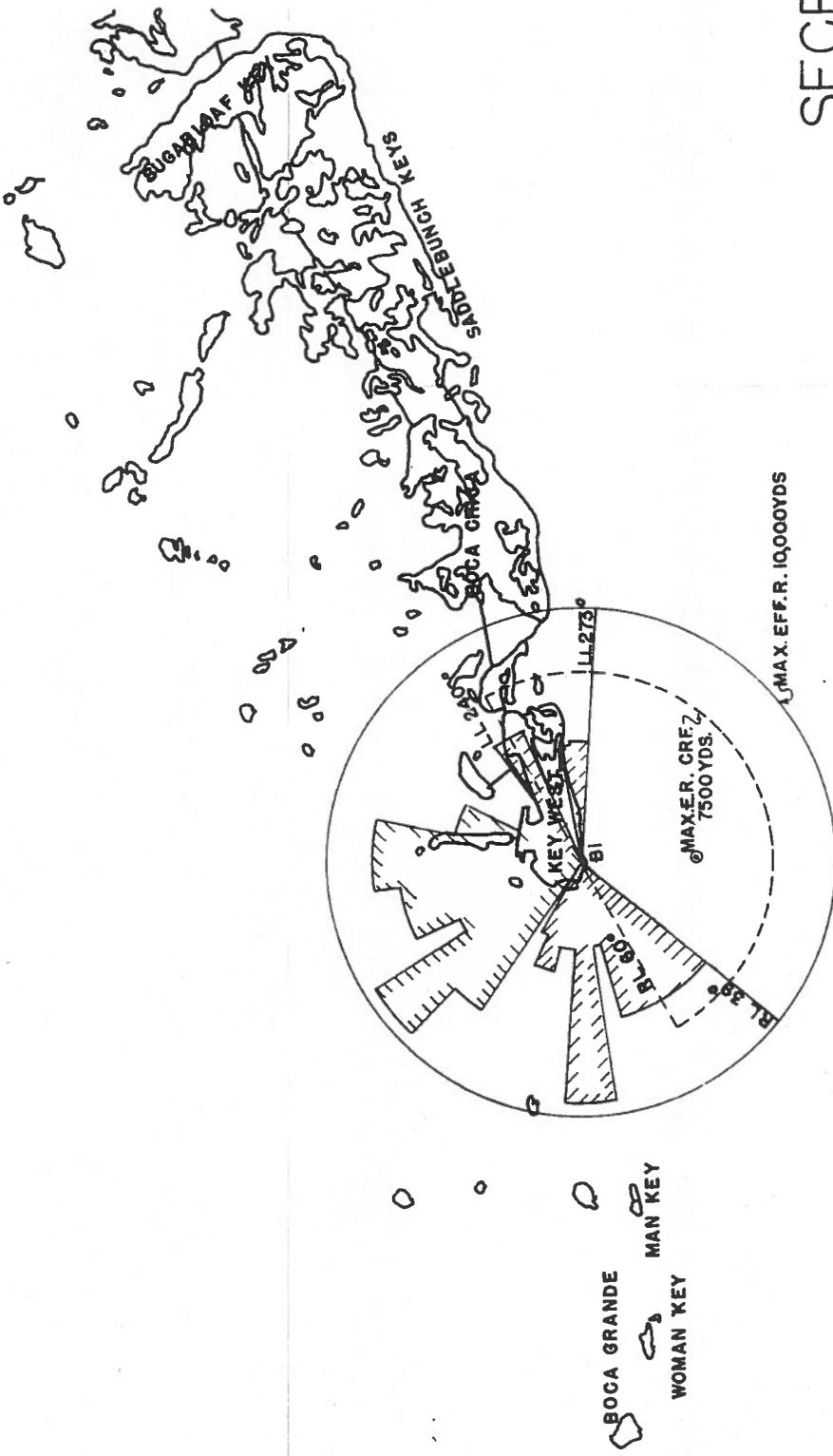
- 8 -

S E C R E T

By KG NARA Date 6/8/00
Authority NNB735 036

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Scale 1"=5000yds.



MAX. EFF. R. 10,000YDS

MAX. R. CRF. 7500 YDS.

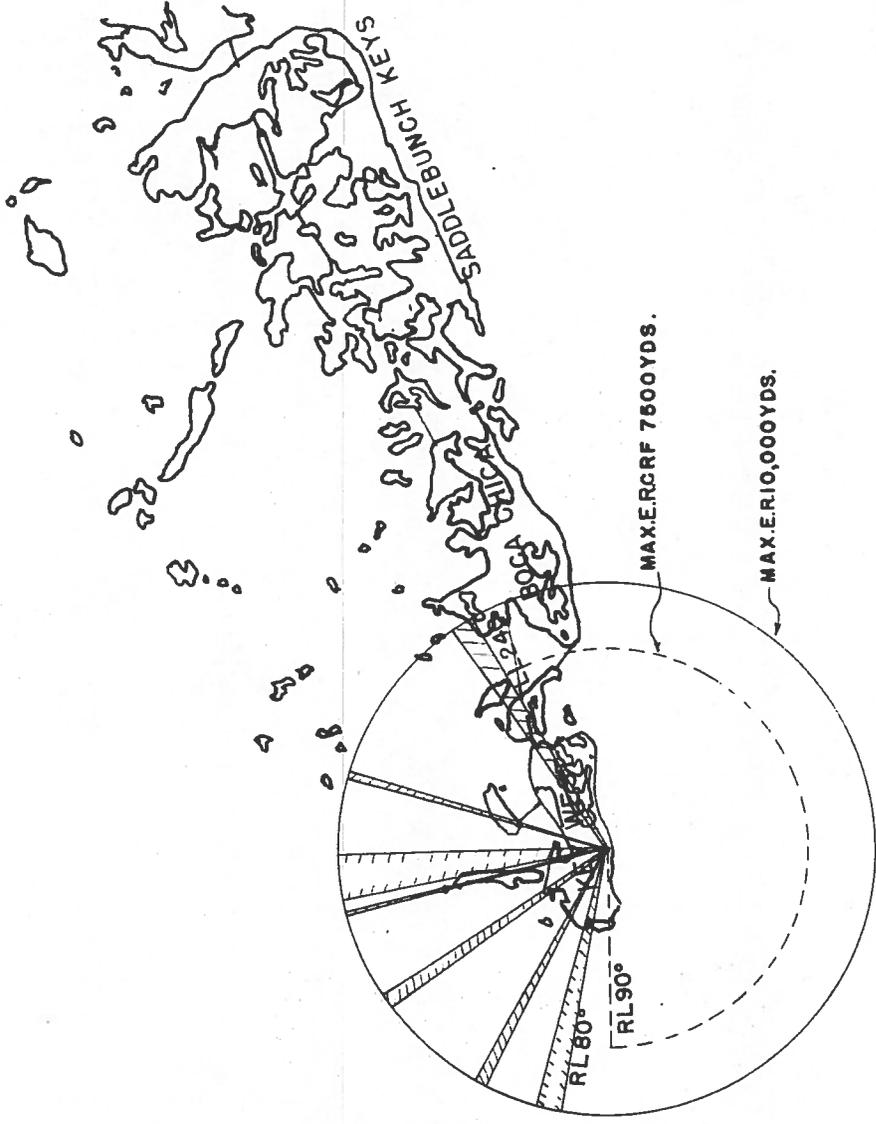
HARBOR DEFENSES of KEY WEST		Revised Date
FIELD of FIRE of MASK & FIELD of VIEW of CRF		
BI - 3" RF	LOC. NO. 200	
Prepared By:	4 APRIL 1945	
HQ. H.D.K.W.	EX. NO. 1B	

DECLASSIFIED
 Authority: NND 705 036
 By: K6-NPA Date: 6/8/00

SECRET

SECRET

SCALE 1" = 5000 yds.



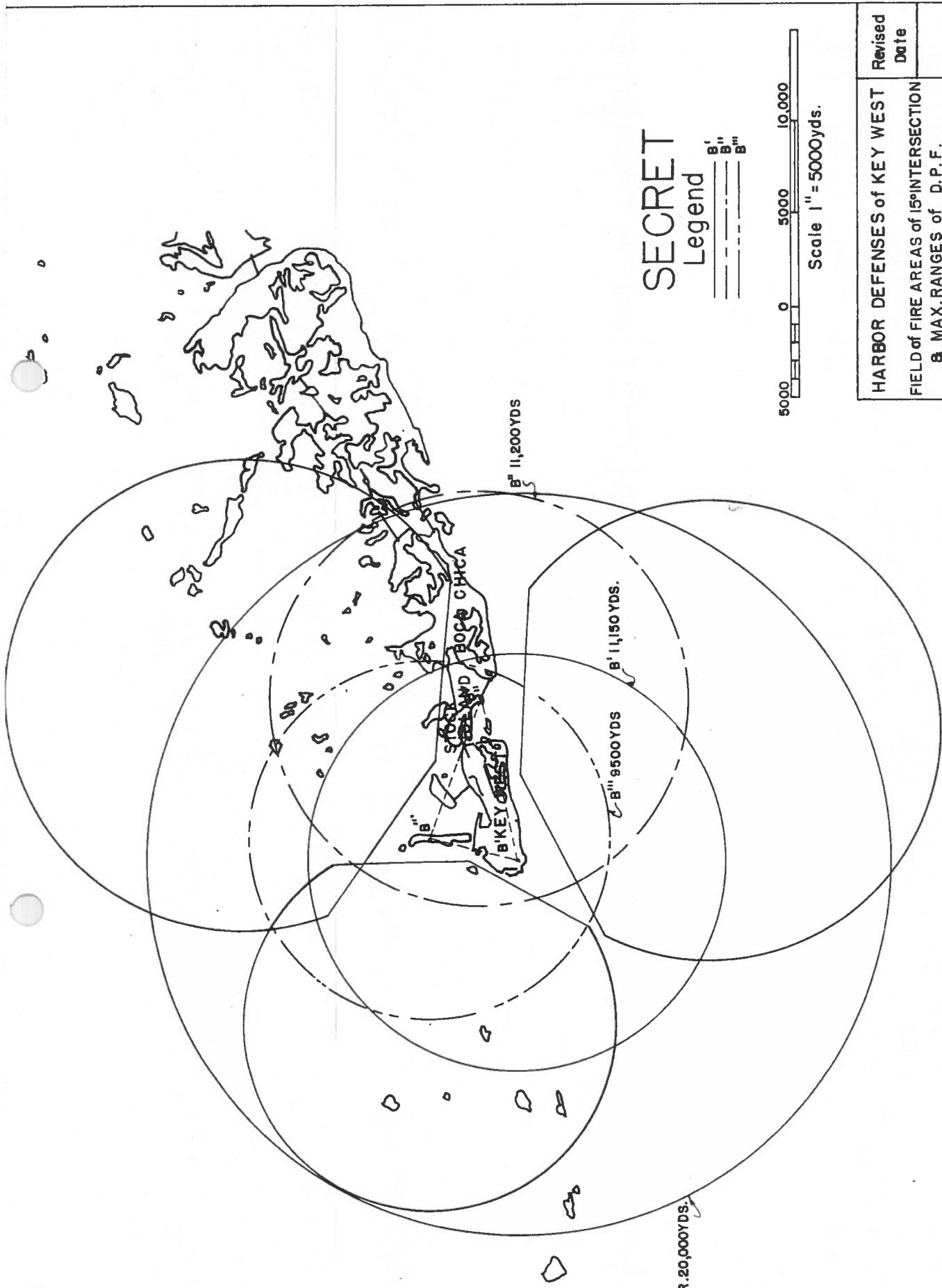
HARBOR DEFENSES of KEY WEST		Reviser
FIELDS of FIRE & EFFECT of MASKS		Date
B2 3" RF		
LOC. NO. 201		
Prepared By :	3 APRIL 1945	
HQ. H.D.K.W.	EX. NO. 2 B	

MARQUESAS

BOCA GRANDE
WOMEN KEY
MAKEY

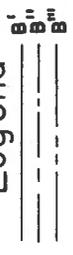
DECLASSIFIED
Authority NND 705 036
By RG-NRA Date 6/8/00

SECRET

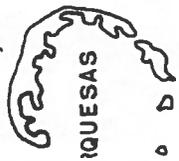


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Legend

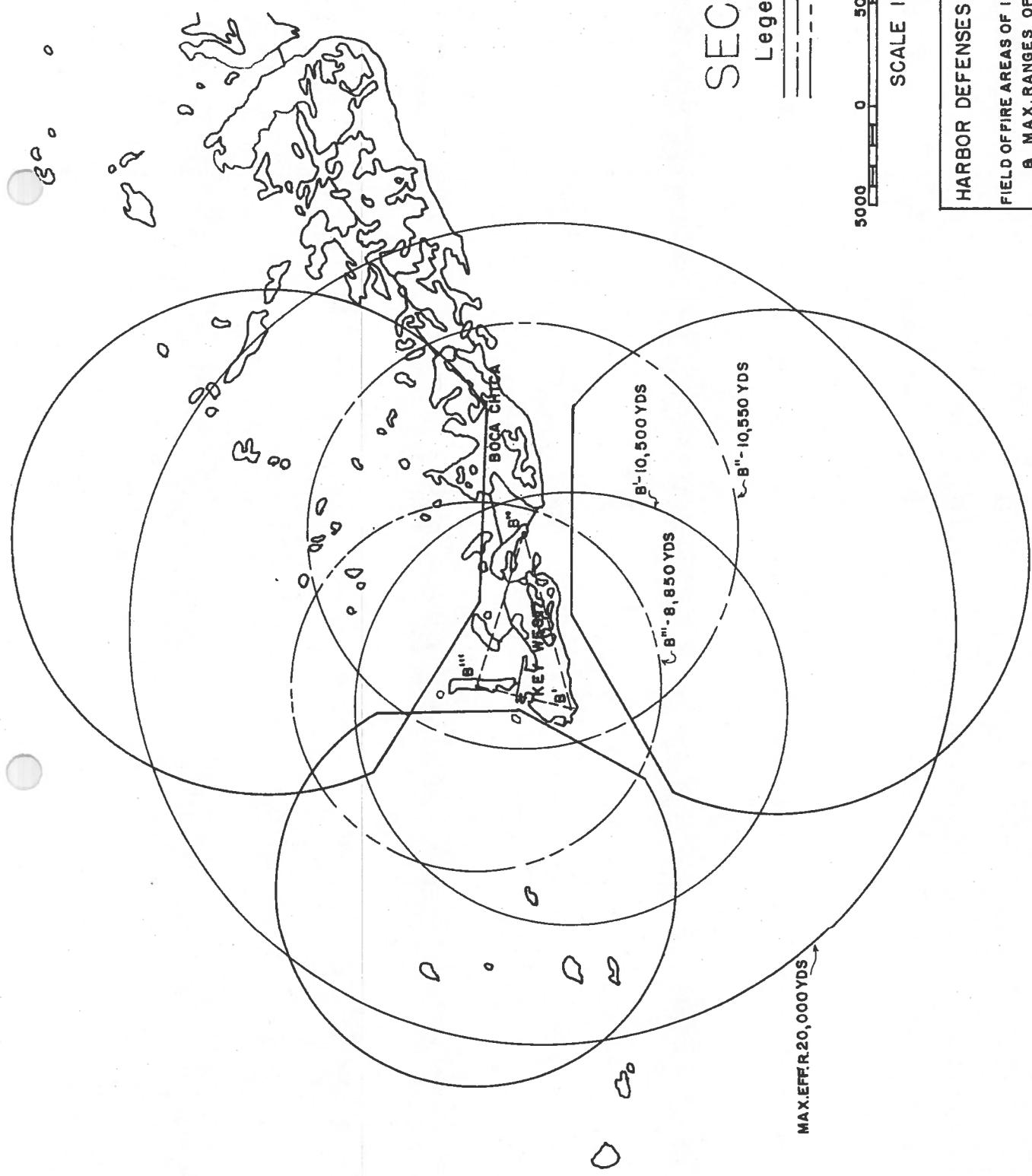


HARBOR DEFENSES of KEY WEST		Revised
FIELD of FIRE AREAS of 15° INTERSECTION		Date
8 MAX. RANGES of D. P. F.		
B 3 - 6" GUNS	LOC. NO. 200	
Prepared By :	4 APRIL 1945	
HQ. H. D. K. W.	EX. NO. 3 B	



DECLASSIFIED
 Authority: NND 705 036
 By: K6-NAPA Date: 6/8/00

SECRET

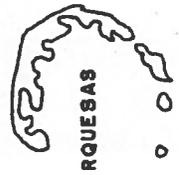


SECRET

Legend
 ——— B'
 - - - - B''
 - - - - B'''

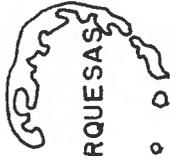


HARBOR DEFENSES of KEY WEST		Revised Date
FIELD OF FIRE AREAS OF 15° INTERSECTION & MAX. RANGES OF D.P.F.		
B4-6" GUNS	LOC. NO. 203	
Prepared By:	4 APRIL 1945	
HQ. H.D.K.W.	EX. NO. 4 B	



DECLASSIFIED
 Authority: NND 6705 036
 By: K6-N/P/A Date: 6/8/00

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MAX EFFR.
7500yds.

SECRET

Scale 1" = 5000yds.

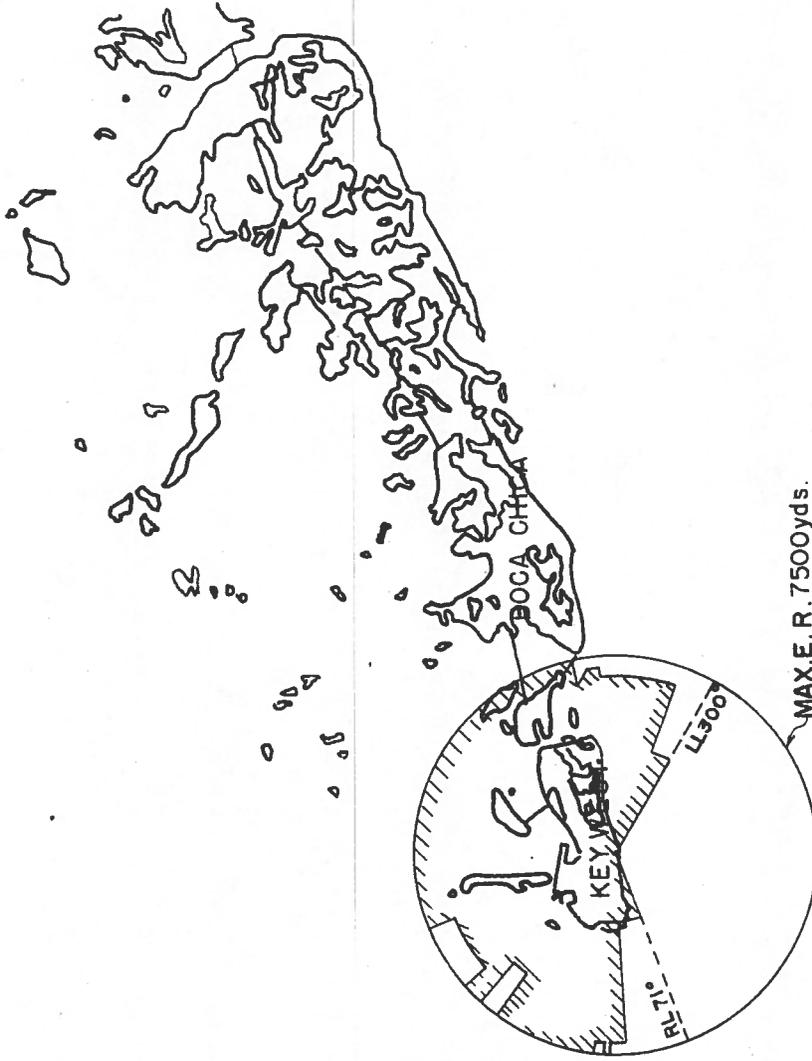
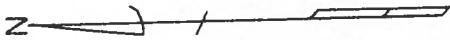


iring table range
yds.

DECLASSIFIED
Authority: MB705 036
By: KG-NRA Date: 6/8/00

HARBOR DEFENSES of KEY WEST		Revised
FIELD of FIRE & EFFECT of MASK		Date
90mm AMTB BTRY.		
B-5	LOC. NO. 200	
Prepared By :	5 APRIL 1945	
HQ. H.D.K.W	EX. NO. 5 B	

SECRET



SECRET

DECLASSIFIED
 Authority: **NMB705 036**
 By: **R6-NRA** Date: **6/18/00**

Max. firing table range
500yds.



HARBOR DEFENSES of KEY WEST		Revised Date
FIELD of FIRE & EFFECT of MASK		
90mm AMTB BTRY		
B6		LOC. NO. 201
Prepared By :	5 APRIL 1945	
HQ. H.D.K.W	EX. NO. 6B	

DECLASSIFIED

Authority NN6735.036
By KG NARA Date 6/8/00

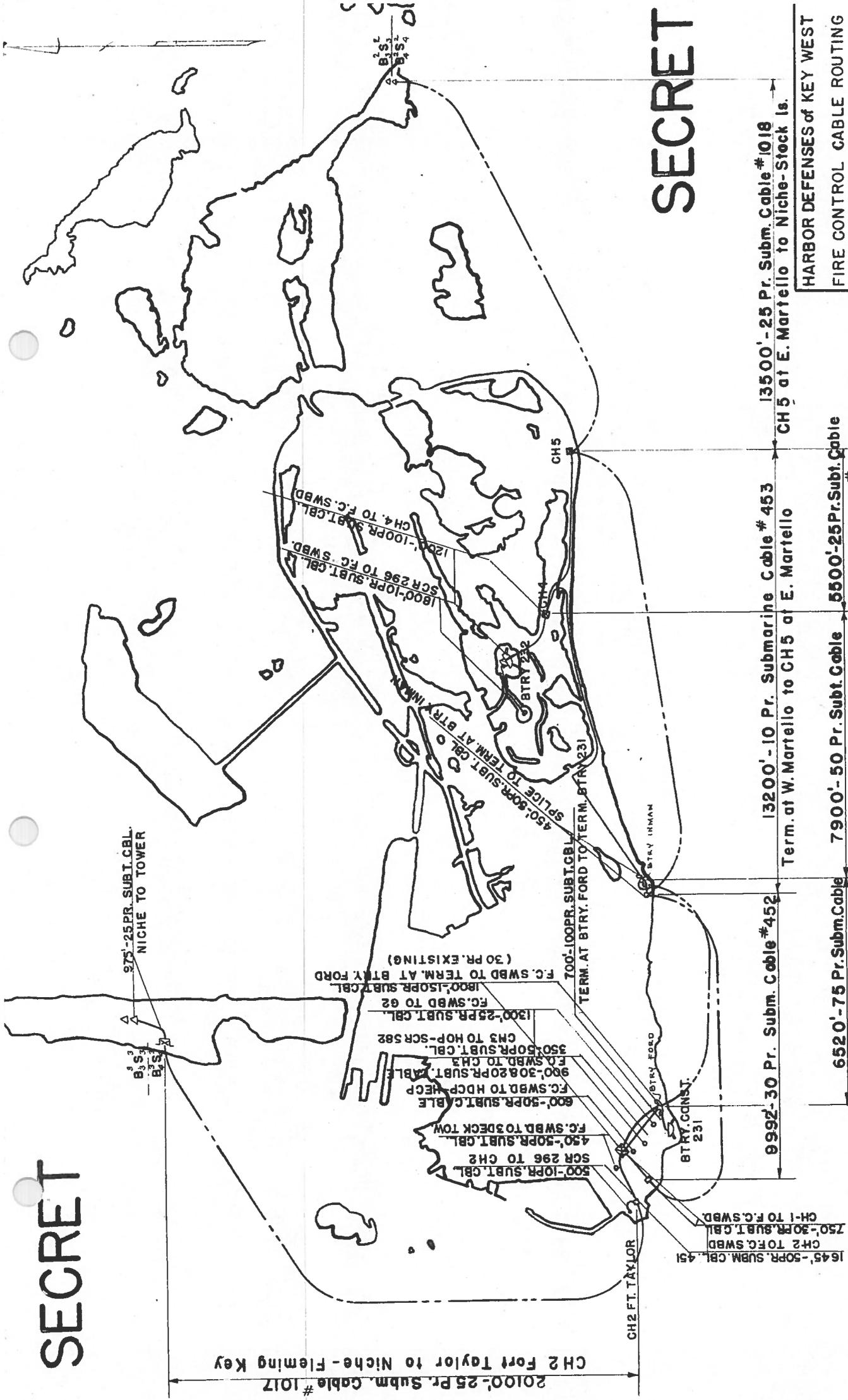
SECRET

EXHIBIT 7B WITHDRAWN PENDING ISSUANCE
OF A REVISED CIRCUIT DIAGRAM BY THE
CHIEF SIGNAL OFFICER

SECRET

HARBOR DEFENSES
CIRCUIT DIA

SECRET



SECRET

20100'-25 Pr. Subm. Cable # 1017
CH 2 Fort Taylor to Niche - Fleming Key

975'-25 Pr. Subt. Cbl. Niche to Tower

13500' - 25 Pr. Subm. Cable # 1018
CH 5 at E. Martello to Niche-Stock Is.

13200' - 10 Pr. Submarine Cable # 453
Term. at W. Martello to CH 5 at E. Martello

9992'-30 Pr. Subm. Cable # 452

6520'-75 Pr. Subm. Cable
Term. at Btry Ford to term. at Btry Inman

7900'-50 Pr. Subt. Cable
Term. at Btry Inman to CH 4 near Btry #232 to CH 5 at E. Martello

5500'-25 Pr. Subt. Cable
CH 4 near Btry #232

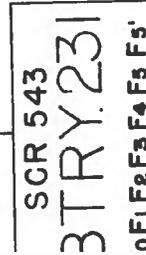
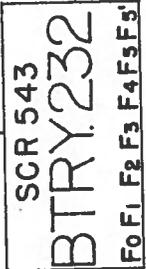
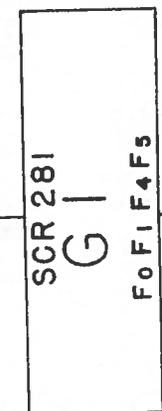
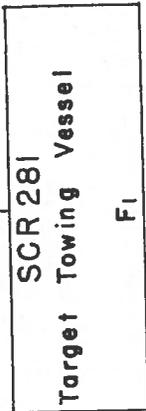
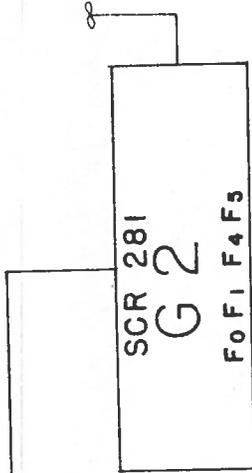
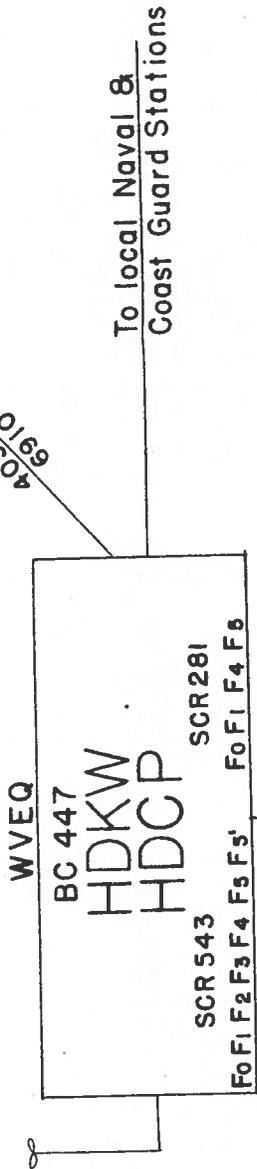
HARBOR DEFENSES OF KEY WEST
FIRE CONTROL CABLE ROUTING

Prepared By: 12 APRIL 1945
HQ. H.D.K.W. EX. NO. 8 B

SECRET

CHARLESTON

4035 KC
6910 KC



Two Radio sets SCR 543 are allocated to the HD Command for air & naval communications. They are shown on the exhibit allocated to the 6" batteries may be one of the Contempt radio sets, but not necessarily the standard procedure. (See page 1 - 4 June 1946)

NOTE: The circuit with HD Charleston authorized by confidential letter EDC, dated 19 Dec. 44 file 676.3 and 7th Ind. there to, Hq. ASF, OCSig. O, Wash. D.C. 27 Feb. 45.

For frequency conversion see letter WD AGO, file 311.23, dated 25 June 45 subject "Frequency Assignments Coast Artillery Harbor Defense Communications."

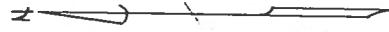
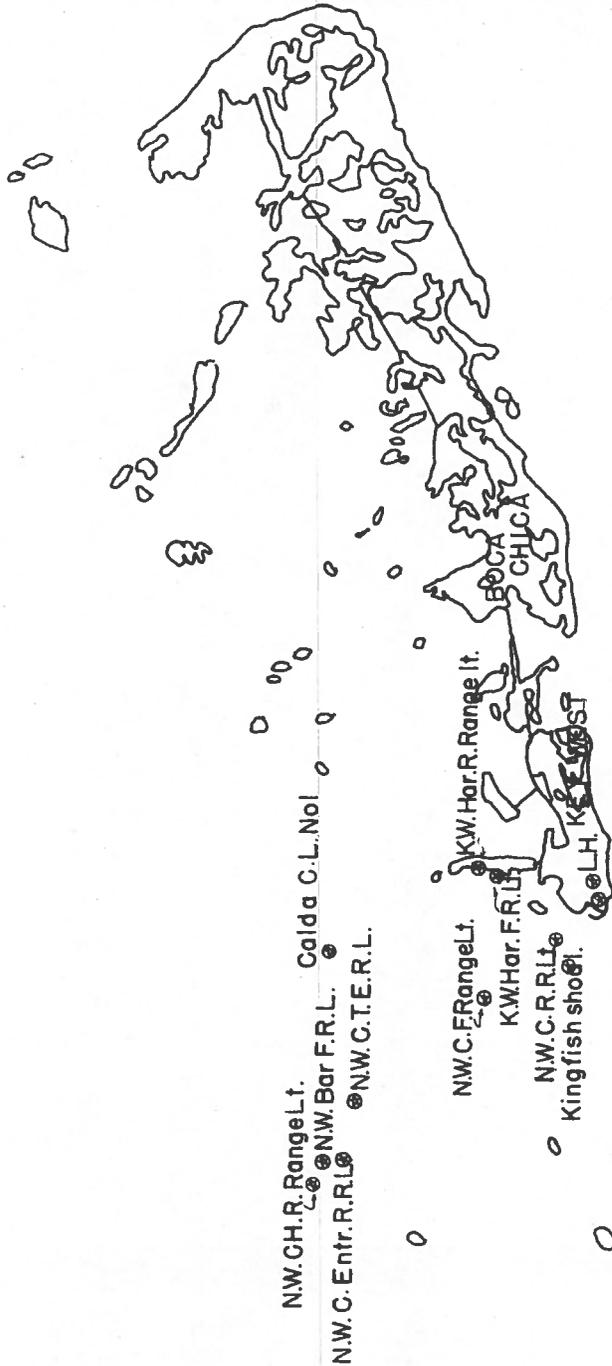
SECRET

HARBOR DEFENSES OF KEY WEST	
RADIO NET	
Prepared By:	13 APRIL 1945
HQ. H.D.K.W.	EX. NO. 10B

SECRET

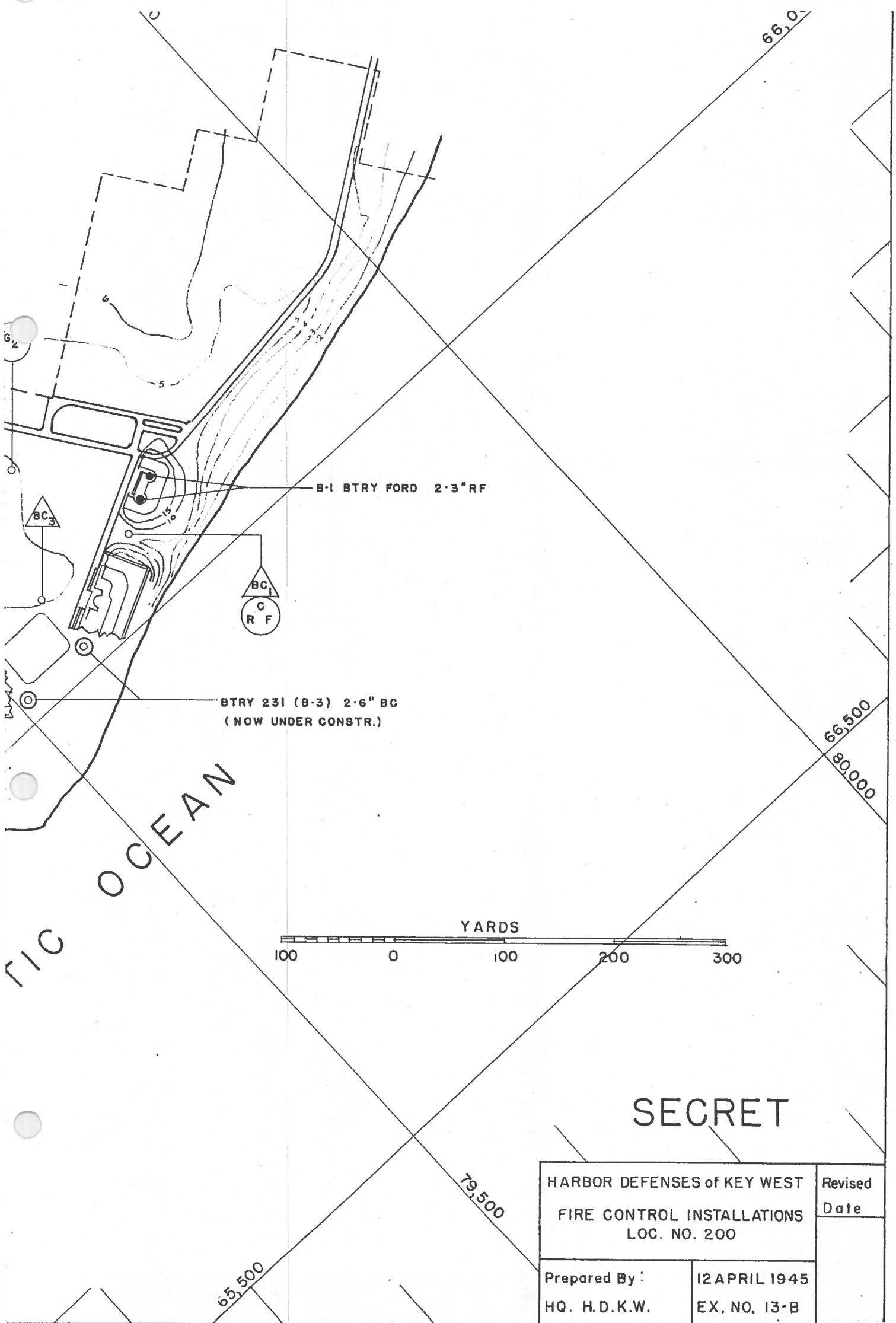
Lambert Grid
Coordinates (yards)

DATUM POINTS	X	Y
Key West Lighthouse	79,881.20	66,639
Calda Chan. Lt. No.1	72,081.92	75,260
Key West Cath. Ch. N.E. Spire	80,476.61	66,956
East Martello Tower	84,973.28	66,850
West Martello Tower	81,529.10	66,206
Sand Key Lighthouse	71,383.85	54,930
Key West Harbor Fr. Range Lt.	79,996.12	70,119
Key West Harbor Rear Range Lt.	80,316.45	70,826
Kingfish Shoal Lt.	76,808.77	67,513
N.W.Chan. Inner Rear Range Lt.	77,778.18	67,934
N.W.Chan. Inner Front Range Lt.	75,470.58	70,597
N.W.Chan. Turn East Ft. Range Lt.	71,747.16	75,208
N.W.Chan. Turn Rear Range Lt.	68,448.66	76,942
N.W.Chan. Entr. Rear Range Lt.	69,418.16	75,760
N.W.Bar Front Range Lt.	69,297.66	76,486
East Triangle Lt.	79,602.38	61,663
Amer. Shoal Lighthouse	111,047.56	63,581
Sombrero Key Lighthouse	156,290.84	76,183
Havana-American Trust Cigar Fact.	82,417.29	67,417
Naval Hospital	85,422.95	68,816
N.W. Passage Lighthouse	69,000.92	74,920
Naval Sound Station	79,410.21	64,121.6



SECRET

HARBOR DEFENSES of KEY WEST		Re
ORIENTATION DATA		D
Prepared By:	9 APRIL 1945	
HQ. H.D.K.W.	EX. NO. 12B	



ATLANTIC OCEAN

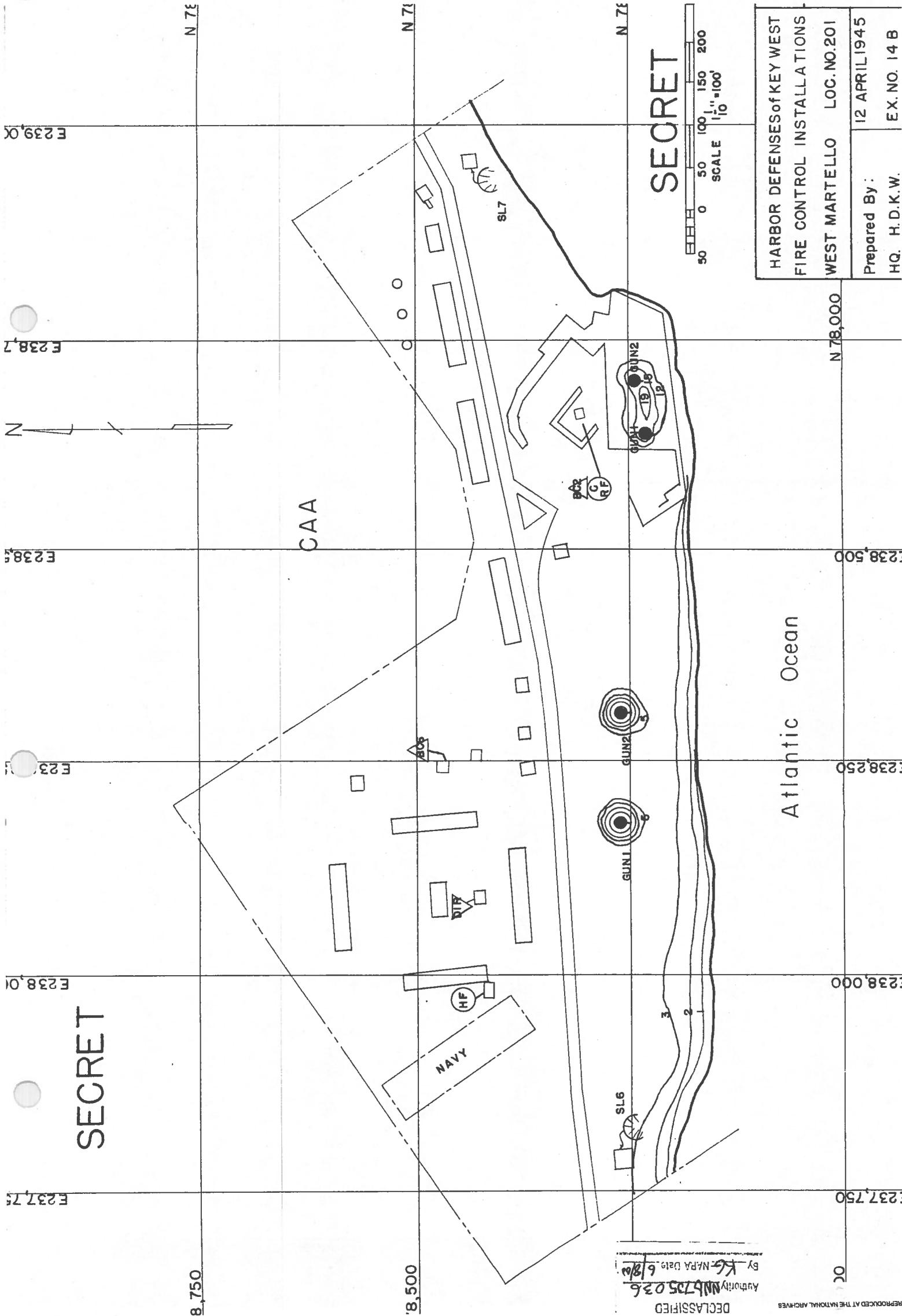


SECRET

HARBOR DEFENSES of KEY WEST		Revised Date
FIRE CONTROL INSTALLATIONS LOC. NO. 200		
Prepared By :	12 APRIL 1945	
HQ. H.D.K.W.	EX. NO. 13-B	

SECRET

SECRET



HARBOR DEFENSES OF KEY WEST FIRE CONTROL INSTALLATIONS	
WEST MARTELLO	LOC. NO. 201
Prepared By:	12 APRIL 1945
HQ. H.D.K.W.	EX. NO. 14 B

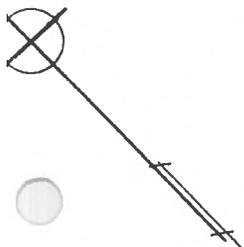
DECLASSIFIED
 Authority: NNB705.036
 By: K6-NPA Date: 6/8/00

67,000

66,500

66,500

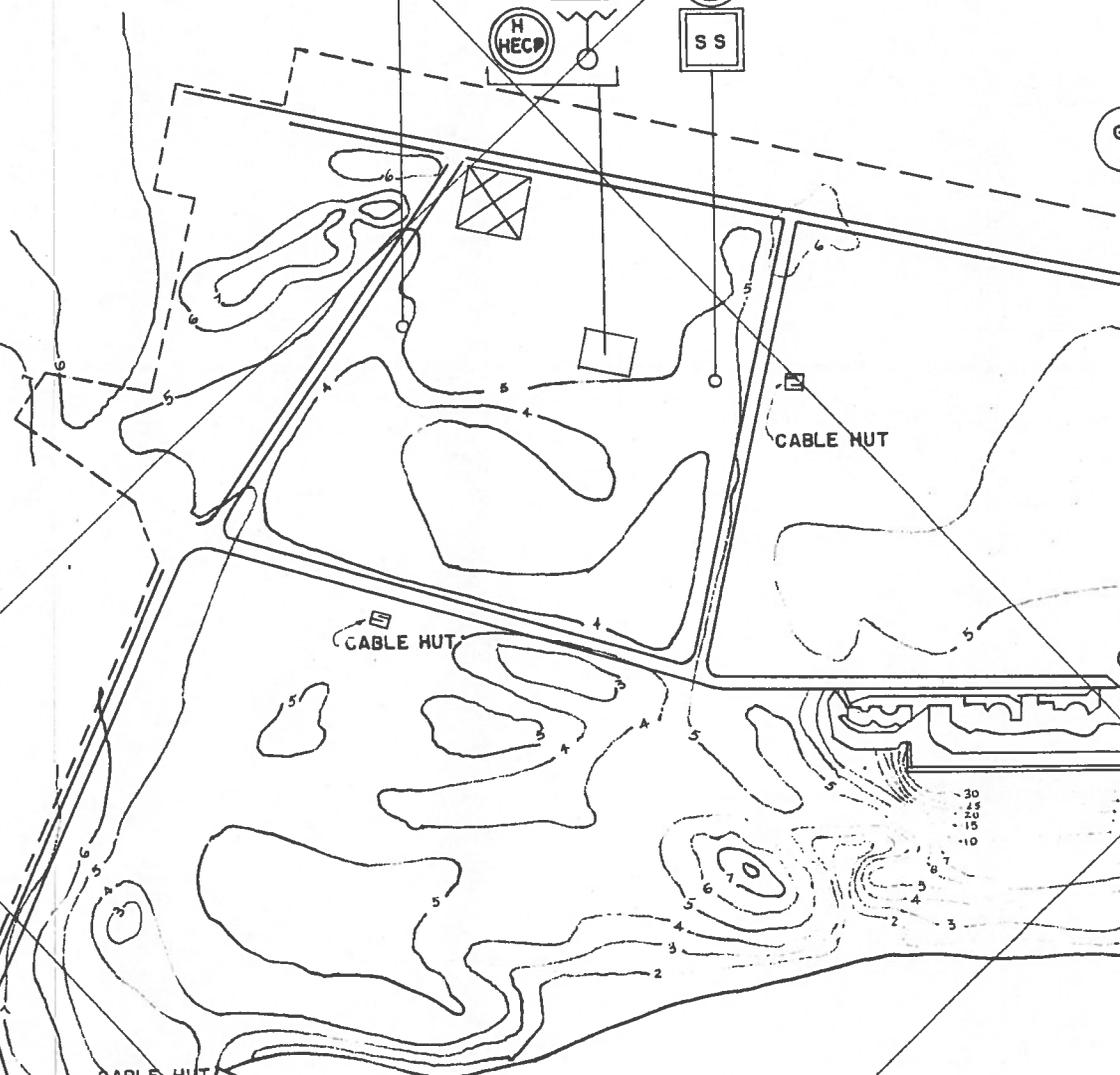
SECRET



AA



SCR 682



CABLE HUT

CABLE HUT

SCR 296 (B-3)

CABLE HUT



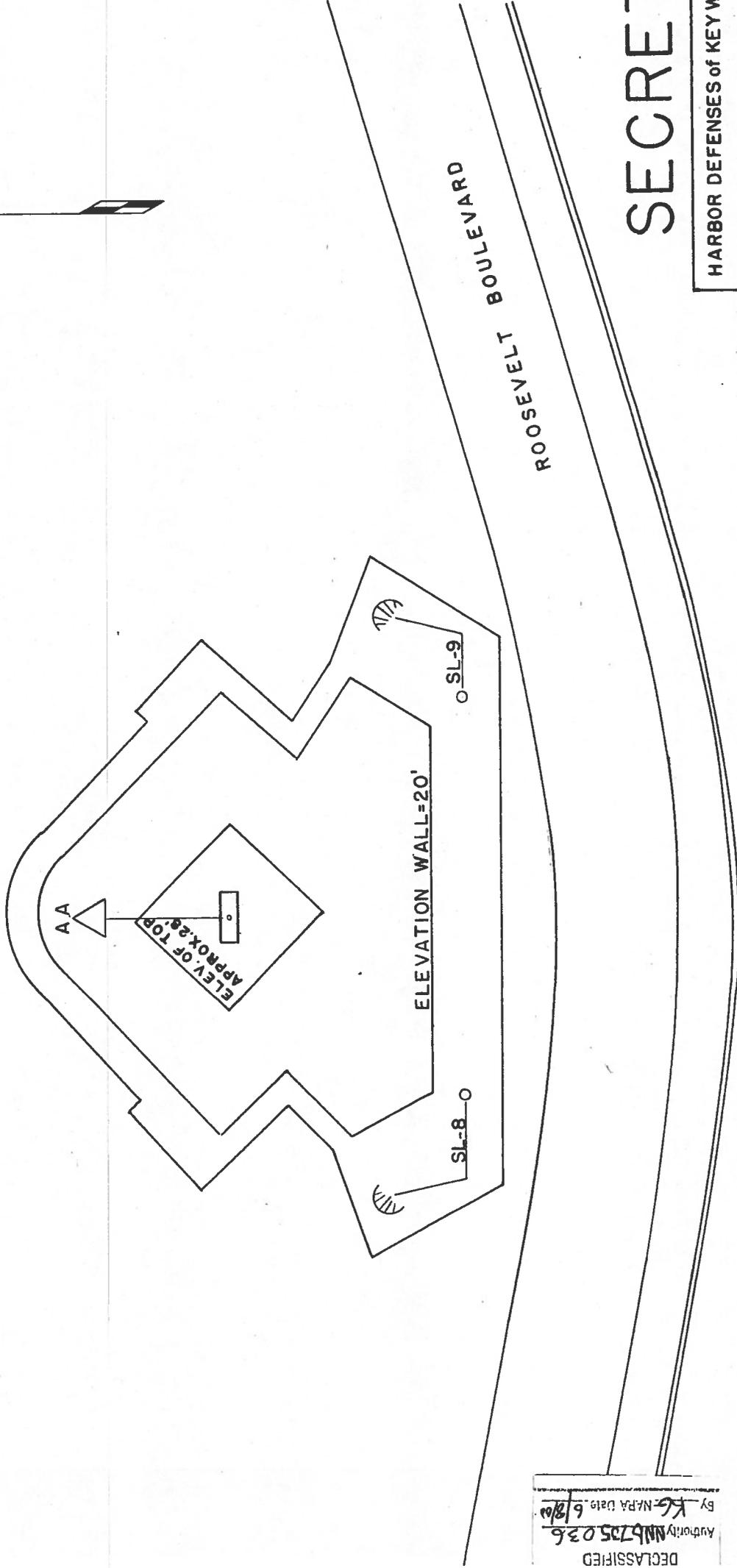
B-5 90MM AMTB BTRY

66,000

79,000

ATLAN

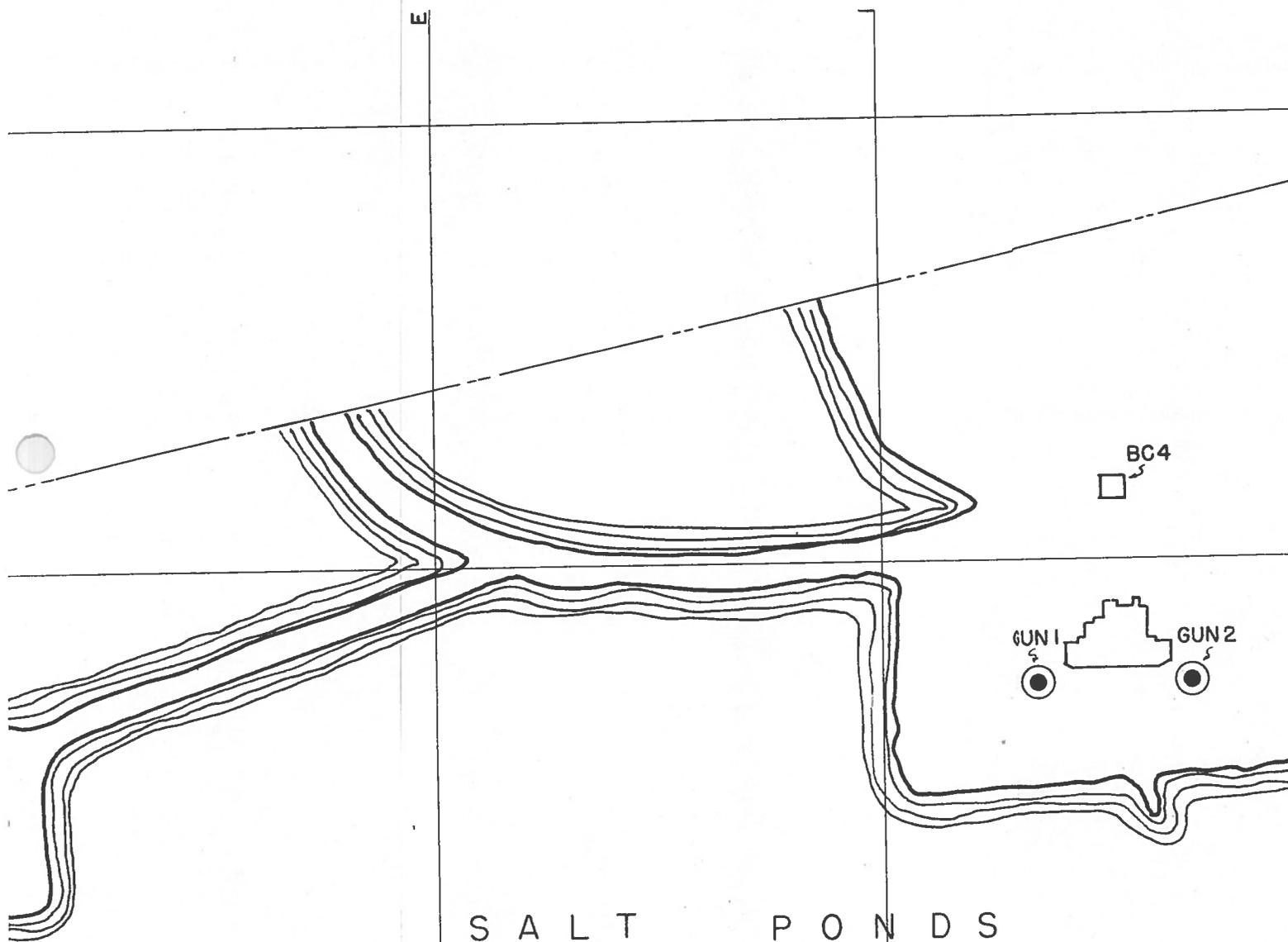
SECRET



SECRET

DECLASSIFIED
 Authority: NND 705 036
 By: RG-NAPA Date: 6/8/02

HARBOR DEFENSES OF KEY WEST		Revis	Date
EAST MARTELLO LOC. NO.			
202 FIRE CONTROL INSTALLATION			
Prepared By :		10 April 1945	
HQ. H.D.K.W.		EX. NO. 15-B	



SALT PONDS

E 83,000

E 83,200

85,000

86,000

87,000

88,000

89,000

90,000

91,000

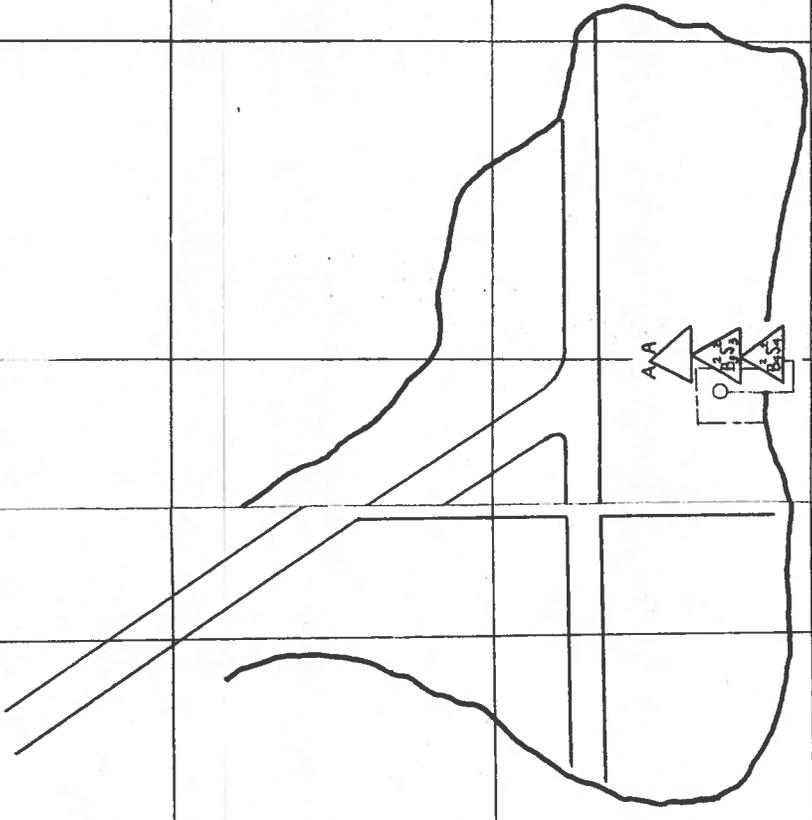
SECRET



70,000

69,000

68,000



SECRET

HARBOR DEFENSES OF KEY WEST
STOCK ISLAND - LOC. NO. 204
FIRE CONTROL INSTALLATION

Prepared By: HQ. H.D.K.W.
13 APRIL 1944
EX. NO. 17 - B



Authority NNB705 036
By K6-NAPA Date 6/8/00

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Scale - 6" = 1,000'



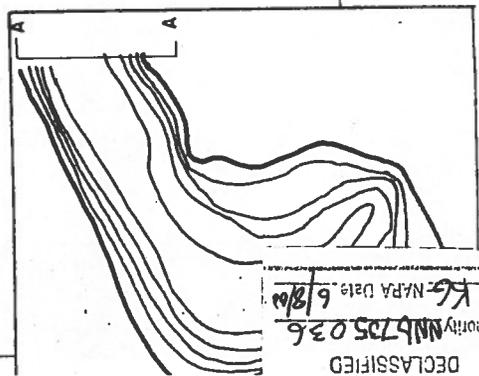
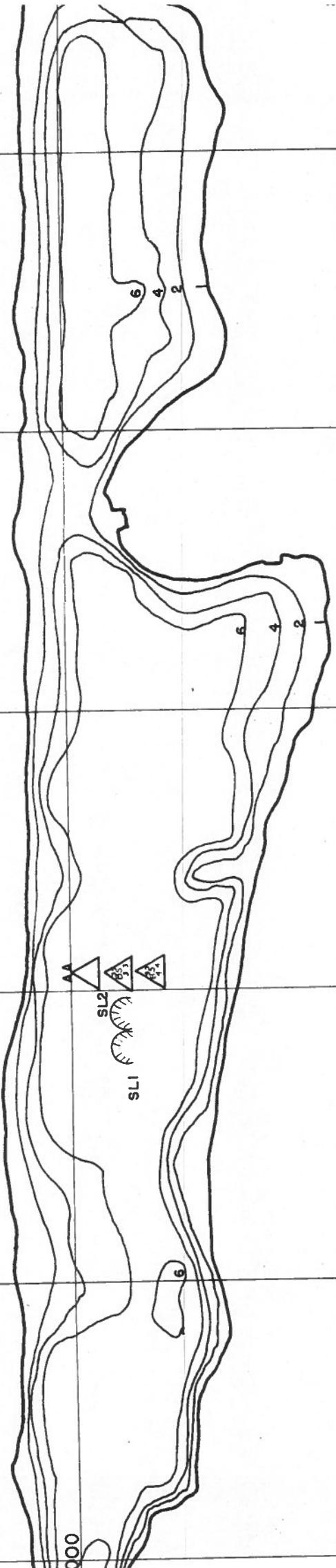
80,000

70,000

70,500

71,000

71,500



DECLASSIFIED
 Authority: NMB 705 036
 By: KG-NRPA Date: 6/2/00

HARBOR DEFENSES OF KEY WEST FLEMING KEY FIRE CONTROL INSTALLATION LOC. NO. 206	
Prepared By: HQ. H.D.K.W.	12 APRIL 1945 EX. NO. 18 B

70,000

70,500

71,000

71,500

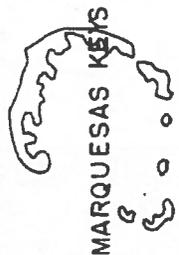
SECRET

24,500yds.

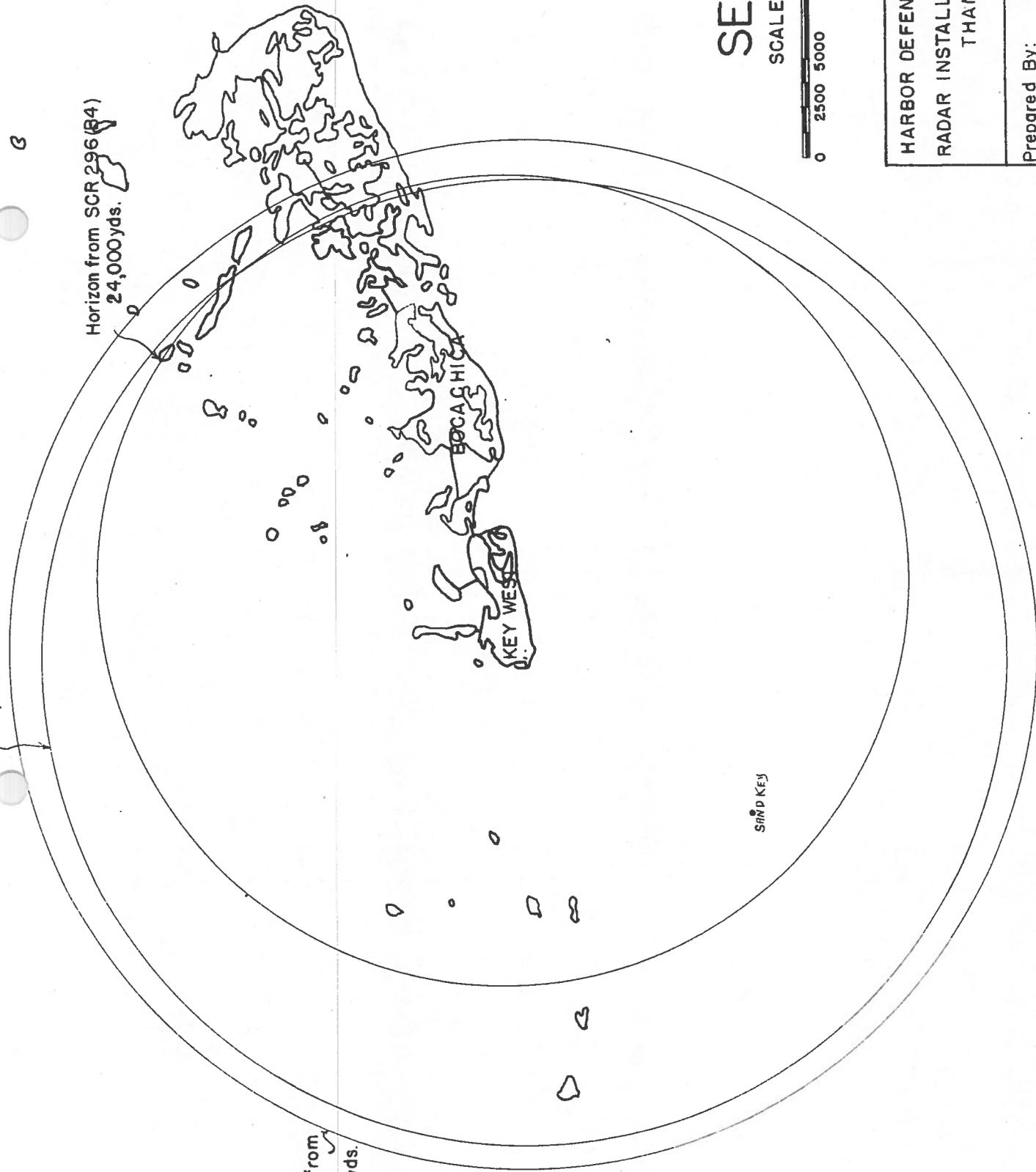


Horizon from SCR 296 (B4)
24,000yds.

Horizon from
SCR 682
26,000yds.



MARQUESAS KEYS



SECRET

SCALE 1" = 5000yds.



HARBOR DEFENSES OF KEY WEST
RADAR INSTALLATIONS OTHER
THAN AA

Prepared By: 13 APRIL 1945
HQ. H.D.K.W. EX. NO. 19B

Note:

Arc of detection in all cases is 360°

Clutter areas & dead areas are negligible due to the lack of height of objects and the flat terrain.

S E C R E TINDEX

	<u>Par.</u>	<u>Page</u>
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Tactical No. 1	4 a	4
Tactical No. 2	4 a	4
Tactical No. 3	4 c	4
Tactical No. 4	4 c	4
Tactical No. 5	4 c	4
Tactical No. 6	4 b	4
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Tactical No. 8	4 c	4
Tactical No. 9	4 c	4
Land Acquisition	5	4

EXHIBITS

	<u>No.</u>
Location of Searchlights Elements	1-C
Field of Illumination	2-C

- 1 -

S E C R E T

Authority: NNB705 036
 By: KG NARA Date: 6/8/00

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S E C R E T

1. General.

- a. Since the Island of Key West at its highest point is only 16 feet above sea level, no advantage can be taken of natural height of site in locating seacoast searchlights.
- b. No advance locations off the Island of Key West are available and suitable for the location of seacoast searchlights.
- c. Due to the unlimited visibility which prevails locally, the dependable range of the 60" searchlight is assumed to be limited only by the height of site and normal range of the light.
- d. Due to locating the 90mm AMTB batteries near the previously approved locations of certain seacoast searchlights, no additional searchlights for the AMTB batteries are provided. Searchlight No. 3, located on the right flank of Battery 5 and Searchlight No. 6, located on the right flank of Battery 6, will be released for employment in defense against motor torpedo boats.
- e. In compliance with instructions contained in letter TAG Office, AG 660.2 (5-27-43)OB-S-E, 2 Jun 43, subject: "Requirements for Harbor Defense Searchlights", the employment and siting of 60-inch portable seacoast searchlights in these Harbor Defenses was reviewed. This Annex is based upon recommendations of this headquarters approved in 12th Ind., Hq. ASF, SPRMS 660.2 (16 Jun 43), 5 Oct 43, to letter, Hq. HDKW, 660.2, 16 Jun 43, subject: "Requirements for Harbor Defense Searchlights", upon subsequent recommendations made in 17th Ind., Hq. HDKW, 660.2, 9 Nov 43, to same letter, and letter, Office, Chief of Engineers, SPEPR, 28 February 1944, subject: "Replacement of Fixed-Type Searchlights Installed in Harbor Defenses," and letter, War Department, AGO AG 470.3 (11 Apr 44)OB-S-E, 1 April 1944, same subject. See Exhibit Nos. 1c and 2c.

2. Tactical Organization. All seacoast searchlights are placed under the tactical control of the Harbor Defense Command, but any or all of these may be released to either of the Commanders of Bn 1 or 2, who in turn may release them to the batteries of their command. Searchlights Nos. 3 and 6 may be released to Batteries 5 and 6, respectively, for employment in defense against motor torpedo boats.

- 2 -

S E C R E T

By KG NARA Date 6/8/00
 Authority NNB705 036

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F I
F I
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3. List of seacoast searchlights follows:

Tactical No.	Location	Site	Type	Type of Mounting	Ht. of Ground	Ht. of Tower	Control Station	Type of Power Plant	Loc. of Power Plant	Place of Storage	On Hand or to be supplied
1	Fleming Key Loc. #206	SL-1	Portable	Steel Tower	8'	50'	B ₃ S ₃ B ₄ S ₄	Portable	Base of Tower	Ft Taylor	On Hand
2	Fleming Key Loc. #206	SL-2	Portable	Steel Tower	8'	50'	B ₃ S ₃ B ₄ S ₄	Portable	Base of Tower	Ft Taylor	On Hand
3	Fort Taylor Loc. #200	SL-3	Portable	Wood Platform	30'	3'	DC Btry 5	Portable	Base of Tower	Ft Taylor	On Hand
4	Fort Taylor Loc. #200	SL-4	Portable	Steel Tower	2'	50'	SL #5	Portable	Base of Tower	Ft Taylor	On Hand
5	Fort Taylor Loc. #200	SL-5	Portable	Steel Tower	5'	50'	SL #4 Tower	Portable	Base of Tower	Ft Taylor	On Hand
6	W. Martello Loc. #201	SL-6	Portable	Steel Tower	5'	50'	W. Martello Tower	Portable	Base of Tower	Ft Taylor	On Hand
7	W. Martello Loc. #201	SL-7	Portable	Wood Tower	5'	41'.5	BC Tower W. Martello Tower	Portable	Base of Tower	Ft Taylor	On Hand
8	E. Martello Loc. #202	SL-8	Portable	Steel Tower	19'.9	26'	E. Martello Tower	Portable	E. Martello	Ft Taylor	On Hand
9	E. Martello Loc. #202	SL-9	Portable	Steel Tower	19'.9	26'	E. Martello Tower	Portable	E. Martello	Ft Taylor	On Hand

See Exhibit 2-C for fields of illumination.

NCTE: All fixed lights were taken down and replaced by portable lights see par 1e.

F I
F I
F I
C I
F I
S IAuthority NNB735 036
By K6 NARA Date 6/8/02

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S E C R E T

4. Construction Requirements.

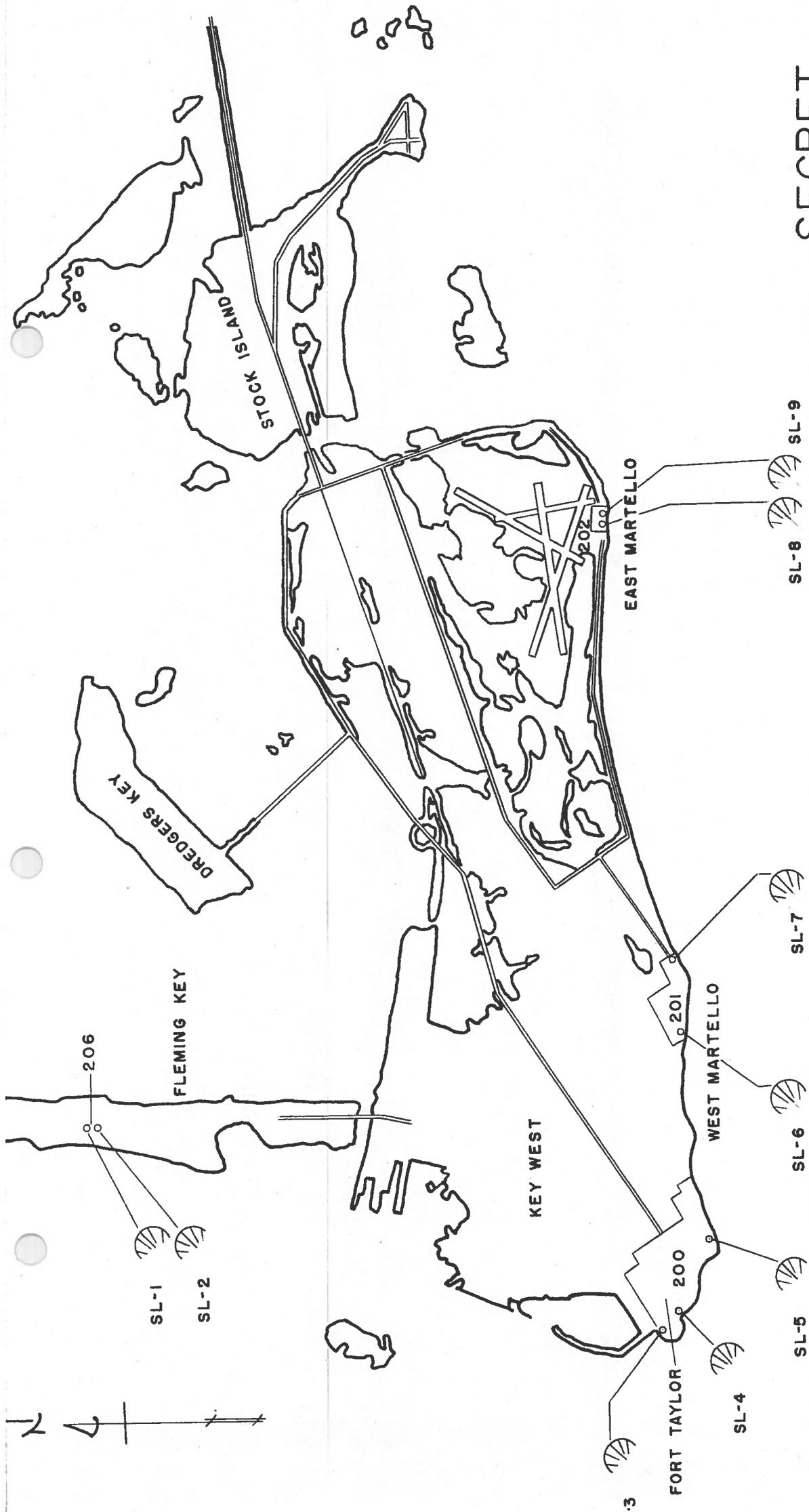
- a. The steel towers for tactical positions Numbers 1 and 2 are in storage at Post Engineers and can be erected in a short time. They were erected at Fleming Key in December 1943 but later removed and placed in storage.
- b. Tactical No. 6 and 7 requires a 50' steel tower.
- c. There are no requirements for Tactical Nos. 3, 4, 5, 8 and 9.

5. Land acquisition - No requirements.

- 4 -

S E C R E TBy KG NARA Date 6/8/00
Authority NN6705 036

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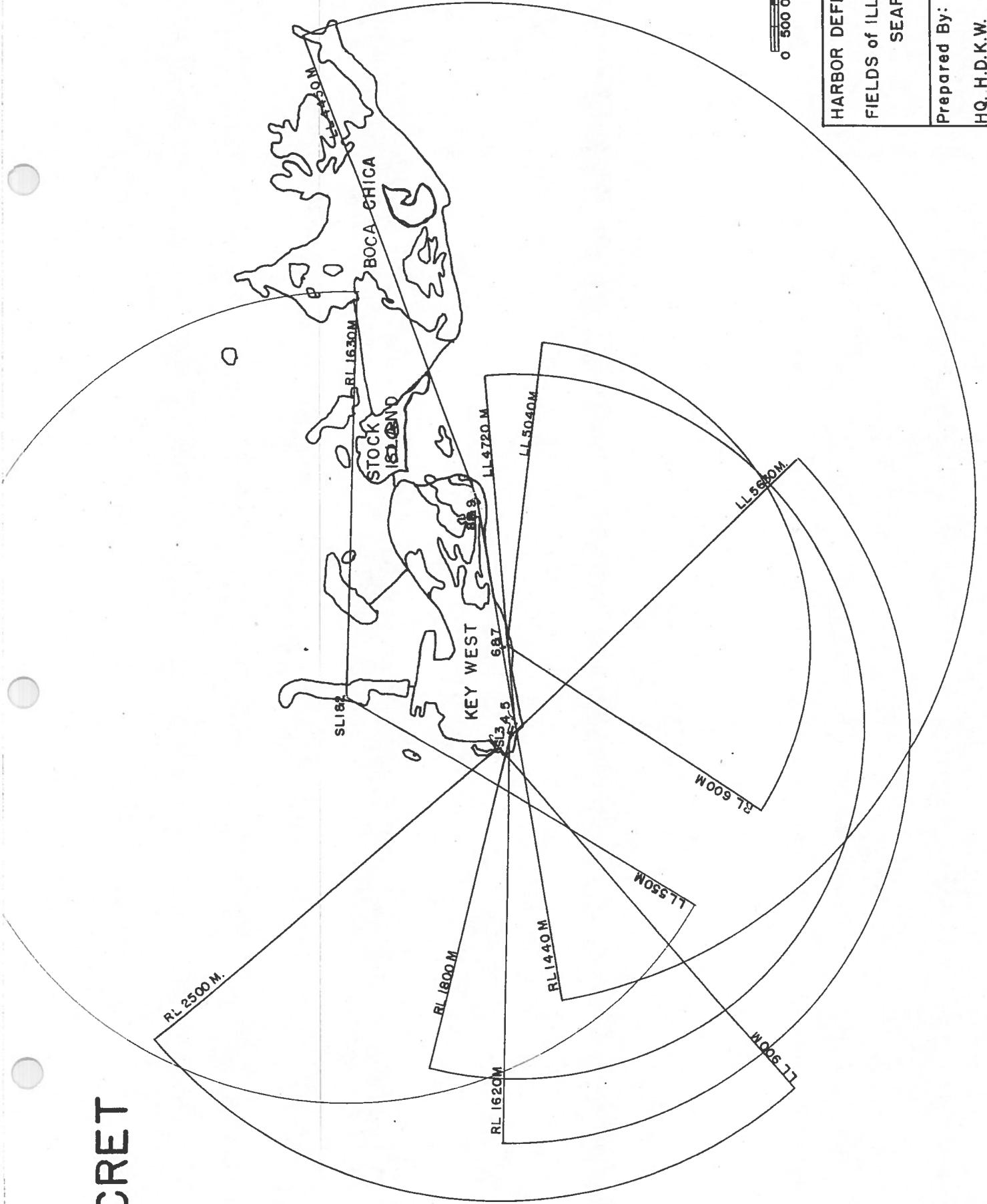


SECRET

HARBOR DEFENSES OF KEY WEST		Revised
SEACOAST SEARCHLIGHTS		Date
Prepared By:	14 April 1945	
HQ. H.D.K.W.	EX. NO. 1-C	

THOUSANDS OF YARDS

SECRET



SECRET

Scale 1"=1000yds



HARBOR DEFENSES of KEY WEST
 FIELDS of ILLUMINATION of the
 SEARCHLIGHTS

Prepared By:	14 APRIL 1945
HQ. H.D.K.W.	EX. NO. 2 C

S E C R E T

No underwater defense project is provided for the Harbor Defenses. Under directive contained in letter TAG, AG 660.3 (9-29-42)OB-S-E, 20 Oct 1942, subject: "Revision of Underwater Defense Projects", a Local Joint Army and Navy Planning Committee submitted a plan for an Underwater Defense Project for the Harbor Defenses of Key West. The Harbor Defense Commander, with the concurrence of the Commandant, Naval Operating Base, Key West, recommended against the establishment of submarine mine defenses in these Harbor Defenses, and this recommendation was approved by the War and Navy Departments, as indicated in letter TAG, AG 660.3 (10-20-42)OB-S-E, 20 Mar 1943, subject: "Revision of Underwater Defense Projects".

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S E C R E T

S E C R E TANNEX E

ANNEX E

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Authority NNP705 036
 By R6-NPRA Date 6/8/00

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S E C R E T

1. Tactical Organization.
 - a. The one antiaircraft battery, a fixed 3 inch battery, in the Harbor Defenses was removed in December 1943 and substitution of a 120mm battery is proposed pursuant to 1st Indorsement, War Department, AGO AG 472.3 (9 Nov 43)OB-S-E, 26 November 1943 on letter, Headquarters, Eastern Defense Command, ORD 472.93/1097, 5 November 1943, subject: "Disposition of 3-Inch Gun Materiel."
Present supply of the 120mm materiel is not contemplated.
 - b. The two 90mm AMTB batteries have a dual mission of Antiaircraft and Sea-coast Defense.
2. a. Relations with other echelons.
 - (1) There is no relation of the harbor defense antiaircraft defense to any sector or subsector antiaircraft defenses.
 - (2) There is no AAAIS for this Harbor Defense at the present time.
 - (3) The AWS for this area is located at Fourth Service Command in Atlanta, Georgia. Commercial telephone is used for communications.
 - (4) The operational control of all antiaircraft artillery guns, automatic weapons, and searchlights in the Key West Antiaircraft Zone is exercised by the Harbor Defense Commander by local joint agreement with the Navy.
- b. Reinforcing units required. Reinforcing mobile antiaircraft units considered necessary to provide a complete defense in the event a category of defense is approved are one Automatic Weapons Battery, one Gun Battery, and one Searchlight Platoon.
3. a. Gun Defense.
 - (1) See par 1a above in reference to fixed 3-Inch AA Guns removed and proposed 120mm gun battery.
 - (2) Pursuant to Ltr. EDC, File CA-472, subject: "Dual Missions of AMTB Batteries", dated 6 September 1944, the two 90mm AMTB batteries have a dual mission of antiaircraft and seacoast defense.
- b. The antiaircraft searchlight defense is based upon five 60", portable, antiaircraft searchlights, and one SCR-268-B. See Exhibit #3E for positions. Inasmuch as the searchlights are portable and subject to constant change of position, the locations in Exhibit 3E are generally correct. Authority to have only one SCR-268-B on hand at this Harbor Defense instead of three as authorized in T/O & E 4-260-1 is in 2nd Ind. Headquarters Eastern Defense Command, 11 Oct 44, letter 413.44, Headquarters Harbor Defenses of Key West, 3 Oct 44, subject: "Radio Sets SCR-268."
- c. Automatic weapons defense. The automatic weapons, after completion of the project, authorized by T/O & E 4-260-1, and their assignment are tabulated below. See Exhibit #4E for their disposition.

- 2 -

S E C R E T

By KG NARA Date 6/8/00
 Authority NNP705036

DECLASSIFIED

Authority NNb735036
 By KG NARA Date 6/8/00

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- 7 -

Tactical No.	Type	Weapon or fire control equipment		
		Authorized	On Hand	Required
5	90mm-M1	4	2 (Mobile) 2 (Fixed)	0
6	90mm-M1	4	2 (Mobile) 2 (Fixed)	0
*120mm	120mm		0	
Automatic Weapons				
1	.50 cal. MG. AA	2	2	0
2	.50 cal. MG. AA	2	2	0
3	.50 cal. MG. AA	2	2	0
3	40mm. M1AA	2	2	0
4	.50 cal. MG. AA	2	2	0
4	40mm. M1AA	2	2	0
5	.50 cal. MG. AA. M2	4	4	0
5	37mm. M1A2	2	2	0
6	.50 cal. MG. AA. M2	4	4	0
6	37mm. M1A2	2	2	0
*120mm	.50 cal. MG. AAM2	4	0	0
FIRE CONTROL EQUIPMENT				
3	Director M5	2	2	0
4	Director M5	2	2	0
5	Director, AA. M9	1	1	0
	Finder, Ht. 13 1/2' M2	1	1	0
	Set control equipment, AA. M1	1	1	0
6	Director, AA. M9	1	1	0
	Finder, Ht. 13 1/2' M2	1	1	0
	Set Control equipment, AA. M1	1	1	0
*120mm	Director M10A1 or M7A1B1	1	0	1
	Finder, Ht. M1A2	1	0	1
	Radar SCR 584 or 545	1	0	1

*120mm Gun Battery is deferred.

S E C R E T

Caliber	No. of Guns	Assigned to	Location
.50 Cal MG	2	Battery No. 1	#200
.50 Cal MG	2	Battery No. 2	#201
.50 Cal MG	2	Battery No. 3	#200
40mm	2	Battery No. 3	#200
.50 Cal MG	2	Battery No. 4	#203
40mm	2	Battery No. 4	#203
.50 Cal MG	4	Battery No. 5	#200
37mm	2	Battery No. 5	#200
.50 Cal MG	4	Battery No. 6	#201
37mm	2	Battery No. 6	#201
.50 Cal MG	4	120mm	#200

- d. Antiaircraft Artillery Intelligence Service. This service is furnished by the Fourth Service Command in Atlanta, Georgia. Ref: Letter Army Service Forces, Headquarters Fourth Service Command, 5 March 1945, subject: "Organization and Operation for Air Defense."
- e. Fire Control Telephone Net. See Exhibit #5E.
- f. Radio Net. At present there is no radio net within this Harbor Defense.
- g. (1) See paragraph 1(a) in reference to 3" fixed antiaircraft gun battery and proposed 120mm gun battery. A searchlight storage shed of a size to house the five antiaircraft searchlights and related equipment was constructed in 1942. An SCR-268 shed, also constructed in 1942, is designed to store one such instrument. There is no designed storage for the other two instruments or for other radar equipment. See Exhibit #6E for locations of storage facilities.
- (2) Tabulation of guns, automatic weapons, and major fire control elements. (See next page)

- 3 -

S E C R E T

By KG-NAPA Date 6/8/00
 Authority NP735 036
 DECLASSIFIED

S E C R E T

4. War Reserve and Battle Allowances of Ammunition.

- a. Allowances of Ammunition for AA weapons are governed per current WD Directives as authorized by Ltr, WD, AGO, AG 471 (9 Jun 44)OB-S-D-M, 10 Jun 44, subj: "Day of Supply for Ammunition".
- b. Suitable space for storage in compliance with provisions of TM 9-1900 is provided at Location #200.

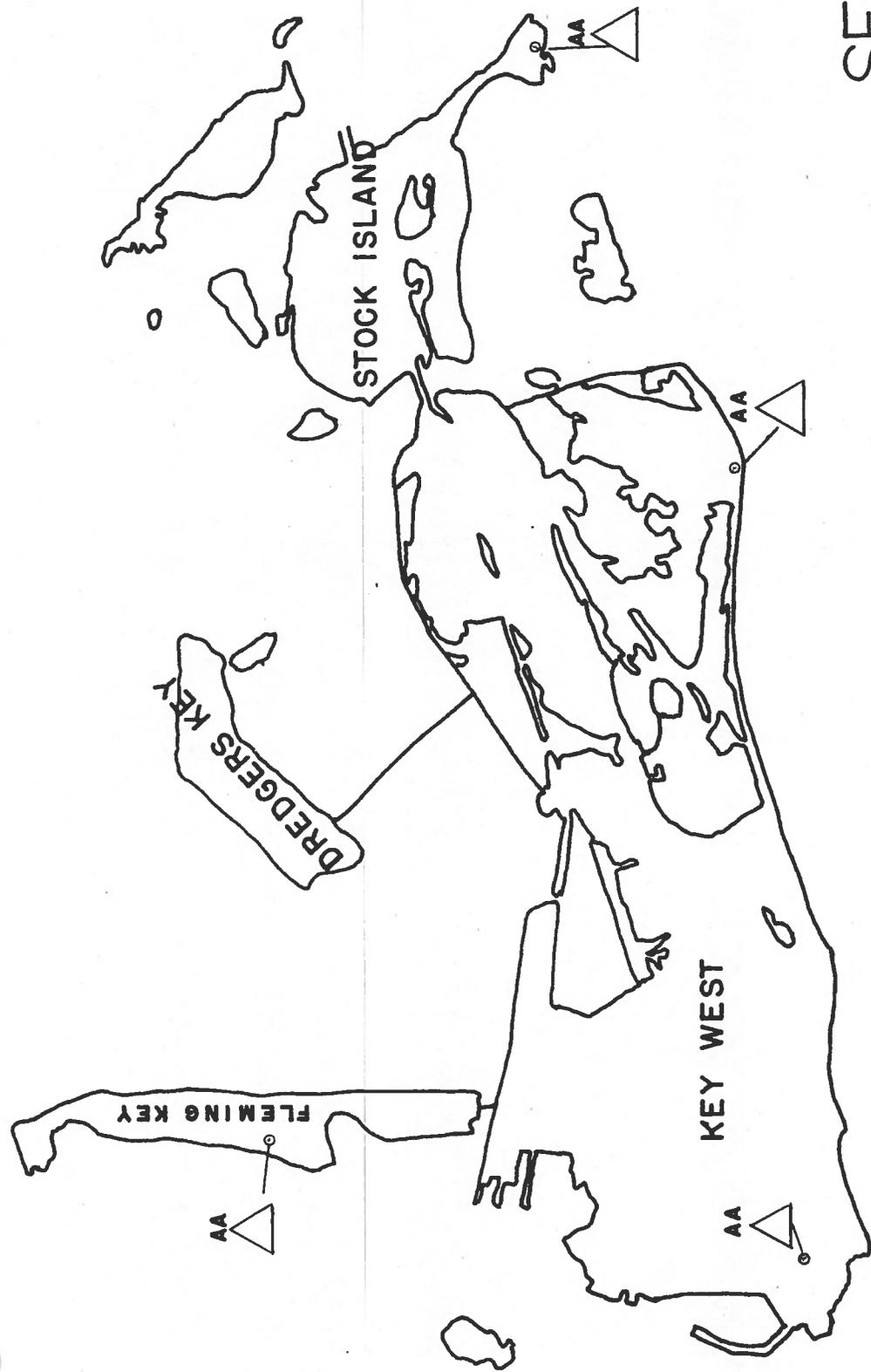
5. Land Acquisition - No additional land is required.

- 5 -

S E C R E T

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Authority: NND 6705 036
By: K6/NARA Date: 6/2/00

SECRET



SECRET

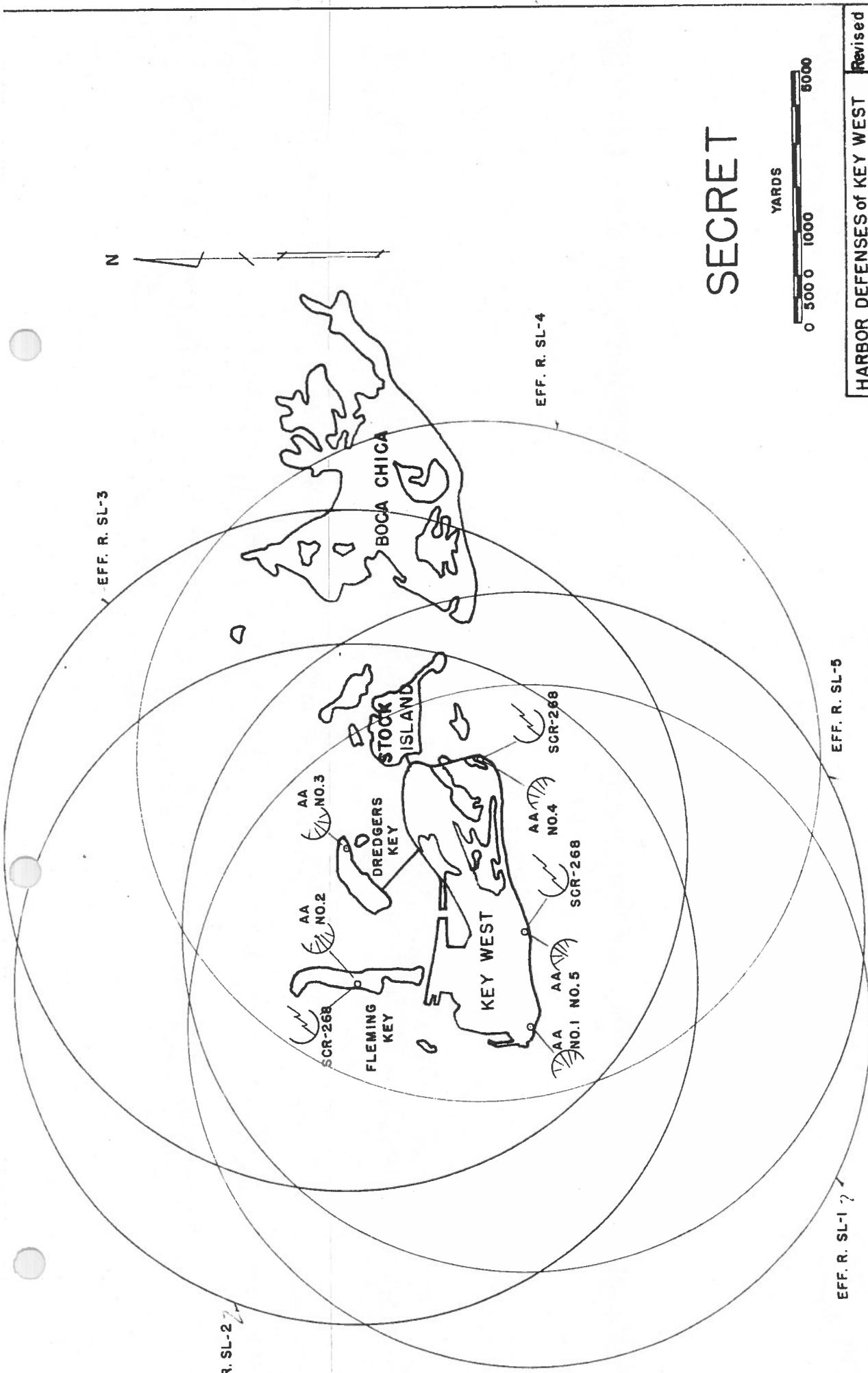
Scale 1"=1000yds.
 0 500 1000 2000 3000

HARBOR DEFENSES of KEY WEST Revised	
Date	
LOCATIONS of AAOP'S (ARMY)	
Prepared By:	14 APRIL 1945
HQ. H.D.K.W.	EX. NO. 1E

DECLASSIFIED
 Authority: NND 735 036
 By: RG-NPA Date: 6/8/00

RET

SECRET



EFF. R. SL-3

EFF. R. SL-4

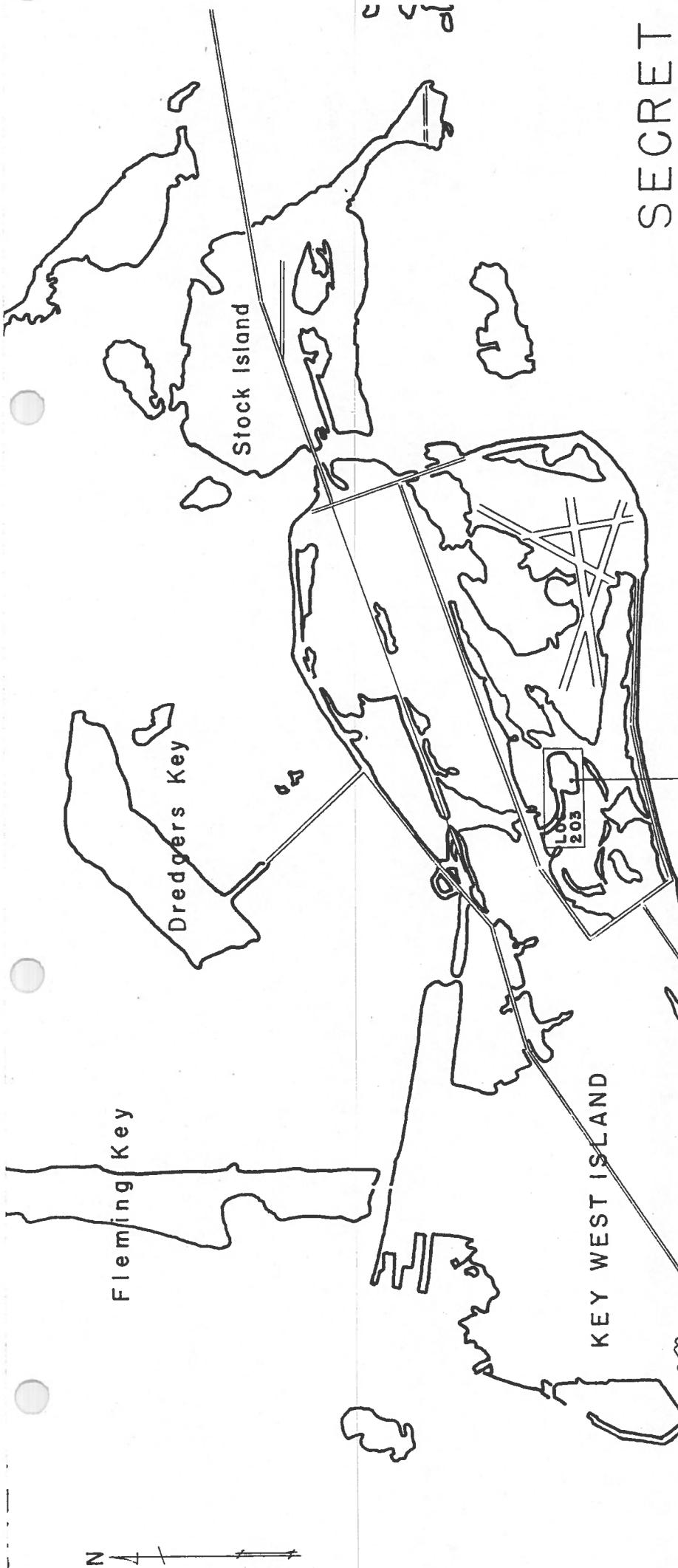
EFF. R. SL-5

EFF. R. SL-1

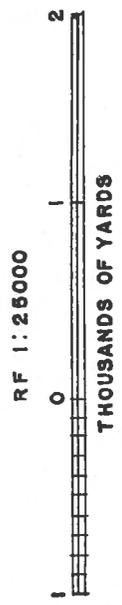
EFF. R. SL-2

HARBOR DEFENSES OF KEY WEST		Revised Date
ANTIAIRCRAFT SEARCHLIGHTS and SCR-268'S		
Prepared By:	18 APRIL 1945	
HQ. H.D.K.W.	EX. NO. 3E	

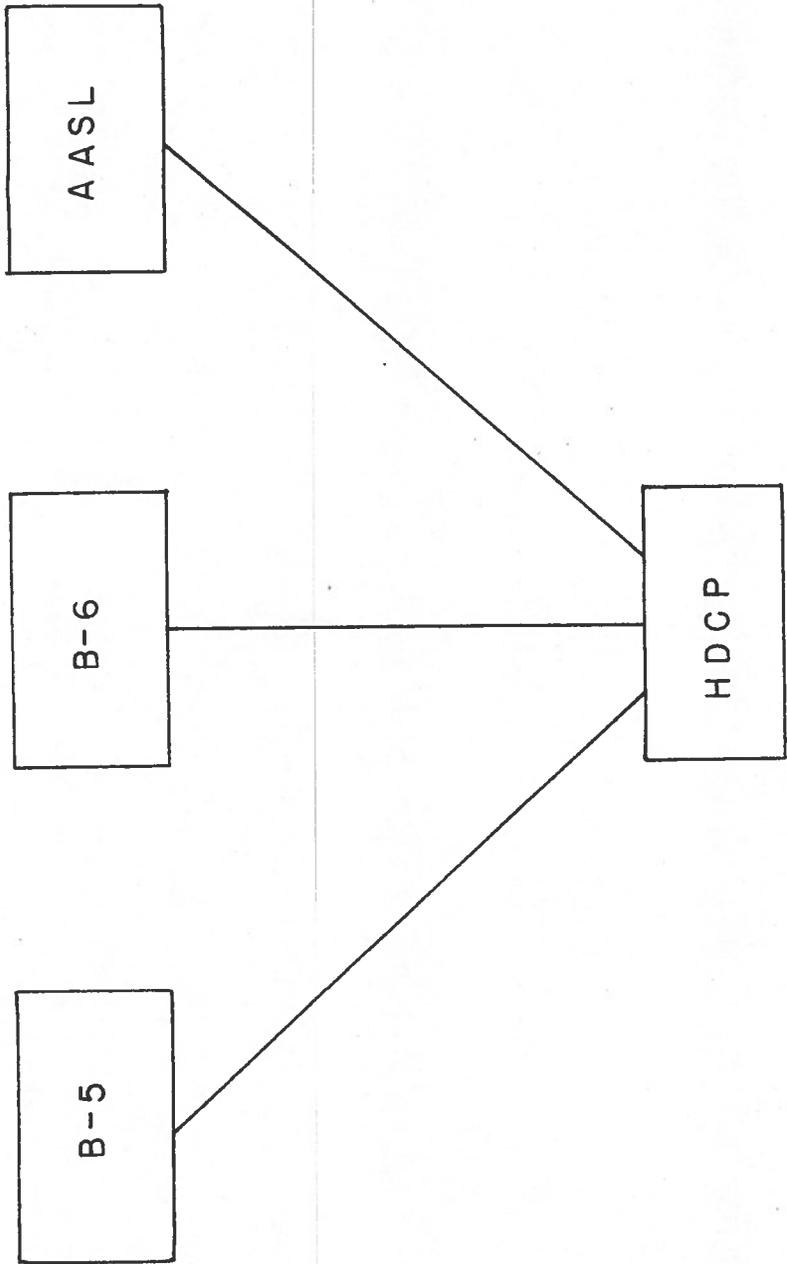
DECLASSIFIED
 Authority: NND 705 036
 By: K6-NAPA Date: 6/8/02



SECRET



HARBOR DEFENSES of KEY WEST	
AUTOMATIC WEAPONS	
Prepared By :	19 APRIL 1945
HQ. H. D. K. W.	EX. NO. 4-E



SECRET

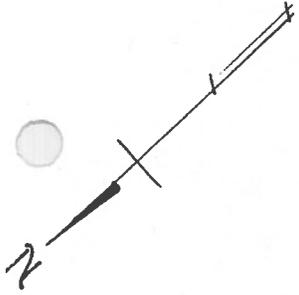
HARBOR DEFENSES of KEY WEST

AA TELEPHONE NET

Prepared By: 17 APRIL 1941

HQ. H.D.K.W. EX. NO. 5-E

SECRET



AA SEARCHLIGHT REPAIR

MOTOR REPAIR



SECRET

HARBOR DEFENSES OF KEY WEST

STORAGE FACILITIES

Prepared By: 18 APRIL 1945

HQ. H.D.K.W. EX. NO. 6 - E

DECLASSIFIED
 Authority: NND 735 036
 By: K6-N/PA Date: 6/8/00

S E C R E T

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S E C R E T

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Authority: ANN 6705 036

By: KG NARA Date: 6/8/00

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S E C R E T

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 By: R6-NARA Date: 6/8/02

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1. See Exhibit 1-G for consolidated summary of Harbor Defense elements. See Exhibit 2-G for consolidated summary of Battery elements. For Consolidated summary of major items of equipment required, see Exhibit 3-G for Quartermaster, 4-G for Engineer, 5-G for Signal, 6-G for Ordnance and 7-G for Chemical Warfare Service. Basis for the determination of equipment requirements is T/O and E 4-260-1 with Change 3, 28 September 1944.

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S E C R E T

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CONSOLIDATED SUMMARY OF HARBOR DEFENSE ELEMENTS

HARBOR DEFENSES OF KEY WEST

1 June 1945

INSTALLATION	NUMBER
H. D. Command Post	1
H. D. Observation Post	1
Harbor Entrance Control Post	1
Gun Bn Command Post	2
H. D. & Fort Signal Station	1
Forts	1
Fire Control Switchboard Installations	2
Searchlight Command Post	1
Meteorological Station	1
Portable Seacoast Searchlights	9
Searchlight Oper. (Cont.) Post (F or P)	9
SCR-682	1

EXHIBIT 1-G

NOTE:

In addition to nine (9) portable SC searchlights listed above, five (5) portable searchlights are being retained in the HD as AA lights pending approval of the installation of an AA gun Battery. (See Charge 1401 - 4 June 1946)

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S E C R E T

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By: N/A Date: 6/8/00

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CONSOLIDATED SUMMARY OF BATTERY INSTALLATIONS

HARBOR DEFENSES OF KEY WEST

BATTERY	OBS. STATION	BC STA.
No. 1	0	1
No. 2	0	1
No. 5	0	H.F. Dir. 1
No. 6	H.F. Dir.	1

CONSOLIDATED SUMMARY OF BATTERY INSTALLATIONS

HARBOR DEFENSES OF KEY WEST

Battery	Flank Obs. Sta. 90 ft.	Other Obs. Sta. 125 Ft.	BC Sta.	Spotting Sta.	Maga- zines	Battery Power Plant	SCR- 296
No. 3	2	1	1*	3	1	1	1
No. 4	2	1	1*	3	1	1	1

*Have a height of instrument greater than 74 feet.

EXHIBIT 2-G

- 1 -

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CONSOLIDATED SUMMARY OF MAJOR ITEMS OF EQUIPMENT
(Quartermaster Requirements for Complete Project)

1 June 1945

Stock or Catalog No.	Article	Total Number Required
35-B	Emplacement Books.	6
35-B	Books, Jane's All Worlds Fighting Ships.	4
35-B	Books, Jane's All Worlds Aircraft.	2
35-B	Lloyd's Register of Ships.	1
35-B	Fort Record Book .	1
35-B	Book, Merchant Vessels of U. S. includ- ing Yachts and Government Vessels U. S. Dept. of Commerce.	1

EXHIBIT 3-G

S E C R E T

Authority NND 735 036
By KG NARA Date 6/8/00

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CONSOLIDATED SUMMARY OF MAJOR ITEMS OF EQUIPMENT
(Engineer Requirements for Complete Project)

1 June 1945

Stock or Catalog No.	Article	Total Number Required
17-8344.600-320	Searchlights 60 in. Portable	14
49-320.0-03	Camouflage Net Set No. 3	8
49-320.0-04	Camouflage Net Set No. 4	8
17-6390.600.100	Kit, Spread Beam Attachment, Searchlight, 60 in. Portable, Type 1	9
<p><i>NOTE:</i></p> <p><i>Five (5) of the searchlight 60" portable are being retained in the H D as & A lights pending approval of the installation of an AA gun Battery.</i></p> <p><i>(See Chge 1 - 4 June 46)</i></p>		

EXHIBIT 4-G

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