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DDP Dir. 5/1/78
RM By TN Date 5/1/78

By authorized _____

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SPOPS 660

30 April 1946.

SUBJECT: Supplement to the Harbor Defense Project, Harbor Defenses of the Columbia.

TO: Commanding General, Army Ground Forces.

1. Reference is made to letter, Headquarters, Harbor Defenses of the Columbia, 660.2 (WDC: 660.2 HDC ARTY), 12 June 1944, subject: "Supplements to Harbor Defense Projects" with 2 Indorsements.

2. The supplement to the Harbor Defense Project, Harbor Defenses of the Columbia, submitted as an inclosure to the correspondence cited in paragraph 1 above, has been reviewed pursuant to the provisions of paragraph 2 e, AR 100-20, and is approved as of 12 August 1946 subject to the modifications and corrections noted in Inclosure 1 herewith.

3. The superseded documents are:

a. Annexes to the Harbor Defense Project, Harbor Defenses of the Columbia, Short Title CCA-AN-CR.

b. Local Board Proceedings Modernization Program Harbor Defenses of the Columbia, 1942.

4. One copy of the subject supplement is returned herewith as it is no longer needed by this headquarters.

5. When revising the supplement in accordance with the comments listed in Inclosure No. 1 herewith, recognition should be given to the elimination from the Harbor Defense Project of the following items of equipment.

a. 3" Armament both antiaircraft and seacoast.

b. Radio Sets SCR-296, 268 and 582 (Radar sites, however, are not eliminated)

6. It is requested that distribution of the revised copies be made pursuant to the approved distribution list.

7. Upon distribution of the revised supplement, action will be taken by this headquarters to direct destruction of the document listed in paragraph 3 a above.

FOR THE COMMANDING GENERAL:

- 3 Incls.
- Incl. 1-Comments (in trip) _____
- Incl. 2-Copy Annexes, HD of the Columbia.
- Incl. 3-Copy Appendices, HD of the Columbia

RICHARD DONOVAN
Major General, G.S.C.
Director of Services, ASF.

J. F. STERMAN, JR.,
Colonel, C.A.C.
Chief, Seacoast Defense Proj. Br.

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The following pertains to the Supplement to the Harbor Defense Project, Harbor Defenses of the Columbia, submitted as an inclosure to letter, Headquarters, Harbor Defenses of the Columbia, 660.2, 12 June 1944, subject: "Supplements to Harbor Defense Projects."

I REFERENCES

- A. Letter, War Department, AGO, AG 660.2 (1-14-43) OB-3-E-M, 2 February 44, subject: "Preparation of Supplements to Harbor Defense Basis Projects."
- B. Letter, War Department, AGO, AG 471 (28 Jan 44) OB-3-D, 11 February 44, subject: "War Reserve Ammunition, Seacoast Artillery."

II GENERAL

The following comments refer to pages or paragraphs of the Supplement to Harbor Defense Project, Harbor Defenses of the Columbia. The references listed below, are except otherwise indicated, those listed in I above.

III COMMENTS

1. Title Page.

- a. In the interest of uniformity among the various harbor defenses, it is suggested that the short titles HDOCL-4H-45 and HDOCL-4F-45 be assigned to the annexes and appendices respectively.
- b. Register numbers should be assigned.
- c. Paragraph 3 should be revised to indicate that only the annexes are bound in the present volume and that the appendices are separately bound.
- d. It is desirable that a revision date be included near the bottom of the title page. This date would be that chosen for crystallization of the revisions pursuant to the comments herein.

2. Table of Contents. The separate binding and separate short title of the appendices should be noted.

3. Authorities.

- a. Clarification of paragraph 1 appears desirable. In view of the serial changes in the basis project which have not been incorporated in the document "Harbor Defense Projects for Harbor Defenses included in the Puget and - Columbia River Area, Parts I to IV" (Short Title OCA-F-PSOR) references should also be made in paragraph 1 to the following correspondence which modified the basis project.

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 By PA Date 5/7/72

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DGD Dir. 5200.10
RM By 128 Date 5/1/72

By authority of

Initials

30 April 1946.

SPOPS 660

SUBJECT: Supplement to the Harbor Defense Project, Harbor Defenses of the Columbia.

TO: Commanding General, Army Ground Forces.

1. Reference is made to letter, Headquarters, Harbor Defenses of the Columbia, 660.2 (WDC: 660.2 HDC ARTY), 12 June 1944, subject: "Supplements to Harbor Defense Projects" with 2 Indorsements.

2. The supplement to the Harbor Defense Project, Harbor Defenses of the Columbia, submitted as an inclosure to the correspondence cited in paragraph 1 above, has been reviewed pursuant to the provisions of paragraph 2 e, AR 100-20, and is approved as of 12 August 1946 subject to the modifications and corrections noted in Inclosure 1 herewith.

3. The superseded documents are:

a. Annexes to the Harbor Defense Project, Harbor Defenses of the Columbia, Short Title CCA-AN-CR.

b. Local Board Proceedings Modernization Program Harbor Defenses of the Columbia, 1942.

4. One copy of the subject supplement is returned herewith as it is no longer needed by this headquarters.

5. When revising the supplement in accordance with the comments listed in Inclosure No. 1 herewith, recognition should be given to the elimination from the Harbor Defense Project of the following items of equipment.

6. a. 3" Armament both antiaircraft and seacoast.

b. Radio Sets SCR-296, 268 and 582 (Radar sites, however, are not eliminated)

6. It is requested that distribution of the revised copies be made pursuant to the approved distribution list.

7. Upon distribution of the revised supplement, action will be taken by this headquarters to direct destruction of the document listed in paragraph 3 a above.

FOR THE COMMANDING GENERAL:

3 Incls.

Incl. 1-Comments (in trip)

Incl. 2-Copy Annexes, HD of the Columbia.

Incl. 3-Copy Appendices, HD of the Columbia

RICHARD DONOVAN
Major General, G.S.C.
Director of Services, ASF.

J. F. STURMAN, JR.,
Colonel, C.A.C.
Chief, Seacoast Defense Proj. Br.

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- (1) Letter, War Department, AGO, AG 660.2 (9-16-40) M-WFD-M, 26 September 1940, subject: "Modernization of Harbor Defense Projects, Continental United States."
- (2) Letter, War Department, AGO, AG 660.2 (4-12-43) OB-S-SFDDO-M, 17 April 1943, subject: "Defense of Harbors Against Motor Torpedo Boats."
- (3) 6th Indorsement, War Department, AGO, AG 660.3 (10-20-42) OB-S-E, 24 February 1943, on letter, War Department, AGO 660.3 (9-29-42) OB-S-E, 20 October 1942, subject: "Revision of Underwater Defense Projects."
- (4) Letter, War Department, AGO, AG 660.2 (10-23-40) M-OCGA, 1 November 1940, subject: "Revision of Antiaircraft Annex, Harbor Defense Projects."

b. Approval by this correspondence of the supplement as modified hereby should be noted in paragraph 3.

4. Annex A.

a. Paragraph 1.

- (1) As respects reference to the basic project, since the basic project together with actions changing it (paragraph 3 a above) will be cited under the heading "Authorities," it is suggested that reference to these actions be deleted from the subject paragraph and that a statement to the effect that the basic project together with modifying actions be cited in paragraph 1 under "Authorities" be substituted therefor.
- (2) The references cited in paragraphs 1 a (2) and 1 a (3) do not effect any changes in the basic project. The letter cited in paragraph 1 a (2) relates to fire control for 6-inch batteries, while the indorsement cited in subparagraph 1 a (3) approves the local board report which merely implements the basic project.
- (3) Accumulation in paragraph 1 of references to letters and documents merely implementing the basic project was not contemplated in the outline forwarded with reference A. Where appropriate, these references might be cited in the portions of the annexes to which they pertain. For example, the references involving salvage of obsolete armament might more usefully be cited following the tabulation in paragraph 3 c, Annex A. If retained in this paragraph, the references should be properly characterized to distinguish them from actions modifying the basic project.

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- (4) Certain of the cited implementing references are not appropriate to the purposes of the supplement. Upon approval, the supplement supersedes the annexes short title CCA-AN-CR and approved expenditure programs and becomes the current authority for the approved harbor defense installations whether existing or under construction. Consequently, the references in subparagraphs b and c (1) should be deleted.

b. Paragraph 4.

- (1) Pursuant to the outline inclosed with reference A, subparagraph a should contain a brief description of the tactical organization. A list of armament is not required here since this information is readily available in paragraph 5 a and Exhibits 1-A and 1-A-1.
- (2) Since the modernisation program is substantially complete with the exception of supply of the guns for Battery (Const.) No. 246 and temporary retention of Battery Murphy, it appears practicable to describe the interim tactical organization in terms of departure from the organization upon completion of the modernisation program.

c. Paragraph 5a.

- (1) The model of guns for Batteries (Const.) Nos. 245 and 247 should be changed to M1 since the T2 gun has been standardized as the 6-inch Gun, M1.
- (2) 6-inch Guns, M1 will be supplied for Battery (Const.) No. 246. However, it should be noted in the tabulation that supply of the gun tubes is deferred pending availability of appropriate manufacturing facilities.
- (3) Information available to this headquarters indicates that construction on Batteries (Const.) Nos. 245 and 247 has been completed and that Battery (Const.) No. 246 is complete except for the emplacement of the guns.
- (4) In view of the large difference between the firing table maximum range of the 90mm AMTB gun and its maximum effective range against motor torpedo boats, a footnote applicable to the maximum ranges for the 90mm AMTB guns should be added to indicate the 7500 yard maximum effective range published in Appendix I, FN 4-5.

d. Paragraph 5b.

- (1) A statement to the effect that the supply of the gun tubes for Battery (Const.) No. 246 is deferred pending availability of manufacturing facilities should be added to subparagraph (1) (c).

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- (2) A statement should be included in paragraph (2) (b) indicating whether the mobile 90mm guns for Battery (Tactical) No. 6 are located in the harbor defense or are in ordnance storage.
- (3) Reference in subparagraph (3) to the superseded buoyant mine project is neither necessary nor desirable. The buoyant project is obsolete and not pertinent to the present project.

e. Paragraph 5 c.

- (1) The heading of this paragraph should be changed to "Batteries Authorized for Exclusion from the Basie Project."
- (2) Battery Russell was eliminated from the harbor defense project and its salvage approved by 3d Indorsement, War Department, AGO, AG 400.93 (14 Nov 44) OB-S-SPOFS, 23 December 1944, on letter, Headquarters, Harbor Defenses of the Columbia 400.93, 14 November 1944, subject: "Salvage of Battery Russell, 10-Inch DC."
- (3) Battery Allen was eliminated from the harbor defense project and its salvage approved in 3d Indorsement, War Department, AGO, AG 400.708 (14 Apr 45) OB-S-SPOFS, 18 May 1945, on letter, Headquarters, Harbor Defenses of the Columbia, 400.93, 14 April 1945, subject: "Salvage of Battery Allen, 8-Inch D.C."
- (4) Where armament has been removed, it is desirable that that fact be noted in lieu of the caliber and model of gun and model of mount.
- (5) The statement as to partial salvage of Battery Nishler should be clarified. The references cited do not indicate the reasons for the partial salvage of that battery. The specific reasons should be briefly noted in this paragraph.

f. Paragraph 6. In view of the fact that ammunition allowances for 90mm and 37mm AMTB weapons are revised and published at frequent intervals in current War Department directives (letter, War Department, AGO, AG 471 (9 Jun 44) OB-S-DM, 10 June 1944, subject: "Day of Supply for Ammunition"), it appears advisable to omit detailed entries of the amounts of various types of ammunition for the particular weapons. A reference to the current authority governing these allowances and a statement regarding the ammunition storage for each battery with reference to its suitability and its compliance with the provisions of TM 9-1900 will meet the necessary requirements pertaining to AMTB weapons. It is desirable that the War Department directive cited above be referred to in lieu of subsequent extracts prepared by the Western Defense Command.

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g. Paragraph 7. The tabulation in subparagraph b may be omitted and space made to the tabulation in paragraph 5 a in order to avoid duplication of location.

h. Paragraph 8. This paragraph should be revised as necessary to reflect current status. In this connection, attention is invited to letter, War Department, AGO, AG 618.33 (20 Jan 45) OH-S-SPOPS, 17 February 1945, subject: "Plan for Long Range Camouflage Planting." (See paragraph 12 b (A) below).

i. Paragraph 9.

- (1) Data in this paragraph should be revised to reflect present status.
- (2) Where land is not owned in fee, it is desirable that the character of the interest be indicated.
- (3) All of the tracts held by lease, or by permit for project installations should be included in this tabulation although acquisition as set forth in Annex H has not been accomplished.
- (4) As respects Location No. 16, Camp Clatsop, 1st Indorsement, Headquarters, Ninth Corps Area, 323.7 - Clatsop, SPIIN, (AG-M), 25 April 1942, on letter, War Department, AGO, AG 323.7 Camp Clatsop (4-20-42) MH-M-SP, subject: "Designation of Camp Clatsop, Oregon as a sub-post of Fort Stevens, Oregon," indicates that authority for occupation of this tract is contained in a letter from the Acting Adjutant General, State of Oregon, 16 October 1941, stating that Camp Clatsop will be available for use any time it is required by the Army. Consequently, occupation of this tract appears to be by permit from the state of Oregon.

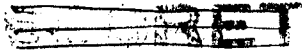
j. Exhibits for Annex A.(1) Exhibit 1-1.

- (a) In view of the new terminology used in T/O & E 4-260-1, dated 11 April 1944, and in FM 4-5, dated 20 June 1944, which eliminates the word "groupment" introduces the battalion into the tactical organization and changed the meaning of the word "group," this exhibit and other portions of the supplement should be revised accordingly. In order to decrease the number of changes, the symbol G will be considered applicable to the battalion. However, in the interests of clarity, it is desirable that this equivalency between this symbol and the battalion be noted in paragraph 4 of this annex.
- (b) The HECF should be shown separate from, but on the same level with, the harbor defense command post.

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- (c) The composition shown for the mine battalion is contrary to that contemplated in paragraph 119, FM 4-5, 20 June 1944, which states that a mine battalion is composed of personnel, materiel, structures and vessels required to plant, operate and maintain a mine field. Under this policy, a mine battery and a mine flotilla should not be grouped with AMTB batteries. A possible tactical organization in conformity with present doctrine might consist of a gun battalion as shown in this exhibit, an anti-motor torpedo boat battalion consisting of two (2) AMTB batteries, and the mine battery as a separate battery directly under the harbor defense headquarters.
- (2) Exhibit 1-A-1. In view of the degree of completion of the modernization program, this exhibit may be deleted and departures from the ultimate tactical organization shown on Exhibit 1-A by means of footnotes. Battery Russell should be eliminated. (See paragraph c (3) above.)
- (3) Exhibit 2-A.
- (a) Information available to this headquarters indicates that Battery (Const.) No. 245 has been completed.
- (b) Radio Sets, SCR-547 were distributed to harbor defenses as a special issue for training purposes only; they are not regarded as project or T/O & E equipment. Consequently, the SCR-547 at Location 5-A should be deleted from this exhibit and not referred to elsewhere in the supplement.
- (c) The abbreviation "MC" used in this exhibit and elsewhere throughout the supplement to designate the mine battery command post at Location No. 7 is the same as that commonly used to designate the mine command. (See Table C, Part 1, FM 4-155 which, although rescinded, represents common practice as respects symbols and abbreviations on fire control drawings.) In order to obviate the confusion arising from this identity of abbreviations, the mine battery command post at Location No. 7 should be designated as MACP throughout the supplement. This is the commonly used designation which is shown in FM 4-155.
- (4) Exhibit 3-A-1. Battery Russell should be deleted from this exhibit. (See paragraph c (3) above.)
- (5) Exhibit 4-A. The 7500 yard maximum effective range should be shown for each 90mm AMTB battery in lieu of the firing table maximum range. (See paragraph c (4) above.)

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- (6) Exhibit 5-A. The tracts now held or to be acquired at North Head should be clarified on this exhibit. Similarly the boundaries of the Fort Casby Reservation should be clearly shown.
- (7) Exhibit 8-A.
- (a) Since the Radio Set, SCR-296 for Battery (Const.) No. 245 has been installed, some rights must have been acquired in the tract pertaining to this installation. Upon this assumption, the tract should be shown on this exhibit and listed in paragraph 9.
- (b) For similar reasons it would appear that tracts B, C, D and E shown on Exhibit 2-H-2 should be included.
- (8) Exhibits 9-A and 9-A-1. From these exhibits, it is not clear whether an access right of way to Location No. 17, as well as cable easements, is involved.

5. ANNEX B.

- a. Paragraph 1. Subparagraphs g (1) and h should be revised to reflect continuance of the harbor entrance control post pursuant to letter, War Department, AGO, AG 660.2 (3 Jul 44) OB-I-E, 6 July 1944, subject: "Harbor Entrance Control Post Fort Stevens - Inactivation of."
- b. Paragraph 2. The coordinates given for BC-B₁ 5¹/₂, SCR-296, BC-B₂ 5¹/₂, SCR-296, are at variance with data submitted with letter, Headquarters, War Defenses of the Columbia, 2 August 1943, subject: "Precise Orientation for Plotting Boards, M3 for Battery (Const.) No. 245, No. 246 and No. 247," which were used as a basis for manufacture of plotting boards for these batteries. Required revision should be accomplished.

c. Paragraph 3.

- (1) Fire control switchboard rooms should be added to this tabulation since they are considered to be elements of the fire control system.
- (2) Under T/O & E 4-260-1, the allowance of azimuth instruments for a combined NDGP-NECP station is three (3) assuming that a harbor defense observation post is associated with the harbor defense command post. It is assumed that the stated requirement of two (2) azimuth instruments for the NDGP-NECP is the number capable of economical use in the particular case.
- (3) Under the present tables of organization and equipment, no depression position finder is authorized for the G-1 station

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in view of the height of instrument. However, if the Susey Depression Position Finder shown in the tabulation is on hand and installed it may be retained as a special project allowance for the particular instrument only. In this case, a note should be added indicating authorization for retention of the particular instrument only, and that no replacement is authorized.

- (4) It is assumed that the reference in subparagraph k (3) to a "mine casemate" was intended to be to a mine casemate.
- (5) The panels ED-17 listed in subparagraph k have been superseded by panels ED-65 or ED-66. The obsolete equipment should be replaced by the modern types.

d. Paragraph A.

- (1) The number of pair between post switchboards and to commercial switchboards should be given.
- (2) Information should be included as to the administrative telephone facilities available in the Fort Columbia area.

e. Paragraph 2. Description of teletype and telegraph facilities should be revised, where necessary, to reflect present status.

f. Paragraph 6.

- (1) Letter, War Department, AGO, AG 311.23 (21 Jun 43) OB-SPSCL-M, 25 June 1943, subject: "Frequency Assignment - Coast Artillery Harbor Defense Communications," which assigned frequencies for the harbor defense radio net, should be cited in this paragraph.
- (2) Radio Sets, SCR-177 are no longer authorized for issue to harbor defenses. The allowances under T/O & E 4-360-1 for the HDOP is three (3) Radio Sets, SCR-343 of which two (2) may be commercial, and two (2) Radio Sets, SCR-281, one (1) of which is for temporary installation in a target towing vessel.
- (3) The Radio Sets, SCR-808 and 828 are issued for training purposes only. In view of the present restricted basis of issue, they are not considered as meeting project requirements and should be omitted from the supplement except for inclusion in the list of signal items in Appendix G.
- (4) With reference to subparagraph b (6), the number of Radio Sets, SCR-536 should conform to the allowances shown in

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T/O & E 4-260-1 based upon the project requirement for mine flotilla vessels. (See paragraph 7 b below.) The case (1) SCR-536 for the mine planter is carried in T/O & E 4-10, as organizational equipment of the mine planter battery and should be indicated as such.

g. Paragraph 7.

- (1) The standard azimuth instrument and depression position finder for use in connection with base and data transmission systems are now the M2A1 models.
- (2) Under T/O & E 4-260-1 there is an allowance of one (1) Depression Position Finder, M2A1 for each gun battery EC station with a height of instrument of 74 feet or more. However, since each such gun battery EC station in the Harbor Defenses of the Columbia is combined with a base and station equipped with a depression position finder, the additional Depression Position Finder, M2A1 will not be required.
- (3) The Radio Set, SCR-547 shown for Battery (Tactical) No. 2 should be deleted. (See paragraph 4 j (3) (b) above.)
- (4) The Lewis depression position finder shown for the M³ station is not authorized under T/O & E 4-260-1. If installed it may be retained but no requirement for a replacement can be established and a note to this effect should be appended. (See paragraph c (3) above.)

h. Paragraph 8. The adequacy of datum points for adjustment in range depression position finders at B₁, B₂, and B₃ should be reviewed in the light of paragraphs 51 b (4) (b), 52 c (1) and Appendix III, FM 4-15, 5 November 1943. Additional datum points appear to be necessary, a project letter should be initiated.

i. Paragraph 10.

- (1) T/O & E 4-260-1, Changes No. 3, should be substituted for TBA #4 as authority for the Radio Sets, SCR-296.
- (2) The Radio Set, SCR-547 should be deleted. (See paragraph 4 j (3) (b) above.)
- (3) Authority for Radio Set, SCR-682 is letter, War Department, AGO, AG 413.44 (24 Jul 43) OB-S-SPRMS, 26 July 1943, subject: "Issue of Instructions on Replacement of SCR-582 Radar Set by SCR-682 Radar Set."

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j. Exhibits for Annex B.

- (1) Exhibit 2-B. This exhibit should be revised as necessary to reflect present status. Requirement for the leased circuit shown from "Fort Stevens" to the HDGP - HEGP is not understood.
- (2) Exhibit 3-B. This exhibit should be revised to:
 - (a) Show on the lines of the net the frequencies (symbols) assigned by the letter cited in paragraph f (1) above. Incorporation of the frequencies in the boxes representing the respective radio sets does not indicate the frequencies assigned for various purposes. It is also desirable that this exhibit carry a tabulation showing the frequencies in kilocycles corresponding to the symbol designations.
 - (b) Show air ground frequencies from the harbor defense command post and battalion command posts.
 - (c) The number of Radio Sets, SCR-336 should be revised in conformity with Changes No. 3, T/O & S 4-260-1. The Radio Sets, SCR-281 and SCR-336 on the mine planter should be omitted as these are organizational equipment of the mine planter battery under T/O & S 4-104.
 - (d) Show the SCR-281 installation in the target towing vessel as working with the HDGP on F₁.
 - (e) Delete the SCR-308-SCR-328 net. (See paragraph f (3) above.)
 - (f) Eliminate G-1 and G-2 from the mine net. As respects G-1 see paragraph 4 j (1) (e) above.
- (3) Exhibit 4-B. Discussion of this exhibit will be made the subject of separate correspondence in view of certain technical questions which have arisen in connection with the use of fire control communication cable pairs for both telephone and data transmission. The Chief Signal Officer will provide a revised circuit diagram for review at a later date. It is contemplated that the supplement will be approved less this exhibit which can be inserted following its subsequent revision and approval.
- (4) Exhibit 5-B.
 - (a) Description and length of the lateral cables from the splices at Location Nos. 2, 5B, 15 and 16 should be included.

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- (b) The projected 100 pair cable between Fort Stevens and Fort Canby should be shown completely to include the land and submarine sections. A convention, such as dot-dash lines, should be added to the legend for indicating the proposed cable in a manner not subject to confusion with the legend used to designate field wire.
- (5) Exhibit 6-B. The purpose of this exhibit is to show the geographical location of the major cables, and to serve as a key for interpretation of the cable schematic diagram. It is desirable that this exhibit be revised to show only major cables and terminals on one sheet. The War Department numbers assigned to submarine cables should be shown and the projected cable between Fort Stevens and Fort Canby should be included.
- (6) Exhibits 10-B, 12-B, 13-B and 14-B. These exhibits should be revised to show the maximum effective ranges of the depression position finders in lieu of presently shown limits. A rule for determination of range capabilities of depression position finders at various heights of instrument is contained in "Notes on Characteristics and Employment of Depression Position Finders," published 6 September 1940 by the Chief of Coast Artillery as follows:
- "Under favorable conditions for observation, the depression position finder can be expected to furnish ranges suitable for use in computation of firing data to maximum ranges equal to 800 yards for each ten feet height of instrument."
- (7) Exhibits 11-B and 15-B. These exhibits should be revised to substitute 7500 yard maximum effective range for the firing table maximum range. (See paragraph 4 c (4) above.)
- (8) Exhibit 16-B.
- (a) Tract limits should be shown for Location 2 Nos. 1 and 2.
- (b) The combined station at Location No. 2 should be shown by means of three (3) triangles arranged accordingly to the relative locations of the stations in the structure. It is not apparent from the present arrangement that $B_1 S_1$ and $B_2 S_2$ are on the lower level while $B_3 S_3$ is on the upper level. Also the location of the Radio Set, SCR-682 should be clarified. From this exhibit it is not apparent whether the SCR-682 is in the combined structure or in a separate structure. As respects symbols showing relative to location, attention is invited to Table C, Part 2, paragraphs f and g, FM 4-155. While this field manual has been

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rescinded, no manual has been published to take its place, and it represents common usage as respects abbreviations and symbols for seacoast artillery fire control charts.

- (9) Exhibit 18-B.
- (a) Radio Set, SCR-547 should be deleted. (See paragraph 4 j (3) b above.)
 - (b) The symbol for Battalion 2 should be revised to indicate that the station is a combined command post and observation post for the battalion.
- (10) Exhibit 21-B.
- (a) The symbol for the switchboard should be revised to indicate that it is a fire control switchboard only.
 - (b) The mine casemate should be so labeled.
- (11) Exhibit 22-B.
- (a) The G-1 station should be shown as a combined command post and observation post for the battalion.
 - (b) The symbols for the combined $B_1^2 S_1^2$ and $B_2^2 S_2^2$ station should be revised to show that these stations are on the same level. (See paragraph (8) (b) above.)
 - (c) The tract limits for the SCR-296 installation at Location No. 14 should be included.
- (12) Exhibit 24-B. The tide station listed in the tabulation in paragraph 3 as being at Location No. 11 should be shown on this exhibit.
- (13) Exhibit 25-B. The symbol for the combined $B_1^5 S_1^5$ and $B_7^5 S_7^5$ stations should be revised to indicate the actual relative location of the stations. (See paragraph (8) (b) above.)
- (14) Exhibit 26-B. The symbol for the combined station structure at Location No. 17 should be revised to show the relative location of the stations in the structure. (See paragraph (8) (b) above.)
- (15) Exhibit 28-B. This exhibit should be deleted. It does not concern project or T/O & E equipment. (See paragraph 4 j (3) (b) above.)

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~~SECRET~~6. Annex C.

a. Paragraph 1. Reference should be made to 3rd Indorsement, War Department, AGO, AG 660.2 (27 Jun 43) OR-S-E, 2 August 1943, on letter, Headquarters, Harbor Defenses of the Columbia 660.2, 27 June 1943, subject: "Requirements for Harbor Defense Searchlights," which established a project allowance of nine (9) fixed searchlights and thirteen (13) portable searchlights (including 3 AMTB searchlights) and to letter, Office, Chief of Engineers, SPEPR, 28 February 1944, subject: "Replacement of Fixed - Type Searchlights Installed in Harbor Defenses," which relates to replacement of fixed searchlights by portable searchlight units.

b. Paragraph 2. Any changes in assignments of searchlights which may be occasioned by change in the tactical organization as discussed in Paragraph 4 j (1) (c) above, should be reflected in this paragraph.

c. Paragraph 3. In the column "Place of Storage or Shelter" the place of contemplated peace-time storage should be given.

7. Annex D.

a. Paragraph 1. Reference to the original buoyant mine project should be deleted since that project is obsolete and has been superseded by the ground mine project.

b. Paragraph 2 b. The numbers of mine flotilla vessels of the several categories on hand at a particular time are regulated by current War Department directives issued from time to time. No over-all project allowance of vessels of the mine flotilla has been established, and the authorizations applicable to the superseded buoyant mine projects are in many cases obsolete. However, for planning purposes, establishment of a firm estimate of project requirements is necessary. Consequently, the following project requirements for vessels of the mine flotilla are established as being the number required to plant the groups of mines comprising the approved project within a reasonable time and to maintain the planted project under the conditions existing in this harbor defense.

<u>Vessel</u>	<u>Number Required</u>
Mine Planter	1
D. B. Boat	2
Mine Yawl	3

The above numbers of mine flotilla vessels should be shown as the project requirement for the harbor defenses.

c. Paragraph 3.

- (1) The existing shore facilities as set forth in this paragraph have been approved by previous War Department actions. However, additional facilities or modification of existing facilities may be required following War Department consideration of proposals resulting from

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letter, War Department, AGO, AG 471.68 (4 Mar 44) OB-S-E, 11 March 1944, subject: "Submarine Mine Explosives and Operations," which forwarded a report of the Joint Army and Navy Ammunition Board made to the Secretary of War, dated 14 February 1944. These proposals should not however, be entered in the supplement at this time.

- (2) With respect to the failure of the mine leading room to meet quantity distance requirements as stated in subparagraph e, suitable modification and augmentation is under consideration as a result of the proposals arising out of the letter cited in (1) above.
- (3) In subparagraph f, reference should be made to 7th Intersement, Headquarters, Army Service Forces, SPOPS 678 (8 Oct 44), 10 October 1944, in letter, Headquarters, Harbor Defenses of The Columbia 663, 17 July 1944, subject: "Emergency Power - Mine Casemate," approved inclusion in the supplement of a power plant for furnishing emergency power for the mine casemate but deferred its accomplishment.

d. Exhibit 1-B. The Audio Reception System, M1 should be included this exhibit.

8. Annex B.

a. Reference to the Radio Set, SCR-547 should be deleted from this annex. (See paragraph 4 j (3) (b) above.)

b. Paragraph 3.

- (1) References in subparagraph b to sound locators should be deleted since these are no longer provided for antiaircraft artillery.
- (2) The six (6) 40mm AA guns and the six (6) .50 caliber machine guns shown in subparagraph g as assigned for a close-in AA defense of strategic harbor defense installations should be deleted. Similarly, the number of each such guns shown in subparagraph e should be reduced to six (6). In the letter cited paragraph 3 a (4) above, twelve (12) 37mm AA guns and twelve (12) .50 caliber machine guns were authorized for the Harbor Defenses of the Columbia. This authorization was based upon the three (3) 12-inch mortar batteries and three (3) 6-inch D.C. batteries then in the harbor defenses and constituted the allowance pending completion of the modernization program. However, in view of the progress which has now been made toward completion of the modernization program, it is considered that the allowance of 40mm guns and .50 caliber machine guns for antiaircraft defense should be based upon the batteries to be retained. The allowance stated in letter referred to above is not to be

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considered additional to that authorized by Changes No. 3, T/O & E 4-280-1 for the retained batteries. Requirements for antiaircraft defense in addition to those provided by automatic weapons supplied for close-in defense of seacoast batteries, should be considered in estimating the requirements for reinforcing antiaircraft artillery.

c. Paragraph 4. In view of the periodic revision of ammunition allowances for automatic weapons, citation of the current authority governing allowances and inclusion of a statement regarding ammunition storage with reference to its suitability and compliance with the provisions of TM 9-1500 will suffice. (See paragraph 4 f above.) Information as to 90mm and 37mm guns which are shown in paragraph 6, Annex A need not be duplicated here.

d. Exhibits 1-E to 4-E inclusive. The 40mm guns and .50 caliber machine guns shown on Exhibit 1-E should be reduced to six (6) each, and corresponding reductions should be made on Exhibits 2-E through 4-E inclusive.

9. Annex F.a. Paragraph 2.

- (1) Subsequent to the original preparation of reference A (the directive covering preparation of supplements), the Secretary of War in letter, War Department, AGO, AG 470.72 (20 Jul 45) OB-S-SPDDO-M, 25 July 1945, subject: "Spare Canisters for Collective Protectors Installed in Fixed Seacoast Fortifications," prescribed that the allotment of spare canisters should be based upon the number of installed canisters. Since the number of canisters installed in protective collectors varies, it is necessary that data be included as to the number of installed canisters for each collective protector installation.
- (2) In accordance with the letter cited in paragraph (1) above, the requirements for reserve canisters should be revised to place them on a basis of two (2) reserve canisters per installed canister. Also, a note should be added to indicate that one half of the reserve canisters are carried in local storage and one half are stored by the Chief of Chemical Warfare Service, earmarked for the harbor defense.

10. Annex G.

a. In view of the recent publication of tables of organization and equipment for fixed harbor defense organization and installations, and the substantial changes from the previous bases of allowance which are effected thereby, it is considered desirable that this appendix be rewritten to accord with the new tables of organization and equipment which, insofar as concerns harbor defense artillery, replace Tables of Basic Allowance No. 4 and changes thereto.

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b. Pursuant to paragraph 5 b of "General Notes on Preparation" included with reference A, items of submarine mine equipment should not be included in Annex G, and reference to Table of Allowances 4-4 should be deleted in paragraph 1.

c. Reference in paragraph 1 a to the Local Board Report should be deleted inasmuch as that document will be superseded upon approval of the element.

d. Exhibit 1-G.

- (1) In conformity with Changes No. 3, T/O & E 4-260-1, the following changes should be made.
 - (a) Designation of tactical commands should be changed to conform with current nomenclature; for example, substitution of battalion for group.
 - (b) The following elements should be added:
 1. Harbor Defense Searchlight Battery.
 2. Mine Yawls.
- (2) In lieu of the previous fort allowance, T/O & E 4-260-1 has set up an allowance to battalion and group command posts which are also fort command posts. Forts Canby and Stevens would be included in this allowance. It is considered that these two (2) allowances, in addition to the similar allowance for the harbor defense, will furnish sufficient equipment to meet the harbor defense needs.
- (3) It is considered that not more than one (1) searchlight command post is warranted for the Harbor Defenses of the Columbia. The searchlight command functions of the battalion command posts when searchlights are assigned to them will presumably be conducted as an activity of the battalion command post. Searchlight command posts are considered as meaning only those separate installations which are established primarily for searchlight direction and control.
- (4) Any changes in the tactical organization resulting from the discussion in paragraph 4 j (1) (e) above should be reflected in this exhibit.
- (5) Mine loading rooms, cable tank house, T.N.T. magazines, mine store houses, boat house, mine wharf and boat dock should be deleted since this exhibit was not contemplated to cover submarine items. (See paragraph b above.)

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SECRETe. Exhibit 3-G.

- (1) Since the types of azimuth instruments and depression position finders for batteries with data computers are different from those provided for batteries without data computers it is desirable that the tabulations for these two types of batteries be separated.
- (2) As respects Batteries (Tactical) Nos. 1 and 3, a footnote applicable to the BC stations should be added to indicate that although the Depression Position Finder M2A1 is authorized in view of the height of instrument, none is to be provided because of the combination of BC stations with base end stations.
- (3) The number of spotting stations for Battery (Tactical) Nos. 2 and 6 should be changed from 1 to 0. Spotting facilities for 80mm AMTB batteries are included in the battery allowance.
- (4) It should be indicated by a footnote that the power plants for Battery (Tactical) Nos. 2, 4, and 6 and the magazines for Battery (Tactical) No. 4 are not considered in computing of signal requirements.

f. Exhibits 3-G-1 to 3-G-3 inclusive.

- (1) These exhibits should be rewritten to reflect all changes herein mentioned and to include only the articles shown in the appendix in Changes No. 3, T/O & E 4-260-1, or included in project allowances. Organizational and individual equipment should not be included. The quantity entries that are desired are those that are needed for the complete project, whether or not these quantities are on hand. Limited standard items on hand which are considered to be adequate substitutes for the standard items (such as Finder Depression Position Lewis M1907, Finder Coincidence Range or Telescope Observation M1908) should be covered in footnotes. Shortages of authorized equipment should be entered in the appendix portion of the supplement in the proper cost estimate and priority guide for the type of equipment concerned and the element of the defense in which the shortage exists.
- (2) The cable items given in Exhibit 3-G-1 should be deleted since they are not considered items of equipment for the purposes contemplated in this exhibit.
- (3) The notes to these exhibits which pertain to allowances incorporated in T/O & E 4-260-1 should be deleted.
- (4) The item Projector and Support, Signal Ground, M4 should be deleted since this is an item of post, camp and

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station equipment and consequently does not comprise T/O & E or project equipment.

- (5) Exhibit 3-G-2 (a) should be deleted. (See paragraph b above).

6. Exhibit 3-G-4. This exhibit may be omitted inasmuch as Chemical Warfare Service items are not included in Changes No. 3, T/O & E 4-280-1 and information regarding the numbers of collective protectors and canisters is fully available in Annex F.

h. An exhibit should be added to the 3-G series showing required quantities of the quartermaster items listed in Changes No. 3, T/O & E 4-280-1.

11. Appendices.

a. A title page should be included.

b. Appendix I.

- (1) Items 1-E, Priorities 1-6 inclusive.
- (a) The camouflage sets should be revised in conformance with the allowances stated with Changes No. 3, T/O & E 4-280-1.
- (b) The items for passive protection - engineer construction and for camouflage sets should be deleted since these items are no longer authorized for inclusion in the harbor defense supplement. Only the features noted in paragraph (4) below are approved for inclusion at the present time.
- (2) Item 1-E, Priority 7. This item should be deleted since it relates to items which are organizational equipment under T/O & E 4-280-1.
- (3) The power plant authorized for inclusion in the supplement by 7th Indorsement, Headquarters, Army Service Forces, SPOPS 675 (5 Oct 44), 10 October 1944, on letter, Headquarters, Harbor Defenses of the Columbia, 663, 17 July 1944, subject: "Emergency Power - Mine Casemate," should be included.
- (4) An item should be included to cover the permanent planting features of the camouflage plan at an estimated cost of \$50,000 as presented in 2d Indorsement, Office of District Engineer, Portland, Oregon, PADPG/DFO 600.96, 16 December 1944, on letter, Office, Chief of Engineers, GE 618.33 (Columbia River) SPEMT Ref CM 109269, 7 November 1944.

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subject: "Plans for Long Range Camouflage Planting." A notation should be included to the effect that the Secretary of War, in letter, War Department, AGO, AG 818.33 (20 Jan 45) OS-S-SPOFS, 17 February 1945, subject: "Plans for Long Range Camouflage Planting" directed that accomplishment be deferred for the period of the present emergency.

c. Appendix II.

- (1) Priorities 1-6 and Priority 7, Items 1-3 to 3-3 inclusive. Records in the office, Chief Signal Officer indicate that signal equipment included in the approved harbor defense project has been furnished.
- (2) Priority 7, Items 4-3 to 6-3 inclusive. The data and estimates contained in these items should be revised in conformity with the following cost estimates made by the Chief Signal Officers:

MATERIAL

3,600' of 100 pr. Lead Covered Cable WC 409 estimated @ \$.31 per foot.....	\$ 1,116.00
20,000' of 100 pr. Single Tape Armored Cable WC 368 estimated @ \$.60 per foot.....	12,000.00
28,000' of 100 pr. Double Wire Armored Subm. Cable WC 339 estimated at \$2.00 per foot.....	56,000.00
4 ea. W.E. Co. 1240 Lead Coil Cases each containing 50 W.E. Co. 632 Leading Coils estimated @ \$100.00 each.....	400.00
Contingencies and local purchase.....	<u>7,000.00</u>
TOTAL MATERIAL.....	\$ 76,516.00

LABOR

Pulling in 3,600' of 100 pr. WC 409 Cable estimated @ \$.25 per foot.....	900.00
Trenching 20,000' of 100 pr. WC 368 Cable estimated @ \$.75 per foot.....	15,000.00
Laying 28,000' of 100 pr. WC 339 Subm. Cable estimated @ \$.35 per foot.....	9,800.00
Splicing 52 splices, estimated @ \$50.00 per splice...	2,600.00
Contingencies.....	<u>2,830.00</u>
TOTAL LABOR.....	\$1,180.00
TOTAL ESTIMATED COST OF PROJECT....	\$107,646.00

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ANNEX A

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d. Appendix III.

- (1) Any equipment furnished since preparation of this appendix should be deleted.
- (2) The quadrants and bare sights should be deleted inasmuch as these are SHL equipment accessory to the weapons to which they pertain.
- (3) The item in Watch wrist, 7-jewel should be deleted since this is an item of organizational equipment.
- (4) Under item 1-0, Priority 3, Guns 6-Inch T2 should be changed to read Guns 6-Inch M1 and the item Clinometer, M1912 A1 should be deleted since this is an item issued to the harbor defense and battalion command posts under T/O & E 4-260-1.
- (5) Item 1-0, Priority 7 should be deleted. (See paragraph 8 b (2) above.)
- (6) Item 1-0, Priority 7 should be revised to include only one (1) instrument in order to conform to the allowances stated in Changes No. 3, T/O & E 4-260-1.

e. Appendix IV. The items contained in this appendix should be deleted such as funds pertaining thereto have been allocated.

f. Appendix V.

- (1) Item 1-R, Priority 4 should be deleted in accordance with the remarks contained in paragraph 11 a above. If acquisition of this tract is considered necessary, a complete showing should be made in separate correspondence.
- (2) Item 1-R, Priority 2 should be revised in accordance with the remarks contained in paragraph 11 b above. Necessity for acquisition of a tract larger than that contemplated in the indentments cited in that paragraph should be presented in separate correspondence.

g. Appendix VI. This appendix should be revised in accordance with the items contained in b through e above.

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REGISTER NO. 3

SUPPLEMENT
TO
HARBOR DEFENSE PROJECT
HARBOR DEFENSES OF THE COLUMBIA

1. This is a REGISTERED DOCUMENT (Par. 2t, AR 380-5, dated 15 March 1944) and consists of 8 Annexes (and 6 Appendices.)
2. The SHORT TITLES of this document are: (Par. 2v, AR 380-5).
 - a. Annexes - Col-AN-WDC-44.
 - b. Appendices - Col-AP-WDC-44.
3. This document will be accounted for on 30 June and 31 December of each year to the Commanding Officer, Harbor Defenses of the Columbia. (Par. 37, AR 380-5).
4. Prompt report will be submitted when this document is transferred from one person to another. (Par. 38, AR 380-5).
5. This document supersedes the document with Short Title as follows: CCA-AN-CR.

I

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DECLASSIFIED UNCLASSIFIED ORDER SEC ARMY BY TAG PER 7063 <i>BY NARS 5/7/70</i>

~~SECRET~~TABLE OF CONTENTSANNEX A - ARMAMENT

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 Exhibit 1-A-1, Tactical Organization, Interim Project.
 Exhibit 2-A, Location Map, Tactical Installations.
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 245, 246, 247.
 Exhibit 3-A-1, Directrix and Field of Fire - Interim Project
 Armament.
 Exhibit 4-A, Directrix and Field of Fire - For AMTB Defense.
 Exhibit 5-A, Government Owned or Leased Land - Canby, Tioga,
 and Cable Easement.
 Exhibit 5-A-1, Description of Cable Easement between Fort
 Canby and Location 1.
 Exhibit 6-A, Government Owned or Leased Land - Sand Island.
 Exhibit 7-A, Government Owned or Leased Land - Fort Columbia
 and Location 6.
 Exhibit 7-A-1, Description of Ft Columbia Military Reservation.
 Exhibit 8-A, Government Owned or Leased Land - Fort Stevens,
 Hammond Military Reservation, and Camp Clatsop.
 Exhibit 8-A-1, Description of Ft Stevens Military Reservation.
 Exhibit 8-A-2, Description of Hammond Military Reservation and
 Camp Clatsop.
 Exhibit 9-A, Government Owned or Leased Land - Location 17.
 Exhibit 9-A-1, Description and Cable Easement between Camp
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 Exhibit 10-A, Government Owned or Leased Land - Location 18.
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ANNEX B - FIRE CONTROL

- Exhibit 1-B, Local Plane Coordinate Grid Map.
 Exhibit 2-B, Telephone, Teletype, and Telegraph Circuits.
 Exhibit 3-B, Radio Communication Nets.
 Exhibit 4-B, Circuit Diagram - Harbor Defenses of the Columbia.
 Exhibit 5-B, Schematic Layout of Main Cables - Harbor Defenses
 of the Columbia.
 Exhibit 6-B, Main Cable Routings - Fort Stevens.
 Exhibit 7-B, Main Cable Routings - Fort Canby.
 Exhibit 8-B, Main Cable Routings - Fort Columbia.
 Exhibit 9-B, Main Cable Routings - Sand Island Military Res.
 Exhibit 10-B, Battery No. 1 (Const. 247), Fields of Fire and
 Area covered by Fire Control System.
 Exhibit 10-B-1, Masked Water Areas, Battery No. 1 (Const. 247).
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 Exhibit 15-B, Battery No. 6 (AMTB No. 2), Field of Fire and
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 Exhibit 16-B, Terrain Map, Location 1, 1-A, and 2.
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 Exhibit 24-B, Terrain Map, Location 10 and 11.
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 Exhibit 26-B, Terrain Map, Location 17 and 18.

III

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ANNEX A

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- Exhibit 1-C, Fields of Illumination.

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- Exhibit 1-D, Underwater Defense Project, Ground Mines, M4.
 Exhibit 2-D, Mine Shore Facilities, Fort Stevens.
 Exhibit 3-D, Mine Shore Facilities, Fort Columbia.
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ANNEX E - ANTI-AIRCRAFT ARTILLERY (Harbor Defense)

- Exhibit 1-E, Location & Fields of Fire AA Automatic Weapons, Harbor Defenses of the Columbia.
 Exhibit 2-E, Location & Fields of Fire AA Automatic Weapons, Fort Stevens.
 Exhibit 3-E, Location & Fields of Fire AA Automatic Weapons, Fort Canby.
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ANNEX F - GAS DEFENSE

(No Exhibits)

ANNEX G - EQUIPMENT

- Exhibit 1-G, Consolidated Summary of Harbor Defense Elements.
 Exhibit 2-G, Consolidated Summary of Battery Installations.
 Exhibit 3-G-1, Consolidated Summary of Major Signal Items of Equipment.
 Exhibit 3-G-2, Consolidated Summary of Major Ordnance Items of Equipment.
 Exhibit 3-G-2(a), Consolidated Summary of Major Ordnance Items of Equipment - Submarine Mine Materiel.
 Exhibit 3-G-3, Consolidated Summary of Major Engineer Items of Equipment.
 Exhibit 3-G-4, Consolidated Summary of Major Chemical Warfare Items of Equipment.

ANNEX H - REAL ESTATE REQUIREMENTS

- Exhibit 1-H-1, Land to be Acquired, Location 1, Tioga.
 Exhibit 1-H-2, Land to be Acquired, Location 2, North Head.
 Exhibit 1-H-3, Land to be Acquired, Location 14, Tract "F".
 Exhibit 1-H-4, Land to be Acquired, Location 14, Tract "A".
 Exhibit 1-H-5, Easement to be Acquired, between Location 14 and Location 15, Tracts "B" and "D".
 Exhibit 1-H-6, Easement to be Acquired, between Location 14 and Location 15, Tract "C".
 Exhibit 1-H-7, Land to be Acquired, Location 15, Tract "E".
 Exhibit 2-H-1, Map of Land to be Acquired, Locations 1 and 2.
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VI	Consolidation

S E C R E T

S E C R E TSUPPLEMENT
TO
HARBOR DEFENSE PROJECT
HARBOR DEFENSES OF THE COLUMBIA
1944AUTHORITIES

1. This document is a supplement to the document entitled "Harbor Defense Projects for Harbor Defenses included in the Puget Sound-Columbia River Area, Parts I to IV", (Short title CCA-P-PSCR). The latter document was approved by the Secretary of War in 1st Indorsement, file AG 660.2 (10-22-32) (Misc) E, dated 23 February 1933. The first revision was approved by the Secretary of War in 2nd Indorsement, file AG 660.2 (11-9-37) (Misc) E, dated 26 February 1938.

2. The original annexes to the Harbor Defense Project, Harbor Defenses of the Columbia were prepared by a Board of Officers appointed by secret letter, Hq., Ninth Corps Area, file -/96, 13 April 1933, addressed to the Commanding Officer, Harbor Defenses of Puget Sound. The original annexes were revised in accordance with the directive contained in the 10th Indorsement, TAG, file AG 660.2 (2-21-35) (Misc) E, 28 August 1935, to basic letter, Hq., Harbor Defenses of Puget Sound, file 660.2 secret-96, 21 February 1935, subject: "Annexes to Project for Harbor Defenses of the Columbia," and approved by the Secretary of War in the 19th Indorsement, AG 660.2 (2-21-35) (Misc) E, dated 30 June 1937. Short Title of the approved Annexes was CCA-AN-CR.

3. The revision of annexes to the Harbor Defense Project, Harbor Defenses of the Columbia, was directed by 3rd Indorsement, War Department, AGO file AG 660.2 (1-9-43) OB-S-E, 13 February 1943, to letter, Headquarters, Harbor Defenses of Puget Sound, file 660/381, 9 January 1943, subject: "Harbor Defense Supplements (or Annexes)."

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ANNEX A - ARMAMENT

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EXHIBITS

- 1-A, Tactical Organization, Modernization Project.
- 1-A-1, Tactical Organization, Interim Project.
- 2-A, Location Map, Tactical Installations.
- 3-A, Directrix and Field of Fire - Battery (Const.)
245, 246, 247.
- 3-A-1, Directrix and Field of Fire - Interim Project
Armament.
- 4-A, Directrix and Field of Fire - For AMTB Defense.
- 5-A, Government Owned or Leased Land - Canby, Tioga,
and Cable Easement.
- 5-A-1, Description of Cable Easement between Fort Canby
and Location 1.
- 6-A, Government Owned or Leased Land - Sand Island.
- 7-A, Government Owned or Leased Land - Fort Columbia
and Location 6.
- 7-A-1, Description of Fort Columbia Military Reservation.
- 8-A, Government Owned or Leased Land - Fort Stevens,
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- 8-A-1, Description of Fort Stevens Military Reservation.
- 8-A-2, Description of Hammond Military Reservation and
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- 9-A, Government Owned or Leased Land - Location 17.
- 9-A-1, Description of Cable Easement between Camp Clatsop
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S E C R E T

ANNEX A

SECTION I - GENERAL

1. REFERENCES.

a. Basic Modernization Project Directives.

- (1) Secret letter, TAG, 26 September 1940, file AG 660.2 (9-16-40) M-WPD-M, subject: "Modernization of Harbor Defense Projects, Continental United States."
- (2) Secret letter, TAG, 24 October 1940, file AG 660.2 (10-18-40) M-OCCA-M, subject: "Modernization of Harbor Defense Projects, Continental United States."
- (3) Ninth Indorsement, Office, Chief of Engineers, file C of E, 665 (Columbia River) MR 4537 SPEOF, 22 May 1942, to letter, Headquarters, Ninth Coast Artillery District, file 660.2, subject: "Modernization Program of Harbor Defense Project, Continental United States." (The Local Board Report, Modernization Program, was approved by this reference).

b. Annexes to Harbor Defense Project (Short title CCA-AN-CR, 30 June 1937). These annexes were superseded by the 1942 and 1943 expenditure programs.

- (1) Eighteenth Indorsement, Office, Chief of Engineers, no file number (17th Indorsement, file AG 660.2 (10-15-41) MSC, 20 February 1942) 25 April 1942, to letter, Headquarters, Harbor Defenses of the Columbia, file 660.2, 15 October 1941, subject: "Expenditure Program, SCD Funds, FY 1942, Harbor Defenses of the Columbia." (This reference approved the FY 1942 Expenditure Program for the Harbor Defenses of the Columbia).
- (2) Third Indorsement, Office, Chief of Engineers, file C of E, 662B (Columbia River) CM-16183 SPEOF, 10 September 1942, to letter, Headquarters, Harbor Defenses of the Columbia, file 334, 11 June 1942, subject: "Expenditure Program, Seacoast Defense Funds, FY 1943." (This reference approved the FY 1943 Expenditure Program for the Harbor Defenses of the Columbia).

c. Underwater Defense Project.

- (1) The Underwater Defense Project was incorporated in the Annexes to Harbor Defense Project, Harbor Defenses of the Columbia (Short title CCA-AN-CR 30 June 1937) and approved by the Secretary of War in the 19th Indorsement, file AG 660.2 (2-21-35) (Misc) E, dated 30 June 1937.
- (2) Sixth Indorsement, War Department, AGO, file AG 660.3 (10-20-42) OB-S-E, 24 February 1943, to letter, War Department, AGO, file AG 660.3 (9-29-42) OB-S-E, subject: "Revision of Underwater Defense Projects" dated 20 October 1942. (This reference approved the conversion of the field from buoyant to ground type mines).

S E C R E T

S E C R E T

ANNEX A
SECTION I - GENERAL
(Continued)

- (3) Fifth Indorsement, Headquarters, Army Service Forces, file SPRMS 660.3 (15 June 43), 31 August 1943, to letter, Headquarters, Harbor Defenses of the Columbia, file 660.3, 15 June 1943, subject: "Revision of Underwater Defense Plan, Harbor Defenses of the Columbia, Fort Stevens, Oregon." (This letter approves the details of the revised underwater defense project).

d. Salvage of Obsolete Armament.

- (1) Third Indorsement, War Department, AGO, file AG 470 (9-18-42) OB-S-SPDDO, 28 October 1942, to letter, Headquarters, Harbor Defenses of the Columbia, file 400.93, 18 September 1942, subject: "Salvage of Obsolete Armament," with inclosure thereto.
- (2) Secret letter, Chief of Ordnance, 30 October 1942, file SPOFX Property and Salvage Section, OO 400.702/11, subject: "Disposal of Obsolete Armament, Harbor Defenses of the Columbia."
- (3) Third Indorsement, War Department, AGO, 4 October 1943, file AG 400.7 (5 Sep 43) OB-S-E, to letter, Headquarters, Harbor Defenses of the Columbia, 5 September 1943, file 662, subject: "Salvage of Battery Pratt, 6" DC, Fort Stevens, Oregon." (This reference approved the salvage of Battery Pratt).

e. Anti-Motor Torpedo Boat Project.

- (1) Secret letter, TAG, 17 April 1943, file AG 660.2 (4-12-43) OB-S-SPDDO-M, subject: "Defense of Harbors Against Motor Torpedo Boats," with six (6) inclosures thereto.

f. Harbor Defense Searchlights.

- (1) Third Indorsement, War Department, AGO, file AG 660.2 (27 Jun 43) OB-S-E, 2 August 1943 to letter, Headquarters, Harbor Defenses of the Columbia, file 660.2, 27 June 1943, subject: "Requirements for Harbor Defense Searchlights."

2. PURPOSE.

a. The purpose of this supplement is to amplify 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 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.

a. To deny access to and use of the Columbia River by enemy ships.

S E C R E T

ANNEX A
SECTION I - GENERAL
(Continued)

b. To support the defense against landing attack within range of the harbor defense weapons. ✓

4. TACTICAL ORGANIZATION.

a. The following tabulations indicate the armament and facilities which are manned in the interim project and upon completion of the modernization project:

(1) Interim Project: (See Exhibit 1-A-1).

- (a) Army controlled submarine ground mine project with USAMP Randolph and mine flotilla.
- (b) Battery Russell 2 - 10" DC guns
- (c) Battery Murphy 2 - 6" DC guns
- (d) Battery Allen 2 - 6" DC guns
- (e) AMTB Battery No. 1 2 - 90mm guns, M1 on M1A1 mount
 2 - 90mm guns, M1 on fixed carriage, M3
 2 - 37mm guns, M1A2 on M3 mount
- (f) AMTB Battery No. 2 2 - 90mm guns, M1 on fixed carriage, M3
 2 - 37mm guns, M1A2 on M3 mount
 2 - 90MM GUNS M1, ON M1A1 MOUNT
- (g) Twenty-two (22) 60" Seacoast Searchlights

(2) Completed Modernization Project: (See Exhibit 1-A).

- (a) Army controlled submarine mine project (ground type) with USAMP Randolph and mine flotilla.
- (b) Battery (Const) #245 2-6" guns, BC long range.
- (c) Battery (Const) #246 2-6" guns, BC long range.
- (d) Battery (Const) #247 2-6" guns, BC long range.
- (e) AMTB Battery No. 1 2-90mm guns, M1 on fixed carriage M3.
 2-90mm guns, M1 on mobile carriage M1A1.
 2-37mm guns, M1A2 on mobile carriage M3.
- (f) AMTB Battery No. 2 2-90mm guns, M1 on fixed carriage M3.
 2-90mm guns, M1 on mobile carriage M1A1.
 2-37mm guns, M1A2 on mobile carriage M3.
- (g) Twenty-two (22) 60" Seacoast Searchlights

S E C R E T

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ANNEX A

SECTION I - GENERAL

(Continued)

b. Navy and Air Corps Coordination.

- (1) Close cooperation with the Navy and the Fourth Air Force is established. Liaison with the Navy is established in the Harbor Entrance Control Post, which structure also contains the Harbor Defense Command Post. In the Harbor Entrance Control Post the Navy maintains direct communication by wire and radio to the Naval Station, Astoria, Oregon, the Naval Air Station, Tongue Point (Astoria), the U. S. Coast Guard and Captain of the Port, Astoria, Oregon, and the Harbor Entrance Control Post Signal Station on Cape Disappointment. Liaison with the Fourth Air Force is maintained by the Army in the Harbor Entrance Control Post by direct tactical wire communication through the tactical switch at Portland, Oregon (Seaport) and Seattle, Washington (Seatac).

c. Priority of Installations.

- (1) The armament approved for the Harbor Defenses of the Columbia after completion of the modernization project is listed below in order of tactical importance to allow other echelons to determine priorities to be assigned to the various project items.

<u>Order of Importance</u>	<u>Tactical No.</u>	<u>Name</u>
1	1	Battery (Const) #247
2	5	Battery (Const) #245
3	3	Battery (Const) #246
4	4	Mine Project
5	2	AMTB Battery No. 1
6	6	AMTB Battery No. 2
7		Harbor Defense - General

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SECTION II
SEACOAST ARTILLERY

5. ARMAMENT.

a. Tabulation of seacoast armament authorized under the approved modernization project.

Tactical Number	BATTERY Name or (Const No.)	No. of Guns	GUN Cal. Model	Model of Mount	Range for Maximum Elevation (Yards)	Location by Fort	Existing or Projected	Status of Armament	Status of Battery	Directrix and field of fire	Remarks
1	No. 2L7	2	6" T2	BC, M4	27,150 /	Canby	Under construction	Emplaced	To be Retained	Exhibit 3-A	
2	AMTB #1	4	90mm M1	2/fixed M3 2/mobile M1A1	27,560 ** 19,560 **	Canby	Existing	Emplaced	To be Retained	Exhibit 4-A	
		2	37mm M1A2	2/mobile M3	4,070 /	Canby	Existing	Emplaced	To be Retained		
3	No. 2L6	2	6" Un-known	BC, M4	27,150	Columbia	Under construction	Not Emplaced	To be Retained	Exhibit 3-A	
4	Mines	12 groups of 13 ground mines each. 4 groups each.				Project Location	Existing	Planted in Project Location	To be Retained	Exhibit 13-E	
5	No. 2L5	2	6" T-2	BC, M4	27,150 /	Stevens	Under construction	Not Emplaced	To be Retained	Exhibit 3-A	
6	AMTB #2	4	90mm M1	2/fixed M3 2/mobile M1A1	27,560 ** 19,560 **	Stevens	Existing *Projected	Emplaced M1A1 not Emplaced	To be Retained	Exhibit 4-A	*See Appendix Item 2-0 Priority 6
		2	37mm M1A2	2/mobile M3	4,070 /	Stevens	Existing	Emplaced	To be Retained		

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ANNEX A

SECTION II - SEACONST ARTILLERY
(Continued)

- b. (1) Batteries (Const) #245, #246, and #247. (Tactical Nos. 5, 3, and 1).
- (a) Authorized under provisions of Paragraph 1a, Section I, Annex A.
 - (b) Emplacements of #245, #246 and #247 are completed.
 - (c) Tubes, shields, and carriages of #247 and #245 are installed, shield and carriage only of #246 are installed.
 - (d) Ordnance materiel to complete the battery is as indicated in Appendix III.
 - (e) Signal materiel to complete the battery is as indicated in Appendix II.
- (2) AMTB Batteries No. 1 and No. 2 (Tactical Nos. 2 and 6).
- (a) Authorized under provisions of Paragraph 1e, Section I, Annex A.
 - (b) Construction and installation of the fixed 90mm guns M1 on carriage M3 are complete for each battery. Installation of the 90mm mobile guns M1, mounted on carriage M1A1, is complete at AMTB No. 1 (Tactical No. 2). ~~Mobile 90mm guns M1 on carriage M1A1 of AMTB No. 2 (Tactical No. 6) were returned to Britain, as they were not required under Category of Defense "A," JMW.~~
 - (c) Ordnance materiel to complete the battery is as indicated in Appendix III.
 - (d) Signal materiel to complete the battery is as indicated in Appendix II.
- (3) Mine Project.
- (a) Original project authorized for buoyant type mines by reference 1c (1), Section I, Annex A.
 - (b) Conversion to ground type mine field approved by War Department and Navy Department by Paragraph 1c (2), Section I, Annex A. Conversion completed 1 May 1944.

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3d Inf. Div

By J. W. NARS, Date 5/21/94

OB-5-SP000

28 Oct 42 on ltr Hq H8 Col., 400.92, 18 Sep 42

subj: "Salvage of Obsolete Ammunition"

approves final report on recommendations for salvage of ammunition with modifications recommended in ltr Hq WDC, 660.240 Col (AD) 23 Sep 42. Report states that HSCP-HECP has been

constructed in Mishler emplacement. Gun wells have been covered with timbers & entire emplacement covered with earth & soil. Gun wells & upper galleries covered with asphaltic cement to prevent water seepage into HSCP-HECP the walls & ceiling of which have been covered with fiber board with wiring & cables behind it. Removal of ammunition would require removal of camouflage & would cause seepage through cracks & fissures caused in emplacement by moving the ammunition. likely to damage wall-board beyond repair & cause communication failures.

ASF action (Memo for C of O Hq ASF SP000 470 Ammunition) 28 Oct 42; subject: Disposal of Obsolete Ammunition AD Columbia directs that no action will be taken to dispose of Battery Mishler other than lead counterweights, ammunition trucks & miscellaneous iron.

Action by C of O is ltr 00400.702/11(S) SP0FX Prop & Salv. Sect, 30 Oct 42 subj same as ASF action.

Battery allen salvaged. 3d Inf

WDAGO, AG 400.703(14 Apr 45) OB-5-SP0PS, 15 May 45, on ltr Hq AD of Columbia, 400.92, 14 Apr 45.

Battery Murphy - 2nd Inf, 3d Div, 28 Oct 42, 400.92, 14 Apr 45.

c. EXISTING BATTERIES AND EMBLACEMENTS.

(1) Status and Disposition

Battery	No. of Guns	Gun Caliber & Model	Model of Mount	Location by Fort	Current Status of Empl. & Mag.	WD Auth for Abandonment	Disposition of Armament and Status of Disposition
Russell	2	10" M1900	1901 DC	Stevens	Interim Project	Sec I, Par ld	Retained pending completion Btry (Const) #245, #246, and #247.
Clark	0			Stevens	Ord & Sig Storage	Sec I, Par ld	Sold and salvaged. (12-INCH MORTAR)
Pratt	0		1898 DC	Stevens	Ord Storage	Sec I, Par ld	Tubes returned to Watervliet Arsenal Nov 1943. Remainder of battery authorized for salvage. (6-INCH)
Allen	2	6" M1905	1903 DC	Canby	Interim Project	Sec I, Par ld	Retained pending completion Btry (Const) #247.
Mishler	2	10" M1886M2	1896 DC	Stevens	Emplacement utilized for HECF - HDCP	Sec I, Par ld	Counterweights and removable parts salvaged. Tubes and carriage retained for reasons contained in reference in Sec I, Par ld.
Lewis	0			Stevens	Ord Storage		Battery removed after World War I. (10-INCH D.C.)
Walker	0			Stevens	Ord Storage		Battery removed after World War I. (10-INCH D.C.)
Smur	0			Stevens	Mine Storage		Battery removed after World War I. (3-INCH D.C.)
Guenther	0			Canby	Ord Storage	Sec I, Par ld	Battery sold and salvaged. (12-INCH MORTAR)
O'Flyng	0			Canby	Troop Shelter		Battery removed after World War I. (6-INCH D.C.)
Murphy	2	6" M1897M1	1898 DC	Columbia	Interim Project	Sec I, Par ld	Retained pending completion Btry (Const) #246.
Ord	0			Columbia	P/R for Btry Murphy and Troop Shelter	Sec I, Par ld	Battery removed after World War I. (8-INCH D.C.)

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6. AMMUNITION - Seacoast Artillery.

a. Reference and authority.

- (1) Letter, War Department, AGO, 11 February 1944, file AG 471 (28 Jan 44) OB-S-D, subject: "War Reserve Ammunition, Seacoast Artillery, and inclosures thereto."
- (2) Letter, Hq., WDC, 29 Oct 1943, file 471 (Ord) to the Commanding General, NWS, WDC, subject: "War Reserve Ammunition, Seacoast Artillery, and inclosure thereto."
- (3) Letter, Hq., WDC, 13 July 1944, file 471 (Ord) to the Commanding General, NWS, WDC, subject: "Supply of 90mm Ammunition."

b. Tabulation of total quantities of ammunition authorized in reference 6a.

	Btry (Const) No. 245		Btry (Const) No. 246		Btry (Const) No. 247		AMTB No. 1		AMTB No. 2	
	(Tactical No. 5)		(Tactical No. 3)		(Tactical No. 1)		(Tactical No. 2)		(Tactical No. 6)	
	Projectiles	Charges	Projectiles	Charges	Projectiles	Charges	2-Fixed 90mm	2-Mobile 90mm	2-Fixed 90mm	2-Mobile 90mm
Battery Storage										
AP-105 lb.	300	300	300	300	300	300	224 480	224 480	224 480	224 480
HE- 90 lb.	200	200	200	200	200	200	832 900	832 900	832 900	832 900
Central Reserve							30	30	30	30
AP-105 lb.	100	100	100	100	100	100				
HE- 90 lb.	100	100	100	100	100	100				
Total War Reserve										
AP-105 lb.	400	400	400	400	400	400				
HE- 90 lb.	300	300	300	300	300	300				
Battery Storage and Total Allowance										
90mm AMTB - - - -	Shell, M-71, fuze T.M. M43 (per gun-Fixed 112 rds, Mobile 240 rds)		240		240		224 480		224 480	
	Shell, M-71, fuze P.D. M48 (per gun-Fixed 168 rds, Mobile 468 rds)		168		168		832 900		832 900	
	Shot, AP, M-77, fuze, None (per gun-Fixed 15 rds, Mobile 15 rds)		15		15		30		30	
37mm AMTB - - - -	Shell, HE, M-54 (per gun 432 rds)		432		432		1000 864		1000 864	
	Shot, AP, M-74 (per gun 48 rds)		48		48		128 96		128 96	

c. The total (war reserve) ammunition indicated in paragraph 6b above can be stored in battery storage, if required.

d. Ammunition storage regulations (TM 9-1900) are complied with in all cases.

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SECTION III - MISCELLANEOUS7. DEFENSE AGAINST MOTOR TORPEDO BOATS.

a. Authorization of Anti-Motor Torpedo Boat batteries and allocation of armament was authorized as indicated in Paragraph 1e, Section I, Annex A.

b. Tabulation of Anti-Motor Torpedo Boat armament:

	<u>AMTB No. 1</u>	<u>AMTB No. 2</u>
(1) Battery Tactical Number	2	6
(2) Battery Name	AMTB No. 1	AMTB No. 2
(3) Number & Caliber of Guns	4 - 90mm M1 2 - 37mm M1A2	4 - 90mm M1 2 - 37mm M1A2
(4) Number & Type of Mounts	2 - Fixed M3 2 - Mobile M1A1 2 - Mobile M3	2 - Fixed M3 2 - Mobile M1A1 2 - Mobile M3
(5) Status of Battery	Emplaced	Emplaced except for 2 - 90mm M1, carriage M1A1. (See Par 5b (2) (*) preceding).
(6) Site (Exhibit 18 B & 23B)	Location 5A	Location 9A
(7) Arcs of fire and ranges	Exhibit 4-A	Exhibit 4-A

8. PROTECTIVE CONCEALMENT.

a. The program of protective concealment for the Harbor Defenses of the Columbia was authorized by:

- (1) Letter, C of E, 27 May 1942, file C of E, 618.33 58 SPEOF, subject: "Camouflage of Fixed Seacoast Defense Installations," to the District Engineer, Portland, Oregon, through the Division Engineer, North Pacific Division.
- (2) Letter, TAG, 5 March 1943, file AG 381 (2-25-43) OB-S-SPAAC-M, subject: "Passive Protective Measures."

b. The protective concealment project of tactical installations of the Harbor Defenses of the Columbia consists of flat top nets, artificial trees, dummy houses, transplanting of natural vegetation, and resodding as necessary. The gun wells are covered by a separate framework which can be tripped and cleared from the guns in a matter of seconds. All structural supports are rugged in design to withstand the severe wind storms and winter gales which are prevalent in this area. Nets are generally of fibreglass, garlands, and chicken feathers, and spray painted during the various seasonal changes to conform to the natural surroundings. Dummy batteries have been constructed and poorly camouflaged to lend deception to the over-all plan. Personnel shelters on barren sand spits or dunes have been constructed deep in the sand and mounded over to appear as dunes wherever possible. Shelters in wooded areas are dispersed under natural cover. The construction batteries are mounded over with sand and thickly planted with natural vegetation. All elements constructed as part of the modernization program,

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ANNEX A
SECTION III - MISCELLANEOUS
(Continued)

or in accordance with specific directives, have been fully camouflaged under the authority contained in letter, War Department, The Adjutant General's Office, file AG 381 (2-25-43) OB-S-SPAA-C-M, 5 March 1943, subject: "Passive Protection Measures" except as modified by a curtailed policy in regard to passive protection directed by letter, War Department, The Adjutant General's Office, file AG 381 (15 Nov 43) OB-S-SPAA-C-M, 17 November 1943, subject: "Passive Protection". Based on the latter directive, the Commanding General, Army Service Forces, by 6th Indorsement, file SPRMS 600.96 (2 Dec 43), 23 March 1944, to letter, Headquarters Western Defense Command, 2 December 1943, subject: "Passive Protection", authorized the preparation of plans only for the complete camouflage of Batteries No. 245, No. 246, and No. 247. No field work is to be initiated at this time but, the availability of the plan will permit future work, whether done by troops or necessitated by an emergency, to conform to an approved plan for the camouflage of the structures concerned.

c. Post installations, buildings and streets are "toned down" by use of camouflage paints and marked with disruptive patterns. The effect from the air is excellent and visibility of post areas is considerably reduced.

d. High maintenance costs are experienced due to storm damage caused by high wind velocities and a freak winter condition called a "silver thaw" which is rain freezing as it strikes the ground or nets. This ice condition at times gets several inches thick and places tremendous weights on all flat tops causing them to sag and collapse. All nets usually require spray painting about four times annually due to wide variations in seasonal color changes of natural vegetation.

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9. GOVERNMENT OWNED OR LEASED RESERVATIONS.

Name	Location No.	Acreage	Date of Procurement	Authority for Procurement	Purpose
Klipsan Beach	1-4	.25	14 August 1944	3rd Ind. WD AGO, file AG 660.2 (27 Jun 43) CB-S-E to ltr Hq HDC, 660.2 27 Jun 43, subj: "Requirements for Harbor Defense Searchlights".	2 Portable S/L Positions
Tioga	1	.46	Leased 4 Mar 1943	War Department approval of 1943 Expenditure Program	2 Portable S/L Positions 1 Single B/E Station Cable Right of Way
Cable Easement	Ft Canby to Loc 1	Not defined	Easement dated 15 Mar 1943	War Department approval of 1943 Expenditure Program	Cable Right of Way
North Head	2	21.8	28 August 1941	War Department approval of 1941 Expenditure Program	2 Fixed S/L Positions 1 Triple B/E Station 1 SCR 682 Radar
Ft Canby Military Reservation	3, 3A, 4, 5, 5A	1566.23 more or less	23 March 1875	General Orders No. 9, Headquarters, Department of the Columbia, 23 March 1875.	Military Post
Sand Island Military Reservation	5B	1700 more or less	21 October 1864	Ceded to US by act of Legislative Assembly of State of Ore	2 Single B/E Stations 3 Mine Cable Huts
Chinook	6	40	10 May 1941	War Department approval of 1941 Expenditure Program	1 Single B/E Station
Ft Columbia Military Reservation	Ft Columbia to Loc 6	.33	Easement filed 10 May 1941	War Department approval of 1941 Expenditure Program	Cable Right of Way
Ft Columbia Military Reservation	6A, 7, 8	729 more or less	1864 - 1869	643 acres deeded U.S. by Henry K. Stevens in 1864; 33 acres set apart for Military purposes by Executive Order dated 8 May 1899; 53 acres acquired by deed from Northern Pacific R.R. in 1899	Military Post
Hammond Military Reservation	8A	.23	3 August 1909	Legislative act of 27 May 1908 35 Stat. 393	

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By J.M.S. NARS, Date 5/21/94

242nd CA. Returned to custody of Ore. on 6/2/41 when
242nd CA moved to Stevens. Camp used in spring &
summer of 1941 & returned to state control 12 Aug 41.
In spring of 1942 was occupied by 25 troops by special permission
of Adjutant Gen. state of Ore.

To fix responsibility for its maintenance &
containing, the WDAGO, AG 323.7 Camp Clatsop (4-20-42)
MR-M-SP subj. "Designation of Camp Clatsop, Oregon, as
a sub-part of Fort Stevens, Oregon" designated it a
sub-part of Ft Stevens. This does not appear to be
suitable authority for its being held by the government.

Ltr to Acting AG. state of Ore, 16 Aug 41 stated Camp
Clatsop would be available for use any time
it is required by the army. (This ltr cited in
1st Ind by 9th CA, 323.7-clatsop, SPIKIH(AG-M), 25 Apr 42
on base ltr cited above.) This would appear to be
authority for occupation at present time. Note that 2 S/O
are only tactical installations at Camp Clatsop.

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9. GOVERNMENT OWNED OR LEASED RESERVATIONS. (Continued)

Name	Location No.	Acreage	Date of Procurement	Authority for Procurement	Purpose
Ft Stevens Military Reservation	9 9A 10 11, 12, 13, 14 (11) 15	2770 more or less	1852	Set apart for Military purposes by Executive Order dated 26 February 1852	Military Post
Camp Clatsop	16	735.8	Letter 3 June 1942 (4-20-42) MR-M-SP, The Adjutant General's Office, Washington, subject: "Designation of Camp Clatsop, Oregon, as a sub-post of Fort Stevens, Oregon", and indorsements thereto.	13th Ind., WD AGO, file 825.1 (4-11-42) MS-E 26 Aug 42 to letter Hq HDC, file 800, 14 Apr 42, subject: "Mooring Basin and Facilities, Fort Stevens, Oregon."	Mooring Basin
Cable Easement	Camp Clatsop to log 17 <i>dated 15 Pacific 1901</i>	Not defined	Easement 27 Aug 42 21 Oct 42 27 Jan 43	War Department approval of 1942 Expenditure Program	2 Portable S/L Positions Sub-post of Fort Stevens
Columbia Beach Military Reservation	17	1 39	1920 27 July 1942	General Leg. act, 17 Feb 1909 War Department approval of 1941 Expenditure Program	1 Triple B/E Station
Gearhart	18	.25	14 August 1944	3rd Ind, WD AGO, file AG 660.2 (27 Jun 43) OB-S-E to ltr Hq HDC, 660.2, 27 Jun 43, subj: "Requirements for Harbor Defense Searchlights."	1 Portable S/L Position

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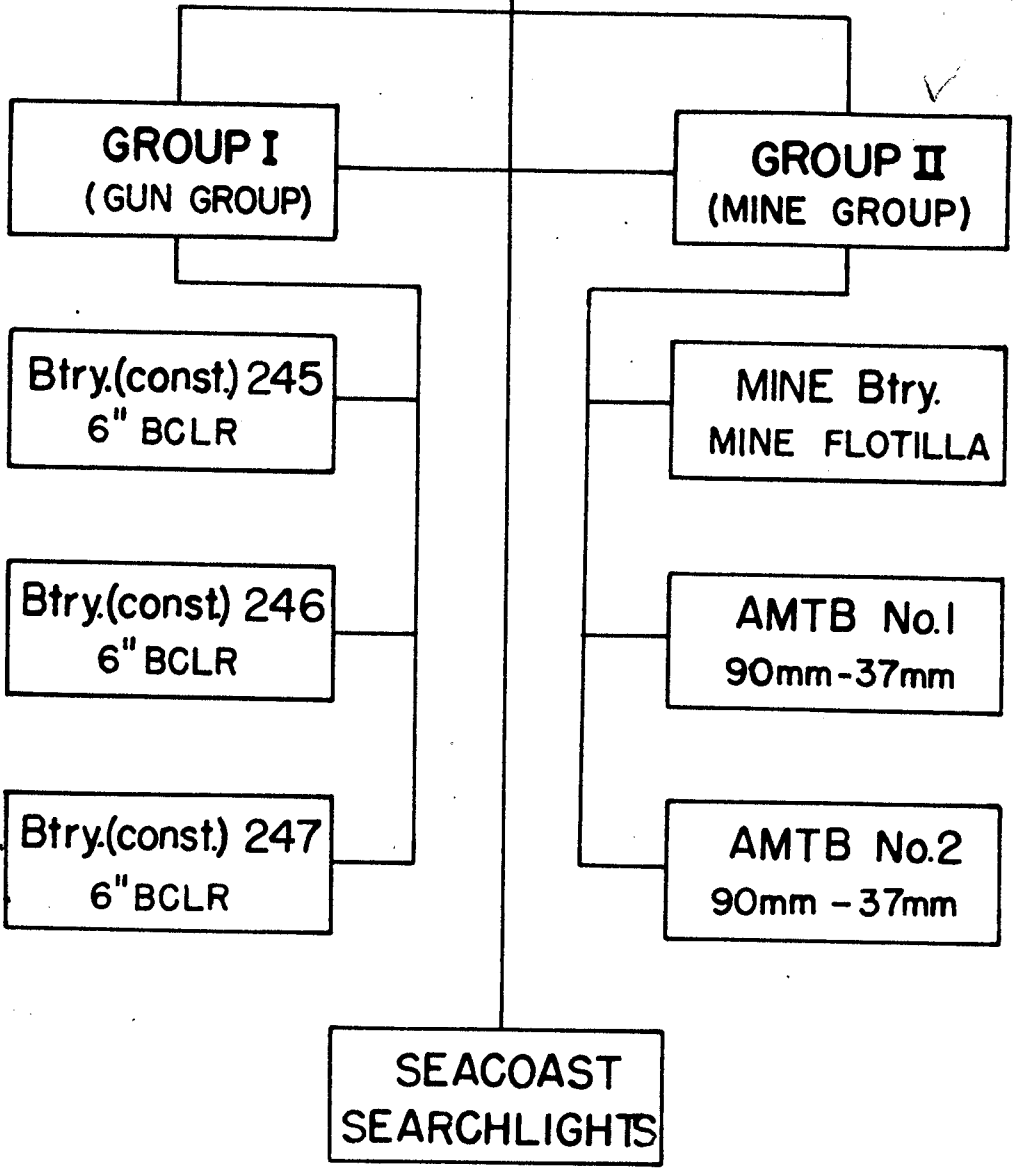
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10. LAND ACQUISITION.

a. Lands to be procured are described fully in Annex H.

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Separate
Sam. level

HDCP | HECF
ARMY | NAVY



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ORDER SEC ARMY BY TAG PER 7063

HARBOR DEFENSES OF THE COLUMBIA
MODERNIZATION PROJECT
Tactical Organization

REVISED
DATE

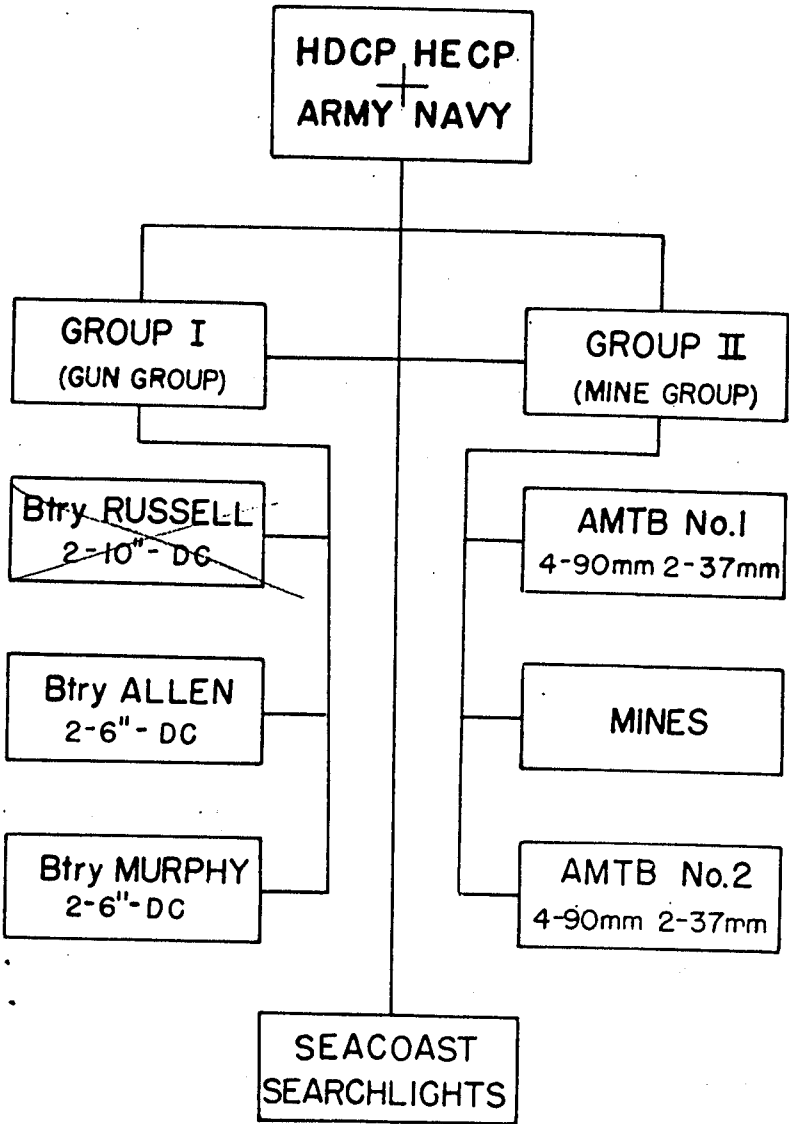
PREPARED BY:
OFFICE OF THE ART. ENG.
FORT STEVENS, OREGON

DATE: 8 MAY 44
EX 1-A ANNEX A

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By *J. L. S.* NARS, Date *5/21/94*

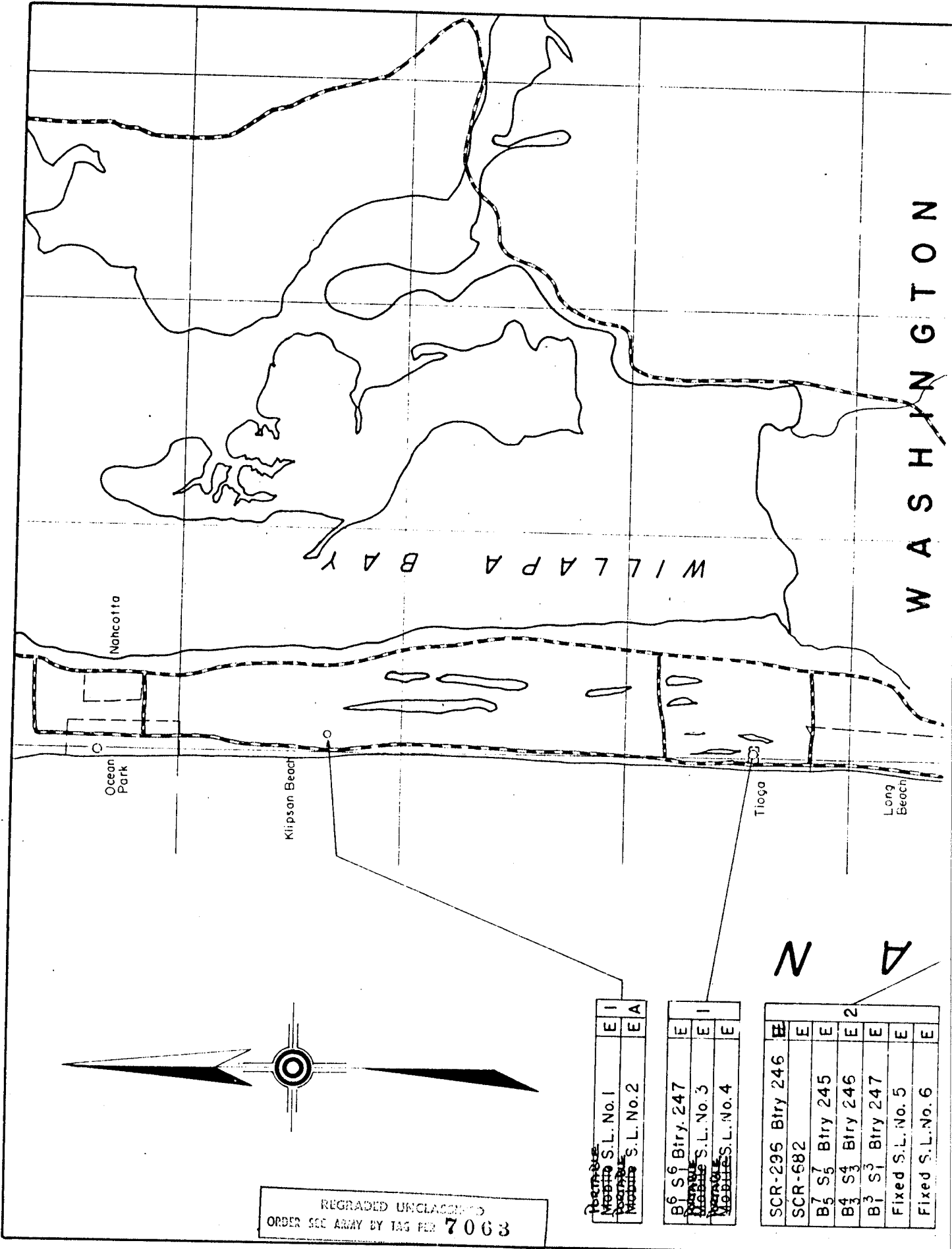


*May be deleted & superseded
by a ultimate statement
Feb 14 of 44.*

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ORDER SEC ARMY BY TAG PER 7063

HARBOR DEFENSES OF THE COLUMBIA INTERIM PROJECT Tactical Organization		REVISED DATE
PREPARED BY OFFICE OF THE ART ENG FORT STEVENS, OREG.	DATE 5 MAY 44	
		EX. 1-A-1 ANNEX A

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W I L L A P A B A Y

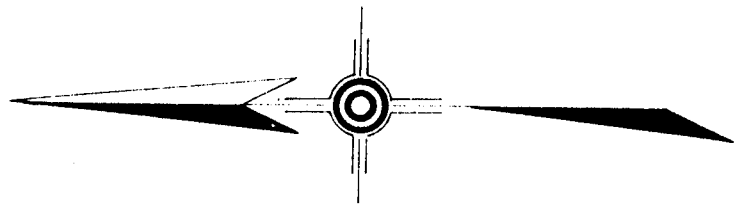
Nahcotta

Ocean Park

Klipsan Beach

Tioga

Long Beach



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 ORDER SEC ARMY BY TAG PER 7063

Position	E 1
Map No. S.L.No.1	E 1
Position	E A
Map No. S.L.No.2	E A

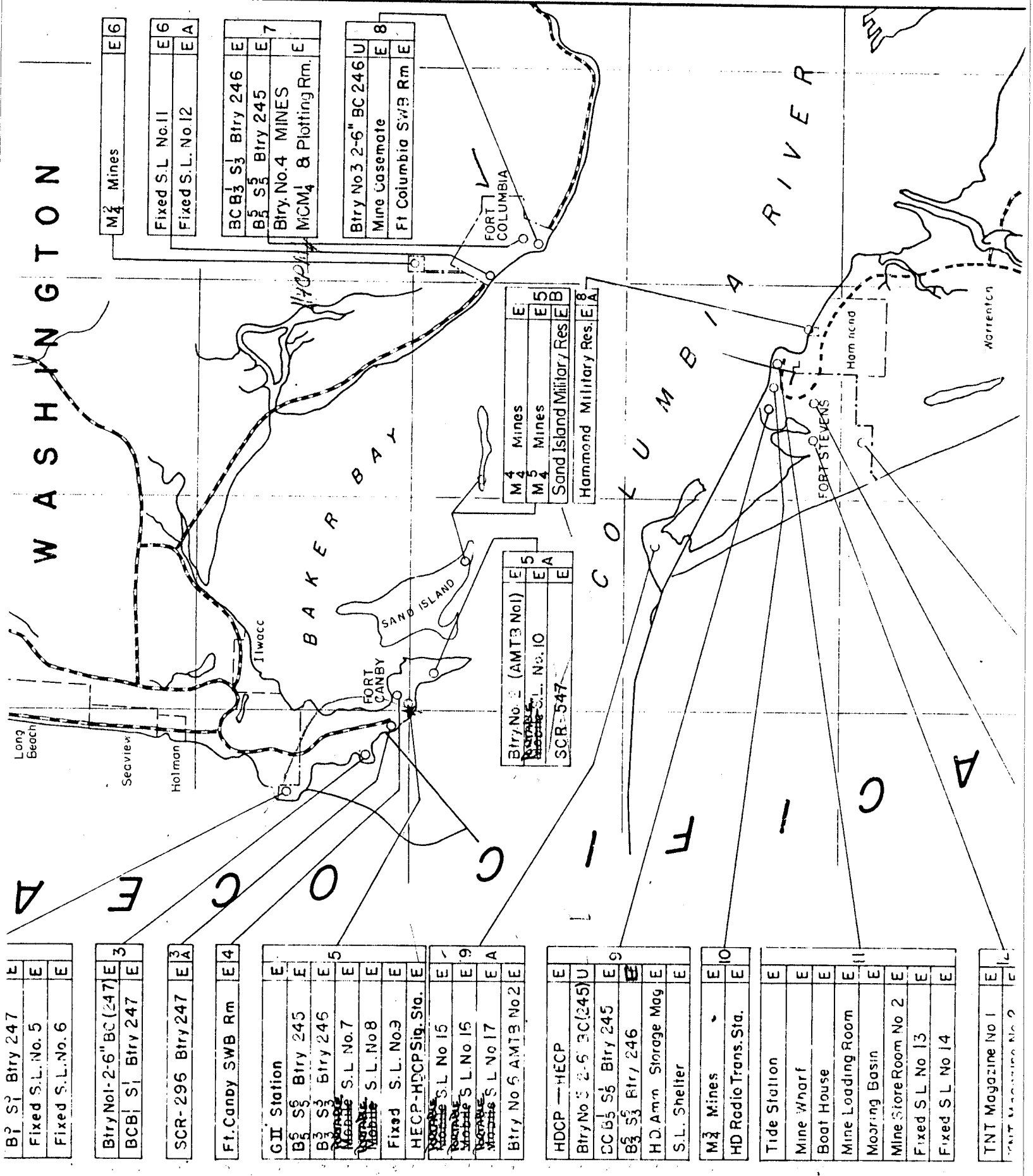
B 6 S 6 Btry. 247	E
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Position	E
Map No. S.L.No.4	E

SCR-295 Btry 246	E
SCR-682	E
B 5 S 7 Btry 245	E
B 4 S 4 Btry 246	E 2
B 1 S 3 Btry 247	E
Fixed S.L.No.5	E
Fixed S.L.No.6	E

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M ² Mines	E6
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Fixed S.L. No.11	E6
Fixed S.L. No.12	EA

BCB ³ S ¹ Btry 246	E
B ⁵ S ³ Btry 245	E7
Btry. No.4 MINES	E
MCM ⁴ & Plotting Rm.	E

Btry No 3 2-6" BC 246 U	E
Mine Casemate	E
Ft Columbia SWB Rm	E

M ⁴ Mines	E
M ⁵ Mines	E5B
Sand Island Military Res	E
Hammond Military Res.	E8

Btry No. 2 (AMTB No1)	E5
Variable S.L. No. 10	EA
SCR-547	E

B ² S ¹ Btry 247	E
Fixed S.L. No. 5	E
Fixed S.L. No. 6	E

Btry No 1-2-6" BC (247)	E3
BCB ¹ S ¹ Btry 247	E

SCR-296 Btry 247	E3
	EA

Ft. Candy SWB Rm	E4
------------------	----

GII Station	E
B ⁶ S ⁶ Btry 245	E
B ³ S ³ Btry 246	E5
Variable S.L. No.7	E
Variable S.L. No.8	E
Fixed S.L. No.9	E
HECP-HQCP Sig. Sta.	E
Variable S.L. No.15	E
Variable S.L. No.15	E9
Variable S.L. No.17	EA
Btry No 5 AMTB No2	E

HDCP - HECP	E
Btry No 3 2-6" BC (245) U	
CC B ⁵ S ⁶ Btry 245	E9
B ⁶ S ³ Btry 246	E
H.D. Amn Storage Mag	E
S.L. Shelter	E

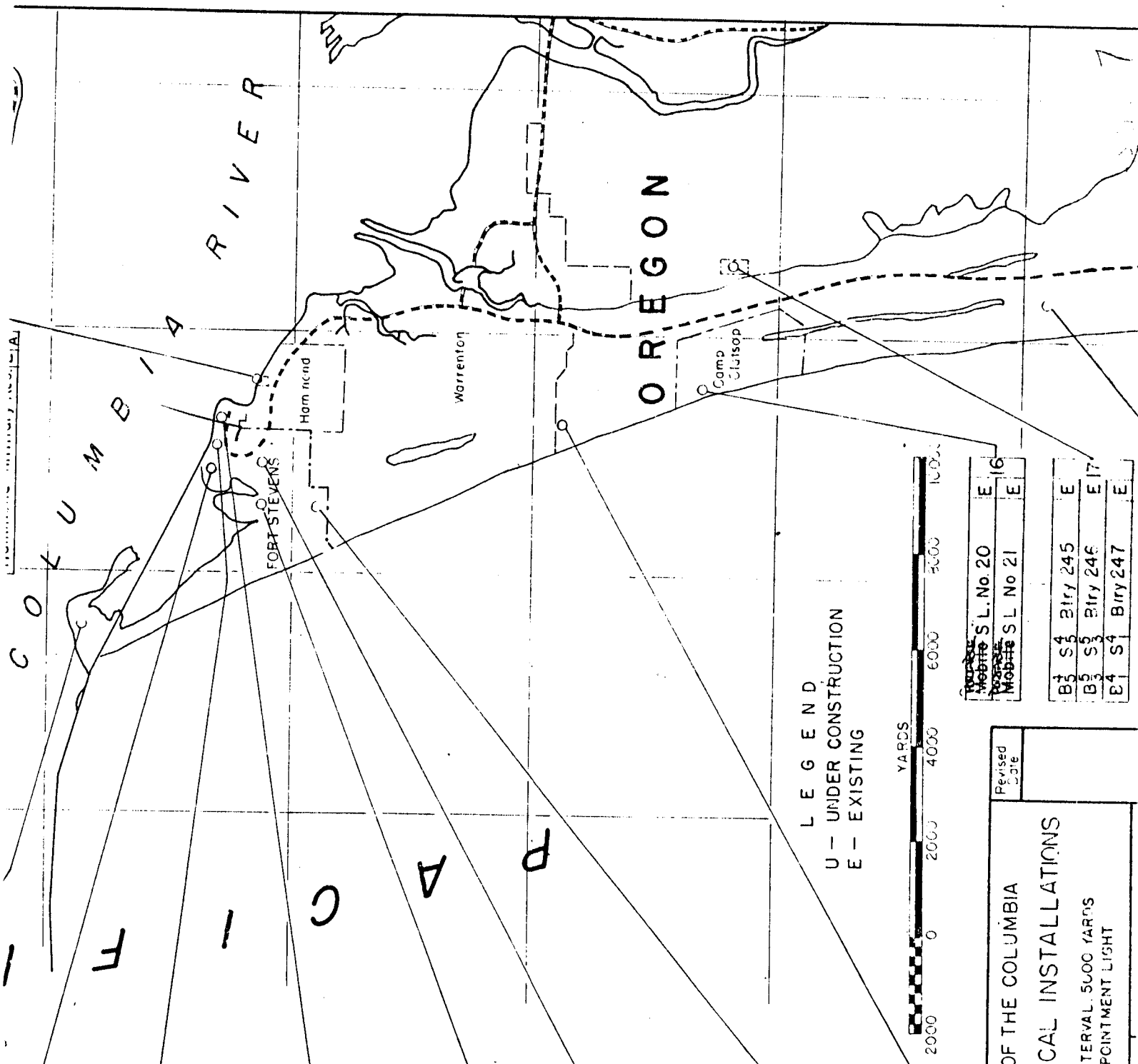
M ² Mines	E10
HD Radio Trans. Sta.	E

Tide Station	E
Mine Wharf	E
Boat House	E
Mine Loading Room	E11
Mooring Basin	E
Mine Store Room No 2	E
Fixed S.L. No. 13	E
Fixed S.L. No 14	E

TNT Magazine No 1	E
TNT Magazine No 2	E

SECRET

DECLASSIFIED



DC B5 S6 Btry 245	E 9
B5 S3 Btry 246	E 9
H.D. Amn. Storage Mag	E
S.L. Shelter	E

M3 Mines	E 10
HD Radio Trans. Sta.	E

Tide Station	E
Mine Wharf	E
Boat House	E
Mine Loading Room	E 11
Moorng Basin	E
Mine Store Room No 2	E
Fixed S.L. No 13	E
Fixed S.L. No 14	E

TNT Magazine No 1	E 12
TNT Magazine No. 2	E

Meteorological Station	E
Mine Store Room No 1	E 13
Cable Tank House	E
Fl Stevens SWB Rm	E

GI Station	E
B5 S3 Btry 245	E
B5 S3 Btry 246	E
B1 S1 Btry 247	E 14
Fixed S.L. No 18	E
Fixed S.L. No 19	E
SCR-296 Btry 245	E

E5 S4 Btry 245	E
B3 S3 Btry 246	E 15
B1 S1 Btry 247	E

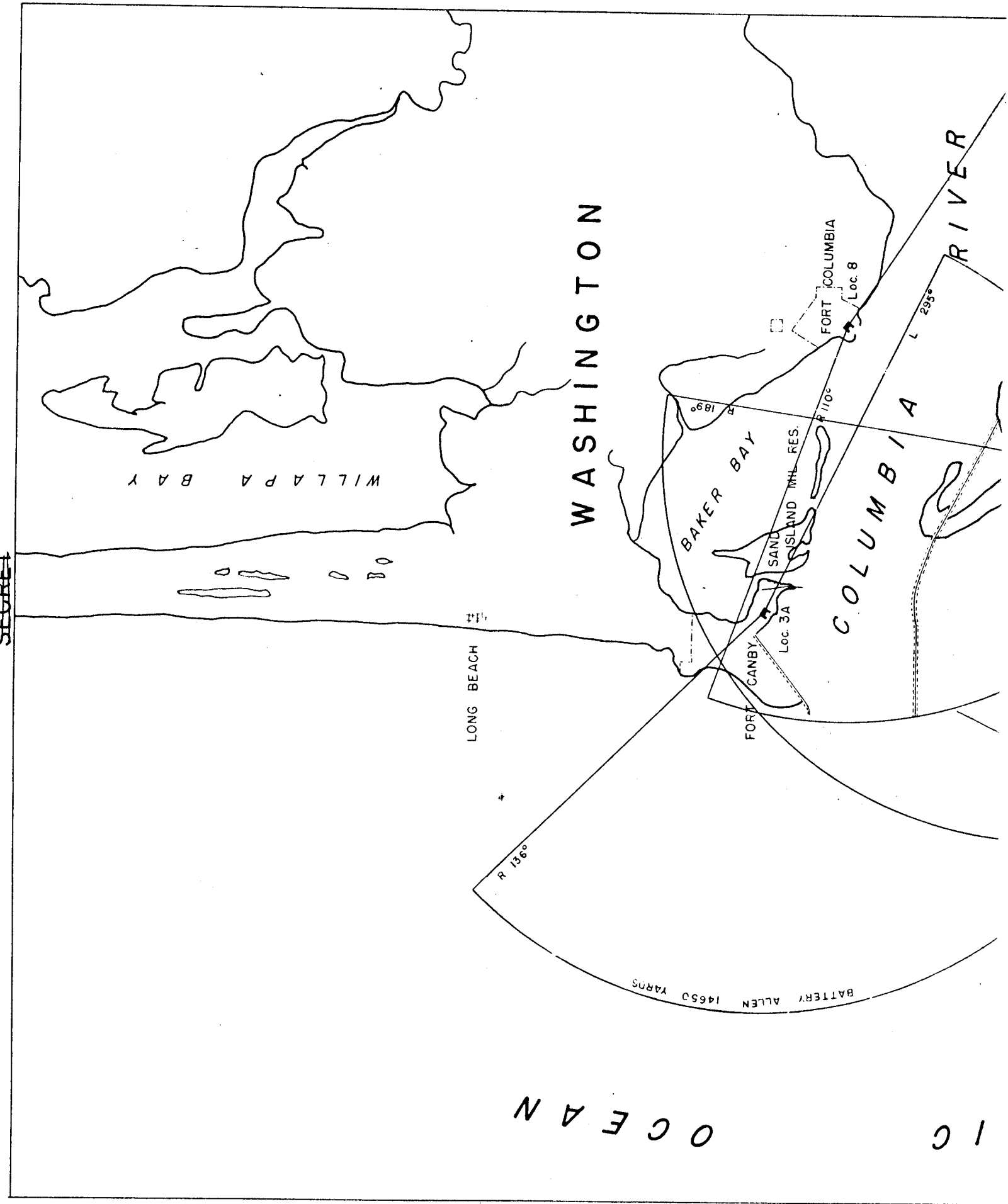
L E G E N D
 U - UNDER CONSTRUCTION
 E - EXISTING



Mobile S.L. No 20	E 16
Mobile S.L. No 21	E

B3 S4 Btry 245	E
B3 S3 Btry 246	E 17
E4 S4 Btry 247	E

HARBOR DEFENSES OF THE COLUMBIA
 LOCATION MAP-TACTICAL INSTALLATIONS
 LOCAL PLANE GRID, INTERVAL 5000 YARDS
 ORIGIN - CAPE DISAPPOINTMENT LIGHT



WILLAPA BAY

WASHINGTON

BAKER BAY

FORT CANBY

Loc 3A

SAND ISLAND MHL RES.

FORT COLUMBIA

Loc 8

COLUMBIA RIVER

LONG BEACH

R 136°

R 189°

R 110°

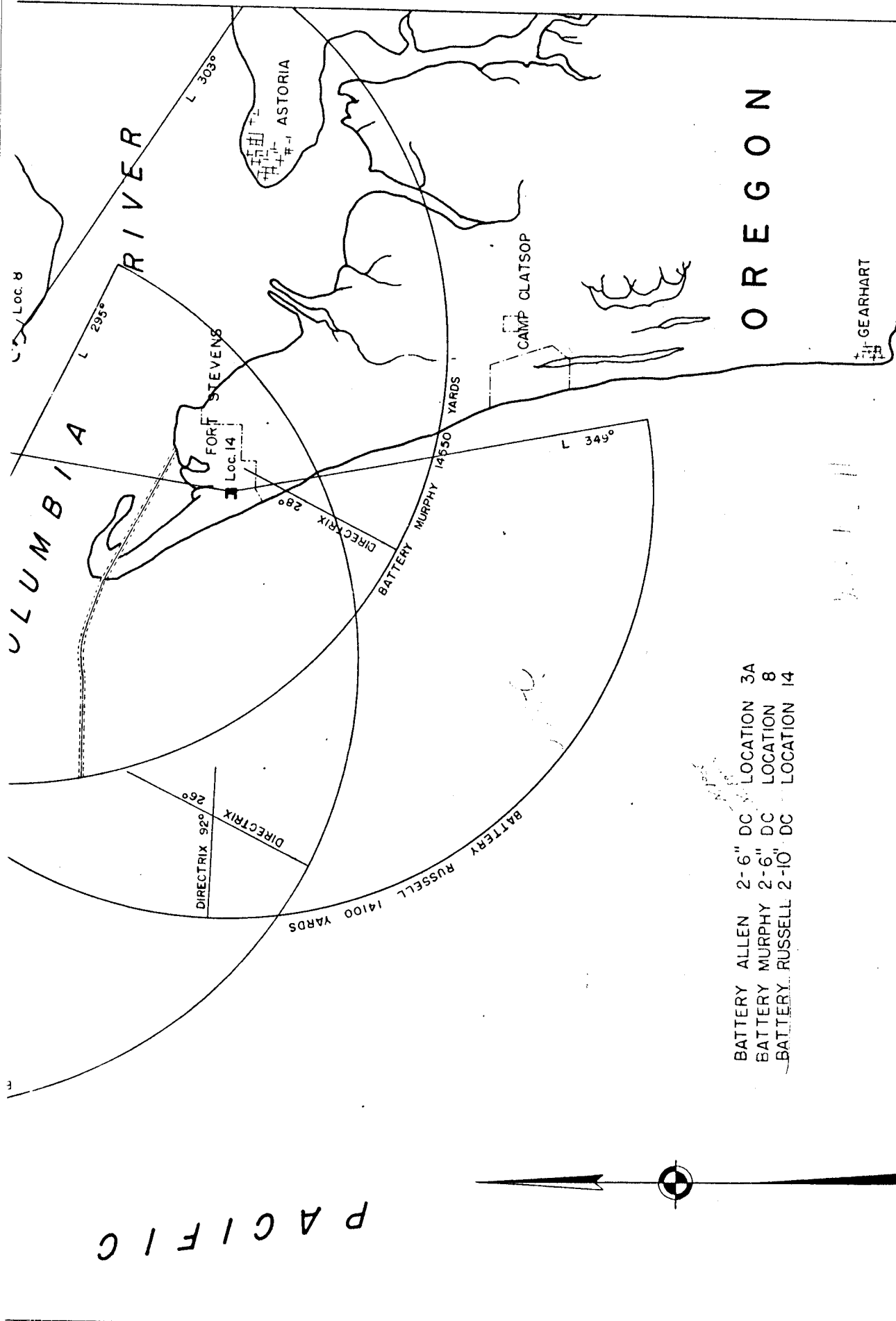
L 295°

BATTERY ALLEN 14650 YARDS

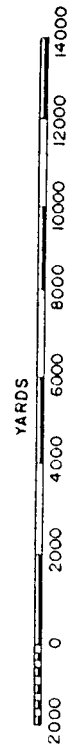
OCEAN

IC

DECLASSIFIED



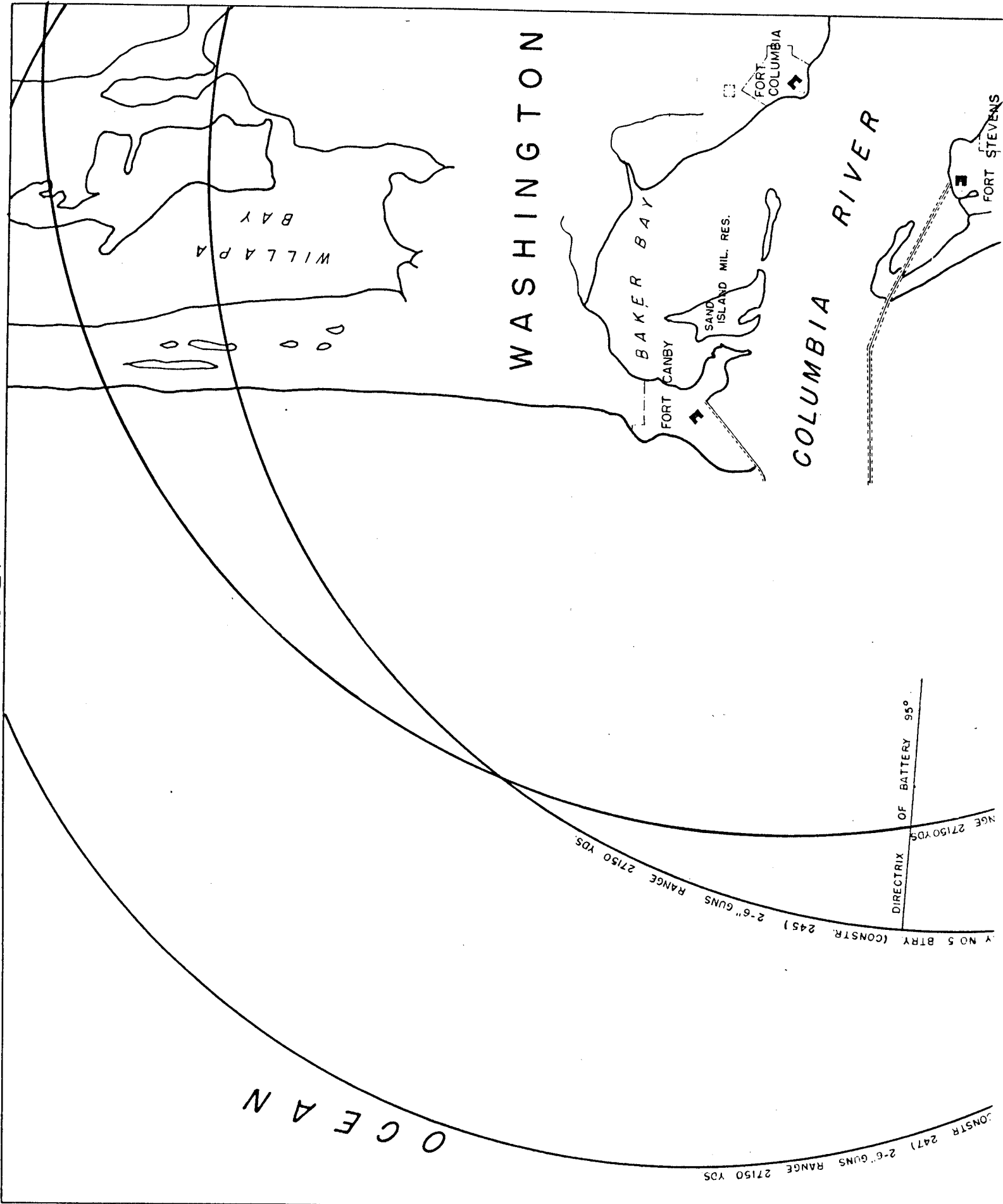
BATTERY ALLEN 2-6" DC LOCATION 3A
 BATTERY MURPHY 2-6" DC LOCATION 8
 BATTERY RUSSELL 2-10" DC LOCATION 14



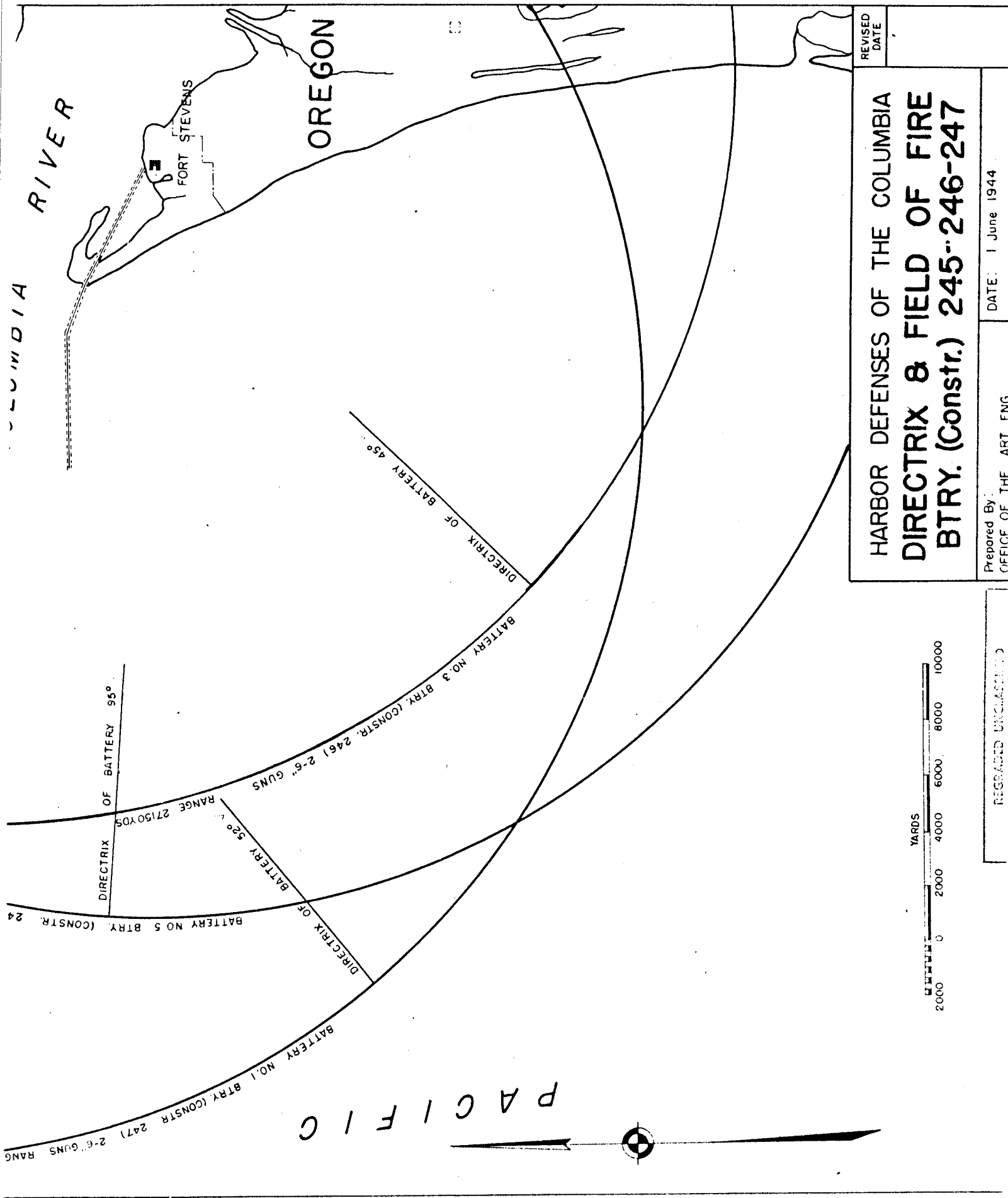
REGRADED UNCLASSIFIED
 ORDER SEC ARMY BY TAG PER 7063

HARBOR DEFENSES OF THE COLUMBIA DIRECTRIX & FIELD OF FIRE INTERIM PROJECT ARMAMENT (To be Abandoned)		Revised Date
Prepared By: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 29 May 1944	Annex <u>A</u>
Ex <u>3A1</u>		

STATE 1



DECLASSIFIED



REVISED
DATE

**HARBOR DEFENSES OF THE COLUMBIA
DIRECTRIX & FIELD OF FIRE
BTRY. (Constr.) 245-246-247**

Prepared By: _____
OFFICE OF THE ART ENG.
DATE: 1 June 1944



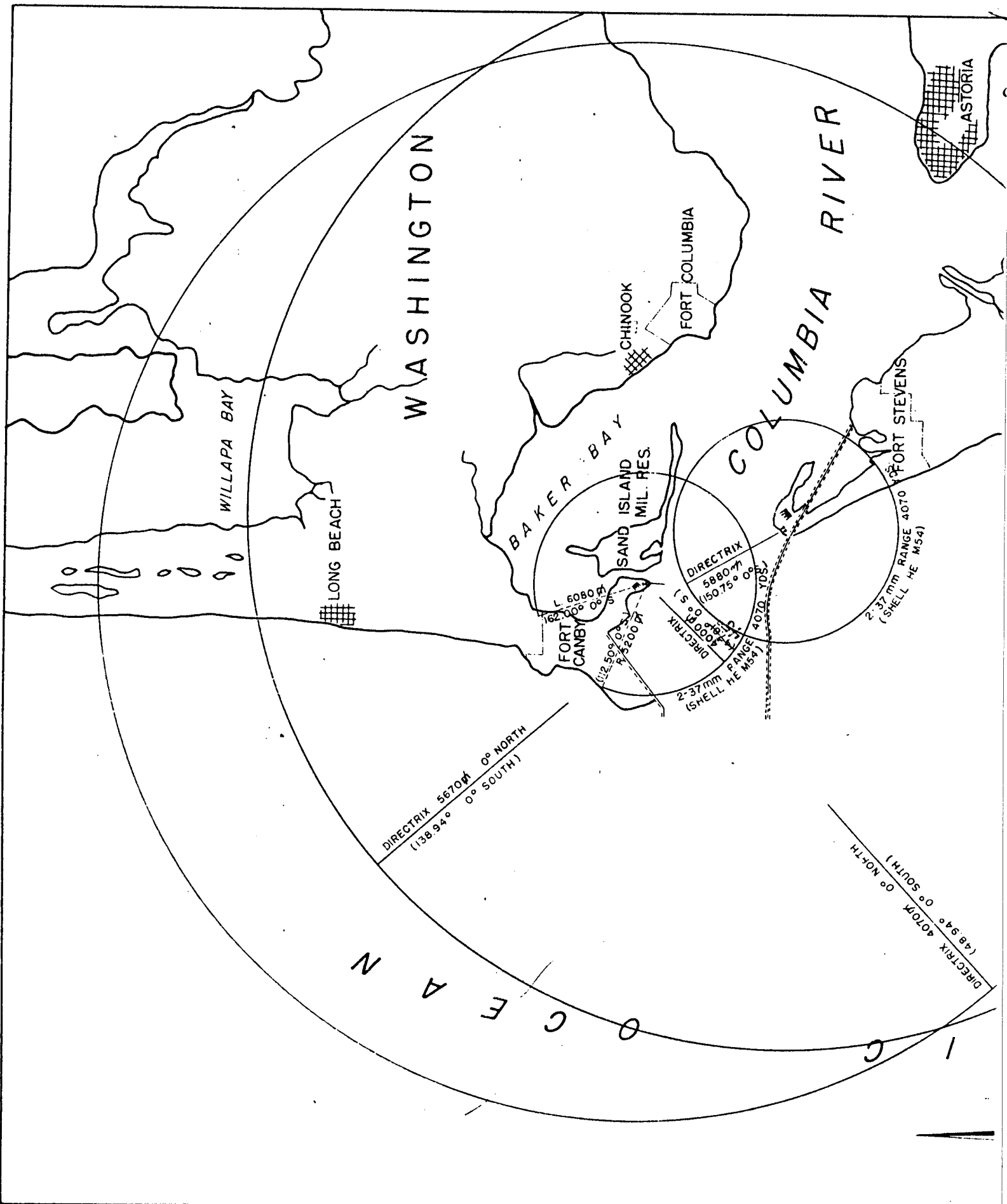
RECLASSIFIED UNCLASSIFIED

PACIFIC

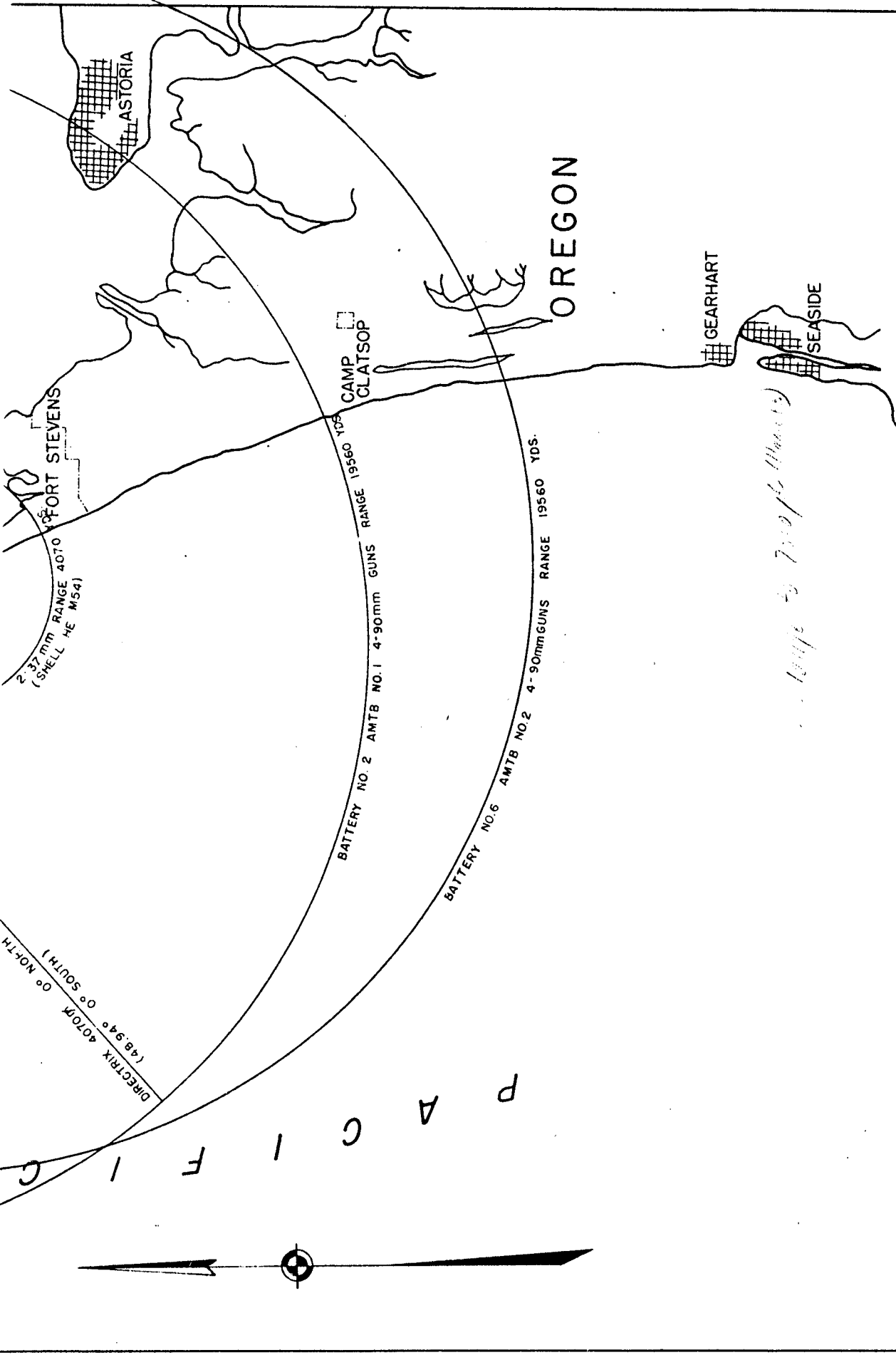
DECLASSIFIED

Authority 760162

SECRET



DECLASSIFIED



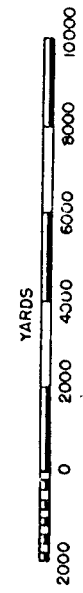
REVISED DATE

HARBOR DEFENSES OF THE COLUMBIA DIRECTRIX & FIELD OF FIRE FOR AMTB DEFENSE
 Battery No. 2 (AMTB'1) & Battery No. 6 (AMTB*2)

Prepared By
 OFFICE OF THE ART. ENG
 FORT STEVENS, OREGON

DATE: 15 July 1944

Ex **4A** Annex **A**



FORWARDED UNCLASSIFIED
 ORDER REC ASBY BY TAG PER 7063

DECLASSIFIED

By *J. W. ...* NARS, Date *2/11/84*

LOCATION NO. 1 46 ACRE	2	7	2	43
	3	11	6	22
	4	5	4	4
	1	K	St.	
LOCATION M SEC. 9 T10N R11W W1M PIONEER TRACT	2	7	2	43
	3	12	7	21
	4	6	3	4
	1	L	St.	
LOCATION N SEC. 9 T10N R11W W1M PIONEER TRACT	2	7	2	43
	3	13	7	20
	4	5	6	4
	1	8	St.	

PACIFIC OCEAN

WASHINGTON

E
 EASMENT FOR FORT CANBY TO
 LOCATION NO. 1 CABLE ROUTE.
 CABLE THREE FEET UNDERGROUND.
 RIGHT OF WAY IS THREE FEET
 WIDE AND FOLLOWS EXISTING
 ROADS AS SHOWN. DETAIL
 DESCRIPTION REFERENCE:
 EXHIBIT 5-A1

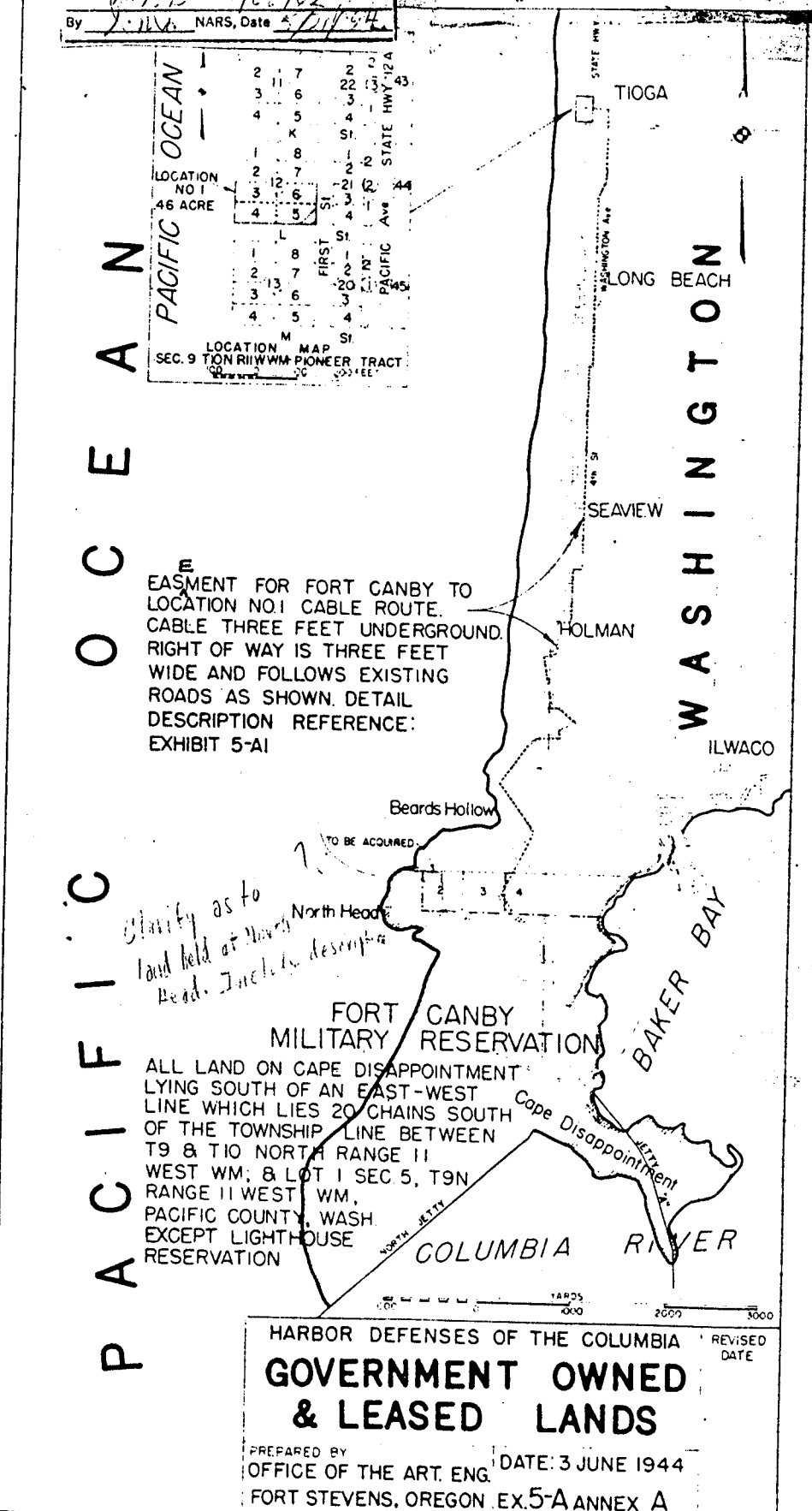
*Clarify as to
 land held at North
 Head. Include description*

**FORT CANBY
 MILITARY RESERVATION**
 ALL LAND ON CAPE DISAPPOINTMENT
 LYING SOUTH OF AN EAST-WEST
 LINE WHICH LIES 20 CHAINS SOUTH
 OF THE TOWNSHIP LINE BETWEEN
 T9 & T10 NORTH RANGE 11
 WEST WM; & LOT 1 SEC. 5, T9N
 RANGE 11 WEST WM,
 PACIFIC COUNTY, WASH.
 EXCEPT LIGHTHOUSE
 RESERVATION

**HARBOR DEFENSES OF THE COLUMBIA
 GOVERNMENT OWNED
 & LEASED LANDS**

PREPARED BY OFFICE OF THE ART. ENG. DATE: 3 JUNE 1944
 FORT STEVENS, OREGON. EX. 5-A ANNEX A

SECRET



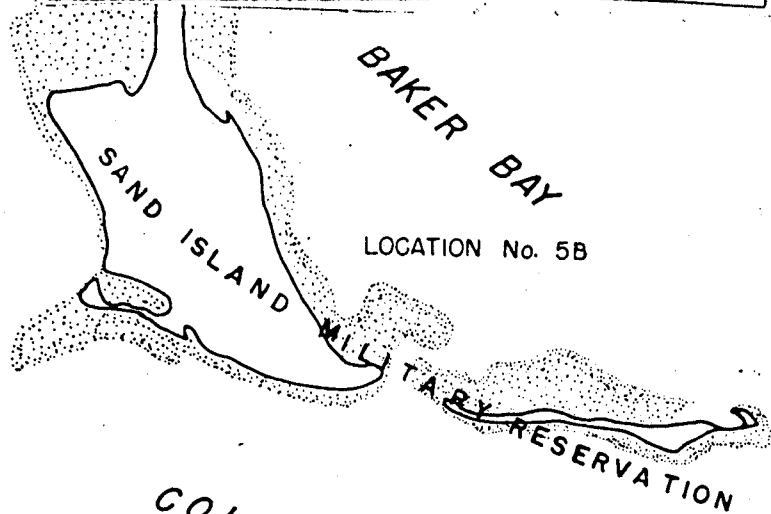
DECLASSIFIED

REPRODUCED AT THE NATIONAL ARCHIVE

By *J. W. S.* NARS, Date *5/21/84*

REGR

ANNEX BY PER 7065

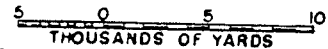
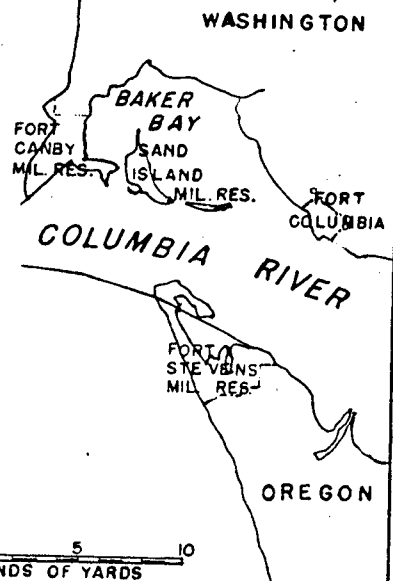


Bounded on the west, north,
and east by low water line
of the Main North Ship Channel
of the Columbia River and on the south by
the low water line of the Columbia River.

T. 9N R. 11W, WM. Clatsop co. Oregon



PACIFIC OCEAN



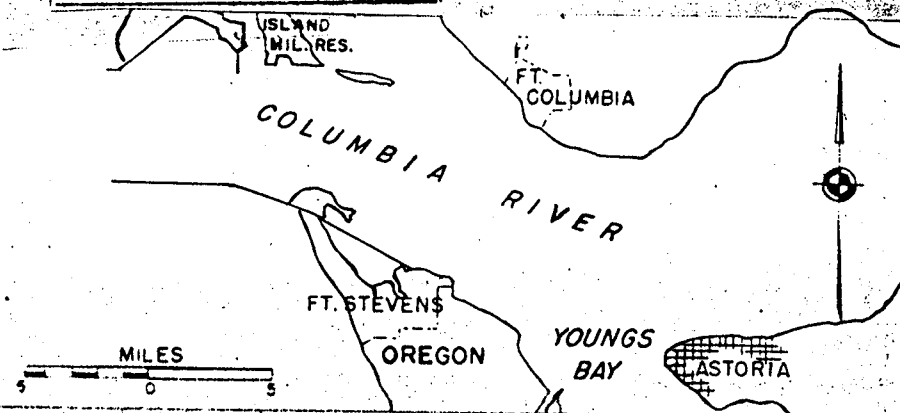
HARBOR DEFENSES OF THE COLUMBIA		REVISED DATE
GOVERNMENT OWNED AND LEASED LANDS		
Prepared By: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 29 MAY 1944	
	EX. 6A ANNEX A	

SECRET

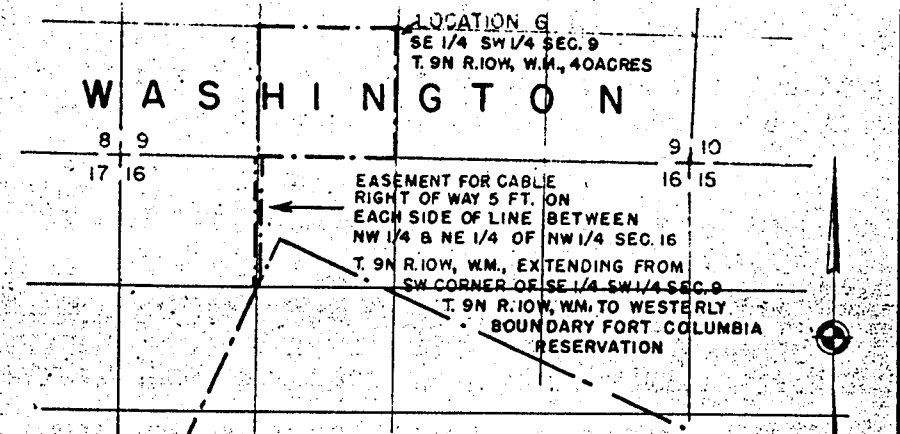
DECLASSIFIED

REPRODUCED AT THE NATIONAL ARCHIVE

By *J. M. W.* NARS, Date *5/21/94*



WASHINGTON



LOCATION G
 SE 1/4 SW 1/4 SEC. 9
 T. 9N R. 10W, W.M., 40 ACRES

EASEMENT FOR CABLE
 RIGHT OF WAY 5 FT. ON
 EACH SIDE OF LINE BETWEEN
 NW 1/4 & NE 1/4 OF NW 1/4 SEC. 16
 T. 9N R. 10W, W.M., EXTENDING FROM
 SW CORNER OF SE 1/4 SW 1/4 SEC. 9
 T. 9N R. 10W, W.M. TO WESTERLY
 BOUNDARY FORT COLUMBIA
 RESERVATION

Metes and Bounds
Ref: Exhibit 7A1

FORT COLUMBIA MILITARY RESERVATION



HARBOR DEFENSES OF THE COLUMBIA
 GOVERNMENT OWNED AND
 LEASED LANDS

REVISED
DATE

RECORDED UNCLASSIFIED
ORDER SPEC. BY TAG NO. 7063

Prepared By:
OFFICE OF THE ART. ENG.
FORT STEVENS, OREGON

DATE: 15 JULY 1944
EX. 7A ANNEX A

SECRET

DESCRIPTION OF FORT COLUMBIA MILITARY RESERVATION

All that certain tract of land situated in Pacific County, Washington, and described as follows:

Beginning at a concrete monument which is South 752 feet and East 1534 feet from the section corner common to sections 8, 9, 16 and 17, Township 9 North, Range 10 West of the Willamette Meridian, thence from said monument by metes and bounds,

- S. 24°46' W., 2436.2 feet, to a 6" x 3' sewer tile filled with concrete and marked U. S. M. R.,
- S. 24°46' W., 210.4 feet, to similar concrete filled sewer tile marked U. S. M. R.,
- S. 24°46' W., 263.0 feet, to a third such monument marked U. S. M. R.,
- S. 23°31'14" W., 789.8 feet, to a point on the section line between sections 16 and 17, which point is the initial point of the original tract deeded to the United States for a military reservation;

Thence following said original reservation boundary,

- S. 24°30' W., 412.5 feet, to Government meander line,
- S. 29° E., 412.5 feet,
- S. 33° E., 651.42 feet,
- S. 46°30' E., 4125.0 feet,
- S. 62°30' E., 485.1 feet, to point where boundary leaves the meander line,

Thence,

- N. 24°30' E., 1485.4 feet, to a concrete post,
- N. 24°30' E., 257. feet,
- East 51.5 feet, to a concrete post,
- N. 24°30' E., 666.6 feet, to a concrete post,

Thence leaving the original boundary and running east 1821.6 feet along the north boundary of the P. J. McGowan Donation Land Claim to the southeast corner of lot 9 of section 22,

Thence north 3730.32 feet to a hemlock post at the northeast corner of lot 2 of section 15, west 1066 feet to a hemlock post at the intersection of the north line of lot 2 with the original boundary,

Thence N. 65°30' W., 4427 feet along said original boundary to the point of beginning.

The tract as described contains an area of 729.35 acres.

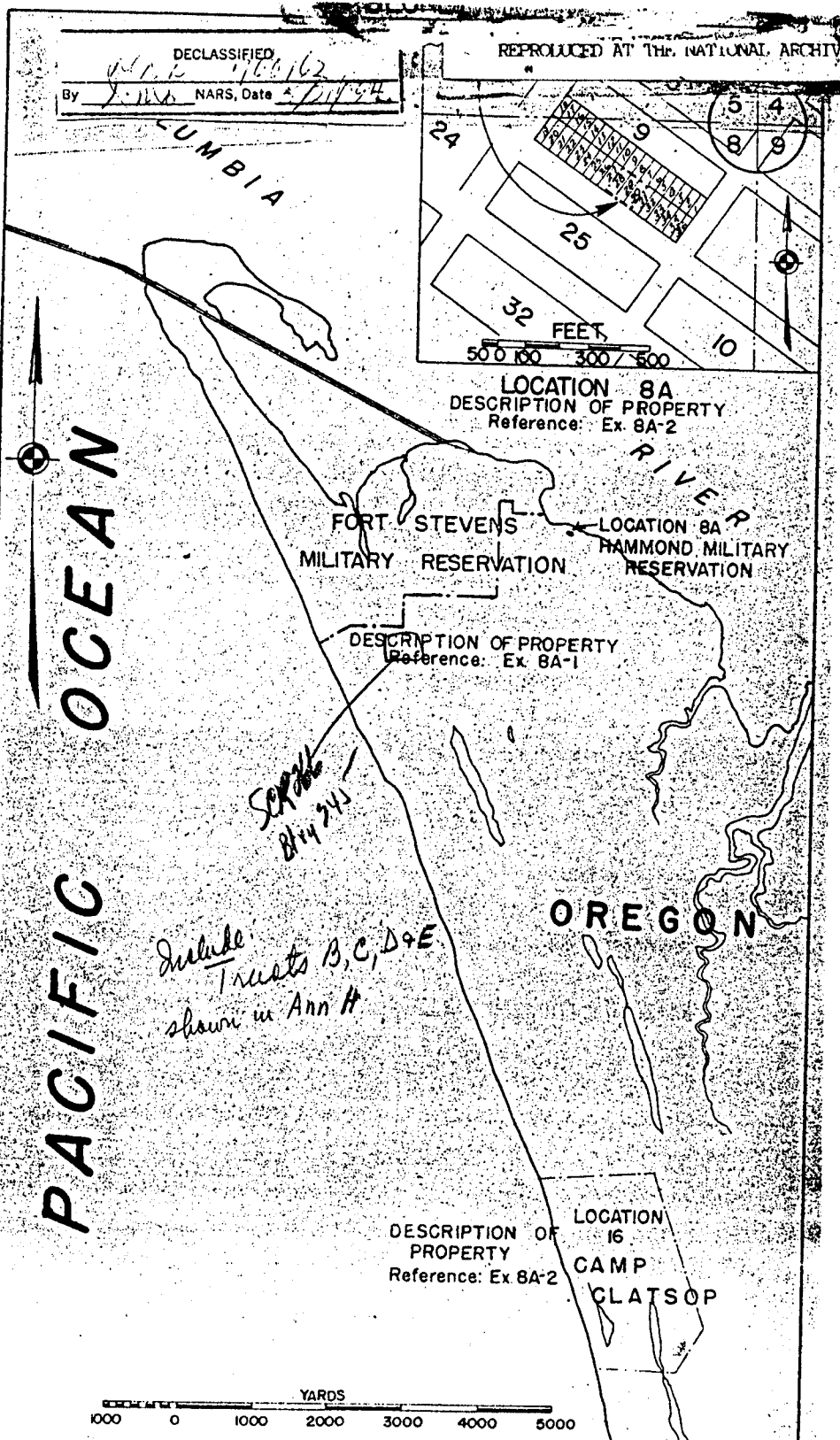
HARBOR DEFENSES OF THE COLUMBIA

DESCRIPTION OF FORT COLUMBIA
MILITARY RESERVATION

Date: 2 June 1944 Exh 7-1-1

DECLASSIFIED
By *[Signature]* NARS, Date *1/16/62*

REPRODUCED AT THE NATIONAL ARCHIVE



PACIFIC OCEAN

OREGON

HARBOR DEFENSES OF THE COLUMBIA
GOVERNMENT OWNED AND
LEASED LANDS

REVISED
DATE

DECLASSIFIED UNCLASSIFIED
ORDER SEC ARMY BY TAG PER 7063

PREPARED BY :
OFFICE OF THE ART ENG
FORT STEVENS, OREGON

DATE: 15 JULY 1944
Ex 8A Annex A

SECRET

DESCRIPTION OF FORT STEVENS MILITARY RESERVATION

That tract of land situated on Point Adams and Clatsop Spit, in Township 8 North, Range 10 West, and Townships 8 and 9 North, Range 11 West of the Willamette Meridian, in Clatsop County, State of Oregon, the boundary of which is more fully described as follows:

Beginning at the southeast corner of the reservation, from which the bearing and distance to the east quarter corner of Section 7, Township 8 North, Range 10 West, is due west, 1,201 feet, and running thence:

- (1) Due west, three thousand eight hundred and forty-one (3,841) feet, to the northeast corner of lot 3, section 7; thence:
- (2) Due south, one thousand three hundred and twenty (1,320) feet, to the southeast corner of lot 3, section 7; thence:
- (3) Due west, two thousand eight hundred and seventy-five (2,875) feet, to a point; thence:
- (4) South sixty degrees west (S. 60° W.), one thousand four hundred (1,400) feet, more or less, to the low water line of the Pacific Ocean; thence:
- (5) Northwesterly, sixteen thousand five hundred (16,500) feet, more or less, along said low water line of the Pacific Ocean, as it meanders, to the southerly side of a jetty; thence:
- (6) Westerly, eight thousand three hundred (8,300) feet, more or less, along said southerly side of a jetty, to the mouth of the Columbia River; thence:
- (7) Easterly and southeasterly, forty-one thousand five hundred (41,500) feet, more or less, along the low water line of the Columbia River, as it meanders, to a point from which the bearing and distance to the northwest corner of the B. C. Kindred Donation Land Claim, as originally fixed by the government survey, is S. 53° W., 2,000 feet, more or less; thence:
- (8) N. 53° E., 360 feet, more or less, to an intersection with the pier head line as established in the Columbia River; thence:
- (9) Southeasterly tracing the pier head line as established in the Columbia River to the northwest corner of that certain tract of land deeded to the United States Treasury Department for the U. S. Coast Guard Service and of record in Book 12, Pages 310 and 311 of the Deed Records of Clatsop County, Oregon; thence:
- (10) Tracing the west boundary of said certain tract to an intersection with the north boundary of Ramie Avenue in the first addition of Kindred Park addition, a legal addition in Clatsop County, Oregon, produced easterly; thence:
- (11) Westerly tracing the north boundary of said Ramie Avenue produced, and Ramie Avenue to an intersection with the east boundary of River Street in said first addition to Kindred Park; thence:

REGRADED UNCLASSIFIED
ORDER SEC ARMY BY TAG PER 7063

HARBOR DEFENSES OF THE COLUMBIA

DESCRIPTION OF FORT STEVENS
MILITARY RESERVATION

Date: 2 June 1944 Exh 8 A 1

- (12) Northerly tracing the said east boundary of River Street to an intersection with the north boundary of North Street in Kindred Park addition; thence:
- (13) Westerly to a point that bears N. 53° E. eighty-two and eight tenths (82.8) feet from the northwest corner of the Kindred Park addition; thence:
- (14) S. 53° W. eighty-two and eight tenths (82.8) feet to the northwest corner of the Kindred Park addition; thence:
- (15) S. $0^{\circ}09'$ W. three thousand eight hundred fifty-five and five tenths (3855.5) feet to the point of beginning.

HARBOR DEFENSES OF THE COLUMBIA

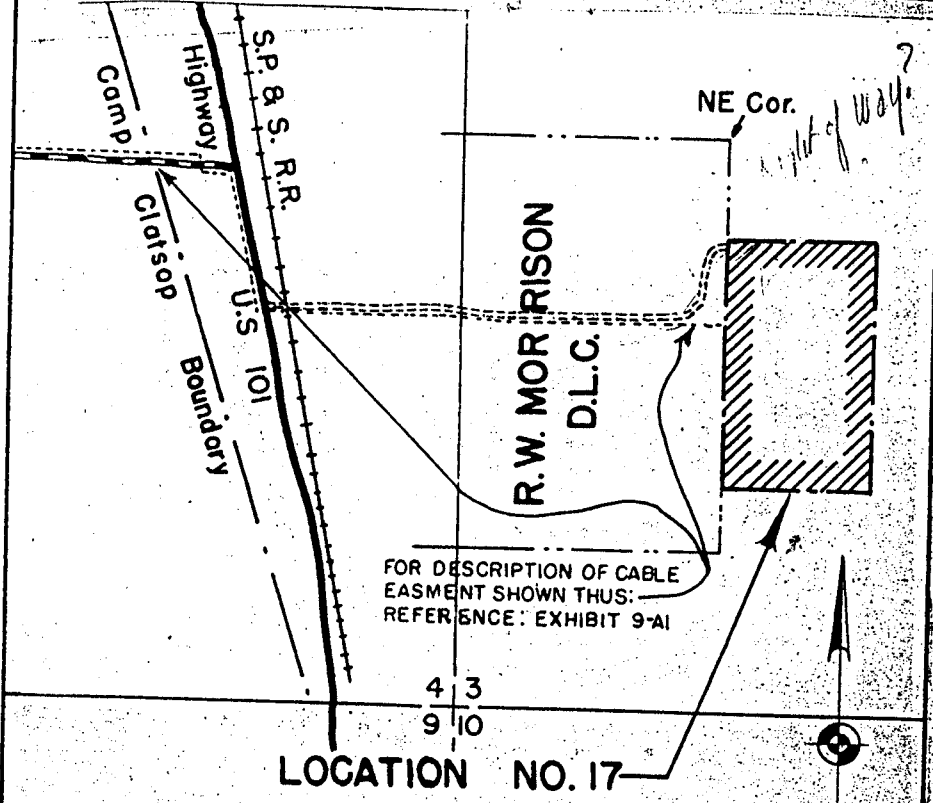
DESCRIPTION OF FORT STEVENS
MILITARY RESERVATION

Date: 2 June 1944 Exh 8-A-1

DECLASSIFIED

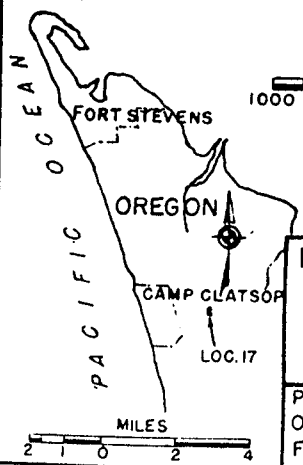
REPRODUCED AT THE NATIONAL ARCHIVE

By *J. L. ...* NARS, Date *5/21/94*



LOCATION NO. 17

40 ACRE TRACT, LOCATED IN SEC. 3 T. 7N
 R. 10W, W.M. DESCRIBED AS FOLLOWS: BEGINNING
 AT A POINT ON THE EAST LINE OF THE R.W.
 MORRISON D.L.C. THAT BEARS SOUTHERLY
 673.55' FROM NE CORNER OF SAID D.L.C.; THENCE
 SOUTHERLY ALONG ELINE OF D.L.C. 1,691.65';
 THENCE: E 1,030'; THENCE: N 1,691.65' THENCE
 W 1,030' TO BEGINNING.



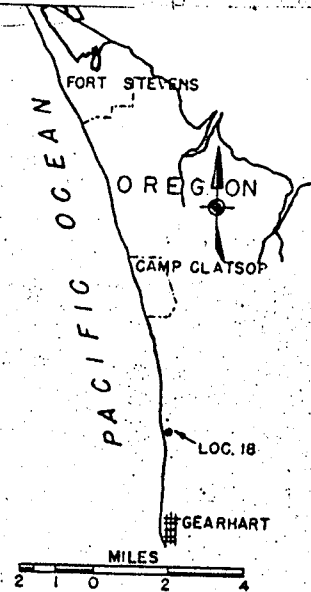
HARBOR DEFENSES OF THE COLUMBIA		REVISED DATE
GOVERNMENT OWNED AND LEASED LANDS		
Prepared By: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 31-MAY 1944	
	EX. 9A ANNEX. A	

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REPRODUCED AT THE NATIONAL ARCHIVE

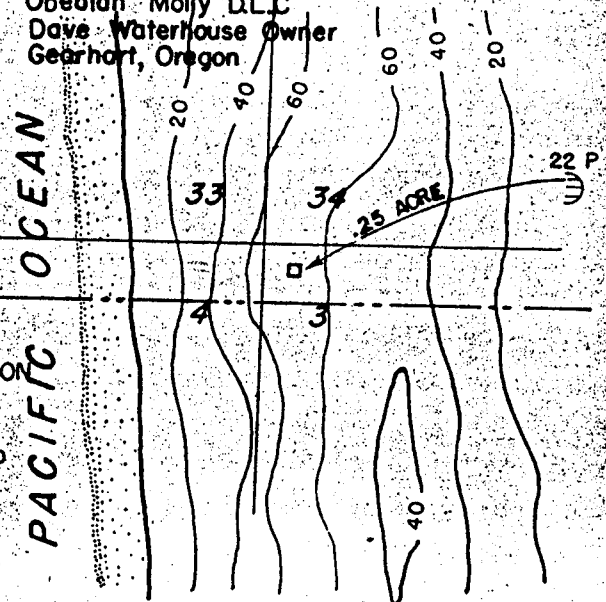
By 11/12/62 NARS, Date 5/21/94



LOCATION 18

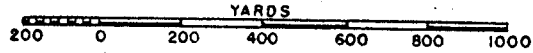
Obediah Molly D.L.C.
Dave Waterhouse Owner
Gearhart, Oregon

T7N RIO WWM
T6N RIO WWM



PROPERTY DESCRIPTION
Permit dated 14 Aug. 44
from owner to Army for
duration plus 6 months to
use any .25 acre of
owners property in
Obediah Molly D.L.C. for
S/L positions.

Contour Interval 20 feet



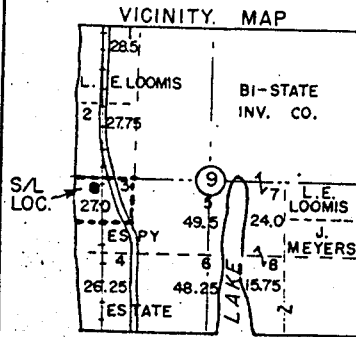
HARBOR DEFENSES OF THE COLUMBIA		REVISED DATE
GOVERNMENT OWNED AND LEASED LANDS		
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 14 August 1944	
		EX. 10A ANNEX A

REGRADDED UNCLASSIFIED
ORDER SEC ARMY BY TAG PER 7063

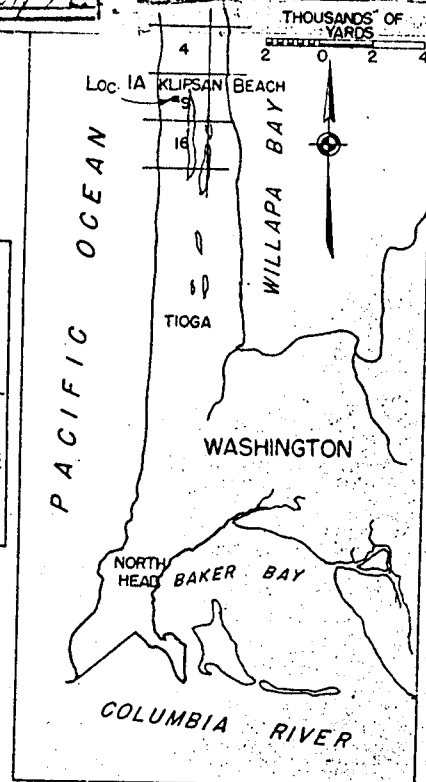
SECRET

By J. J. W. NARS, Date 2/11/94

LOCATION No. 1A



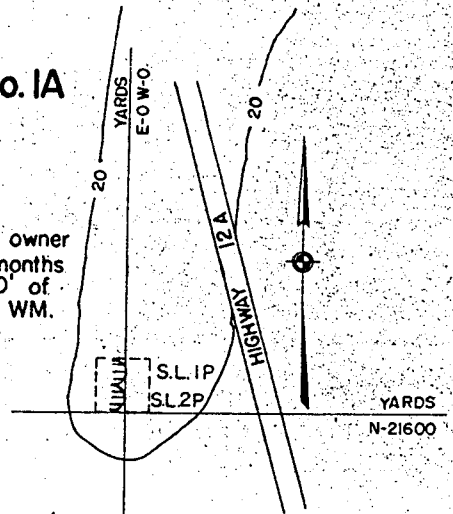
SECTION 9 TOWNSHIP 11 N
RANGE 11 W.W.M.



LOCATION No. 1A

PROPERTY DESCRIPTION

Permit dated 14 Aug. 44 from owner to Army for duration plus 6 months for .25 acre within North 800' of lot 3, Sec. 9, T11N, R11W, WM. West of Hwy. 12A.



Contour Interval 20 feet
YARDS



HARBOR DEFENSES OF THE COLUMBIA
GOVERNMENT OWNED AND
LEASED LANDS

REVISED
DATE

REGRADED UNCLASSIFIED
ORDER SEC ARMY BY TAG PER 7063

Prepared By:
OFFICE OF THE ART. ENG.
FORT STEVENS, OREGON

DATE: 14 Aug. 44

EX 11A ANNEX A

SECRET

~~SECRET~~

ANNEX B - FIRE CONTROL

INDEX

Paragraph 1	- General.	Page 3.
Paragraph 2	- Orientation Data.	Page 5.
Paragraph 3	- Fire Control Elements - Other Than Batteries.	Page 7.
Paragraph 4	- Post Telephone System.	Page 9.
Paragraph 5	- Teletype and Telegraph Facilities.	Page 10.
Paragraph 6	- Radio Communication.	Page 10.
Paragraph 7	- Battery Fire Control Elements.	Page 12.
Paragraph 8	- Datum Points.	Page 22.
Paragraph 9	- Land Acquisition.	Page 23.
Paragraph 10	- Radar Equipment.	Page 24.

EXHIBITS

- 1-B, Local Plane Coordinate Grid Map.
- 2-B, Telephone, Teletype, and Telegraph Circuits.
- 3-B, Radio Communication Nets.
- 4-B, Circuit Diagram - Harbor Defenses of the Columbia.
- 5-B, Schematic Layout of Main Cables - Harbor Defenses of the Columbia.
- 6-B, Main Cable Routings - Fort Stevens.
- 7-B, Main Cable Routings - Fort Canby.
- 8-B, Main Cable Routings - Fort Columbia.
- 9-B, Main Cable Routings - Sand Island Military Res.
- 10-B, Battery No. 1 (Const. 247), Fields of Fire and Area Covered by Fire Control System.
- 10-B-1, Masked Water Areas, Battery No. 1 (Const. 247).
- 11-B, Battery No. 2 (AMTB No. 1), Field of Fire and Masked Water Areas.
- 12-B, Battery No. 3 (Const. 246), Fields of Fire and Area Covered by Fire Control System.
- 12-B-1, Masked Water Areas, Battery No. 3 (Const. 246).
- 13-B, Battery No. 4 (Mines), Fields of Fire and Area Covered by Fire Control System.
- 14-B, Battery No. 5 (Const. 245), Fields of Fire and Area Covered by Fire Control System.
- 14-B-1, Masked Water Areas, Battery No. 5 (Const. 245).
- 15-B, Battery No. 6 (AMTB No. 2), Field of Fire and Masked Water Areas.
- 16-B, Terrain Map, Location 1, 1-A, and 2.
- 17-B, Terrain Map, Location 3 and 3-A.
- 18-B, Terrain Map, Location 4, 5, and 5-A.
- 19-B, Terrain Map, Location 5-B and 6-A.
- 20-B, Terrain Map, Location 6 and 7.
- 21-B, Terrain Map, Location 8.
- 22-B, Terrain Map, Location 9 and 14.
- 23-B, Terrain Map, Location 9-A.
- 24-B, Terrain Map, Location 10 and 11.
- 25-B, Terrain Map, Location 15 and 16.
- 26-B, Terrain Map, Location 17 and 18.

~~SECRET~~

~~SECRET~~ANNEX B - FIRE CONTROLINDEX (Continued)EXHIBITS (Continued)

- 27-B, SCR-296, Battery No. 1 (Const. 247), Arc of Detection and Masked Water Areas.
- 28-B, SCR-547, Battery No. 2 (AMTB No. 1), Arc of Detection and Masked Water Areas.
- 29-B, SCR-296, Battery No. 3 (Const. 246), Arc of Detection and Masked Water Areas.
- 30-B, SCR-296, Battery No. 5 (Const. 245), Arc of Detection and Masked Water Areas.
- 31-B, SCR-682, Arc of Detection and Masked Water Areas.
- 32-B, Datum Points.

~~SECRET~~

~~SECRET~~ANNEX B - FIRE CONTROL1. GENERAL

a. The inaccuracy of plotting equipment where the angle of intersection of less than 15° is encountered has been considerably reduced under the modernization project by the construction of multiple base lines. They extend from Location 1 on the Long Beach Peninsula in Washington to Location 17, east of Camp Clatsop, Oregon. All sectors of the fields of fire can be accurately plotted on the plotting boards.

b. Axial spotting at long ranges from the battery location of (Const.) #245 cannot be accurately determined because of the low height of site of the battery. This condition will not prevail at Battery (Const.) #246 and #247 as the height of site of the battery and/or the spotting station is sufficient. Bi-lateral spotting for all batteries can be accurately determined from any or all baselines or combinations of baselines.

c. Observing and spotting is dependent upon visibility. Weather conditions in this locality are extremely variable during all seasons of the year. From local meteorological data during the past five (5) years the following information has been obtained which directly affects visibility:

Rainy days - 50.0%
Cloudy days - 30.6%
Clear days - 19.4%

During the winter seasons high winds of gale proportions are frequent. This condition causes heavy breakers and rollers which, with the normal southwest or northwest swell, renders spotting extremely difficult due to white water obscuring the splash. The rough water causes a variable error in vertical base position finding because of the inability to obtain precise water lining of the target. Fog conditions and low cloud banks during several months of the year will obscure visibility from certain base end stations. However, through the medium of the multiple base lines and the varying height of sites of the stations, it is anticipated that observation at effective ranges can be obtained a greater part of the time. Where visibility cannot be obtained, and during hours of darkness, radar data will be available for all batteries.

d. The high ground at Fort Canby and Fort Columbia provides adequate height of site for accurate position finding by either vertical or horizontal base methods. At Fort Stevens the ground is low and at no point exceeds 100 feet, except at Location 17, east of Camp Clatsop. This will necessitate the use of horizontal base methods with all base lines located on the south side of the Columbia River. Base lines terminating at Location 17, however, can use vertical base from that station.

e. Terrain conditions at Fort Canby are very favorable for the installation of radar equipment as the high headlands are precipitous and provide excellent height of site, minimum of mask, and maximum coverage of the ocean water areas, and the entrance to the Columbia River. The Surface Craft Detector, SCR-296A, for Battery (Const.) #247, is installed on Cape Disappointment at Location 3A. A second SCR-296A is installed on North Head for Battery (Const.) #246 and a General Surveillance Detector, SCR-682, will be installed at this same point (Location 2). The third SCR-296A, for Battery (Const.) #245, is installed at Fort Stevens at Location 14. Terrain conditions at Fort Stevens are not as favorable because of lower

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~~SECRET~~ANNEX B - FIRE CONTROL
(Continued)

1. GENERAL (Contd.)

Locations.

- f. (1) The standard method of fire control to be established for these Harbor Defenses upon completion of the modernization project will be the normal horizontal base method, using Case II pointing. With the provision of multiple baselines it is believed that the use of emergency methods will be remote except in the event of communication failure or obscurity of the target because of poor visibility.
- (2) Emergency methods of fire control will consist of using radar data, with Case II pointing when possible, otherwise Case III pointing. Single station vertical base methods are available to each battery and will be used as the situation demands.
- (3) A third emergency method is being promulgated whereby a central Harbor Defense directing point will be established for each radar location, and flank and center DPF. Data from any one of the directing points will be supplied to the batteries direct and relocated on the respective plotting boards.
- g. (1) Close coordination with the Navy and Coast Guard is maintained in the joint operation of the Harbor Entrance Control Post and for fire control of the challenge and examination anchorage batteries.
- (2) Coordination with the Air Corps for observation or reconnaissance aviation is maintained through Headquarters, Western Defense Command, through the Commanding General, Northwestern Sector, Western Defense Command. In view of the fact that no antiaircraft artillery units are assigned or attached to these Harbor Defenses, the exchange of liaison officers is not established. Harbor Defense automatic weapons and the Anti-aircraft guns of the MTB batteries conform to the operational instructions issued by Hq., Fourth Air Force, particularly in firing on hostile aircraft and coordination of firing. Aviation missions for training purposes are available to the Harbor Defenses and coordinated through Headquarters, Northwestern Sector, Western Defense Command.
- h. Facilities for naval operations are established for the Navy in the Harbor Entrance Control Post. A section of the Harbor Defense transmitter room is utilized by the Navy for its radio and auxiliary power equipment. Army T/O type quarters are provided for Navy officers and enlisted personnel.

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ANNEX B - FIRE CONTROL
(Continued)

2. ORIENTATION DATA.

a. The origin of the local plane coordinate system of these Harbor Defenses is the Cape Disappointment Light on the Fort Canby Military Reservation. The central meridian, as the Y axis through the Cape Disappointment Light, is 124°03'03.136" West Longitude; a perpendicular to the Y axis is the X axis at 46°16'33.608" North Latitude. X and Y are zero (0-0) through that point of origin and other points are referred to as North, South, East, and West.

b. The geographical coordinates of the Cape Disappointment Light and triangulation station "Gun," Fort Stevens, having been accurately determined by the U. S. Engineers, are used as control points for verification data of other points. The line between these points becomes a common baseline that may be used as a comparison of three coordinate systems: local plane grid, geographic, and U. S. Progressive Military Grid System.

c. All orientation data, baselines, and local coordinates, used in these Harbor Defenses, including the coordinates of fire control stations, battery directing points, etc., under the local plane grid system were based on triangulation and computations established in 1911-1912. Successive surveys made by the U. S. Engineers have proven the computations to be accurate and are accepted and used as orientation data for the modernization program.

d. Mean sea level can be conveniently determined by a bench mark and triangulation station, known as "tank," on Clatsop Spit in line with the south jetty. It consists of a standard U. S. Engineer circular brass disc, three inches in diameter imbedded in concrete on the NW pedestal. Elevation above mean sea level: 29.53 feet.

e. Exhibit 1-B indicates the local plane coordinate system in effect.

f. Local plane coordinates of Harbor Defense & Battery Elements:

<u>Installation</u>	<u>Coordinates</u>	<u>Location Number</u>
HDCP - HECF	E 6886.47 S 8351.03	9
Group I Station	E 6584.77 S 10400.67	14
Group II Station	E 301.04 N 94.48	5
SCR-682	W 1995.67 N 2983.99	2
Battery No. 1 - D.P. Gun #1 (Const. No. 247)	W 1168.24 N 1052.61	3
BC - B ₁ ¹ S ₁ ¹	W 1136.57 N 1027.21	3
B ₁ ² S ₁ ²	E 6587.51 S 10417.40	14
B ₁ ³ S ₁ ³	W 2009.20 N 2981.00	2
B ₁ ⁴ S ₁ ⁴	E 11821.40 S 19106.40	17
B ₁ ⁵ S ₁ ⁵	E 8099.60 S 15332.60	15
B ₁ ⁶ S ₁ ⁶	W 202.13 N 11340.87	1
SCR-296 (This Battery)	W 402.70 N 464.70	3A
Battery No. 2 (AMTB #1)		5A
BC-2	E 834.00 S 218.10	5A
DP - Gun No. 3	E 942.90 S 339.00	5A

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ANNEX B - FIRE CONTROL
(Continued)

2. ORIENTATION DATA (Contd.)

<u>Installation</u>	<u>Coordinates</u>	<u>Location Number</u>
<u>Battery No. 3 - D.P. Gun #1</u> (Const. No. 246)	E 11040.00 / S 2886.45 ✓	8 ✓
50 - D1 S1 3 3	E 11279.50 ✓ S 2450.50 /	7 ✓
51 3 3	E 6566.50 ✓ S 10397.20 /	14 ✓
52 3 3	E 246.84 / N 59.17 /	5 ✓
53 3 3	W 2004.80 N 2984.40 /	2 ✓
54 3 3	E 11821.40 / S 19103.70 /	17 ✓
55 3 3	E 7310.14 / S 8382.32 /	9 ✓
56 3 3	E 8101.53 ✓ S 15337.93 ✓	15 ✓
57 S 3	W 1710.29 N 2940.99	2 ✓
SCR-296 (This Battery)	E 11316.61 / S 2644.03 /	7 ✓
<u>Battery No. 4 (Mincs)</u>	E 10697.44 / S 254.87 /	6 ✓
51 11	E 7685.80 / S 8497.19 /	10 ✓
52 11	E 5205.29 S 1573.07 /	5B ✓
53 11	E 3410.13 / S 1234.47 /	5B ✓
<u>Battery No. 5 - D.P. Gun #1</u> (Const. No. 245)	E 6762.71 S 8317.80 ✓	9 ✓
EC - D1 S1 5 5	E 6768.72 S 8358.00	9 ✓
51 5 5	E 6768.95 S 8355.65	9 ✓
52 5 5	E 8091.80 ✓ S 15283.10 /	15 ✓
53 5 5	E 6589.42 ✓ S 10422.72 /	14 ✓
54 5 5	E 11818.10 ✓ S 19105.80 /	17 ✓
55 5 5	E 11328.33 / S 2650.62 /	7 ✓
56 5 5	E 232.65 / N 51.81 /	5 ✓
57 S 5	W 2009.10 / N 2986.60	2 ✓
SCR-296 (This Battery)	X E 6724.32 / S 10653.02 ✓	14 ✓
<u>Battery No. 6 (MTB #2)</u>	E 3709.25 S 6259.45	9A ✓
BC-6	E 3739.53 S 6029.75	9A ✓
DF - Gun No. 1		9A ✓

SCR 2965
12.854ft. New
1.784ft. old

SCR 2963
8.094ft. old
5.094ft. New

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By *J. W. ...* NARS, Date *7/11/84*

3. FIRE CONTROL ELEMENTS - OTHER THAN BATTERIES.

ELEMENTS	LOC. NO.	EXH. NO.	EXISTING U.S.A. CONSTR. (E) (U)	TYPE OF STRUCTURE	PROTECTION AGAINST		ARC OF VIEW		MANNING DETAIL
					Bombs	Shell Fire *	Gasproof	Degrees Right - Left	
a. HDCP - HECF (Combined)	9	22-B ✓	E	Underground abandoned emplacement of Battery Mishler with inclosed wood frame observation tower at ground level.	LBB	Completed	281 - 21	4-0 24-EM (T/O 4-260-1)	
b. Group I Station	14 ✓	22-B ✓	E	Two level, concrete, dug in to observation slots.	SB	Not required.	178 - 07	3-0 6-EM	
c. Group II Station	5 ✓	18-B ✓	E	Two level, wood frame, plaster covered, dug in to observation slots.	Non-SB	Not required.	107 - 288	3-0 6-EM	
d. Signal Station	5 ✓	18-B ✓	E	Wood frame octogonal shaped structure, 4 1/2' on each side, 10' high, 360° observation, with 20' signal mast.	Non-SB	Not required.	130 - 262	4-EM	
e. Tide Station	11 ✓	--	E	Established at mine wharf.	--	--	--	--	
f. Meteorological Station	13 ✓	--	E	Established in Artillery Engineer Bldg., No. T-318.	Non-SB	Not required.	--	4-EM	
g. Cable huts, (other than Mino cmd.)	11 8 5B	-- -- --	E E E	No. 1-Concrete, 7'15" x 7'15" x 7'. No. 2-Concrete, 6' x 6' x 10'. No. 3-Concrete, 5' x 5' x 5'.	SB SB SB	-- -- --	-- -- --	-- -- --	
h. SCR-682	2 ✓	16-B ✓	E	Concrete Operating room with 10' wood frame tower mounted theroon.	SB	Not required.	Ech. 31-B	8-EM (T/O 4-260-1)	

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ANNEX B - FIRE CONTROL
(Continued)

3. FIRE CONTROL ELEMENTS - OTHER THAN BATTERIES.

i. Elevations and Instruments required.

Station	Elev. Above MSL Ft.		DPF	CL	Azimuth M1910A1	Telescope M-1908
	Ground	Trunnions				
HECP - HECP	32	55.87	--	--	2	--
Group I Station	103	105.75	1-Swasey	✓	1	--
			A-II, #111			
Group II Station	294	296.00	1-M1.	4	1	--
Signal Station	189	194.65	--	--	--	1
SR-682	237	--	--	--	--	--
Total Instruments Required:			1-Swasey	A-II	4	1
			1-M1	CL 4		

NOTE: Light Bombproof "LBB" by construction,
Splinterproof "SB" by construction.

j. Bomb Proofing and Gas Proofing.

- (1) Except where indicated, none of the stations or facilities require bombproofing, splinterproofing, or gasproofing.

k. Fire Control Switchboard Rooms.

(1) Fort Stevens - Location 13.

A light bombproof reinforced earthcovered concrete structure which also contains the administrative system. Gasproofing has been completed. Tactical switchboards, BD-74, combination, are installed, or on hand to be installed, as follows:

- 1 each - A, B, C, H, and J,
- 1 each - BD-75,
- 2 each - BD-17.

The present structure provides space as follows:

Entrance room, which includes gasproofing equipment and gasproof compartments.....13'x17'x9' high.

Administrative room, includes womens rest room (6'x8'x9' high) and latrine (4'x8'x9' high).....23'x15'x9' high.

Tactical room, which includes, Main switchboard room (35'x17'x9' high), Wire Chiefs office (8'x8'x9' high), Mens latrine (4'x8'x9' high), Storeroom (8'x8'x9' high), Workshop (8'x12'x9' high)....35'x25'x9' high.

Power Room,.....9'x13'x9' high.
Adjacent Storeroom.....4'6"x6'6"x9' high.

(2) Fort Canby - Location 4.

A heavy splinterproof reinforced earthcovered concrete structure which also contains the administrative system. Gasproofing has been completed for the structure. Tactical switchboards, BD-74, combination, are installed, or on hand to be installed, as follows:

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ANNEX B - FIRE CONTROL
(Continued)

3. FIRE CONTROL ELEMENTS - OTHER THAN BATTERIES (Contd.)

- 1 each - B, C, H, and J,
- 1 each - BD-75,
- 1 each - BD-17.

The dimensions of the rooms are:

Operating Room.....18'x15'x9' high.
Storage Battery Room..... 4'x15'x9' high.
Charging Room & Storeroom..4½'x15'x9' high.
Adjacent entrance room,
which includes gasproof-
ing equipment and gas-
proof compartments.....11'6"x11'6"x8' high.

(3) Fort Columbia - Location 8.

A heavy splinterproof underground concrete structure which was constructed for a mine casement in 1901. Structure is adequate for requirements of the Modernization Program and gasproofing has been completed. No administrative board is located at Fort Columbia as the administrative requirements are met by the Fort Stevens Board. Tactical switchboards, BD-74, combination, are installed, or on hand to be installed, as follows:

- 1 each - B, C, and H,
- 1 each - BD-75,
- 1 each - BD-17.

The dimensions of the rooms are:

Operating Room, which
includes, Mens latrine
(3'4"x4'x6'10").....11'x19'10"x6'10" high.

Storage Battery Room.....4'x9'x6'10" high.
Charging Room & Storeroom..9'x11'4"x6'10" high.

Adjacent entrance room,
which includes gasproof-
ing equipment and gas-
proof compartments.....11'4"x10'6"x8' high.

- (4) Trunking is set up between the tactical boards and the administrative system. Commercial and tactical trunking to higher echelons is accomplished through the Fort Stevens Board.

4. POST TELEPHONE SYSTEM.

a. The post telephone system consists of administrative switchboards at Fort Stevens and Fort Canby, together with associated equipment. Both switchboards are located in the same structures as the tactical boards of the respective forts. Trunking is established between the administrative and tactical boards in order that administrative pairs in the river cable can be utilized for fire control purposes in an emergency. Commercial trunking facilities for commercial toll calls and leased tactical circuits are accomplished through the Fort Stevens Board.

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~~SECRET~~ANNEX B - FIRE CONTROL
(Continued)4. POST TELEPHONE SYSTEM (Contd.)

b. The Fort Stevens board is a Western Electric, No. 605A, with four operating positions. It has an ultimate capacity of 1100 lines, and is at present equipped with 340 common battery lines, 10 ring down trunks, 15 central office trunks, and no long line equipment.

c. The Fort Canby board is a standard Kellogg with a present and ultimate capacity of 100 common battery lines and 10 universal trunks.

5. TELETYPE AND TELEGRAPH FACILITIES.

a. Teletype facilities consist of three machines:

- (1) One machine for general coverage (TFX) and is located in the radio-telegraph office in the Harbor Defense Headquarters Building. It is connected with the commercial teletype switchboard in Portland, Oregon.
- (2) One machine for operation on a leased tactical circuit within the Northwestern Sector, Western Defense Command, and terminates at the Headquarters of Northwestern Sector, Western Defense Command. The machine is located in the radio-telegraph office in the Harbor Defense Headquarters Building.
- (3) One machine located in the Harbor Entrance Control Post for operation on a leased tactical circuit between the Harbor Entrance Control Post and the Naval Station, Astoria, Oregon. Teletype communications to and from the Thirteenth Naval District are relayed through the Naval Station, Astoria, Oregon.

b. A telegraph circuit is established between the Western Union Telegraph Company, Portland, Oregon, and the radio-telegraph office, Harbor Defense Headquarters.

c. Teletype and telegraph circuit diagram is shown by Exhibit No. 2-B.

6. RADIO COMMUNICATION.a. Northwestern Sector Command Net.

- (1) Radio communication is established with Headquarters, Northwestern Sector, Western Defense Command, Northwestern Sector Mobile Forces, and the Harbor Defenses of Puget Sound by means of a radio BC-447 with a BC-779 receiver installed in the Harbor Defense Command Post. Frequencies of 4090 kc and 5545 kc have been assigned for this net.
- (2) An SCR-177 is installed in the Harbor Defense Command Post which functions as a secondary for the BC-447, lateral liaison with adjacent troops, and air-ground communication. The set is equipped to operate on frequencies between 1500 kc and 4500 kc. If required, this set can function in the Harbor Defense net.

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7. BATTERY FIRE CONTROL ELEMENTS.
a. Battery No. 1 (Const. No. 247) Exhibit 10-B. (TRUNNION ELEVATION 194.7' MSL)

	Battery Elements	Combined With	Loc. No.	Exh. No.	Existing Under Const (E) (U)	Type of Structure	Protection Against		Arc of View deg. ^{horiz}	Manning Detail T/O & E 4-67
							Bombs* Shell fire*	Gas		
(1)	Emplace-ment	BC-B1S1	3	17-B	E	Concrete, earth covered	BB	PL/Rm only	-	
(2)	BC-1	B1S1	3	17-B	E	Concrete on top of em- placement, earth covered to observation slots	SB	Not re- quired	142 - 319	1-0 7-EM
(3)	B1S1	BC-1	3	17-B	E	Concrete on top of em- placement, earth covered to observation slots	SB	Not re- quired	142 - 319	4-EM
(4)	B2S2	B3S3	14	22-B	E	Concrete dug in, north half of double station	SB	Not re- quired	147 - 337	4-EM
(5)	B3S3	B4S4 B7S7	2	16-B	E	Two level, concrete dug in, south half of lower level	SB	Not re- quired	180 - 0	4-EM
(6)	B4S4	B5S5 B4S4	17	26-B	E	Inclosed two level wood tower, south half of upper level	Non SB	Not re- quired	152 - 14	4-EM
(7)	B5S5	B7S7	15	25-B	E	Concrete dug in, north half of double station	SB	Not re- quired	143 - 335	4-EM
(8)	B6S6		1	16-B	E	Wood, cottage type	Non SB	Not re- quired	180 - 0	4-EM
(9)	Plotting Room		3	17-B	E	Located in emplacement	BB	Com- pleted	-	1-0 17-EM
(10)	SCR-296		3-A	17-B	E	Prefabricated steel tower and transmitter room	Non SB	Not re- quired	Exh. 27-B	1-0 7-EM

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Paragraph 7a Continued
(11) Baselines and instruments.

BASELINES		Azimuth Degrees	Range Yards	Elev. above MSL ft		DFP	CL	Azimuth M-2	Azimuth 1910A1
From	To			Ground	Trunnions				
BC-B ₁ S ₁ I ₁ I ₁	B ₁ S ₁ I ₁ I ₁	325.98	13809.62	208	209.38	1-M2	3	1	2
B ₁ S ₁ I ₁ I ₁	B ₁ S ₁ I ₁ I ₁	328.94	10143.59	254	295.04	1-M2	4	1	1
B ₁ S ₁ I ₁ I ₁	B ₁ S ₁ I ₁ I ₁	342.90	5142.53	83	84.15			1	1
B ₁ S ₁ I ₁ I ₁	B ₁ S ₁ I ₁ I ₁	192.20	8552.95	234	235.79	1-M2	3	1	1
				24	39.63 43.27			1	1
Total instruments required									
						2-M2 1-M2	CL3 CL4	3	17

*Note: Bombproof - "BB" by construction.
Splinterproof - "SP" by construction.

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Paragraph 7. (Continued)
5. Battery No. 2 (AMTB No. 1) Exhibit 11-B. (TRUNJION ELEVATION 19.66' MSL)

Battery Elements	Loc. No.	Exh. No.	Existing Under Const (E) (U)	Type of Structure	Protection Against		Arc of View		Manning Detail
					Bombs	Shell fire * Gas	Right	Left	
BC-2 BC-2	5-A	18-B	E	Two level, 25 ft. wood frame tower which also contains the fire control equipment	Non SB	Not required	5000	6140	1-0 7-EM
SCR-547	5-A	28-B 18-B	E	None	Non SB	Not required	5000	6140	7-EM

(2) Paragraphs 5 and 7, Annex A, tabulate complete data on Battery.

(3) Instruments required.

Station	Elevation Ground MSL ft.	Instruments		Remarks
		AA, BC, MI	Finder, Height MI, 13 ^{1/2}	
BC-2 BC-2	15	2	1	1 additional instrument, AA, BC, MI, over T/3A authorized by letter, WD AGO, file AG 413.74 (18 Nov 43) OB-S-SPDDO, 22 Nov 43, subject: "Instrument, Observation, AA, BC, MI."

*Note: "SB" - Splinterproof by construction.

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Paragraph 7. (Continued).
 Battery No. 3 (Const. No. 216) Exhibit 12-B. (TRUNNION ELEVATION 22.1' MSL)

	Battery Elements	Combined With	Loc. No.	Exh. No.	Existing Under Const		Type of Structure	Protection Against Bombs*		Arc of View degrees Right - Left	Manning Detail (T/O & E 4-67)
					(E)	(U)		Shell fires*	Gasproof		
(1)	Empl. ce- ment	-	8	21-B	E		Concrete, earth covered	BB	PL/Rm only	-	
(2)	BC-3	B1S1 33	7	20-B	E		Concrete, manhole	SB	Not re- quired	116 - 339	1-0 7-EM
(3)	B1S1 33	BC-3	7	20-B	E		Concrete, manhole	SB	Not re- quired	116 - 339	4-EM
(4)	B2S2 33	-	14	22-B	E		Concrete, dug in	SB	Not re- quired	140 - 334	4-EM
(5)	B3S3 33	-	5	18-B	E		Concrete, manhole	SB	Not re- quired	162 - 288	4-EM
(6)	B4S4 33	B3S3 B7S7 11 55	2	16-B	E		Two level, concrete, dug in, top level	SB	Not re- quired	180 - 0	4-EM
(7)	B5S5 33	B4S4 B7S7 11 55	17	26-B	E		Inclosed two level, wood tower, north half of upper level	Non SB	Not re- quired	152 - 14	4-EM
(8)	B6S6 33	-	9	22-B	E	≠	Steel tower with concrete pier	Non SB Sprinter- not com- pleted	Not re- quired	295 - 39	4-EM
(9)	B7S7 33	B5S5 11	15	25-B	E		Concrete, dug in, manhole half double station	SB	Not re- quired	143 - 355	4-EM
(10)	Plotting Room	-	8	21-B	E		Located in emplacement	SB	Com- pleted	-	1-0 17-EM
(11)	SCR-296	-	2	16-B	E		Prefabricated stool tower and transmitter room	Non SB	Not re- quired	Exh. 29-B	1-0 7-EM

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Paragraph 7c Continued
(12) Baselines and instruments.

BASELINES		Azimuth Degrees	Range Yards	Elev. above MSL ft		DFP	CL	Azimuth M-2	Azimuth M910A1
From	To			Ground	Trunnions				
BC-B1s1 3	B2s2 3	30.68	9239.69	477	479.64	1-M2	5	1	2
BC-B1s1 3	B2s3 3	102.82	11314.51	274	275.92	1-M2	4		1
BC-B1s1 3	B6s6 3	33.79	7137.39	19	73.00			1	1
B2s2 3	B2s3 3	148.86	12217.25	-	-				
B2s2 3	B5s5 3	328.88	10169.94	254	295.04	1-M2	4		1
B2s2 3	B7s7 3	342.73	5173.99	83	84.15			1	1
B4s4 3	Vertical Base	-	-	234	241.12	1-M2	3		1
Total instruments required									
*Note: Bombproof - "BB" by construction									
Splinterproof - "SD" by construction									

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Paragraph 7. (Continued).
Battery No. 1 - Mines - Exhibit 15-B.

(1)	Battery Elements	Combined With	Loc. No.	Exh. No.	Existing (E) Under Const (U)		Type of Structure	Protection Against Bombs* Shell fire*		Arc of View degrees Right - Left	Manning Detail (T/O 4-69)
					(E)	(U)		Gasproof	Yes		
(1)	Casemate	-	8	21-B	E		Concrete, earth covered	BB	Yes	-	1-0 11-EM
(2)	MC-4	M ₄ & PL/Rm	7	20-B	E		Two level, concrete, dug in, with plotting room on lower level	SB	See Note (1)	104 - 337	1-0 4-EM
(3)	M ₄	MC-4	7	20-B	E		Two level, concrete, dug in, WOOD FRAMED ROOF .	Non SB	Not required	104 - 337	2-EM
(4)	M ₄	-	6	20-B	E		Concrete, manhole	SB	Not required	94 - 12	2-EM
(5)	M ₄	-	10	24-B	E		Wood frame, corrugated iron sheathed tower	Non SB	Not required	285 - 107	2-EM
(6)	M ₄	-	5B	19-B	E		Wood tower (resembles a water tank)	Non SB	Not required	94 - 287	2-EM
(7)	M ₄	-	5B	19-B	E		Wood tower (resembles a water tank)	Non SB	Not required	93 - 286	2-EM
(8)	Plotting	MC-M ₄	7	20-B	E		Lower part of a two level concrete dug in	SB	See Note (1)	-	1-0 13-EM

*Note Bombproof - "BB" by construction. Splinterproof - "SB" by construction.

Note (1): Gas proofing of mine plotting room deleted from expenditure program FY 1943 under authority 3rd Ind, WD, ASF, 30 July 43, file SPRES 660.2 (4 July 43) to letter Hq HDC, 4 July 43, file 660.2, subject: "Gas proofing of mine plotting room (M₄)"

Note (2): Space available in casemate for gasproof plotting room.

Note (3): Miscellaneous installations of the mine command shown in Annex D.

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EC 12753
SM 12 MAR 1953

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Paragraph 74 Continued.
(9) Baselines and Instruments.

BASELINES		Azimuth Degrees	Range Yards	Elev. above MSL ft		DPF	CL	Azimuth M-2	Azimuth 1910A1
From	To			Ground	Trunnions				
MC-M ₄ ¹	M ₄ ²	165.47	2468.09	328	328.97	1-MI	4		2
MC-M ₄ ¹	M ₄ ²			279	280.59	1-MI	4		1
				-	-				
		31.81	6887.83	10	50.00	1-Lewis MI907 #159	A		1
M ₄ ¹				7	39.83				2
		100.68	1826.81	12	44.53				2
						1-Lewis MI907 #159	A		
						2-MI	4		8

Total instruments required

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FO 12754

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Paragraph 7. (Continued). Battery No. 5 (Const. No. 245) Exhibit 14-B. (TECHNICAL ELABORATION 31.1 'M.S.)

Battery Elements	Combined With	Loc. No.	Exh. No.	Existing Under Const (U) (E)	Type of Structure	Protection Against Bombs*		Gasproofed	Arc of View degrees		Manning Detail (T/O & E L-67)
						Shell fire*	BB		Right	Left	
(1) Emplacement	BC-B ₁ S ₁ S ₁	9	22-B	E	Concrete, earth covered	BB		Pl/Rm only	-	-	
(2) BC-5	B ₁ S ₁ S ₁	9	22-B	E	Concrete on top of emplacement, earth covered to observation slots	SB		Not required	165 - 354		1-0 7-EM
(3) B ₁ S ₁ S ₁	BC-5	9	22-B	E	Concrete on top of emplacement, earth covered to observation slots	SB		Not required	165 - 354		4-EM
(4) B ₂ S ₂ S ₂	-	15	25-B	E	Concrete dug in	SB		Not required	145 - 352		4-EM
(5) B ₃ S ₃ S ₃	B ₂ S ₂ S ₂	14	22-B	E	Concrete dug in, south half of double station	SB		Not required	147 - 337		4-EM
(6) B ₄ S ₄ S ₄	B ₄ S ₄ B ₅ S ₅ S ₅ I I S S	17	26-B	E	Inclosed two level wood tower, single station on lower level	Non SB		Not required	152 - 02		4-EM
(7) B ₅ S ₅ S ₅	-	7	20-B	E	Wood frame, plaster covered dug in	Non SB		Not required	103 - 345		4-EM
(8) B ₆ S ₆ S ₆	-	5	18-B	E	Concrete, dug in	SB		Not required	82 - 285		4-EM
(9) B ₇ S ₇ S ₇	B ₄ S ₄ B ₅ S ₅ S ₅ S S I I	2	16-B	E	Two level concrete dug in, north half of lower level	SB		Not required	180 - 0		4-EM
(10) Plotting Room	-	9	22-B	E	Located in emplacement	BB		Completed	-		1-0 17-EM
(11) SCR-296	-	14	22-B	E	Prefabricated steel tower and transmitter room	Non SB		Not required	Exh. 30-B		1-0 7-EM

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EC 12753
SM 12 MAR 45

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(12) Bombproofed Instruments.

Pr. n.	To	Azimuth Degrees	Range Yards	Elev. Above		DPF	CL	Azimuth M-2	Azimuth D100A	SOPF 15 Ft
				Ground	Trunnions					
EC-B1S1 55	B2S2 55	349.19	7052.64	44	45.70	-		1	2	1
EC-B1S1 55	B2S2 55	218.63	7303.09	326	327.96	1-M2	4		1	
B2S2 55	B2S2 55	162.82	5087.28	99	101.16	-		1	1	
B2S2 55	B4S4 55	328.94	10135.83	254	286.04	1-M2	4		1	
B2S2 55	B5S5 55	211.37	9102.90	-	-	-				
B2S2 55	B6S6 55	148.75	12252.52	264	265.05	1-M2	3		1	
B7S7 55	Vertical Base			234	235.79	1-M2	3		1	
Total instruments required										1
				2-M2	CL3	3		8		


*Note: Bombproof - "BB" by construction.
Splinterproof - "SP" by construction.

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EO 12958
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12/22/93


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Paragraph 7. (Continued).
f. Battery No. 6 (ATB No. 2) Exhibit 15-B. (TRUNION ELEVATION 28.76' MSL)

Battery Elements	Loc. No.	Exh. No.	Existing Under Const. (E) (U)	Type of Structure	Protection Against		Arc of View Miles Right - Left	Manning Detail
					Bombs Shell fire *	Gas		
(1) BC-6 	9-A	23-B	E	Converted steel gravel bunker on 34' tower. Two levels which also contain fire control equipment.	Non SB	Not required	0 - 6400	1-O 7-EM

(2) Paragraphs 5 and 7, Annex A, tabulate complete data on Battery.

(3) Instruments required.

Station	Elevation Ground MSL ft.	Instruments		Remarks
		AA, BC, MI	Finder, Height MI, 1 3/4	
BC-6 	21	2	1	1 additional instrument, AA, BC, MI, over V/3A authorized by letter, WD AGO, file AG 413.74 (18 Nov 43) OB-S-SFDDO, 22 Nov 43, subject: "Instrument, Observation, AA, BC, MI."

*Note: "SB" - Splinterproof by construction.

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EC 12953
12 MAR 1953

6. DATUM POINTS.

a. The following datums are available for orientation. Origin of the local plane coordinates are Cape Disappointment Light. Datum locations and numbers are shown in Exhibit 32-B.

Datum No.	Name	Location by Local Plane Yari. Coordinates	Description	Land Datum	Water Datum
1	Klipsan Beach Light	*W 360	Navigation light, Klipsan Beach, Washington	Az only	
2	North Head Light	W 2172.77	Lighthouse	Az only	Az & Range
3	Bent 550	W 2754.83	20' pole on North Jetty	Az only	
4	Cape Disappointment Light	Origin	Lighthouse	Az only	Az & Range
5	Jetty "A" Light	E 1146.19	Ilwaco Channel Light	Az only	Az & Range
6	Sand Island Dike Light 111.8	E 3722.06	Col River channel light	Az only	Az & Range
7	Sand Island Dike Light 110.6	E 5903.38	Col River channel light	Az only	Az & Range
8	Chinook Dike Light 108.8	E 8334.71	Chinook channel light	Az only	
9	Grey's Point Light	*E 24100	Col River channel light	Az only	
10	Tongue Point Light	*E 23900	Col River channel light	Az only	
11	Astor Column	E 19786.66	Historical concrete monument	Az only	
12	Astoria Light	*E 17400	Col River channel light	Az only	Az & Range
13	Lower Sands Light	*E 13460	Col River channel light	Az only	Az & Range
14	Desdemona Sands Light	E 8176.30	Col River channel light	Az only	Az & Range
15	Knuckle Datum South Jetty	E 718.17	20' pole on South Jetty	Az only	Az & Range
16	Outer Datum South Jetty	W 1889.92	20' pole on South Jetty	Az only	Az & Range
17	SCR-296 Tower Btry 245	E 6724.32	100' steel radar tower	Az only	
18	Peter Iredale	*E 5840	Fowsprit of wrecked ship	Az only	
19	West Point Light	*E 6710	Navigation light, Tillamook Head	Az only	

Note: (*) Data approximate to plus or minus 50 yards. Precise data to be established locally without cost.

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ANNEX B - FIRE CONTROL
(Continued)

Paragraph 8 Continued.

b. The following datums are visible from stations as indicated:

Station	Datums Visible (Exhibit 32-B)
HDCP-HECP (OP)	No. 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16.
Group I Station	No. 3, 4, 5, 6, 7, 15, 16, 18.
Group II Station	No. 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18.
BC-B ₁ ¹ S ₁ ¹	No. 3, 15, 16, 17, 18.
B ₁ ² S ₁ ²	No. 3, 15, 16, 18.
B ₁ ³ S ₁ ³	No. 1, 2, 3.
B ₁ ⁴ S ₁ ⁴	No. 3, 4, 5, 15, 16, 17, 18, 19.
B ₁ ⁵ S ₁ ⁵	No. 3, 16, 19.
B ₁ ⁶ S ₁ ⁶	No. 1, 2.
BC-2	No. 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17.
BC-B ₃ ¹ S ₃ ¹	No. 3, 4, 5, 6, 7, 8, 13, 14, 15, 16, 17.
B ₃ ² S ₃ ²	No. 3, 15, 16, 18.
B ₃ ³ S ₃ ³	No. 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19.
B ₃ ⁴ S ₃ ⁴	No. 2, 3, 15, 16, 17, 18, 19.
B ₃ ⁵ S ₃ ⁵	No. 3, 4, 5, 15, 16, 17, 18, 19.
B ₃ ⁶ S ₃ ⁶	No. 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.
B ₃ ⁷ S ₃ ⁷	No. 3, 16, 19.
MC-M ₄ ¹	No. 4, 5, 6, 7, 8, 13, 14, 15, 16, 17.
M ₄ ²	No. 3, 5, 6, 7, 8, 14, 15, 16, 17.
M ₄ ³	No. 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.
M ₄ ⁴	No. 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17.
M ₄ ⁵	No. 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17.
BC-B ₅ ¹ S ₅ ¹	No. 3, 4, 5, 6, 15, 16, 17.
B ₅ ² S ₅ ²	No. 3, 15, 16, 19.
B ₅ ³ S ₅ ³	No. 3, 15, 16, 18.
B ₅ ⁴ S ₅ ⁴	No. 3, 4, 5, 16, 17, 18, 19.
B ₅ ⁵ S ₅ ⁵	No. 3, 4, 5, 6, 7, 8, 14, 15, 16, 17.
B ₅ ⁶ S ₅ ⁶	No. 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18.
B ₅ ⁷ S ₅ ⁷	No. 2, 3.
BC-6	No. 3, 4, 5, 6, 7, 8, 10, 11, 14, 15, 16, 17, 18.

9. LAND ACQUISITION.

a. The land to be acquired is described in detail under

Annex H.

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10. RADAR EQUIPMENT.

a. Authorities.

- (1) Table of Basic Allowances No. 4, 1 July 1942, and changes thereto.
- (2) Secret radio No. 4702, dated 3 February 1944, War Department, ASW, to the Commanding General, Western Defense Command.

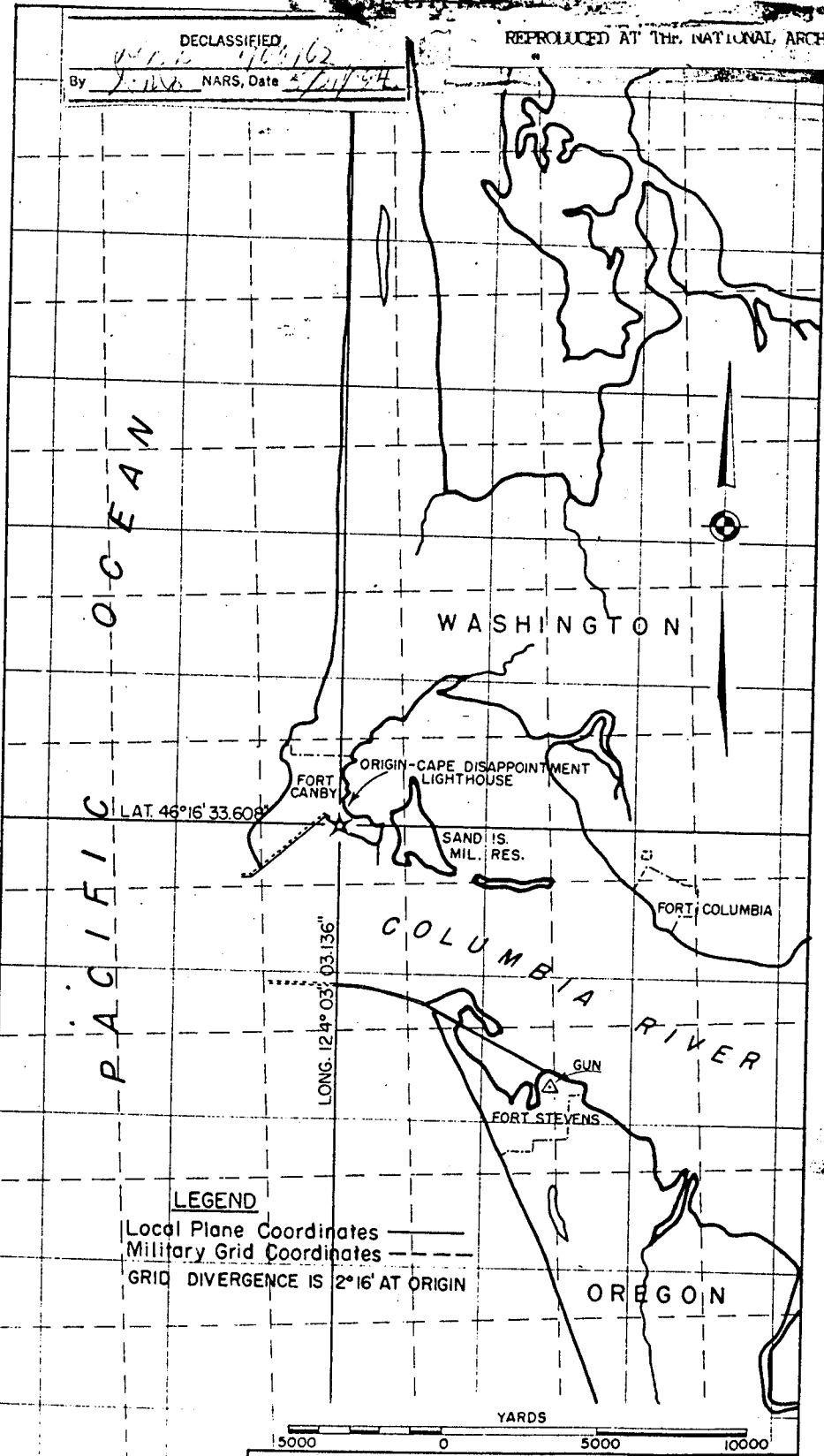
b. Tabulation of radar installations.

Type	Loc. No.	Exh. No.	Primary Assignment	Secondary Assignment	Elevation, ft., MSL		Areas of Detection	Authorized by	Remarks
					of Antenna Ground	Dipoles			
SCR-296-A	2	16-B	Btry No. 3 (246)	Btry No. 1 (247) Btry No. 5 (245)	307	419.57	Exh 29-B	Par 10a(1) above	Project No. RAD-9-1014
SCR-296-A	3-A	17-E	Btry No. 1 (247)	Btry No. 3 (246) Btry No. 5 (245)	222	254.2	Exh 27-B	Par 10a(1) above	Project No. RAD-9-112
SCR-296-A	14	22-B	Btry No. 5 (245)	Btry No. 1 (247) Btry No. 3 (246)	77	185.31	Exh 30-B	Par 10a(1) above	Project No. RAD-9-1013
SCR-547	5-A	18-E	Btry No. 2 (AMTB No. 1)	Btry No. 6 (AMTB No. 2)	15	-	Exh 28-B	Par 10a(2) above	
SCR-682	2	16-B	HDCP-HECP	Group I (Gun Group)	237	262.88	Exh 31-B	Par 10a(1) above	Project No. RAD-9-220 Radical construction completed Installation awaiting equipment

DECLASSIFIED

REPRODUCED AT THE NATIONAL ARCHIVE

By *J. W. NARS*, Date *7/1/84*



PACIFIC OCEAN

WASHINGTON

LAT. 46°16' 33.608"

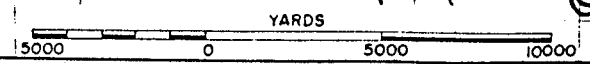
LONG. 124° 03' 03.136"

COLUMBIA RIVER

OREGON

LEGEND

Local Plane Coordinates ———
 Military Grid Coordinates - - -
 GRID DIVERGENCE IS 2°16' AT ORIGIN



HARBOR DEFENSES OF THE COLUMBIA LOCAL PLANE GRID SYSTEM

REVISED DATE:

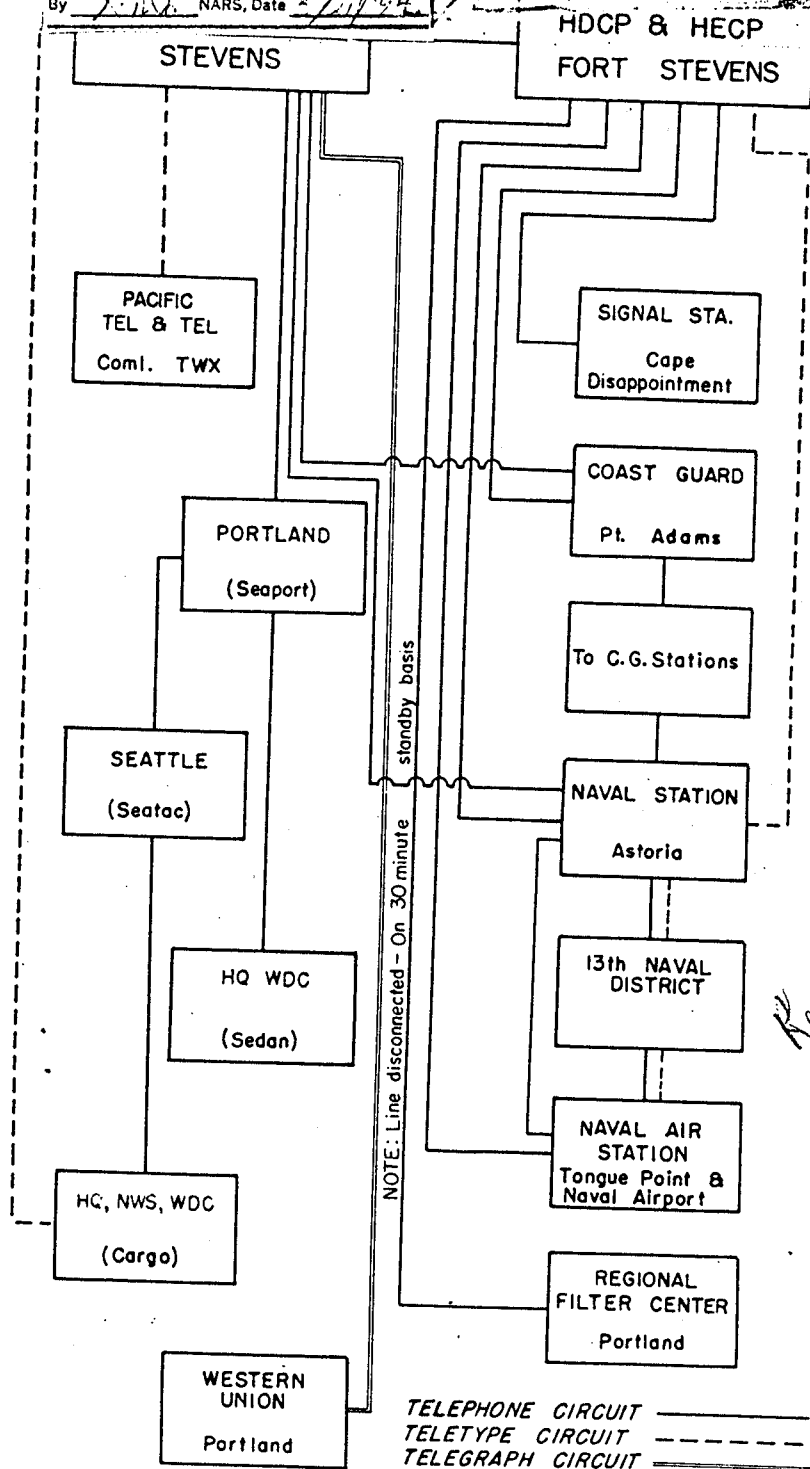
RECLASSIFIED UNCLASSIFIED
ORDER 550 BY TAG PER 7063

PREPARED BY:
OFFICE OF THE ART. ENG.
FORT STEVENS, OREGON

DATE: 19 MAY 1944
EX. I-B ANNEX B

SECRET

By *J. W. A.* NARS, Date *2/21/94*



Reverse of previous page

HARBOR DEFENSES OF THE COLUMBIA		REVISED DATE:
Telephone, Teletype & Telegraph Circuits - Leased Lines		
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 29 MAY 1944	EX. 2-B ANNEX B

DECLASSIFIED UNCLASSIFIED
ORDER BY TAG PER 7063

~~SECRET~~

By W.A. NARS, Date 2/11/94

NOTE 1

Possible Nets with SCR-536
 6 SETS 4495 KC
 5 SETS 4930 KC
 5 SETS 5500 KC
 16 TOTAL
 (3 SPARES)

ELIMINATE
12 sets
13 1180 capd
for service
house
sets used

delete

HARBOR DEFENSES OF THE COLUMBIA
 RADIO COMMUNICATION NETS

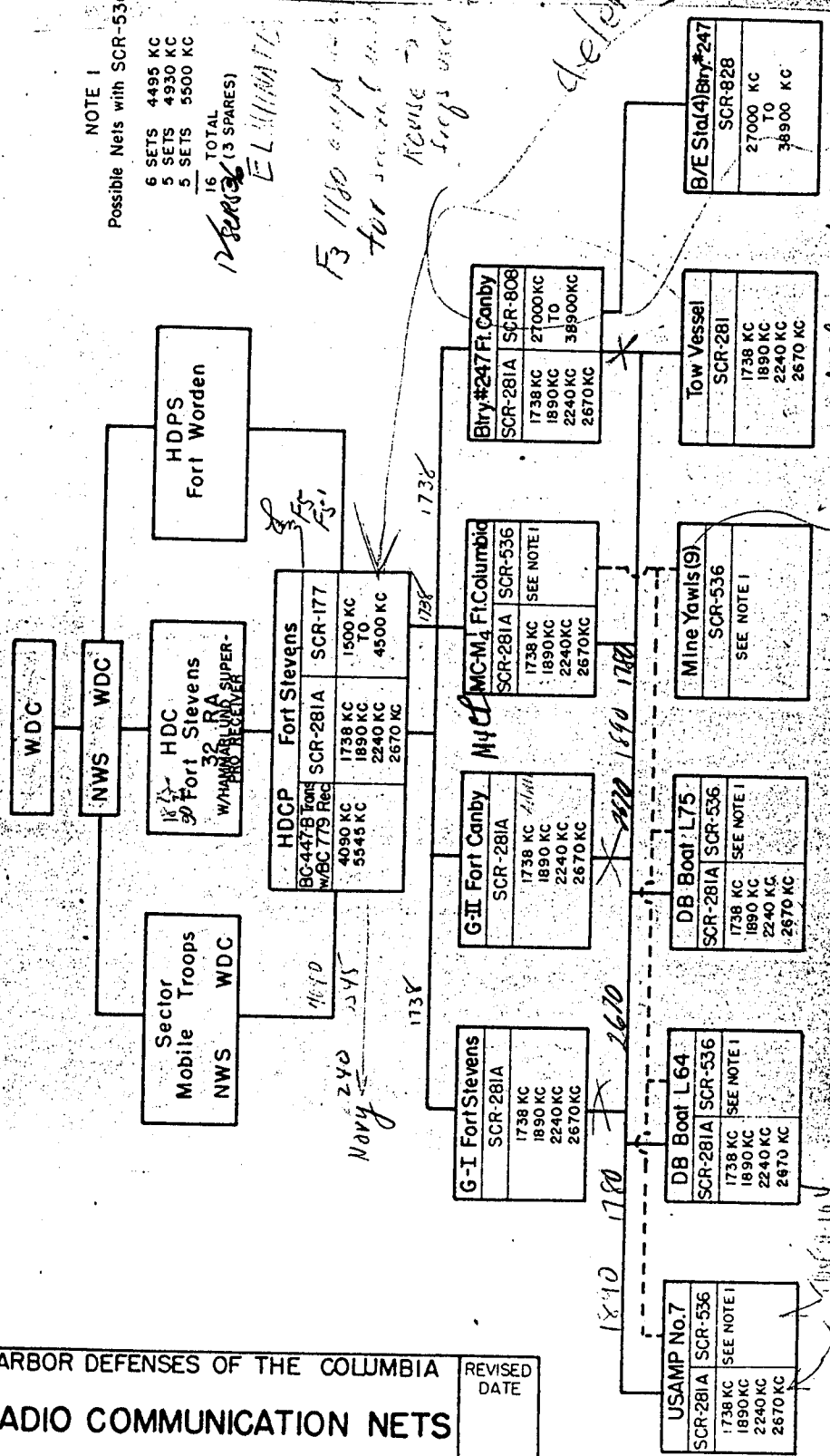
PREPARED BY
 OFFICE OF THE ART. ENG.
 FORT STEVENS, OREGON

DATE: 15 JULY 1944
 EX. 3-8 ANNEX B

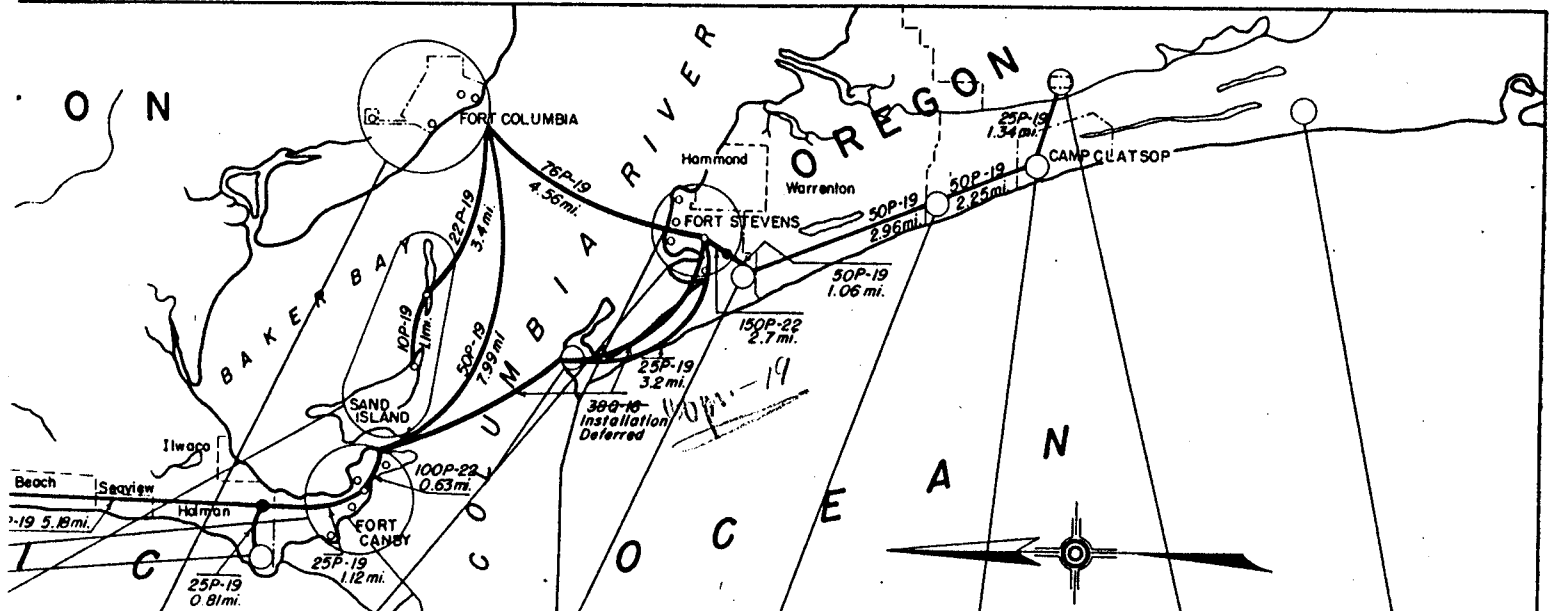
REVISED DATE

ORDER REGRADED UNCLASSIFIED
 SEC ARMY BY TAG PER 7063

SECRET



in excess of est. req. but OK



LOC. 6-6A-7-8
M ¹ Mines
Fixed S.L. No. 11
Fixed S.L. No. 12
Fl Columbia SWB Rm
BCB ¹ S ¹ Btry 246
B ¹ S ¹ Btry 245
No. 4 M ¹ Mines
Btry No. 3-2-6 BC 246
Mine Casemate

LOC. 9-9A-10-11-12-13
Mobile S.L. No. 15
Mobile S.L. No. 16
Mobile S.L. No. 17
Btry. No. 6 AMTB No. 2
HD Radio Trans. Sta.
HDCP—HECP
Btry. No. 5-2-6 BC 245
BCB ¹ S ¹ Btry 245
B ¹ S ¹ Btry 246
M ¹ Mines
Fixed S.L. No. 13
Fixed S.L. No. 14
Fl. Stevens SWB Rm

LOC. 14
GI Station
B ¹ S ¹ Btry 245
B ¹ S ¹ Btry 246
B ¹ S ¹ Btry 247
Fixed S.L. No. 18
Fixed S.L. No. 19
SCR-296 Btry 245

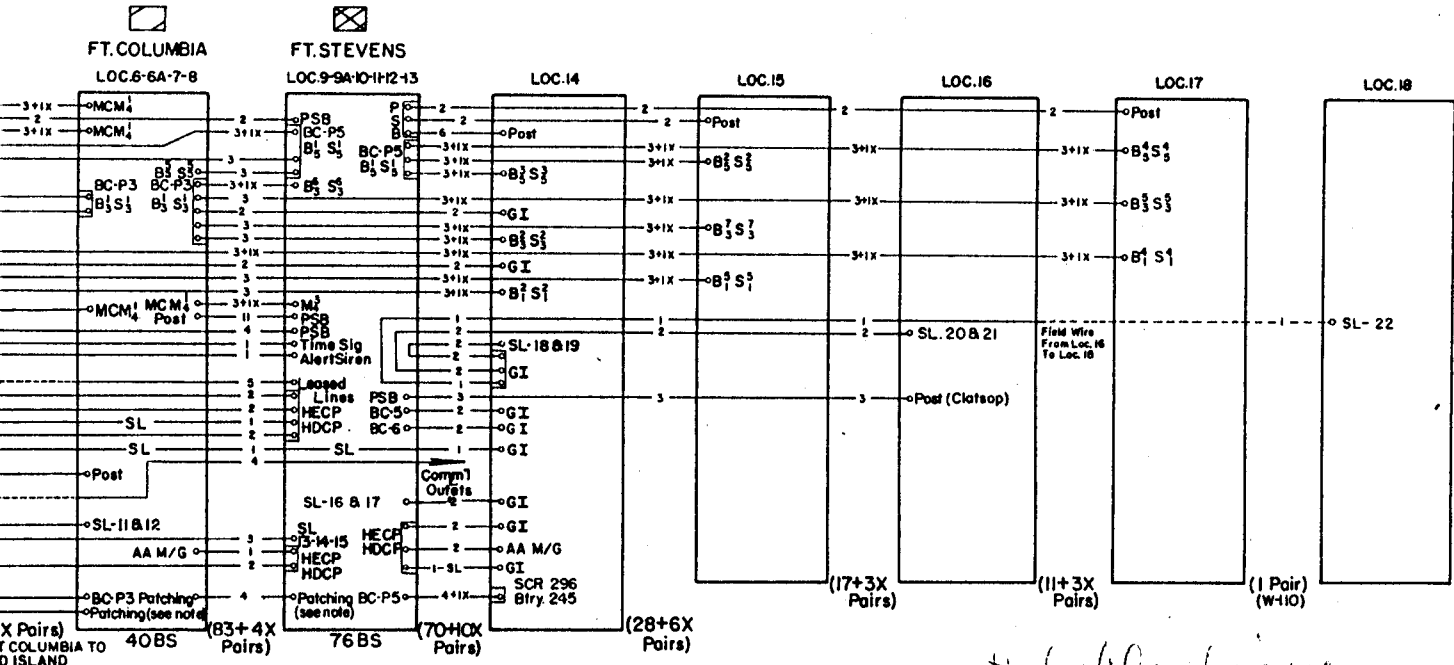
LOC. 15
B ¹ S ¹ Btry 245
B ¹ S ¹ Btry 246
B ¹ S ¹ Btry 247

LOC. 16
Mobile S.L. No. 20
Mobile S.L. No. 21

LOC. 17
B ¹ S ¹ Btry 245
B ¹ S ¹ Btry 246
B ¹ S ¹ Btry 247

LOC. 18
Mobile S.L. No. 22

*Intake Unit
Call Nos.*

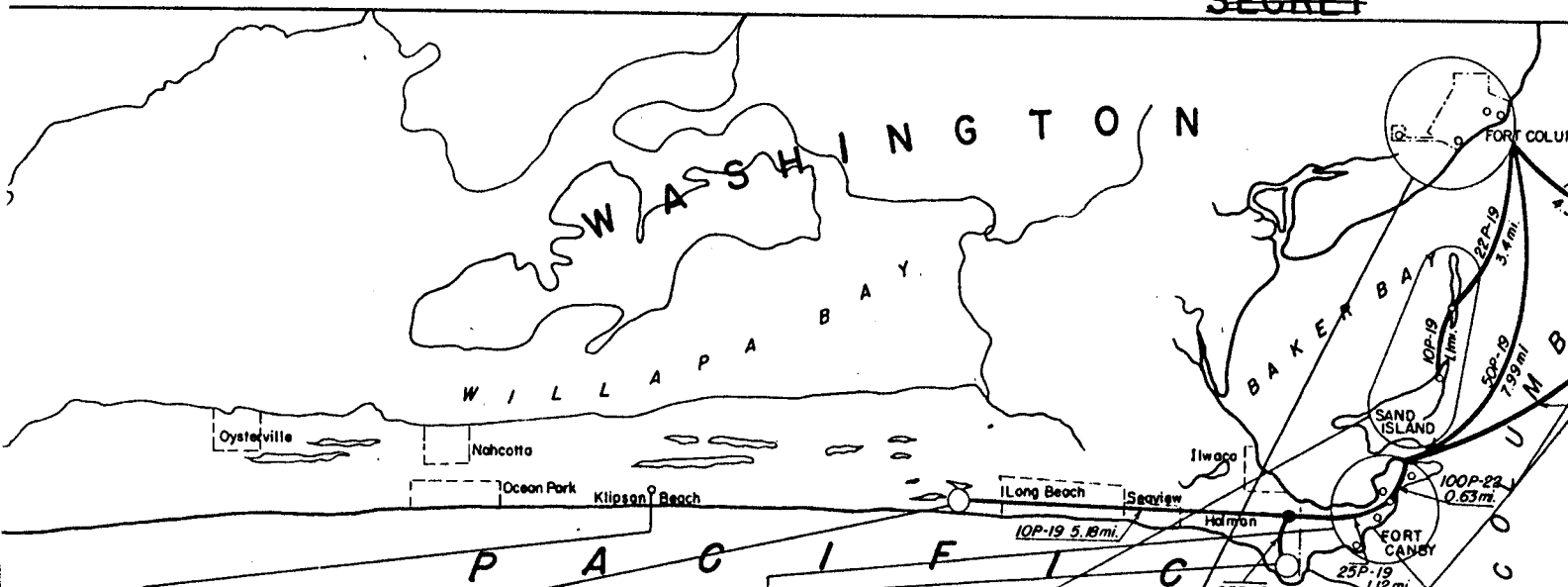


**HARBOR DEFENSES OF THE COLUMBIA
CIRCUIT DIAGRAM**

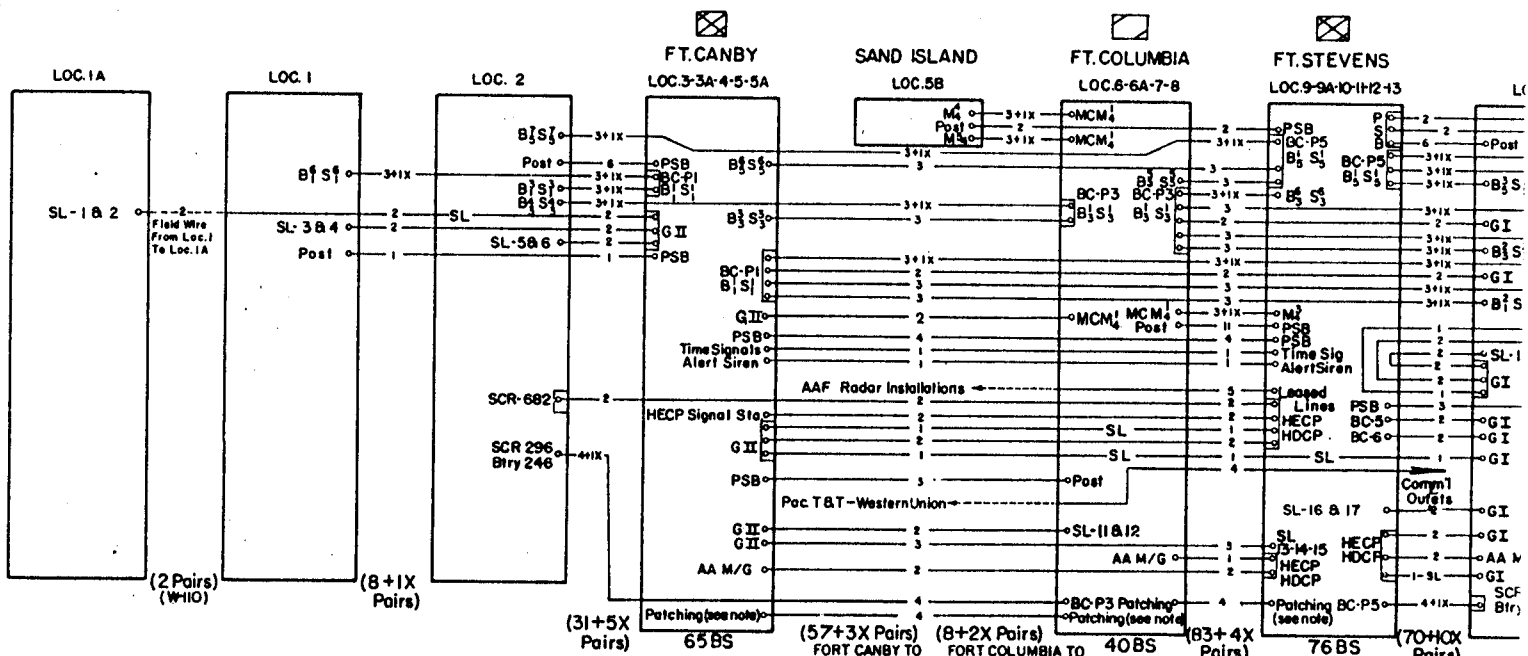
Prepared By: OFFICE OF THE ARTILLERY ENG. FORT STEVENS, ORE.	DATE: 15 JULY 1944 EX. NO. 4B ANNEX B
Revised Date	



REGRADED UNCLASSIFIED
ORDER SEC ARMY BY TAG PER 7063



LOC. 1A Mobile S.L. No. 1 Mobile S.L. No. 2	LOC. 1 Bt S. Btry 247 Mobile S.L. No. 3 Mobile S.L. No. 4	LOC. 2 Bt S. Btry 245 Bt S. Btry 246 Bt S. Btry 247 Fixed S.L. No. 5 Fixed S.L. No. 6 SCR-682 SCR-296 Btry 246	LOC. 3-3A-4-5-5A Btry. No. 1-2-6 BC247 BCBt S. Btry 247 SCR-296 Btry 247 Fort Canby SWB Rm G II Station Bt S. Btry 245 Bt S. Btry 246 HCEP-HDCP Sig. Sta. Mobile S.L. No. 7 Mobile S.L. No. 8 Btry No 2 AMTB No 1 Fixed S.L. No. 9 Mobile S.L. No. 10	LOC. 5B M: Mines M: Mines	LOC. 6-6A-7-8 M: Mines Fixed S.L. No. 11 Fixed S.L. No. 12 Ft Columbia SWB Rm BCBt S. Btry 246 Bt S. Btry 245 No 4 MC M: Mines Btry No 3-2-6 BC 246 Mine Casemate	LOC. 9-9A-10-11-12-13 Mobile S.L. No. 15 Mobile S.L. No. 16 Mobile S.L. No. 17 Btry. No. 6 AMTB No. 2 HD Radio Trans. Sta. HDCP—HECP Btry No 5-2-6 BC 245 BCBt S. Btry 245 Bt S. Btry 246 M: Mines Fixed S.L. No. 13 Fixed S.L. No. 14 Ft. Stevens SWB Rm
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LEGEND

(9 Pairs) TOTAL NUMBER OF CIRCUITS IN SECTION
 (+ X) TOTAL NUMBER OF "T" CIRCUITS IN SECTION

☐ — FIRE CONTROL SWITCHBOARD (FSB)
 ☒ — FSB AND POST SWBD (PSB) AT SAME LOCATION

(BS) BATTERY SUPPLY CIRCUITS
 NUMBER OF 'BS' SHOWN IS FOR CIRCUITS ON DIAGRAM ONLY
 LOCAL CIRCUITS WITHIN LOCATIONS—NOT SHOWN ON DIAGRAM
 PAR. 8, ANNEX B, INDICATES STATION COMBINATIONS

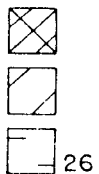
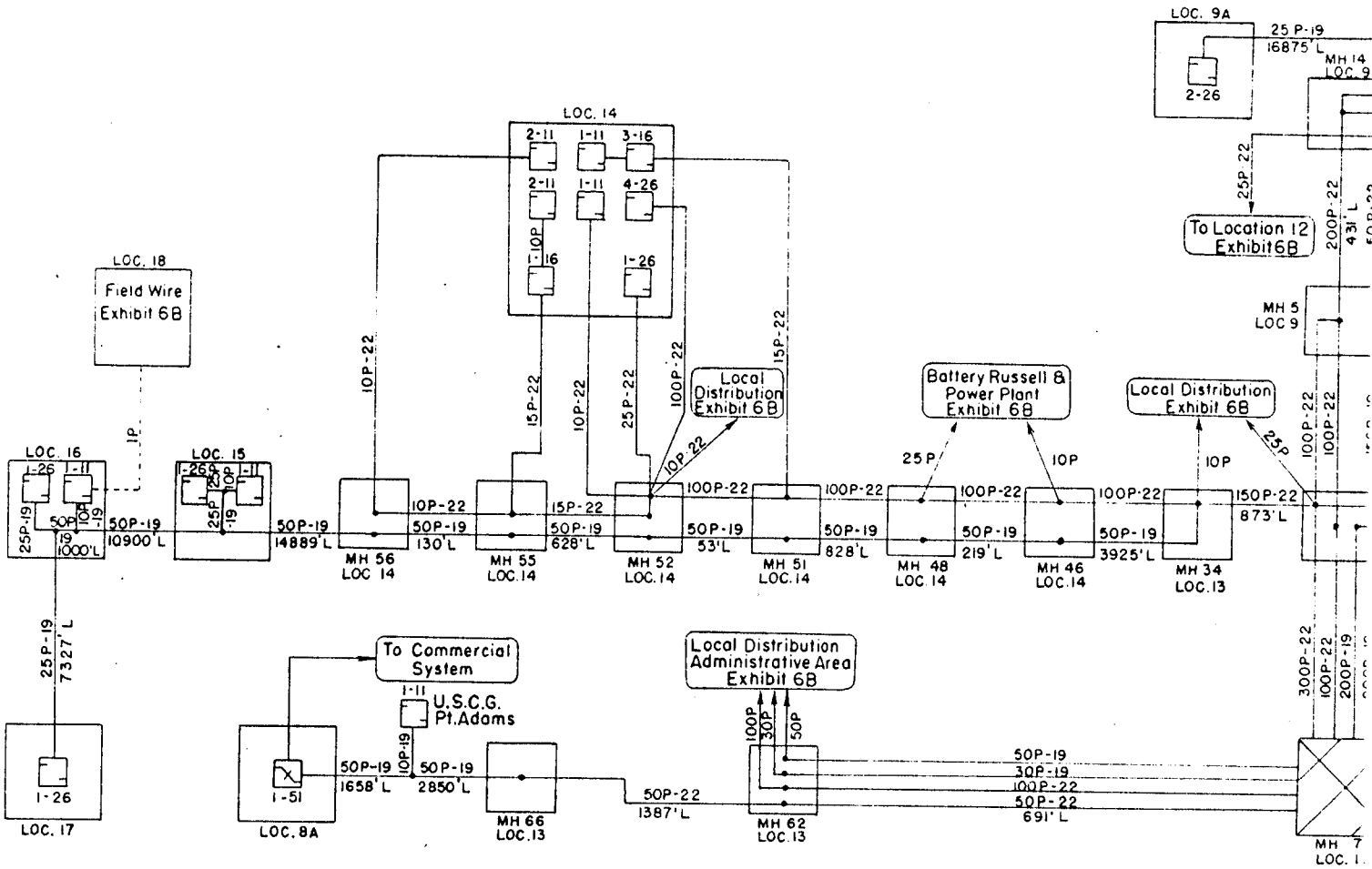
NOTE:

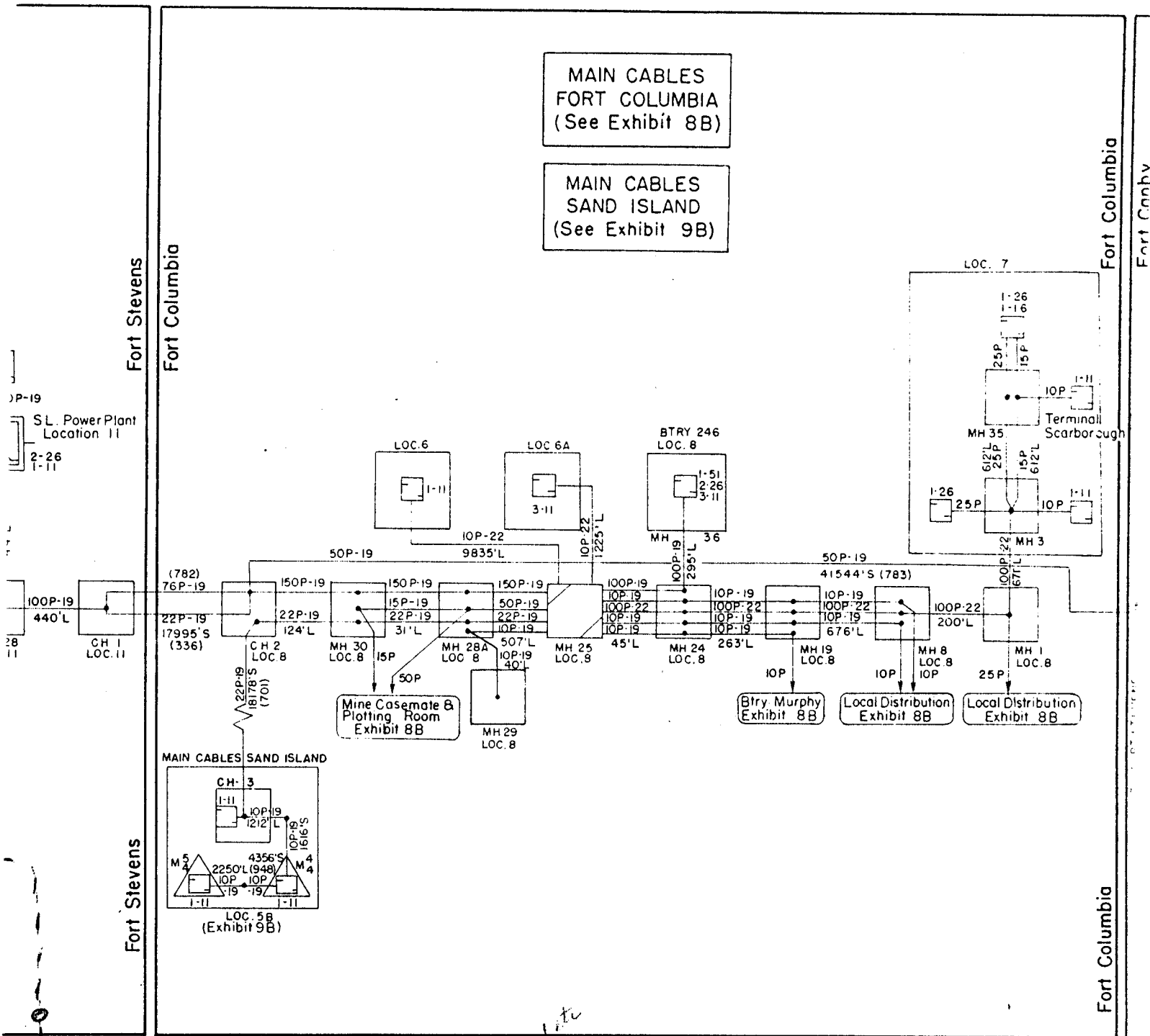
PATCHING LINES FOR SECONDARY RADAR ASSIGNMENTS.
 ONLY ONE TIME INTERVAL CIRCUIT PER BATTERY, INCLUDING RADAR, INSTALLED BETWEEN SWITCHBOARDS.



REGRADED UNCL
 ORDER SEC ARMY BY TAG P.

**MAIN CABLES
FORT STEVENS
(See Exhibit 6B)**





Connecting Terminal

MH Manhole

3200'L(S) Distance Between Main Splices and Terminals

Installed on Land

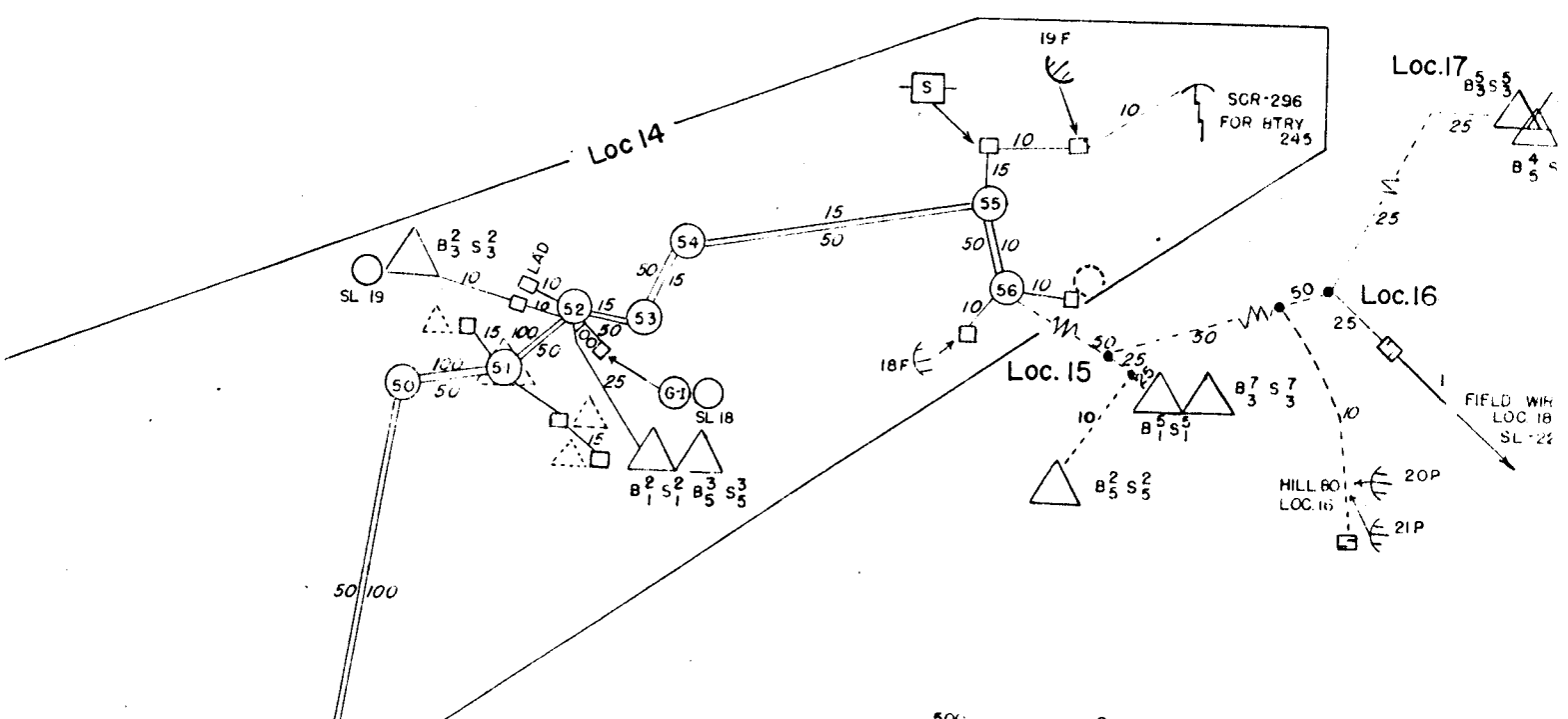
LOC. 3 Location Number

Cable

(701) Cable Number

Point and Number

• Splice



LEGEND

SPLICE	•
DUCT CABLE	—
CONDUIT LINES	○—○
TRENCHED CABLE	- - -
MANHOLE & NO.	⑩
HANDHOLE	□
LOCAL ADMINISTRATIVE DIST.	L.A.D.

HARBOR DEFENSES OF THE COLUMBIA
MAIN CABLE ROUTINGS
 (FORT STEVENS)

REVI
DA

OFFICE OF THE ART ENG
 FORT STEVENS, OREGON

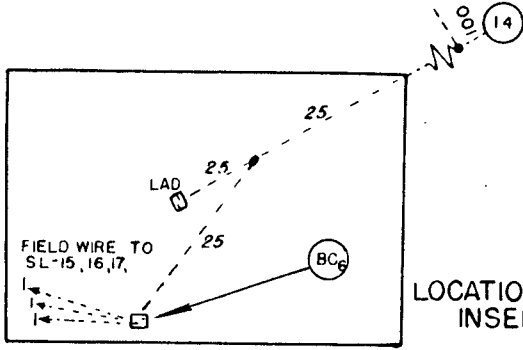
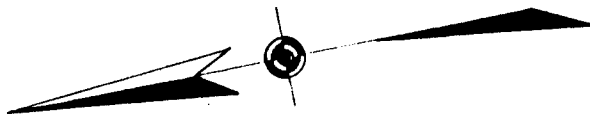
DATE: 15 July 1944
 EX 6B ANNEX B

DECLASSIFIED
 7/16/2

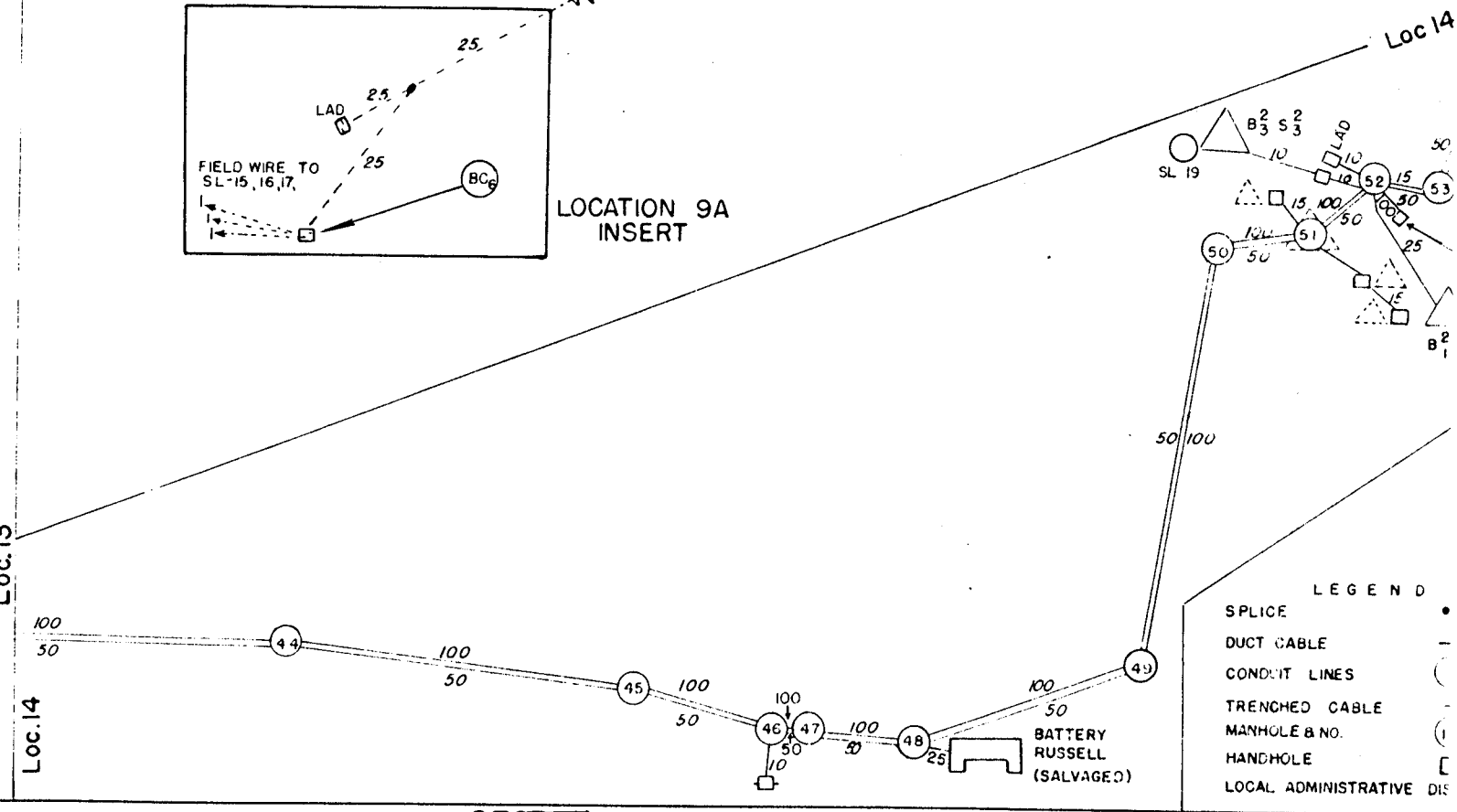
REGRADED UNCLASSIFIED
ORDER SEC ARMY BY TAG PER 7063

A-17

ID
RT

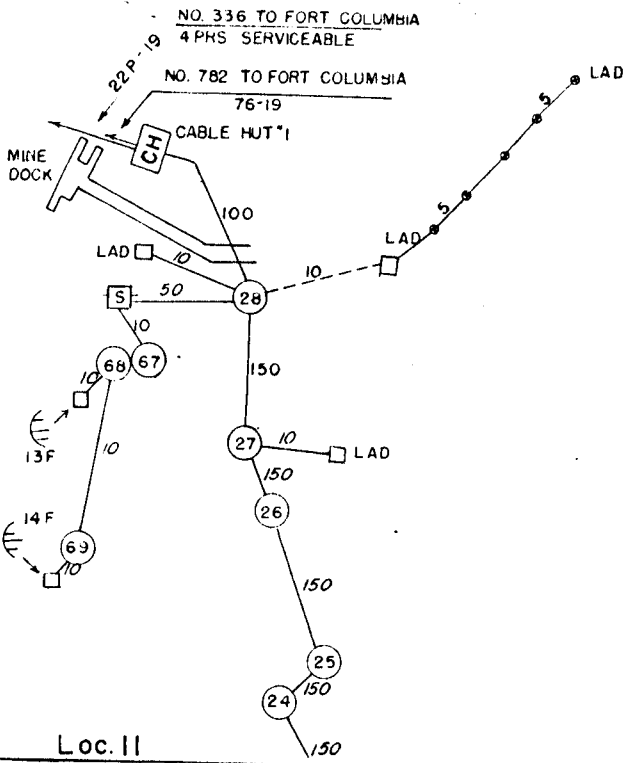


LOCATION 9A
INSERT

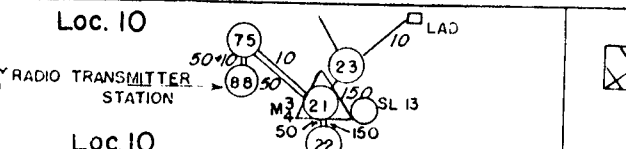


LEGEND

- SPLICE •
- DUCT CABLE —
- CONDUIT LINES ()
- TRENCHED CABLE - - -
- MANHOLE & NO. (1)
- HANDHOLE []
- LOCAL ADMINISTRATIVE DIS



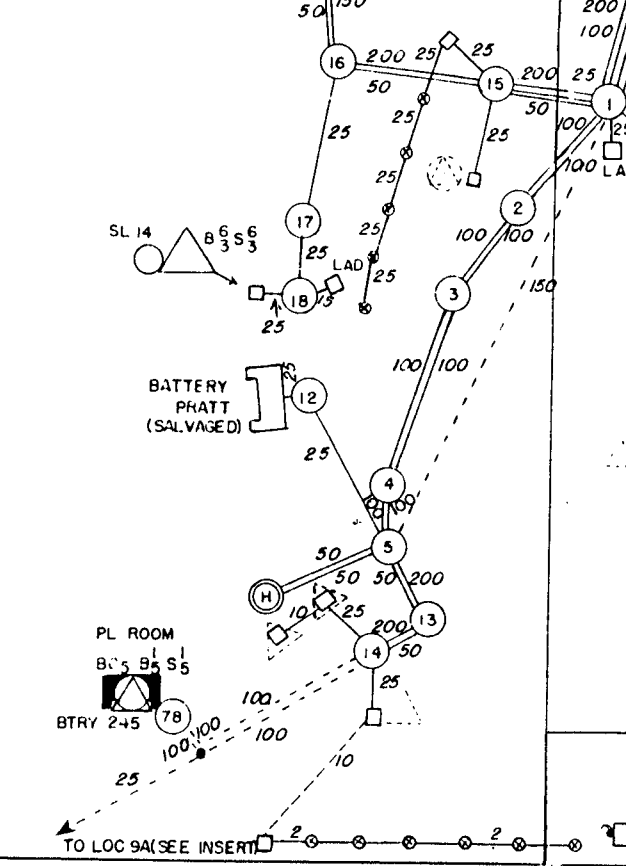
Loc. 11



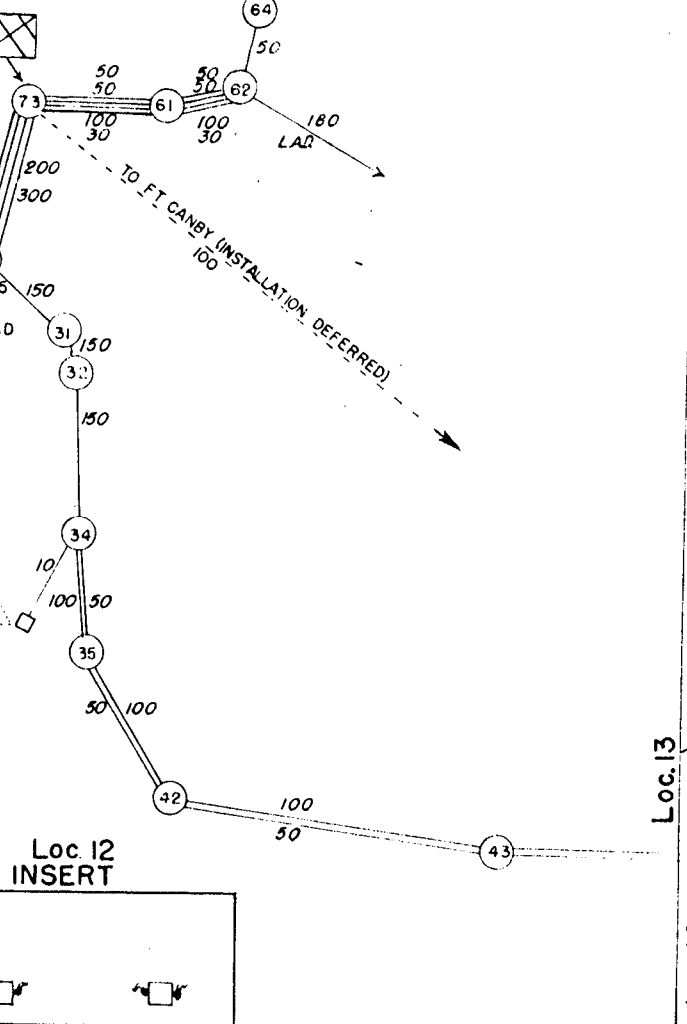
Loc. 10

Loc. 10

Loc. 9



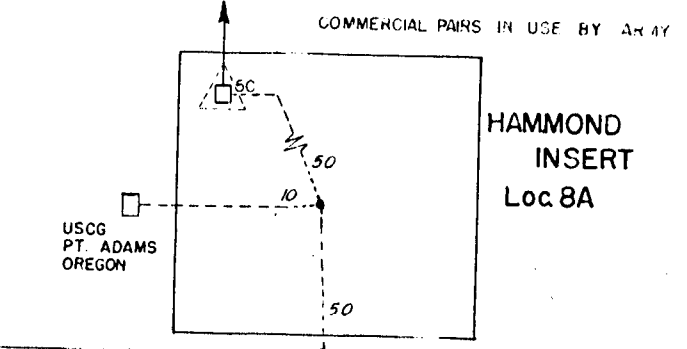
TO LOC 9A (SEE INSERT)



Loc. 12 INSERT

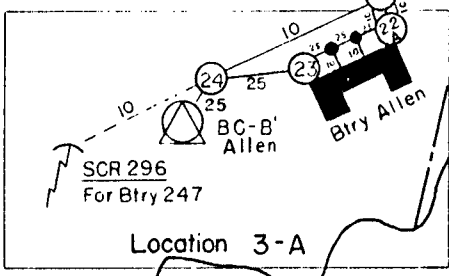
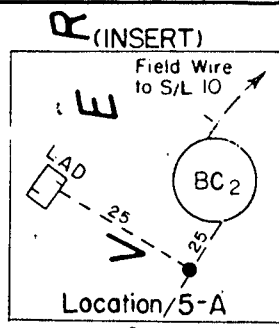
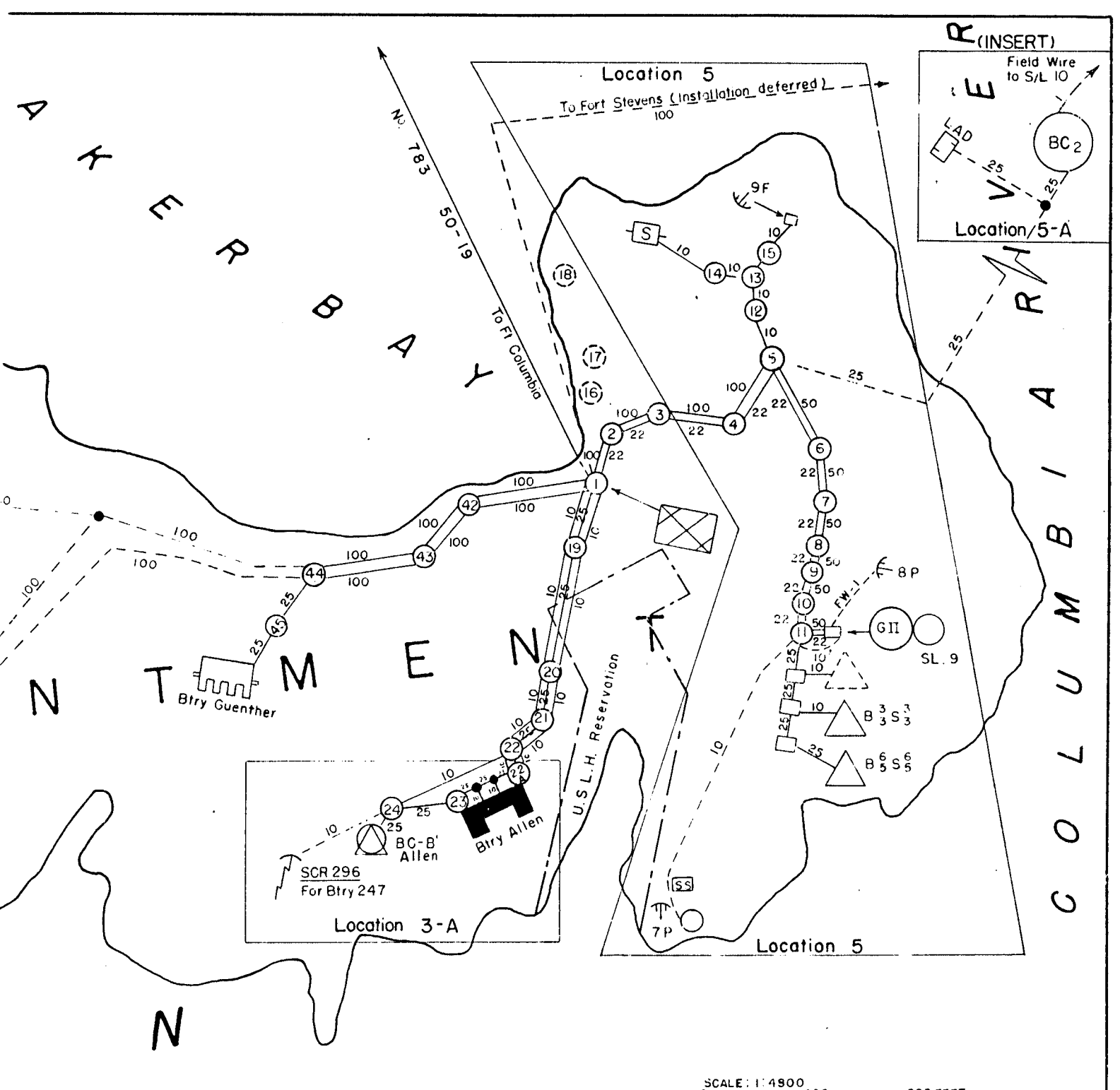
Loc. 13

Loc. 14



HAMMOND INSERT
Loc. 8A

FILE
SL
T-
T-
T-



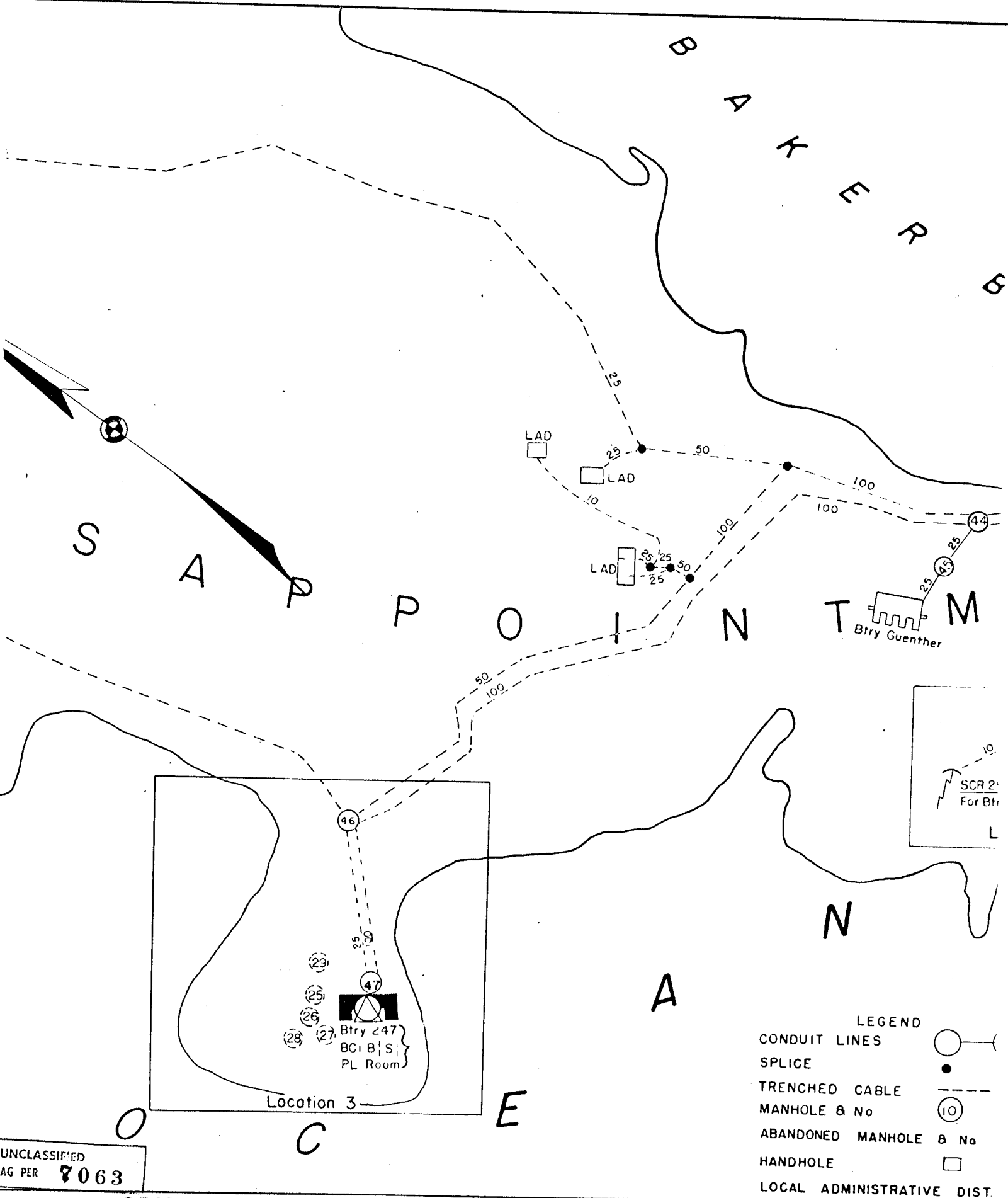
- LEGEND
- CONDUIT LINES
 - SPLICE
 - TRENCHED CABLE
 - MANHOLE & No
 - ABANDONED MANHOLE & No
 - HANDHOLE
 - LOCAL ADMINISTRATIVE DIST. L A D

HARBOR DEFENSES OF THE COLUMBIA MAIN CABLE ROUTINGS (FORT CANBY)

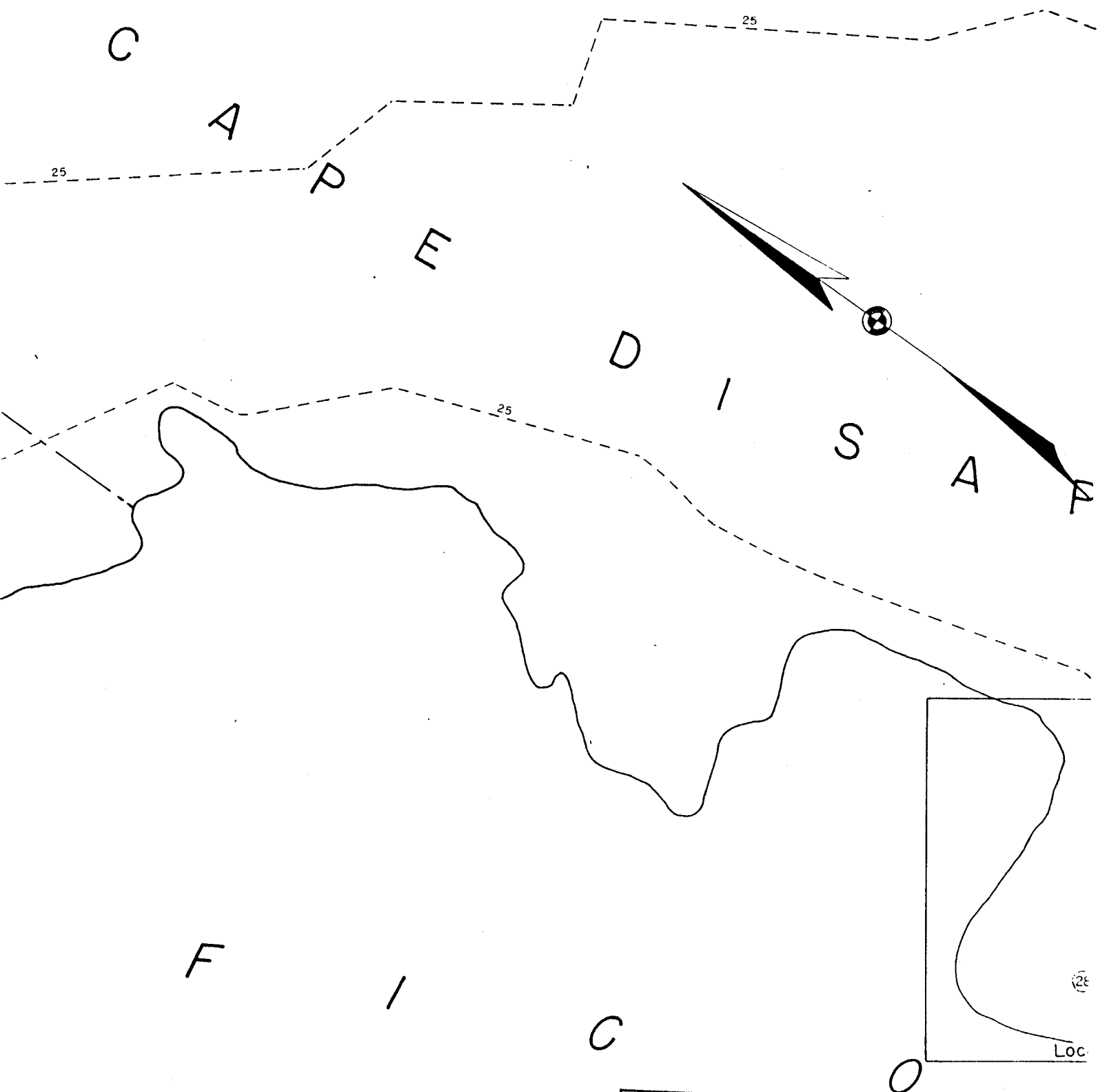
Prepared By:
OFFICE OF THE ARTILLERY ENGINEER
FORT STEVENS, OREGON

DATE: 15 JULY 1944
EXHIBIT 7B ANNEX B

REVISED
DATE



UNCLASSIFIED
TAG PER 7063



REGRADED UNCLASSIFIED
 ORDER SEC ARMY BY TAG PER 7063

(INSERT)
Location 1

Field Wire To
Loc. 1A
SL-1&2

Field Wire To
S/L 3&4

Location 2

SCR 296
For Btry 246

SCR 682

B⁴S⁴
B₃S₃

B⁷S⁷
B₅S₅

SL 5&6

10

5F

6F

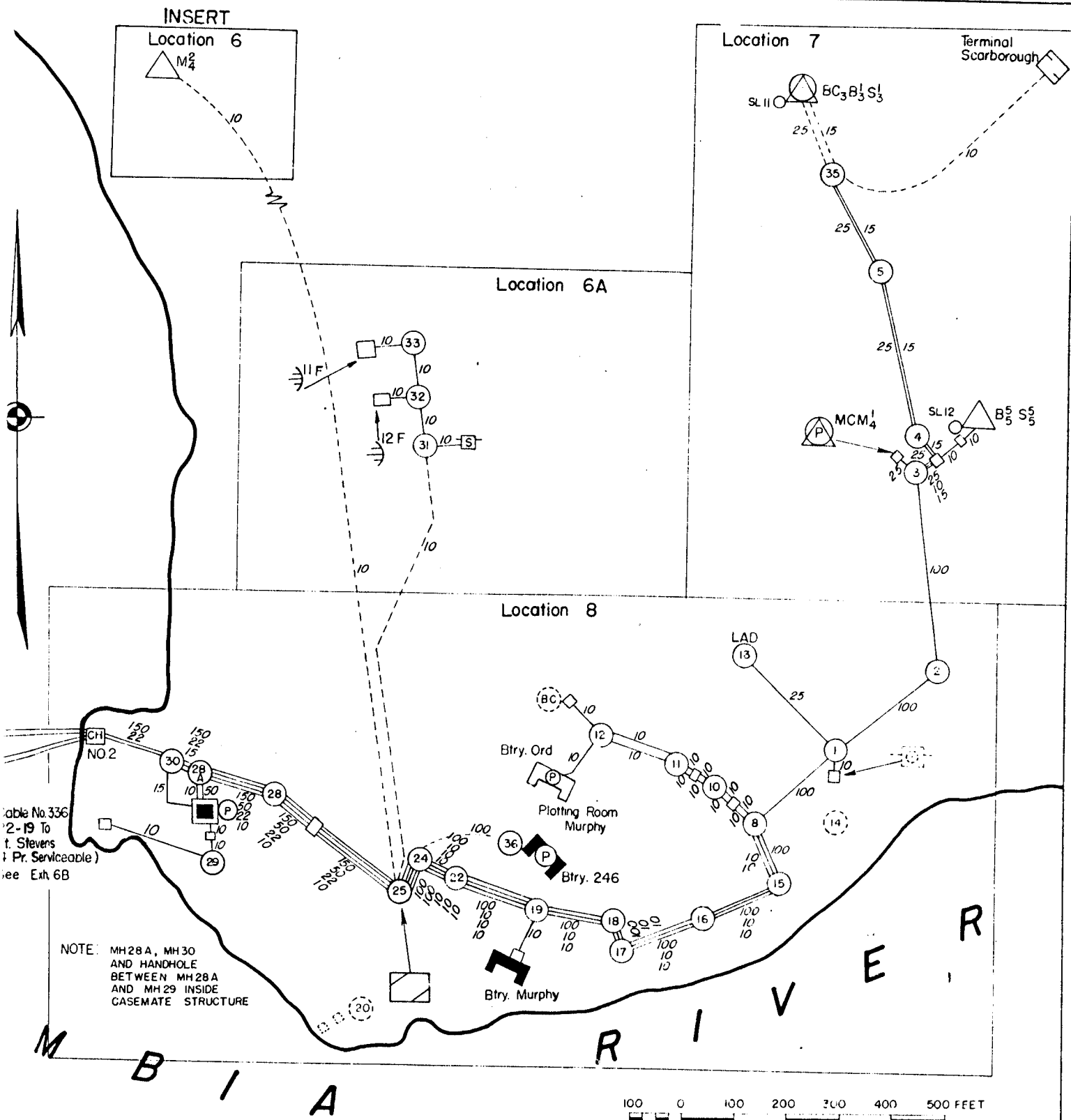
B2 Guenther

Location 2

RESERVATION

U S L H

P A C I F



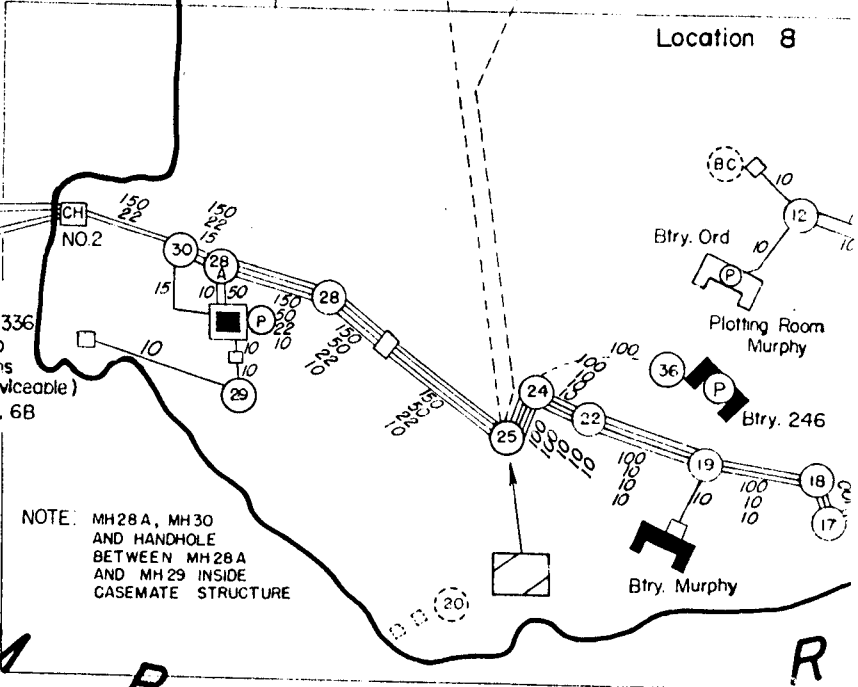
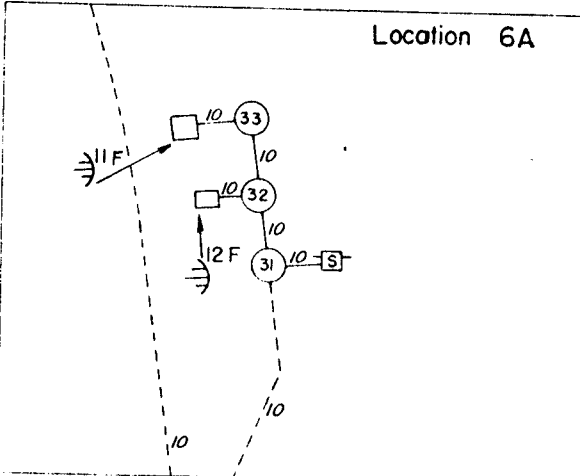
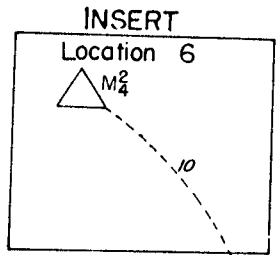
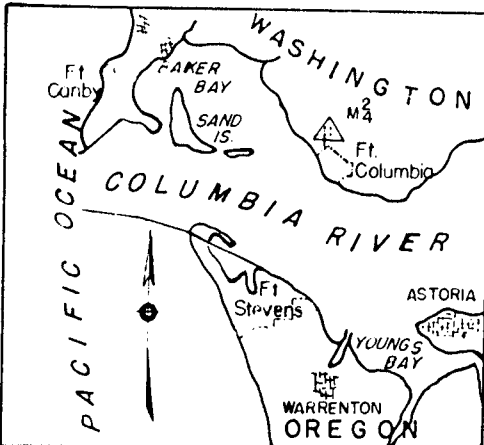
able No. 336
2-19 To
t. Stevens
t Pr. Serviceable)
ee Exh. 6B

NOTE: MH28A, MH30
AND HANDHOLE
BETWEEN MH28A
AND MH29 INSIDE
CASEMATE STRUCTURE

LEGEND

- CONDUIT LINE
- MANHOLE & NO.
- ABANDONED MH & NO.
- HANDHOLE
- TRENCHED CABLE
- LOCAL ADM DIST

<p>HARBOR DEFENSES OF THE COLUMBIA</p> <p>MAIN CABLE ROUTINGS</p> <p>(FORT COLUMBIA)</p>		<p>REVISED DATE</p>
<p>Prepared By: OFFICE OF THE ARTILLERY ENG. FORT STEVENS, OREGON</p>	<p>Date: 15 JULY 1944</p> <p>EXHIBIT 8-B ANNEX B</p>	



Cable No. 783
50-19 To
Fort Canby - See Exh. 7-B

Cable No. 701
22-19 To Sand Island
See Exhibit No. 9B

Cable No. 782
76-19 To
Ft. Stevens
See Exh. 6B

Cable No. 336
22-19 To
Ft. Stevens
(4 Pr. Serviceable)
See Exh. 6B

NOTE: MH28 A, MH30
AND HANDHOLE
BETWEEN MH28 A
AND MH29 INSIDE
CASEMATE STRUCTURE

C
O
L
U
M
B
I
A
R
I
V
E
R

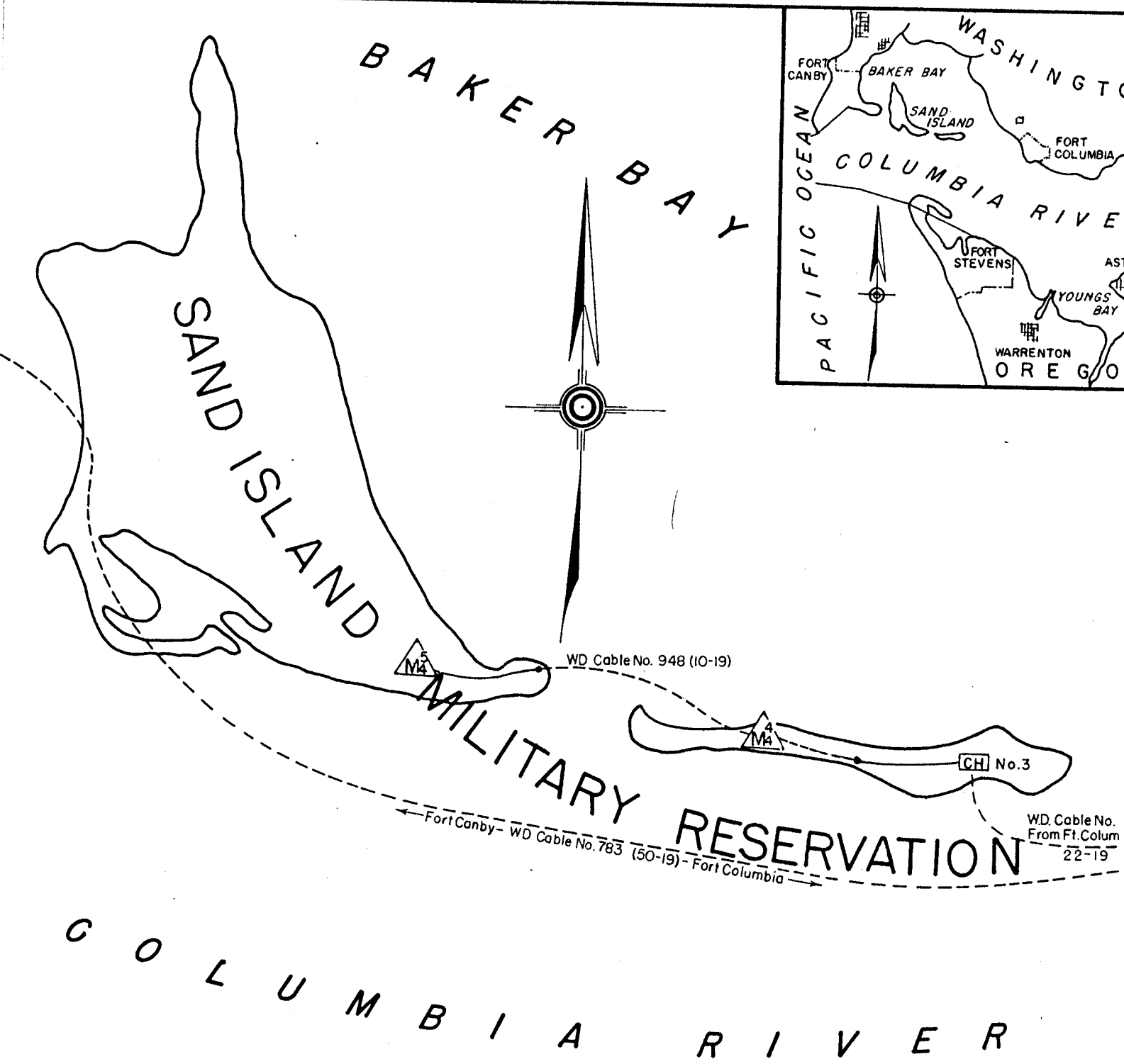
LEGEND

CONDUIT LINE	○—○
MANHOLE & NO.	⑥
ABANDONED MH & NO.	②①
HANDHOLE	□
THE NCHED CABLE	- - -
LOCAL ADM DIST	LAD

HARB
MAIN

Prepared By
OFFICE OF THE
FORT STEVEN

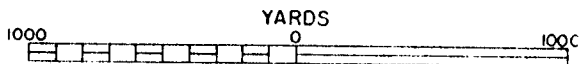
REGRADED UNCLASSIFIED
ORDER SEC ARMY BY TAG PER 7063



C O L U M B I A R I V E R

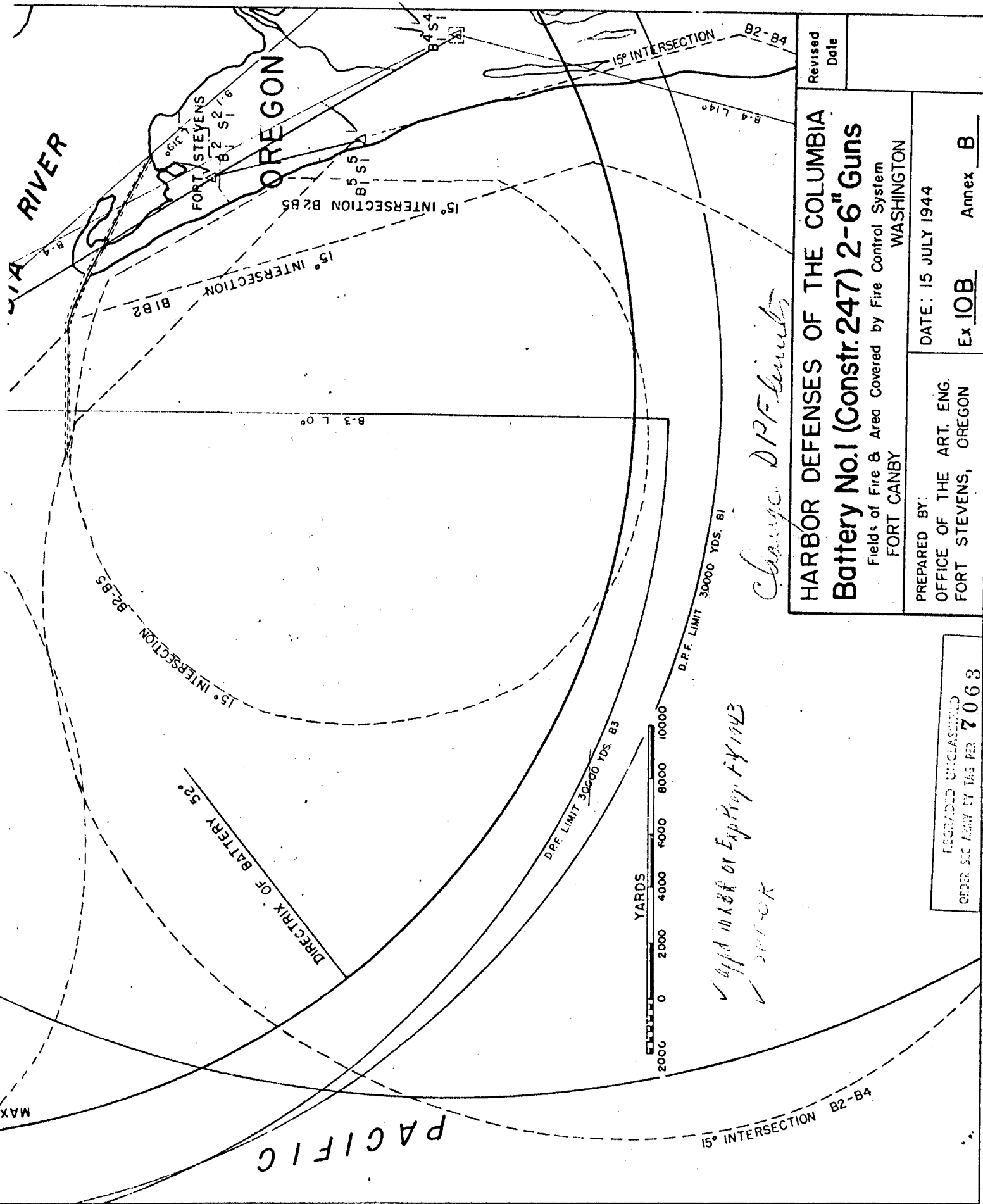
LEGEND

- SUBMARINE CABLE -----
- SUBTERRANEAN CABLE _____
- SPLICE ●



REGRADED UNCLASSIFIED
 ORDER SEC ARMY BY TAG PER 7063

HARBOR DEFENSES OF THE COLUMBIA MAIN CABLE ROUTINGS (SAND ISLAND MILITARY RESERVATION)		REV DF
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 15 JULY 1944 EX. 9B ANNEX B	

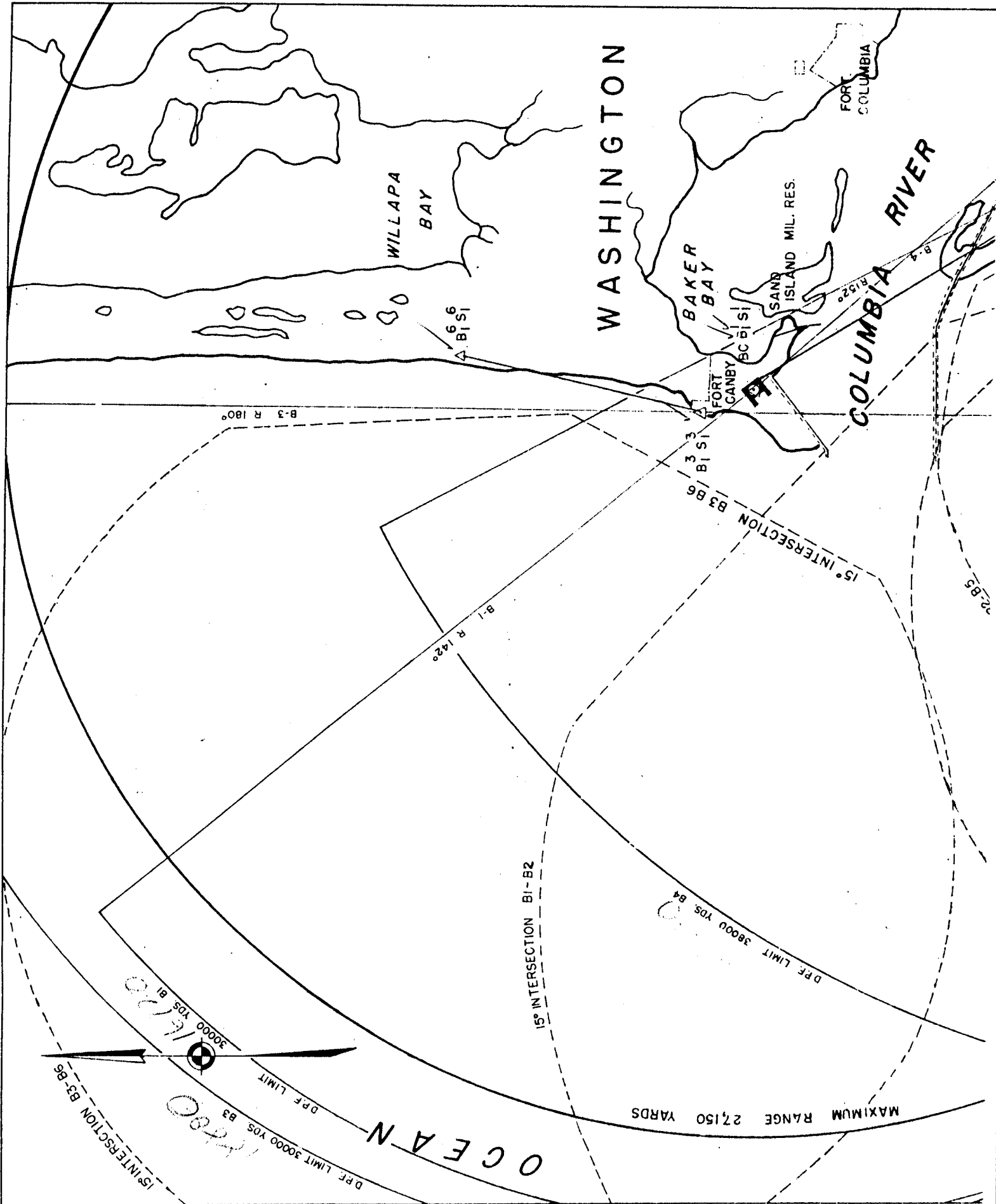


Revised Date	
HARBOR DEFENSES OF THE COLUMBIA Battery No. 1 (Constr. 247) 2-6" Guns Fields of Fire & Area Covered by Fire Control System FORT CANBY WASHINGTON	
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 15 JULY 1944 Ex <u>10B</u> Annex <u>B</u>

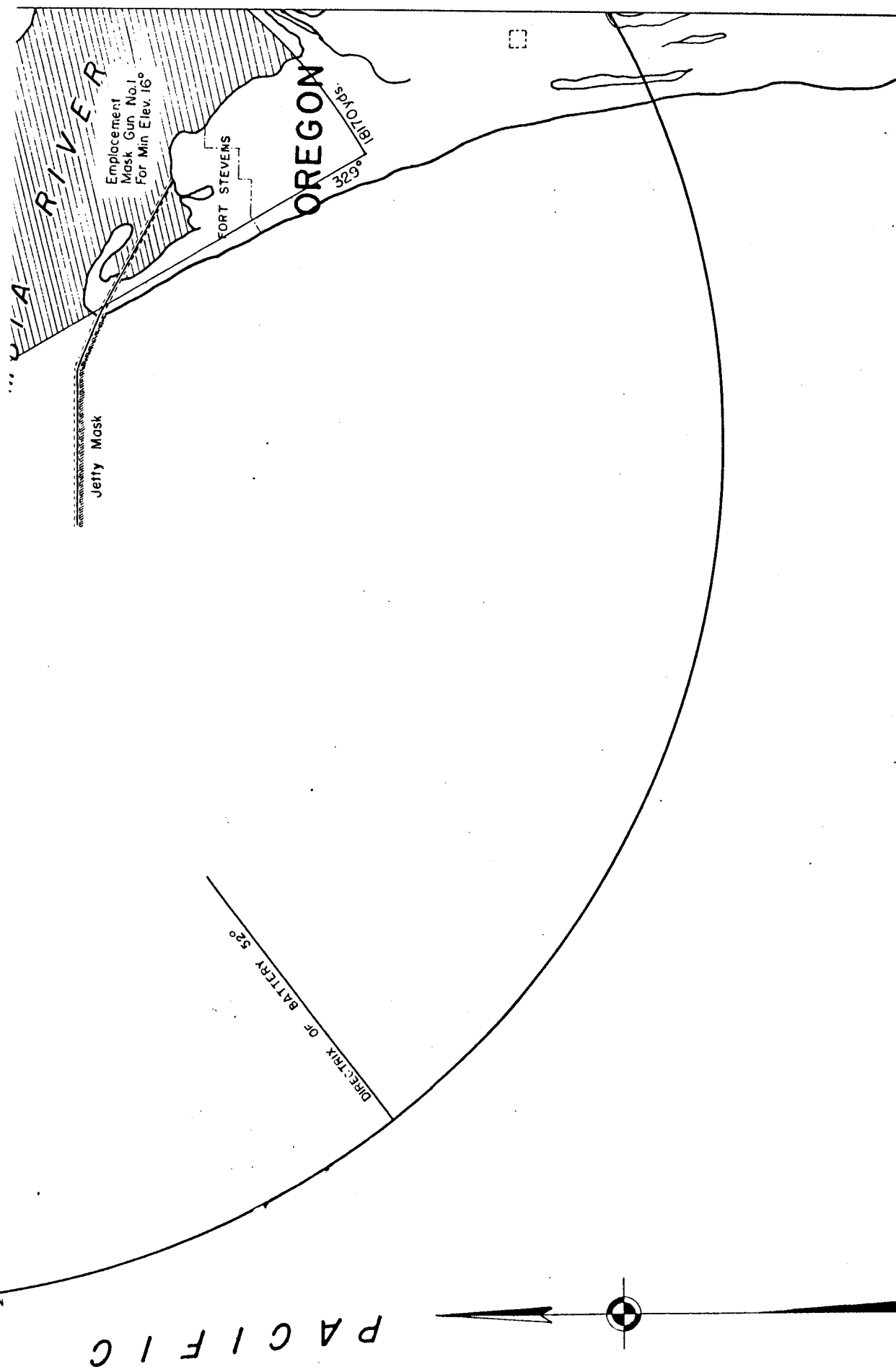
REPRODUCED UNCLASSIFIED
 ORDER SEC 15-1 BY TAG PER 7063

SECRET

SECRET



DECLASSIFIED



HARBOR DEFENSES OF THE COLUMBIA MASKED WATER AREAS Battery No. 1 (Constr. 247) 2-6" Guns FORT CANBY WASHINGTON		REVISED DATE
Prepared By: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 28 June 1944 Ex IOBI Annex B	



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 ORDER SEC AUTH BY TAG PER 7068

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DECLASSIFIED

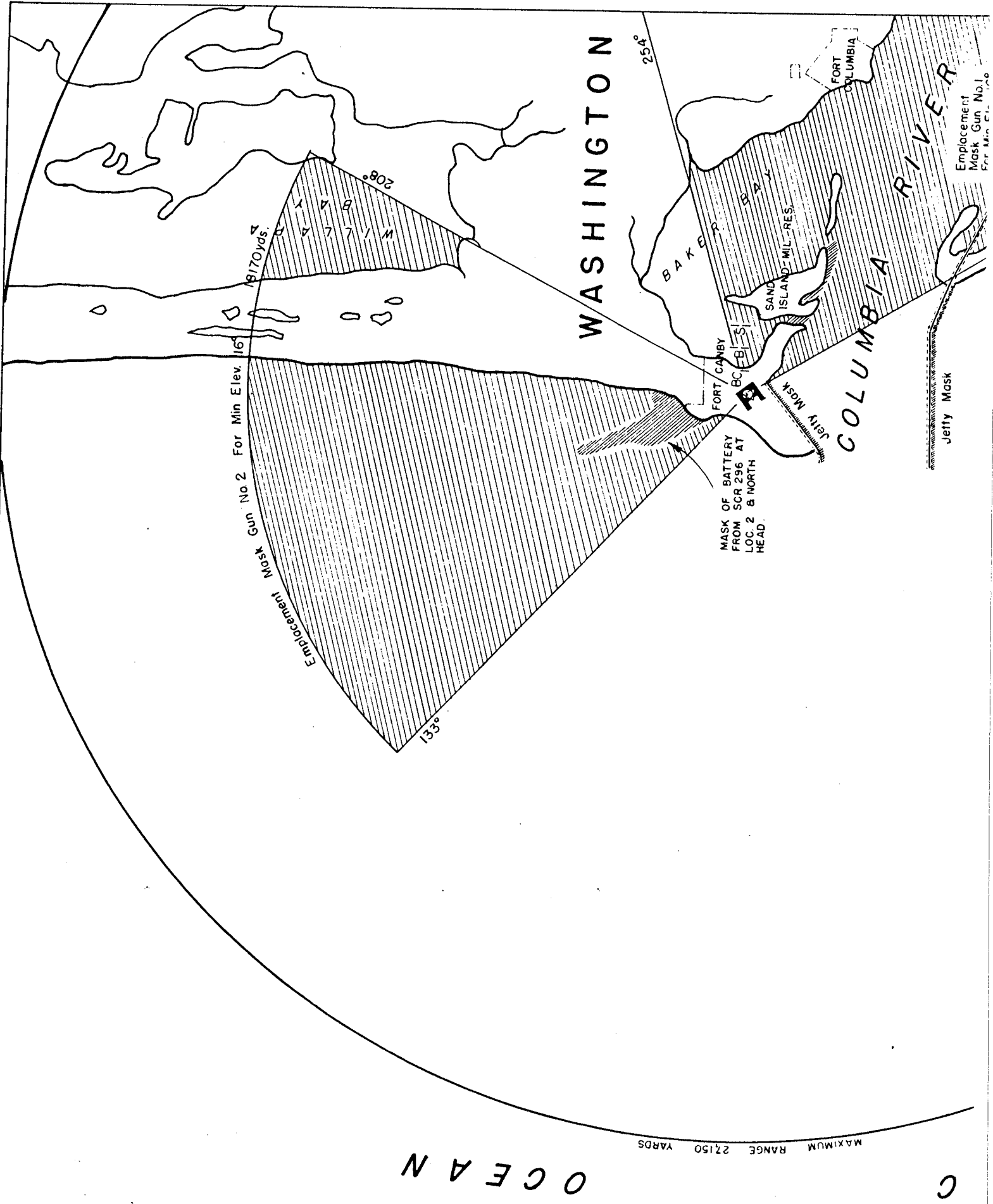
SECRET

OCEAN

MAXIMUM RANGE 22150 YARDS

DECLASSIFIED

C



Emplacement Mask Gun No. 2 For Min Elev. 16'

1870 yds.

Emplacement Mask Gun No. 2 For Min Elev. 16'

208°

133°

WASHINGTON

254°

BAKER P.

FORT CANBY

MASK OF BATTERY FROM SCR 296 AT LOC. 2 & NORTH HEAD.

SAND ISLAND MIL. RES.

Jetty Mask

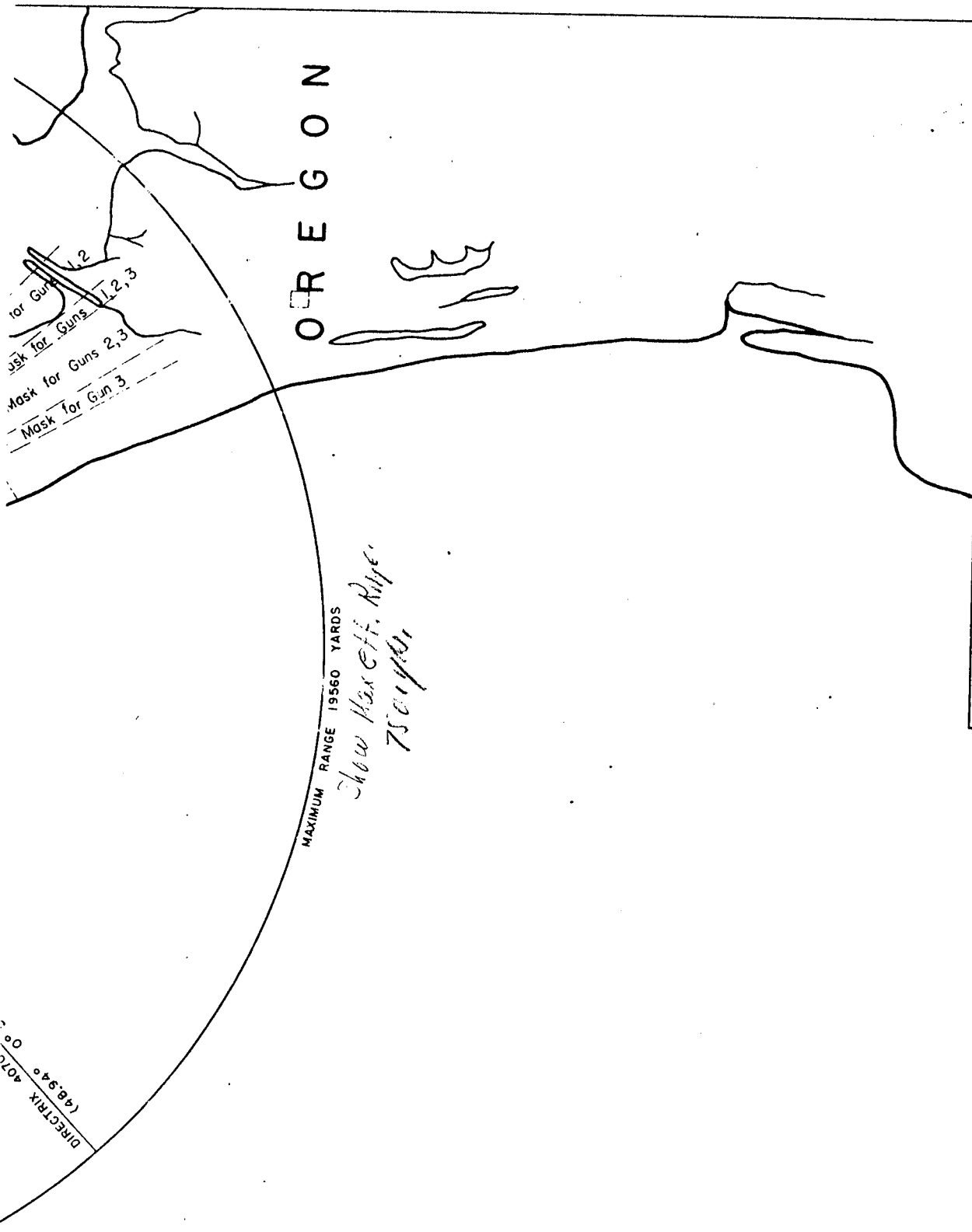
COLUMBIA RIVER

FORT COLUMBIA

Jetty Mask

Emplacement Mask Gun No. 1 For Min. Elev. 16'

PACIFIC



OREGON

Mask for Guns 1,2
Mask for Guns 1,2,3
Mask for Guns 2,3
Mask for Gun 3

MAXIMUM RANGE 19560 YARDS

Show Max Eff. Range
7500 yds

DIRECTRIX 407L
(48.94° 00)

HARBOR DEFENSES OF THE COLUMBIA
Field of Fire and Masked Water Areas

Battery No. 2 AMTB No. 1 4-90mm Guns
FORT CANBY WASHINGTON

Prepared By:
OFFICE OF THE ART. ENG.
FORT STEVENS, OREGON

DATE: 15 July 1944

Ex 11B Annex B

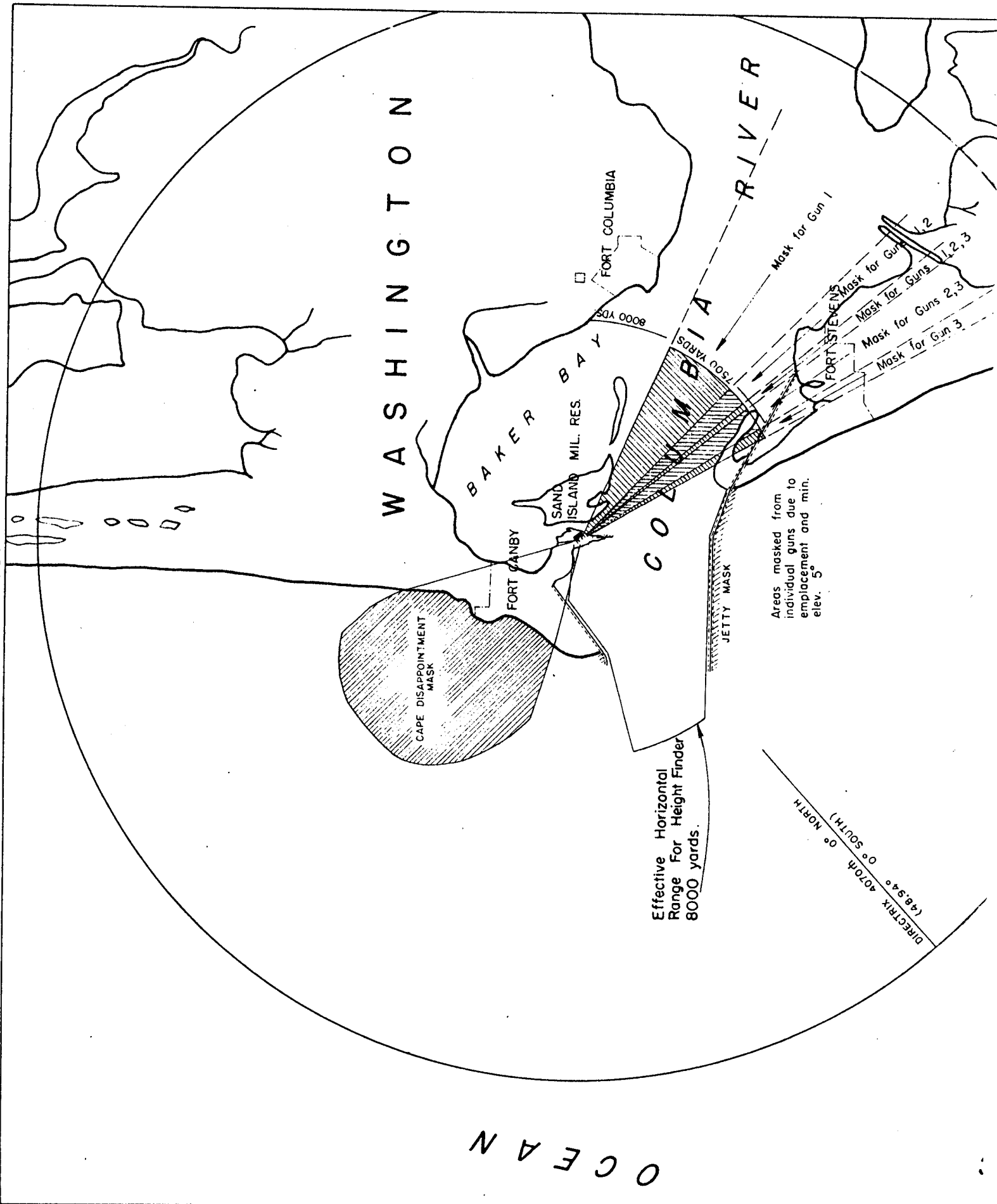
REVISED
DATE



REPRODUCED UNCLASSIFIED
ORDER SEC AUTH BY TAG REG 7063

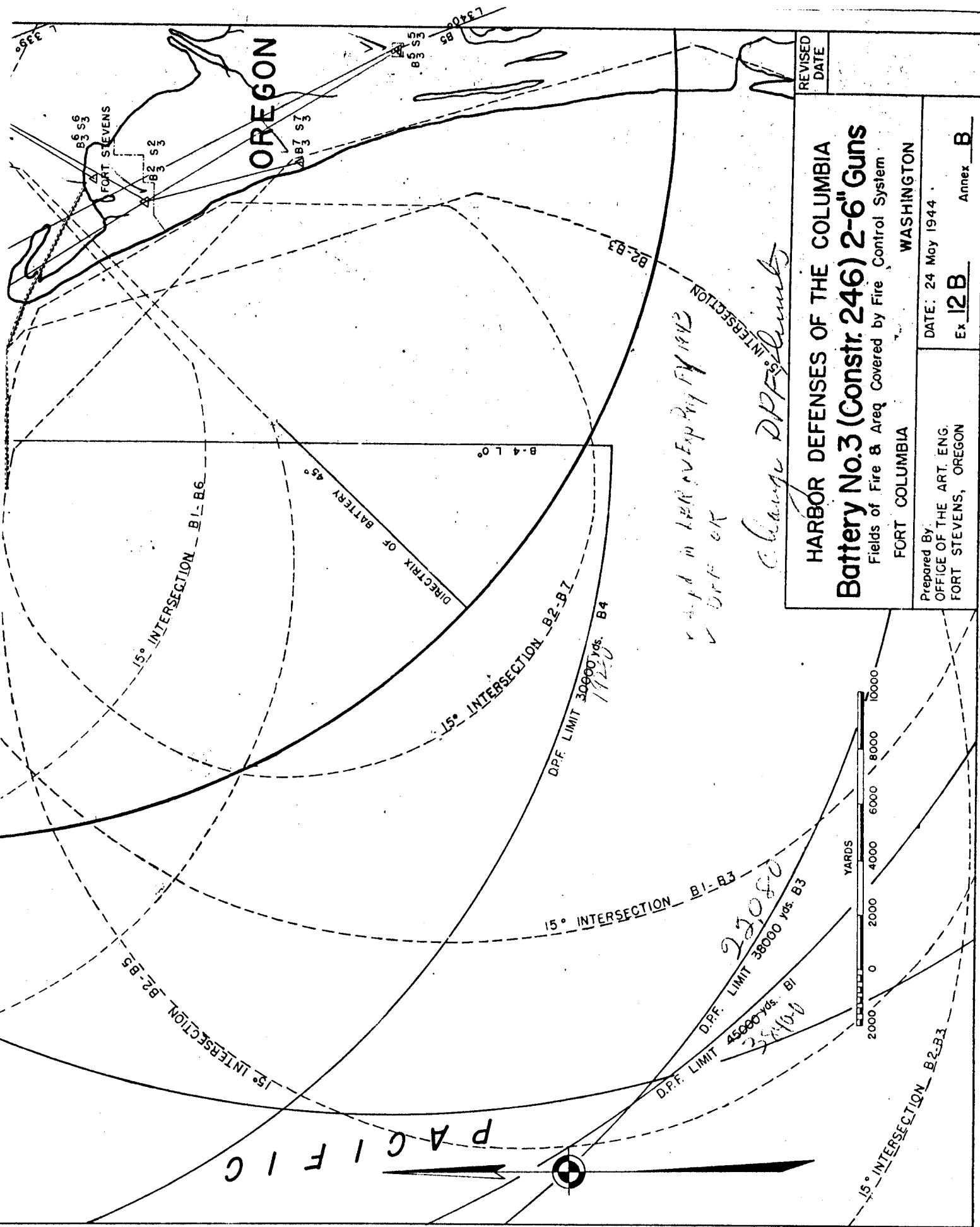
SECRET

SECRET



DECLASSIFIED

Authority 760162



REVISED DATE	
HARBOR DEFENSES OF THE COLUMBIA Battery No. 3 (Constr. 246) 2-6" Guns Fields of Fire & Areq Covered by Fire Control System	
FORT COLUMBIA	WASHINGTON
Prepared By: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 24 May 1944
Ex <u>12 B</u>	Annex <u>B</u>

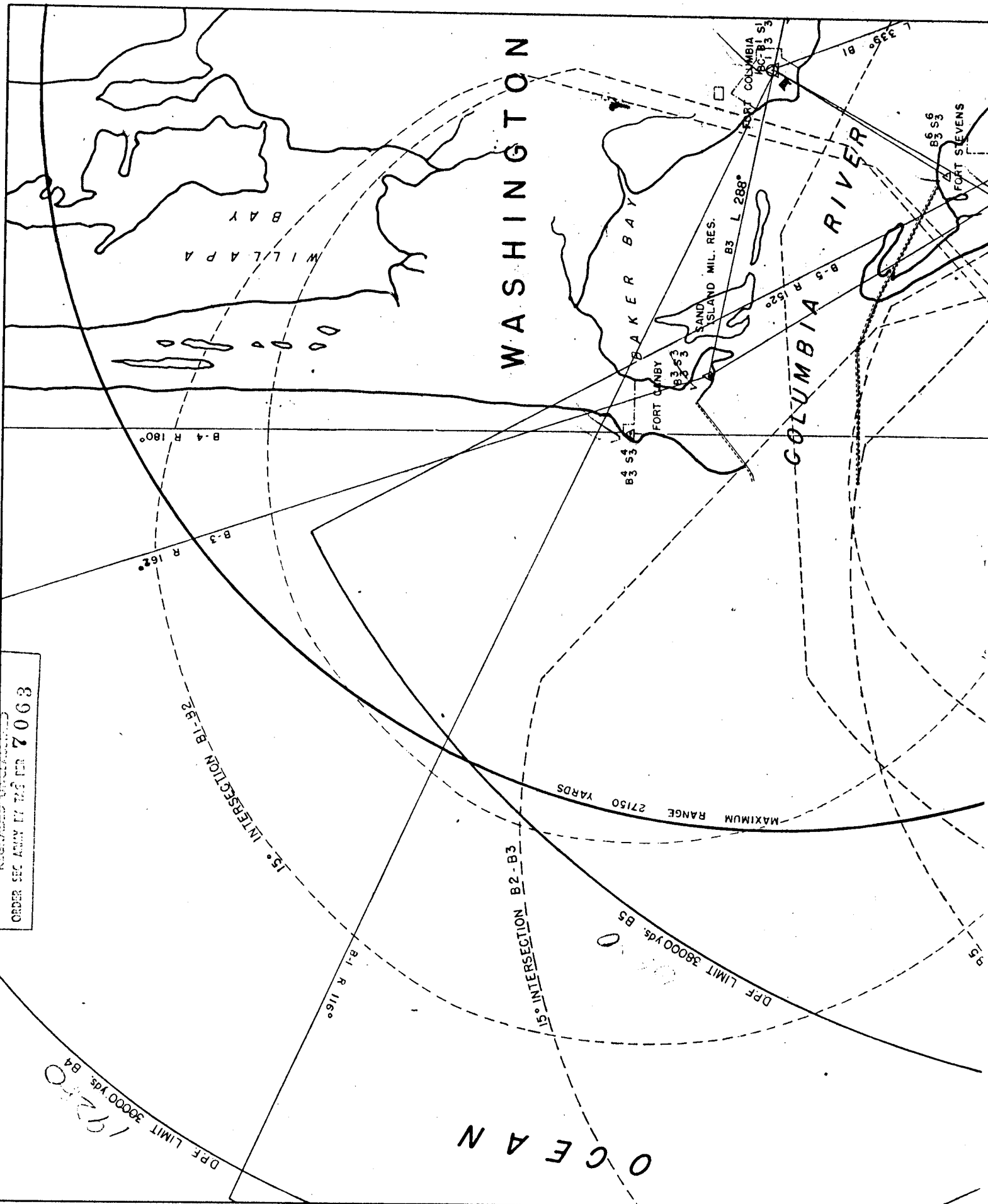
DECLASSIFIED

SECRET

SECRET

ORDER SEC ARMY BY TAG DER 7063

19270
DPE LIMIT 30000 Yds. B4

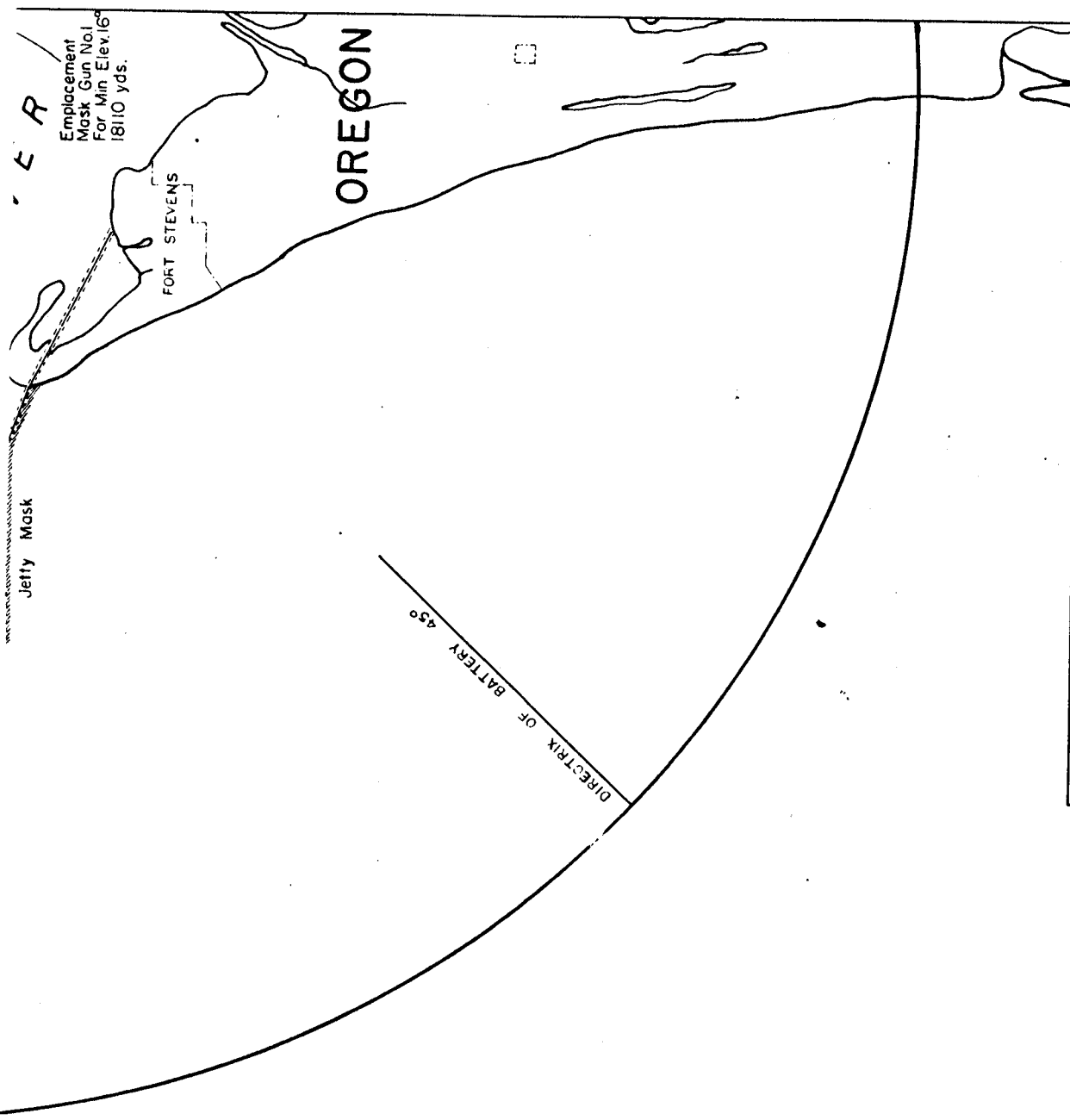


DECLASSIFIED
Authority 260162

PACIFIC



RECLASSIFIED UNCLASSIFIED
ORDER SEC ARMY BY TAG PER 7063

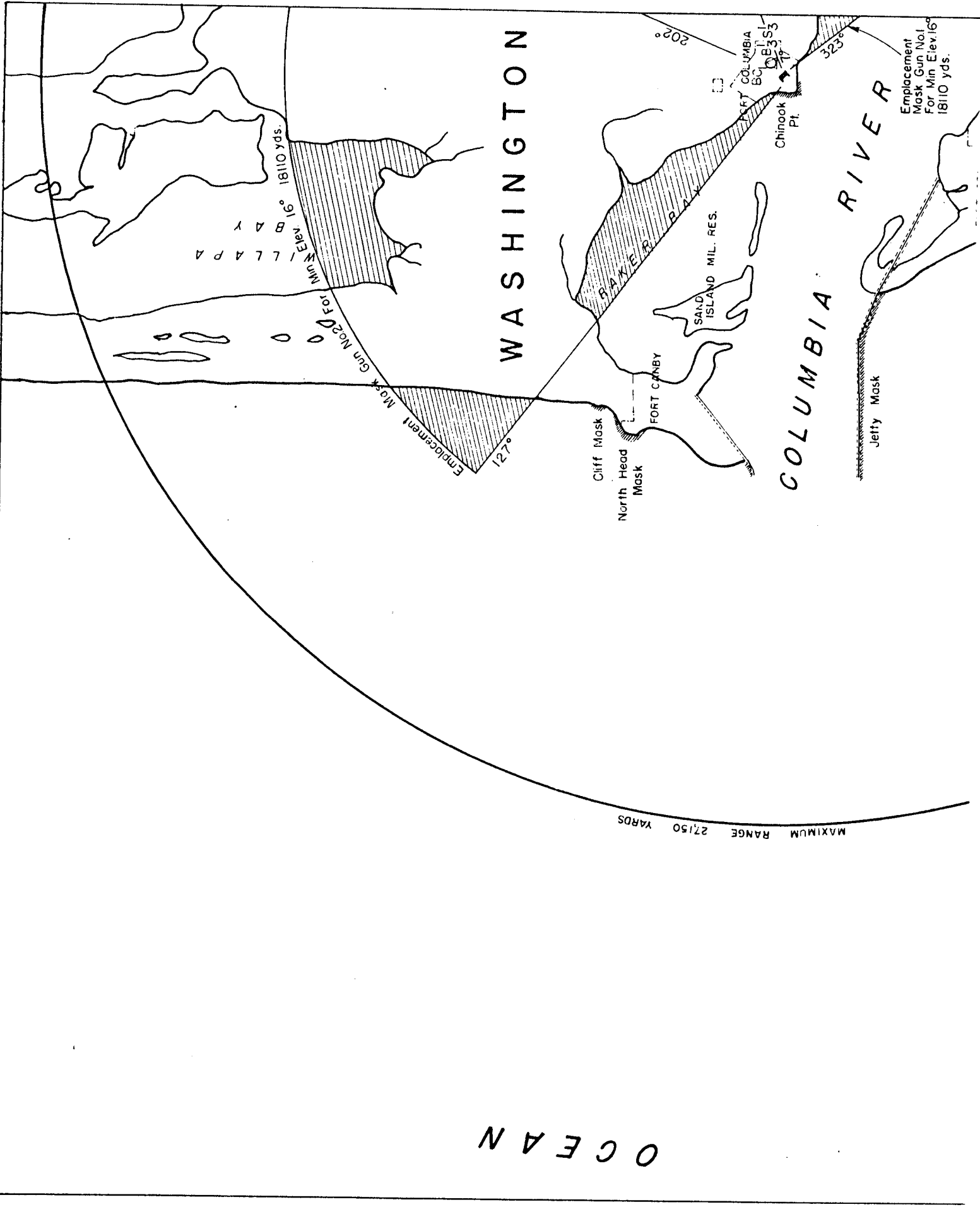


HARBOR DEFENSES OF THE COLUMBIA MASKED WATER AREAS Battery No. 3 (Constr. 246) 2-6" Guns FORT COLUMBIA WASHINGTON		REVISED DATE
Prepared By: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 28 JUNE 1944 Ex 12BI Annex B	

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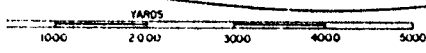
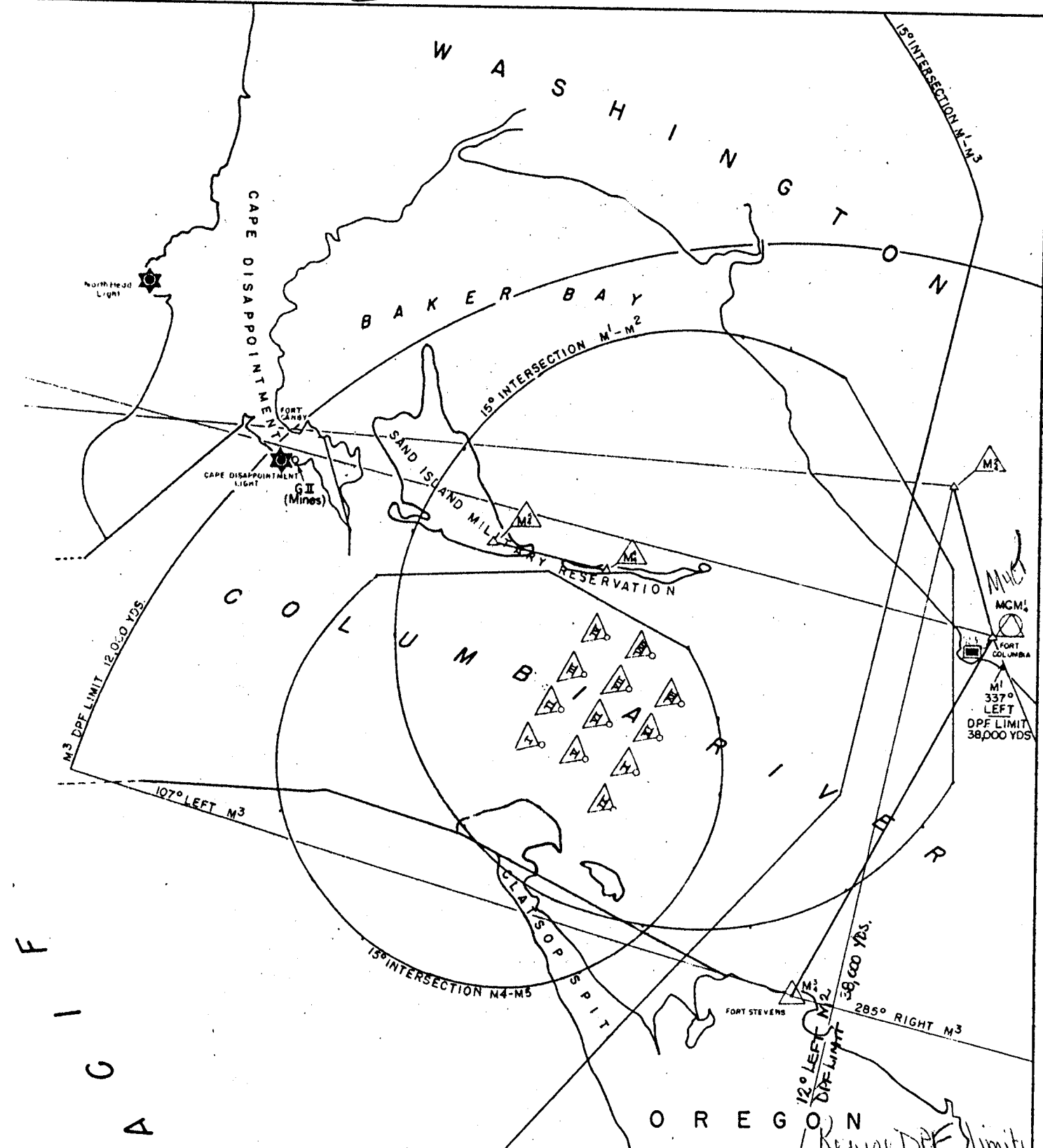
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SECRET



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~~SECRET~~



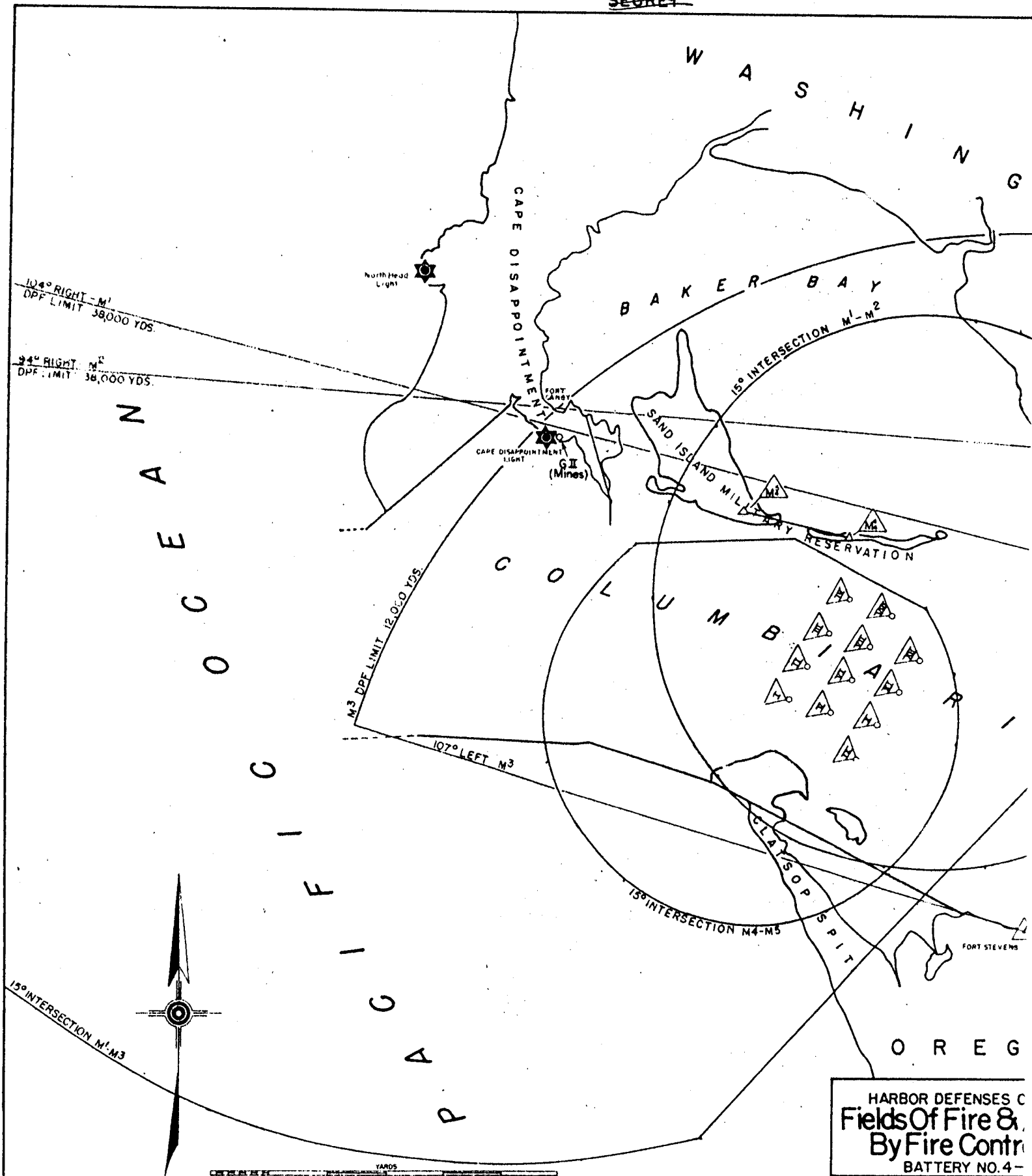
HARBOR DEFENSES OF THE COLUMBIA Fields Of Fire & Area Covered By Fire Control System BATTERY NO. 4 — MINES		REVISED DATE
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 15 JULY 1944 EX. 13-B ANNEX B	

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 ORDER SEC ARMY BY TAG PER 7003

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~~SECRET~~



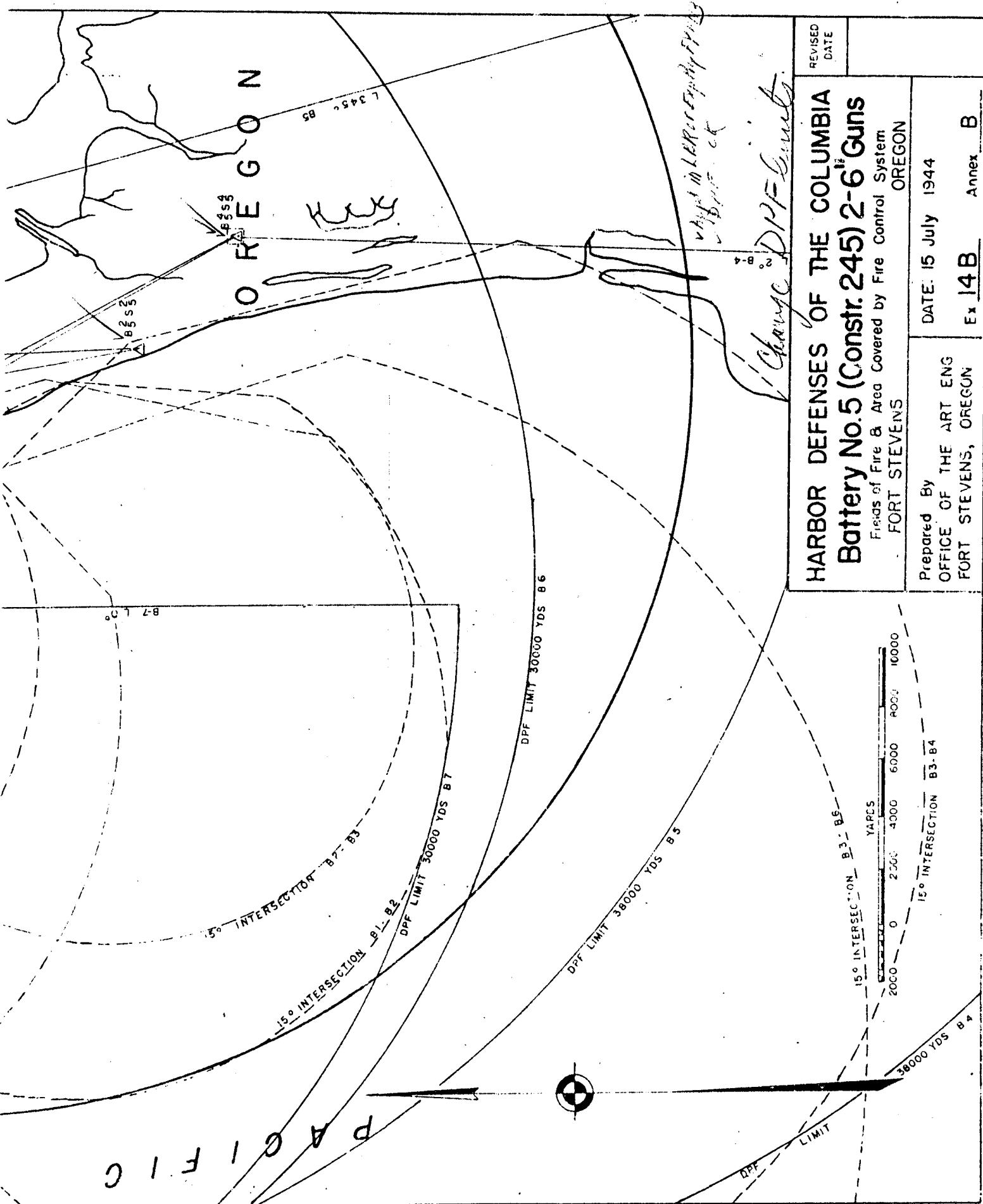
HARBOR DEFENSES C
 Fields of Fire &
 By Fire Contr
 BATTERY NO. 4-

PREPARED BY:
 OFFICE OF THE ART. ENG.
 FORT STEVENS, OREGON

REGRADED UNCLASSIFIED
 ORDER SEC ARMY BY TAG PER 7063

~~SECRET~~

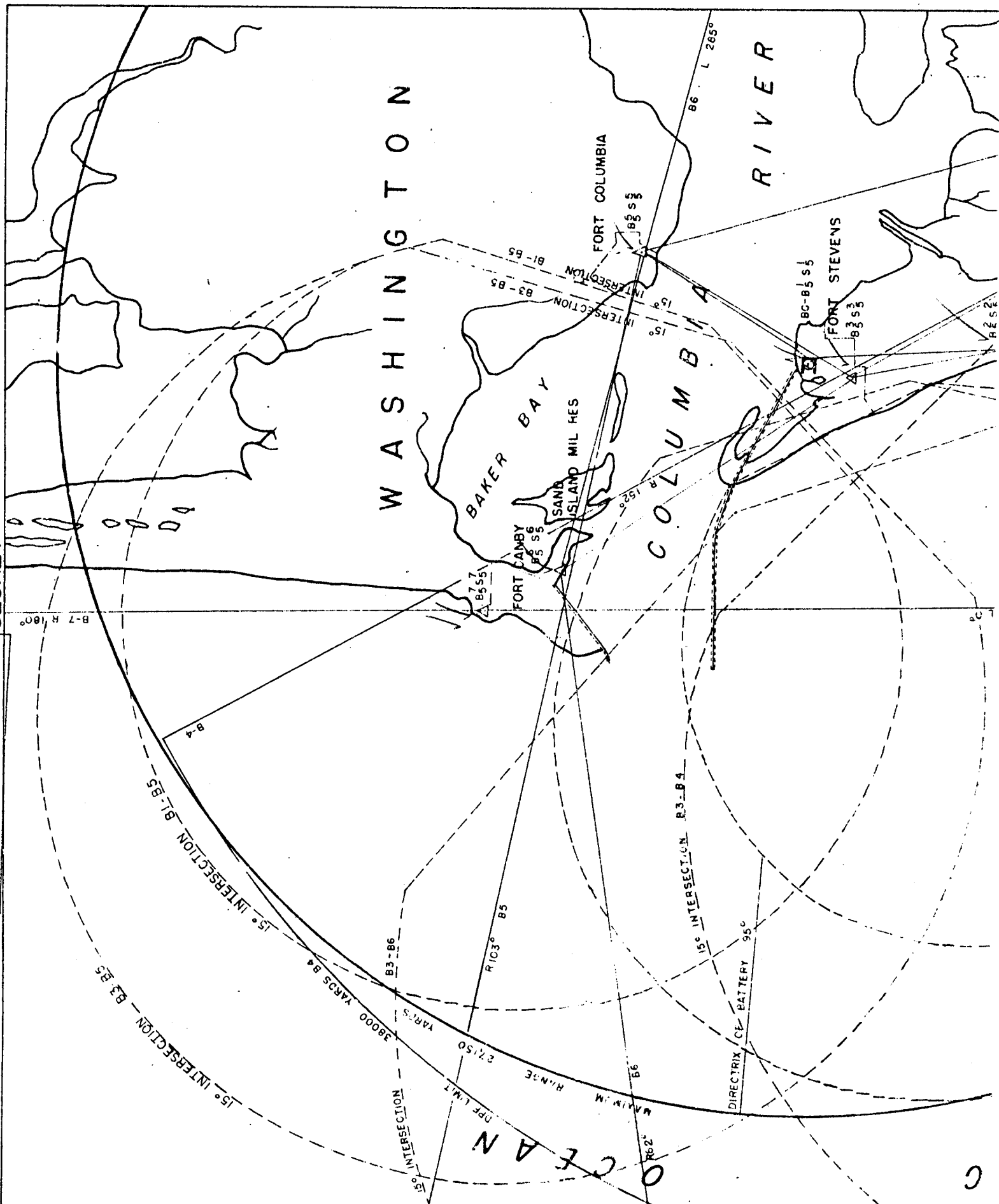
DECLASSIFIED



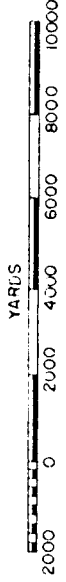
REVISOR	DATE
HARBOR DEFENSES OF THE COLUMBIA Battery No.5 (Constr. 245) 2-6" Guns Fields of Fire & Area Covered by Fire Control System FORT STEVENS OREGON	
Prepared By OFFICE OF THE ART ENG FORT STEVENS, OREGON	DATE: 15 July 1944 Ex 14B Annex B

DECLASSIFIED

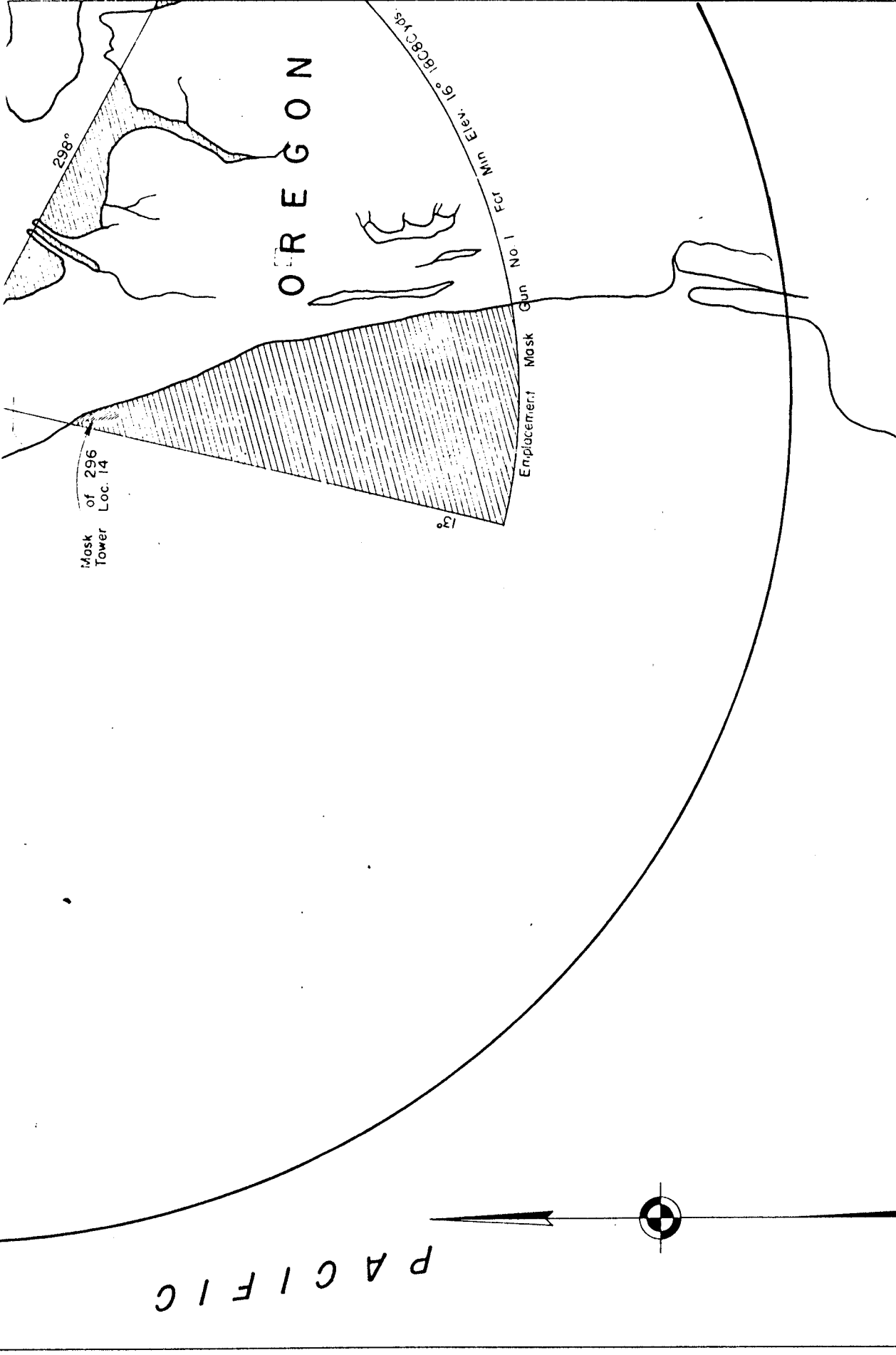
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PACIFIC

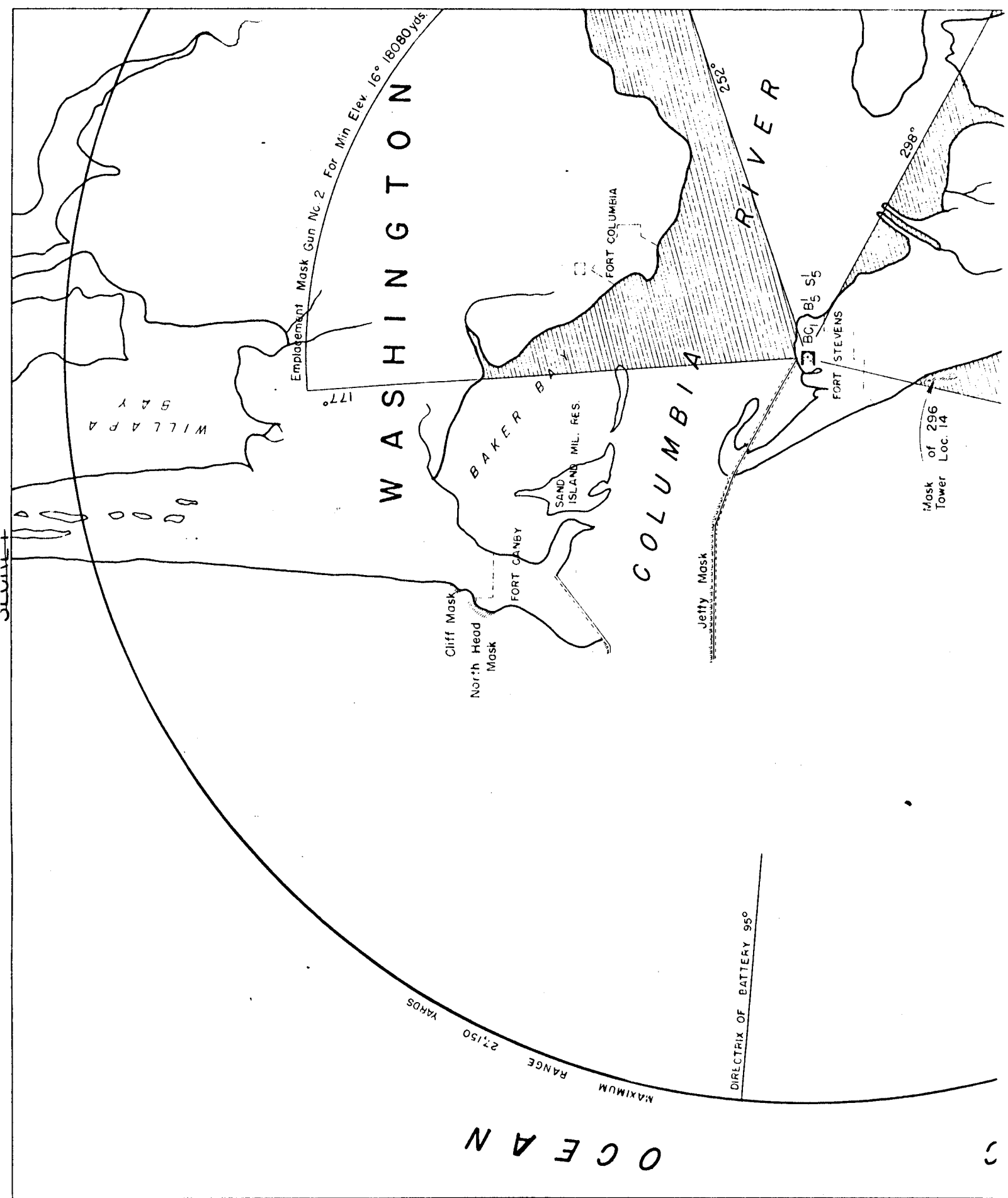


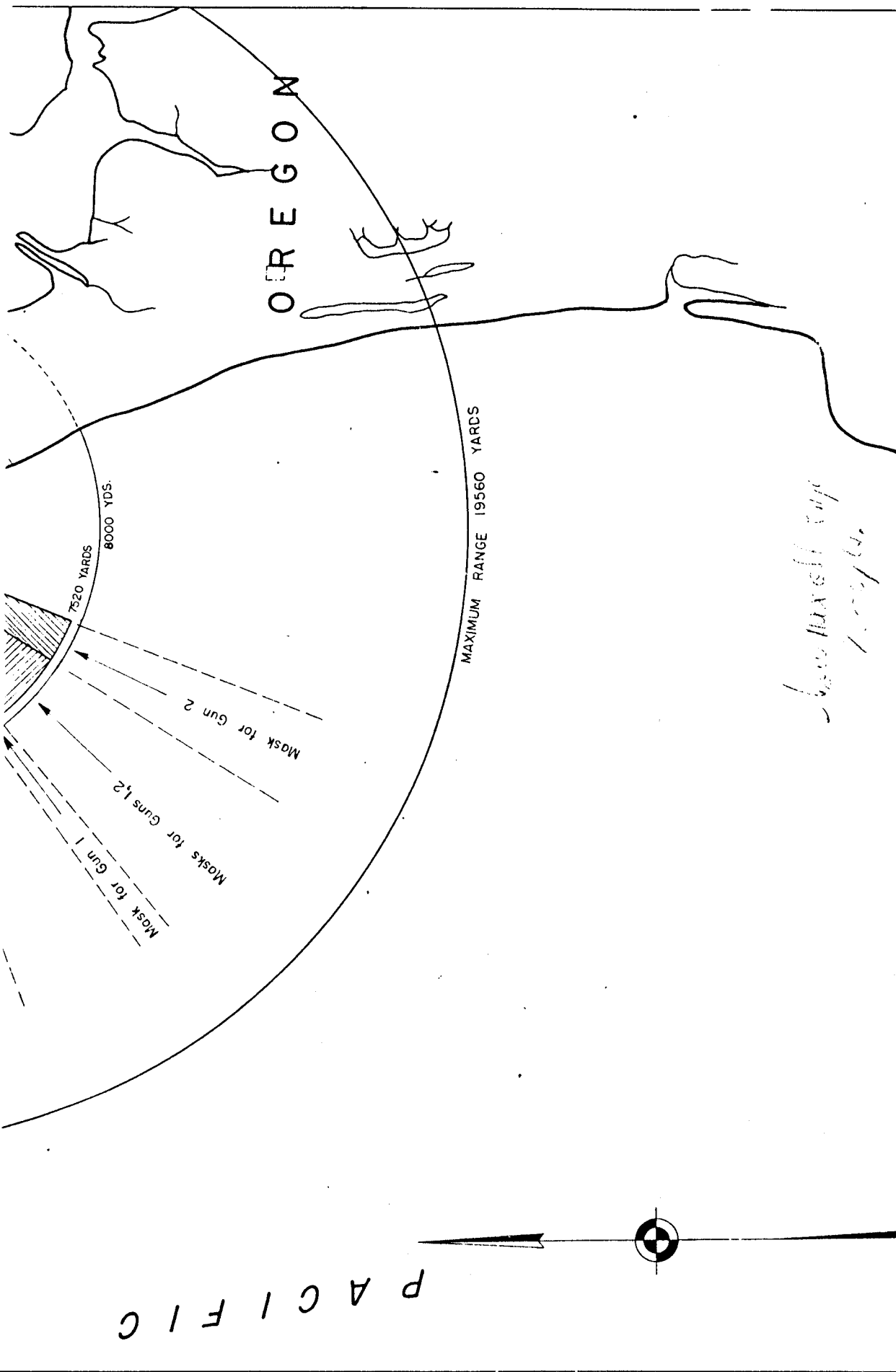
DECLASSIFIED INFORMATION



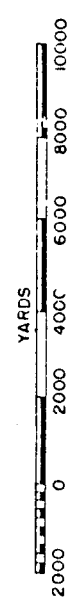
HARBOR DEFENSES OF THE COLUMBIA		REVISED DATE
MASKED WATER AREAS		
Battery No. 5 (Constr. 245) 2-6" Guns		
FORT STEVENS OREGON		
Prepared By:	DATE: 28 June 1944	
OFFICE OF THE ART. ENG.	Ex. 14BI	Annex B
FORT STEVENS, OREGON		

DECLASSIFIED





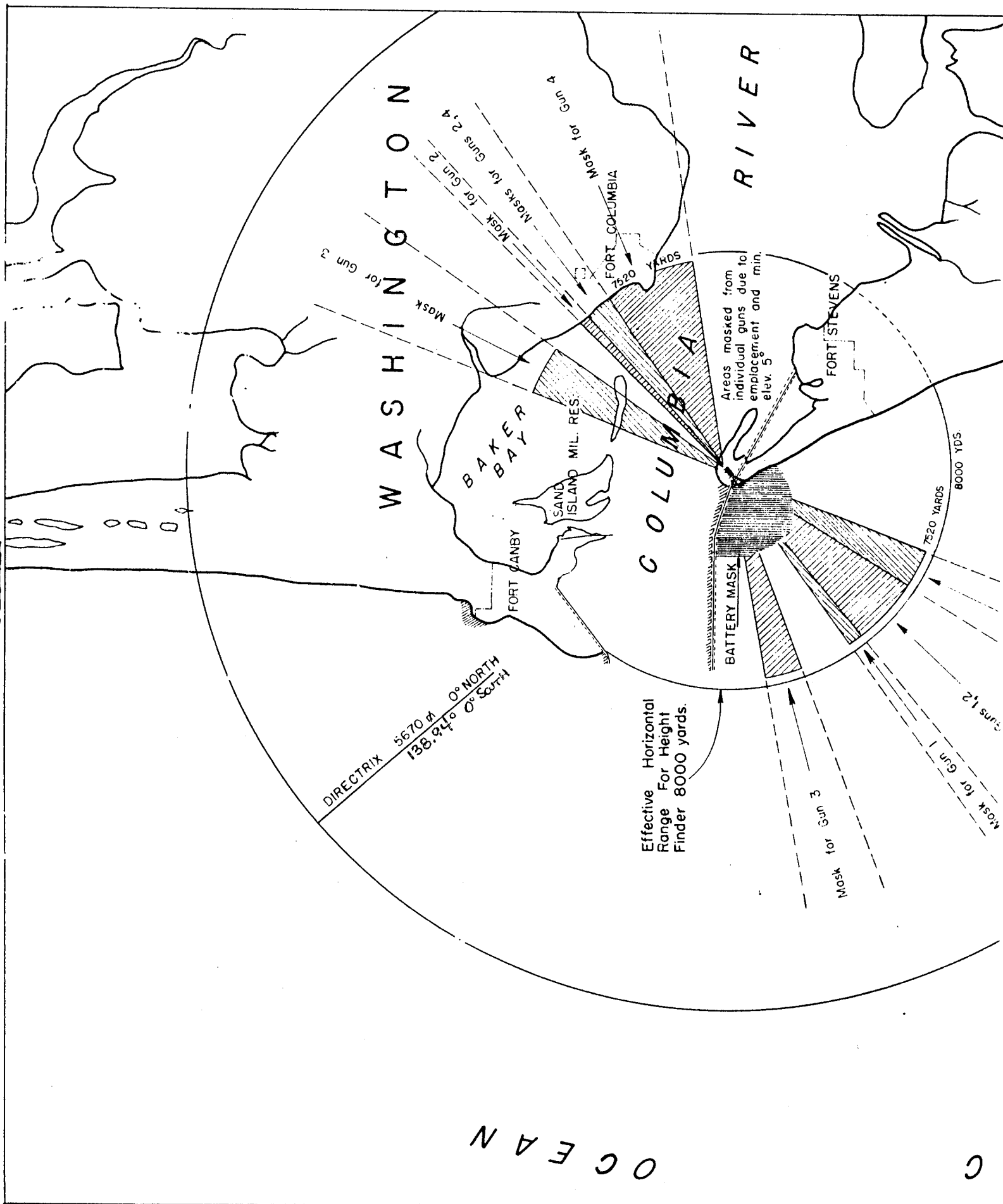
HARBOR DEFENSES OF THE COLUMBIA Field of Fire and Masked Water Areas Battery No. 6 AMTB No. 2 4-90mm Guns FORT STEVENS OREGON		REVISED DATE
Prepared By: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 28 May 1944 E* 15B Annex B	



GPO : 1944 O - 7068
 7068

SECRET

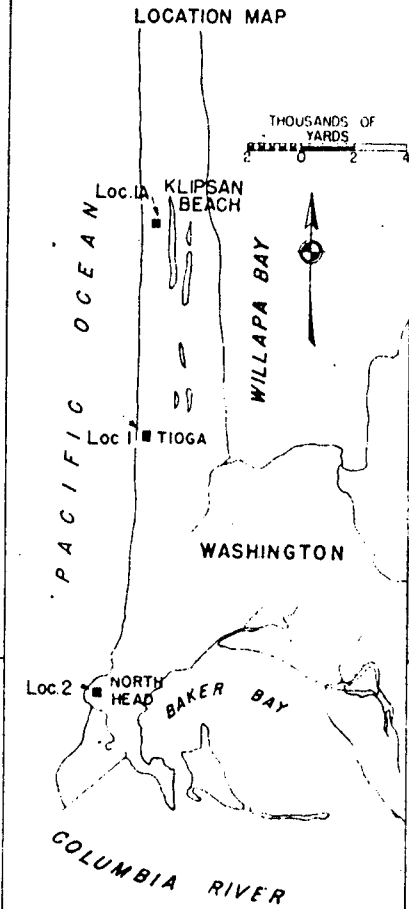
DECLASSIFIED
 Authority 260162



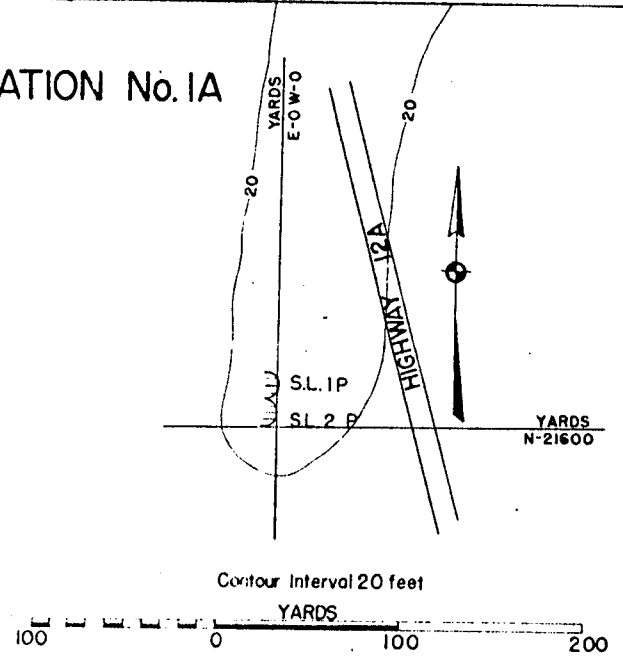
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 Authority 260162

DATE

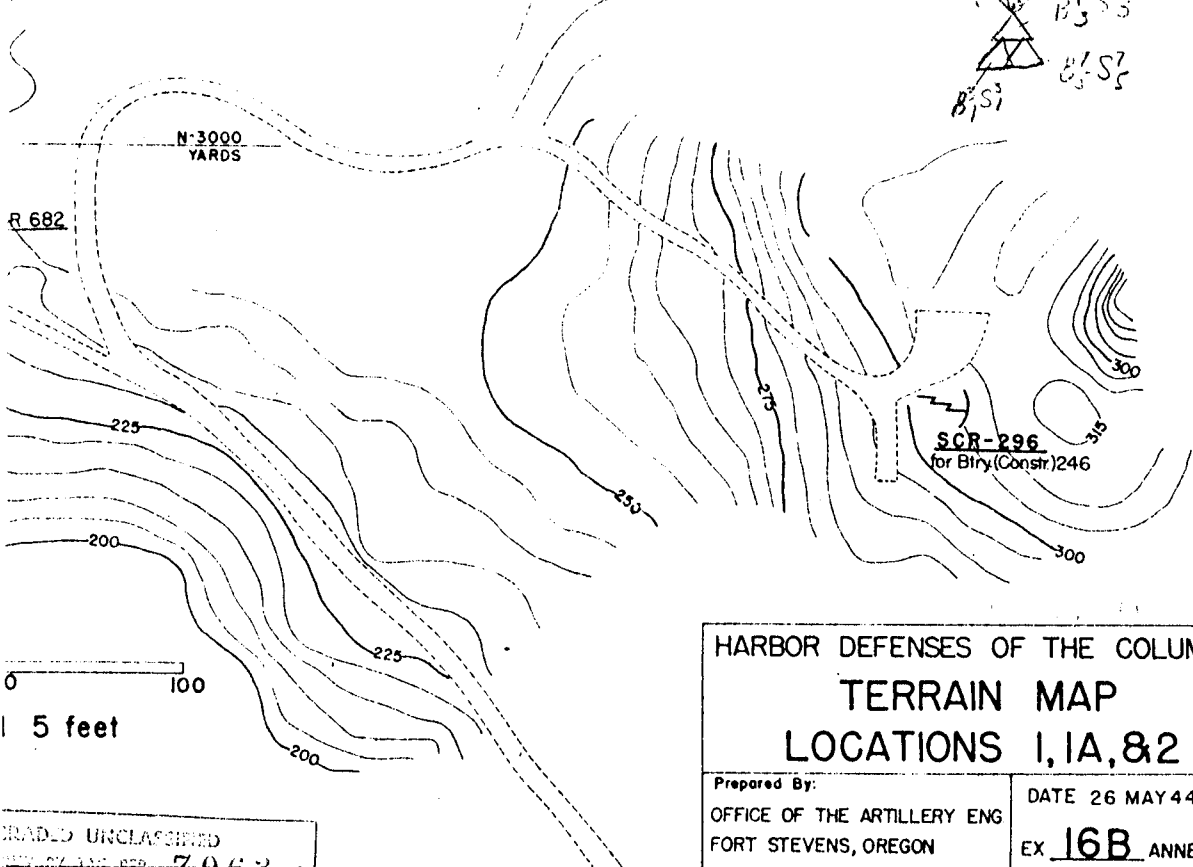
SECRET



LOCATION No. 1A



LOCATION No. 2



? $B_3^4 S_5^4$
 $B_3^4 S_5^4$
 $B_3^4 S_5^4$

HARBOR DEFENSES OF THE COLUMBIA		REVISED DATE
TERRAIN MAP		
LOCATIONS 1, 1A, & 2		
Prepared By:	DATE 26 MAY 44	
OFFICE OF THE ARTILLERY ENG		
FORT STEVENS, OREGON	EX 16B ANNEX B	

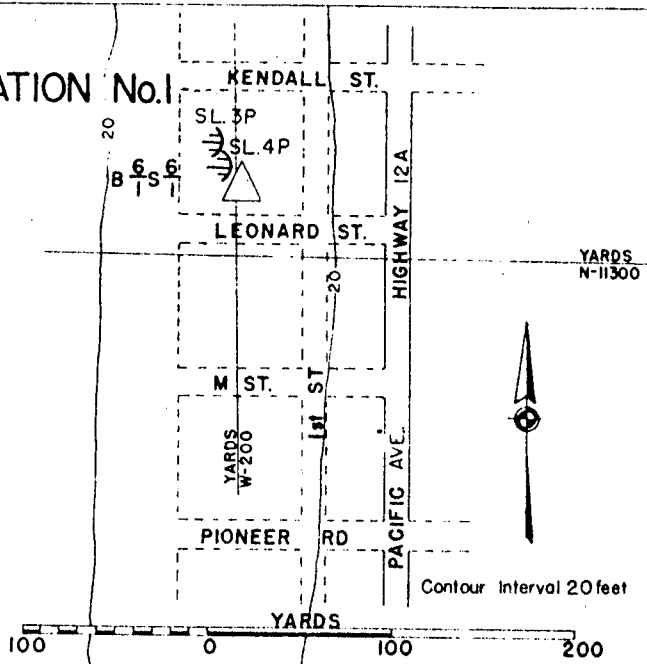
UNCLASSIFIED
 AUTHORITY: 48 CFR 1.101-1.6 PER 7063

SECRET

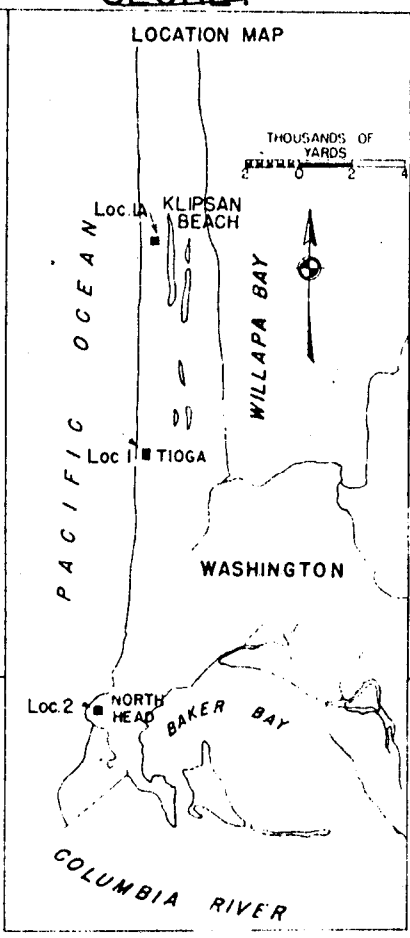
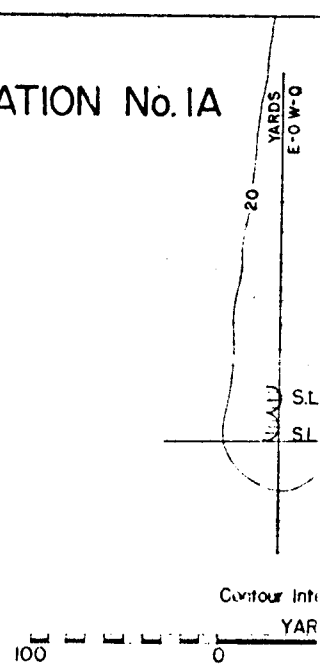
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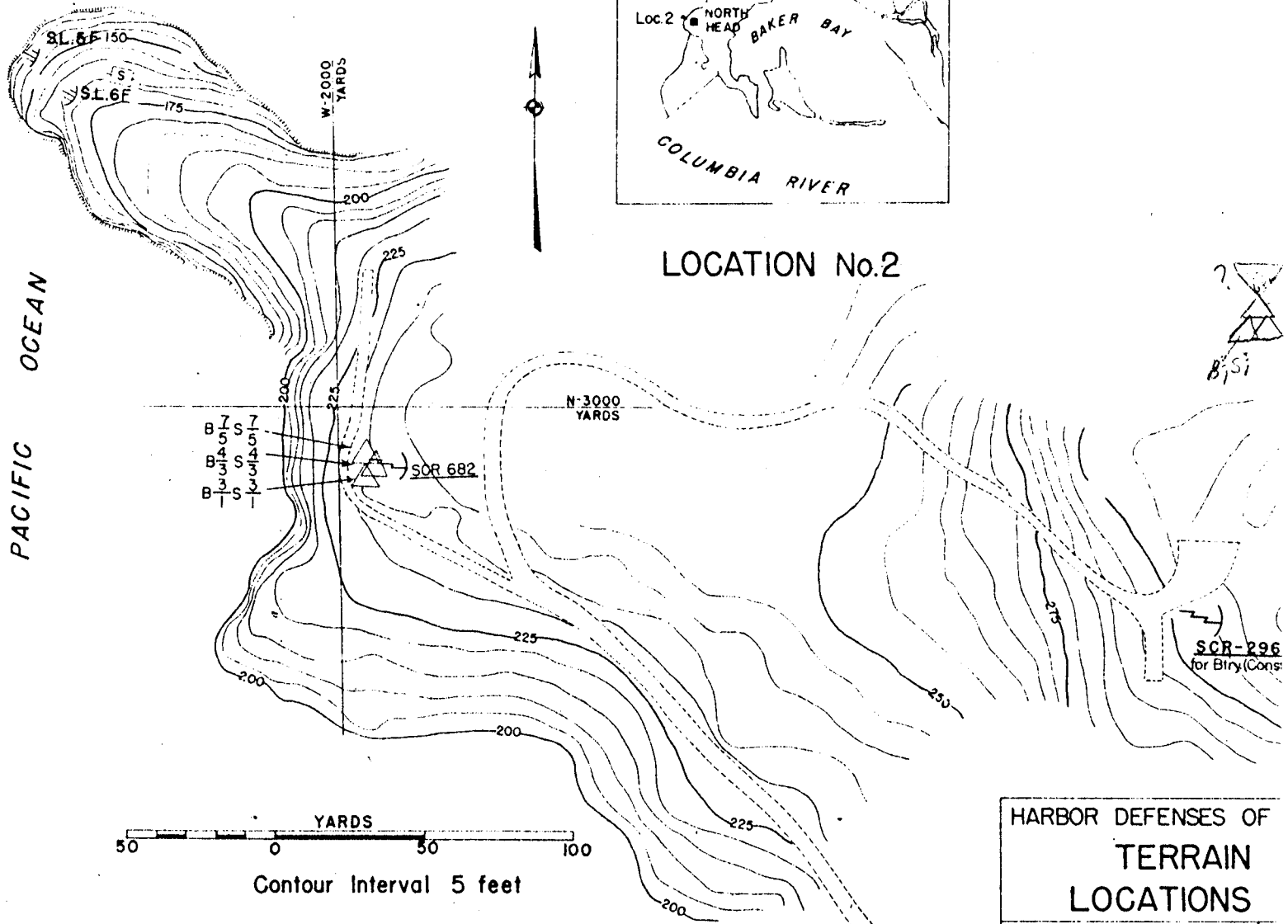
LOCATION No. 1



LOCATION No. 1A



LOCATION No. 2



HARBOR DEFENSES OF TERRAIN LOCATIONS

Prepared By: OFFICE OF THE ARTILLERY ENG FORT STEVENS, OREGON

REGRADED UNCLASSIFIED ORDER SEC. ARMY BY TAG PER 7-063

SECRET

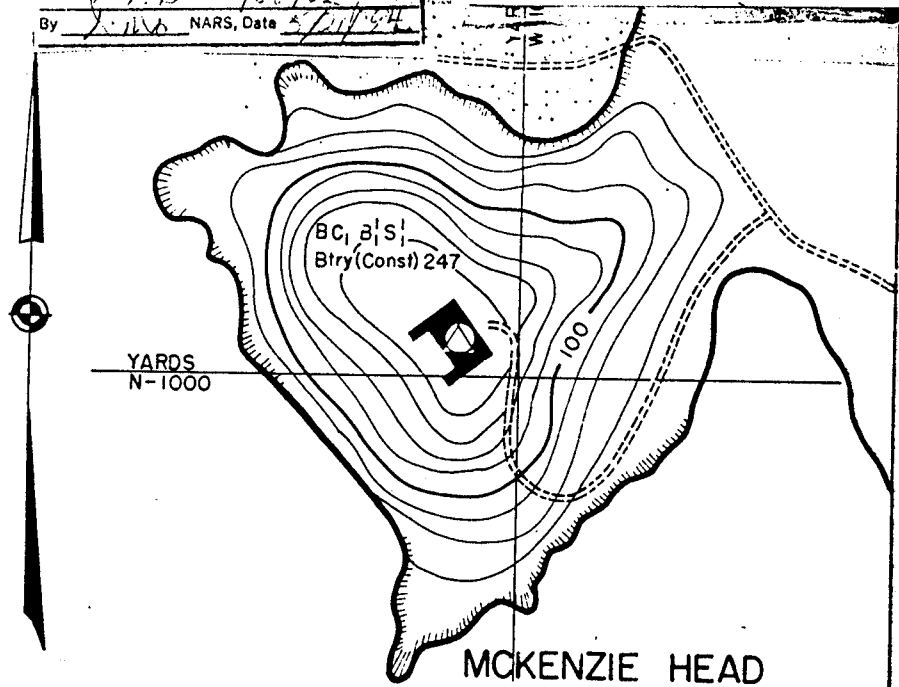
DECLASSIFIED

OLD 6 CONTROLLED BUOTH TO H

OLD SL 6+7
OLD SL 7 CONTROLLED
OLD SL PP
SPP 1297

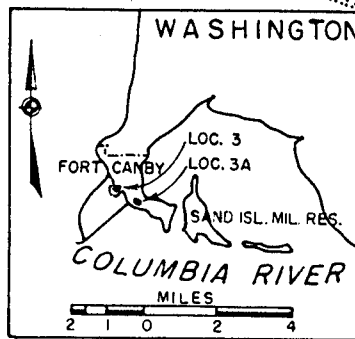
DECLASSIFIED
By *[Signature]* NARS, Date *5/21/84*

REPRODUCED AT THE NATIONAL ARCHIVE



LOCATION 3A

YARDS
N-500



YARDS
W-500

SCR-296
for Btry (Const.) 247

Contour Interval 20 feet



HARBOR DEFENSES OF THE COLUMBIA

TERRAIN MAP

LOCATIONS 3 & 3A

REVISED
DATE

PREPARED BY
OFFICE OF THE ART. ENG.
FORT STEVENS, OREGON

DATE: 18 MAY 1944

EX. 17-B ANNEX B

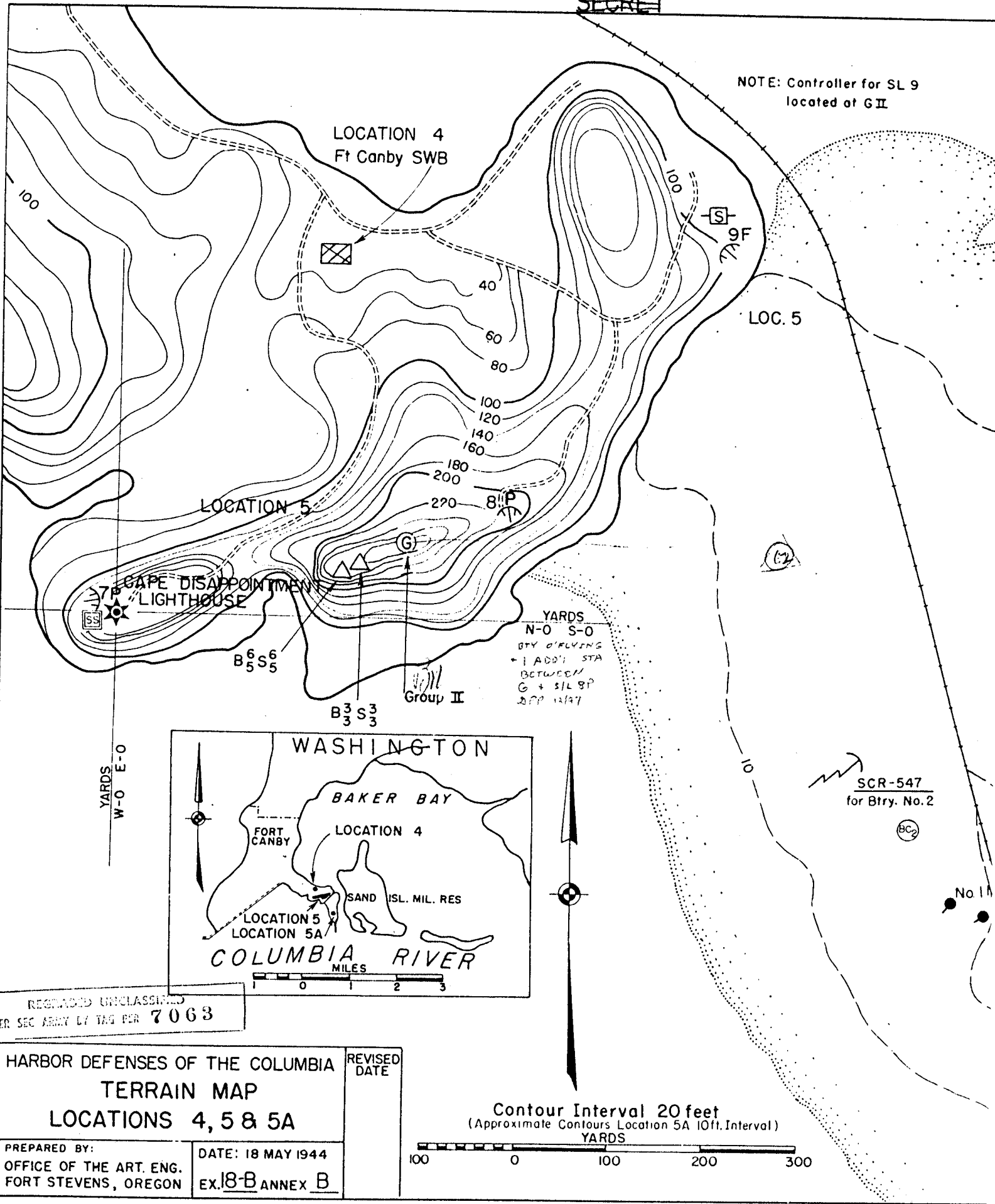
ORDER SEC. A...

7003

SECRET

SECRET

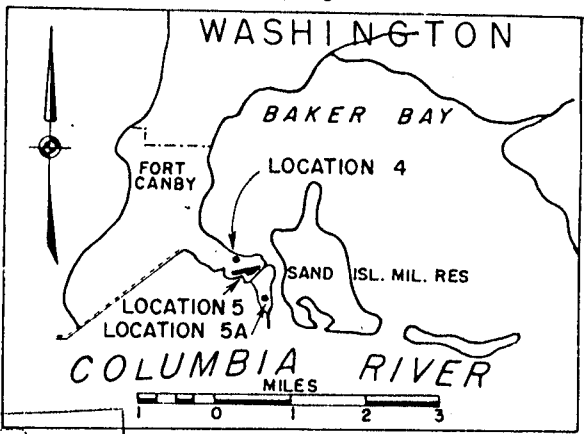
NOTE: Controller for SL 9 located at G II



YARDS
W-O E-O

YARDS
N-O S-O
BY ORIVING
+ 1 ADD' STA
BETWEEN
G + 51L 8P
20P 1217

SCR-547
for Btry. No. 2



RECLASSIFIED UNCLASSIFIED
PER SEC ARMY BY TAG PER 7063

HARBOR DEFENSES OF THE COLUMBIA TERRAIN MAP LOCATIONS 4, 5 & 5A		REVISED DATE
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 18 MAY 1944	
EX. 18-B ANNEX B		

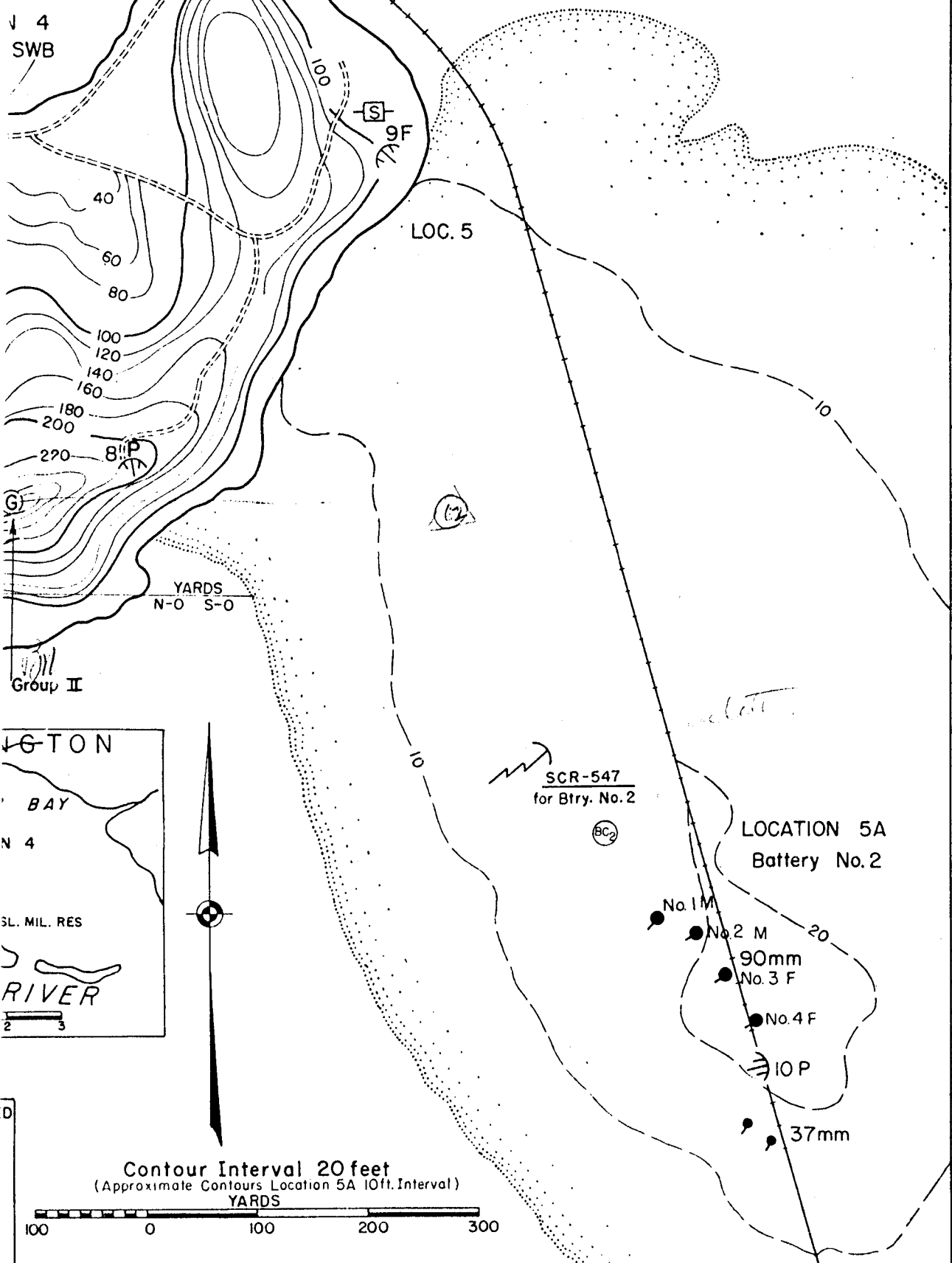
Contour Interval 20 feet
(Approximate Contours Location 5A 10ft. Interval)
YARDS
100 0 100 200 300

SECRET

DECLASSIFIED
Authority: 11-0-162

SECRET

NOTE: Controller for SL 9
located at G II



V 4
SWB

LOC. 5

G II

Group II

TON

BAY

N 4

SL. MIL. RES

RIVER

0

Contour Interval 20 feet
(Approximate Contours Location 5A 10ft. Interval)

YARDS

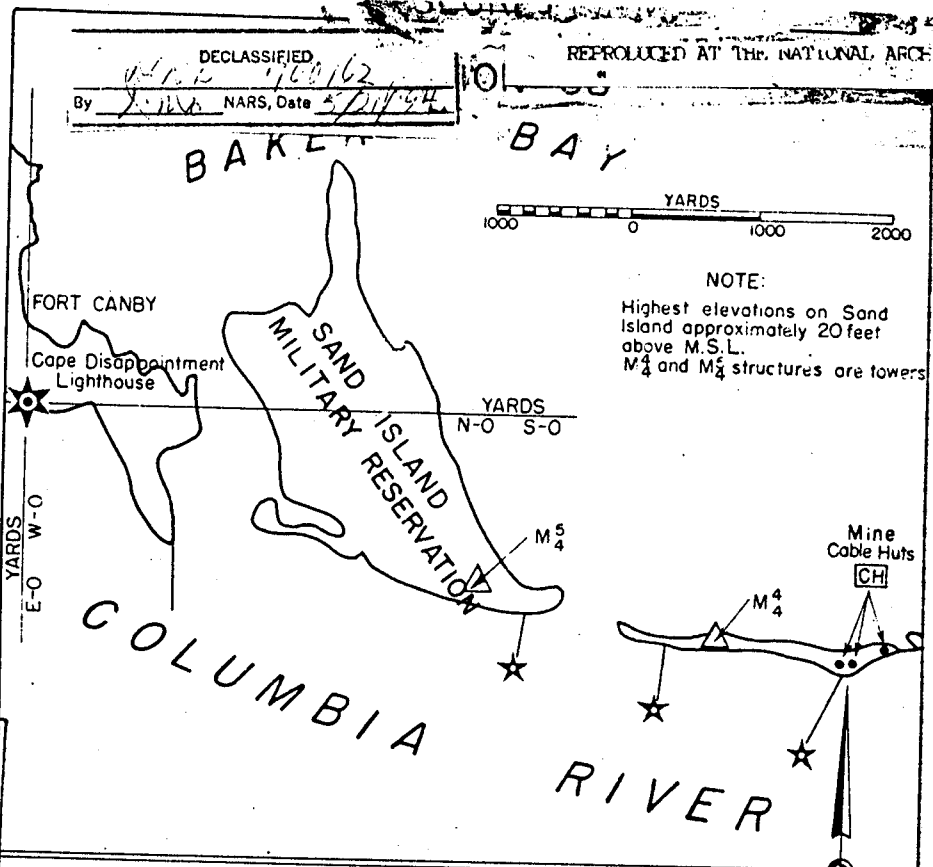
100 0 100 200 300

SECRET

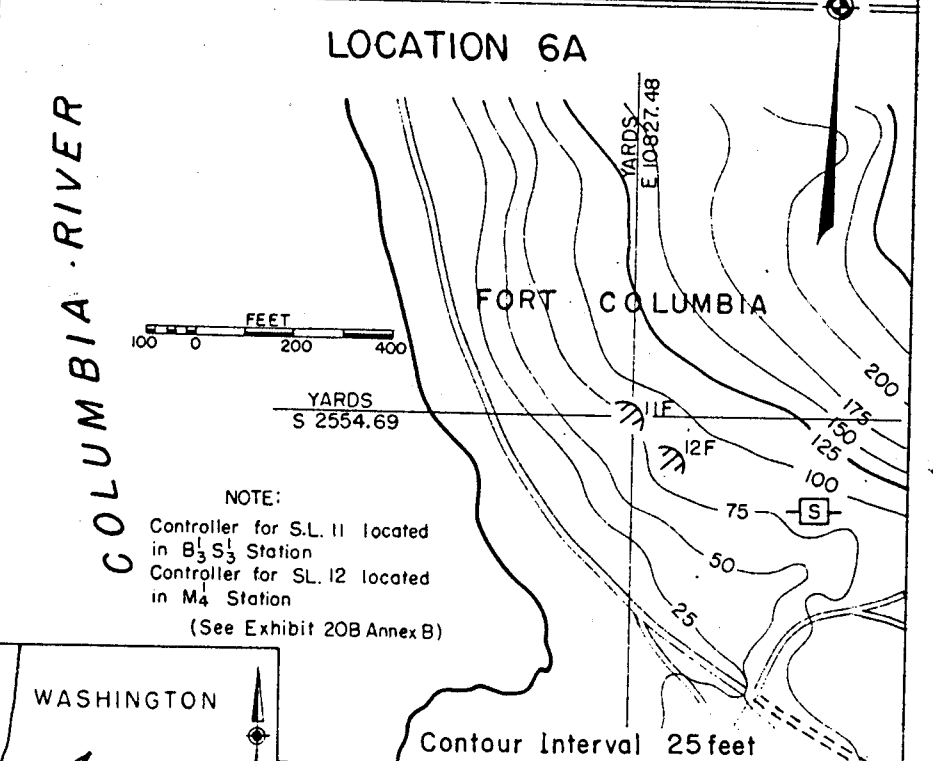
DECLASSIFIED

DECLASSIFIED
 By *J.W.V.* NARS, Date *5/21/94*

REPRODUCED AT THE NATIONAL ARCHIVE



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 ORDER SEC ARMY BY TAG PER 7063



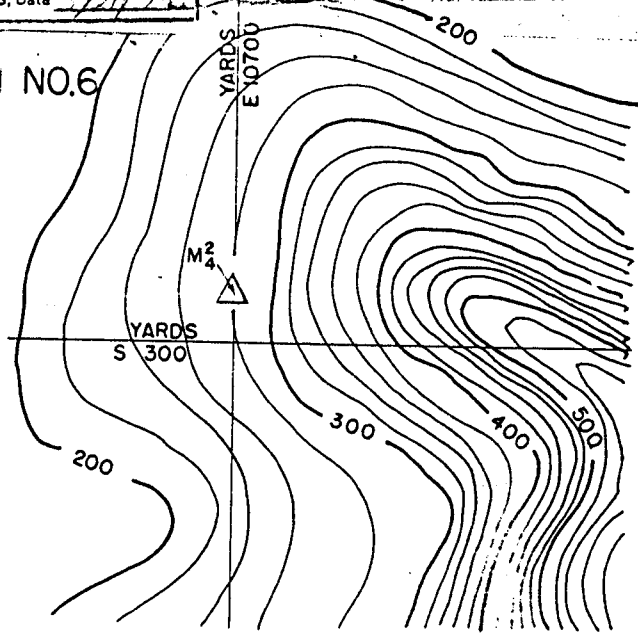
HARBOR DEFENSES OF THE COLUMBIA TERRAIN MAP LOCATIONS 5B & 6A		REVISED DATE
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 22 MAY 1944 EX. 19-B ANNEX B	

SECRET

DECLASSIFIED
By J. J. W. NARS, Date 5/21/94

REPRODUCED AT THE NATIONAL ARCHIVE

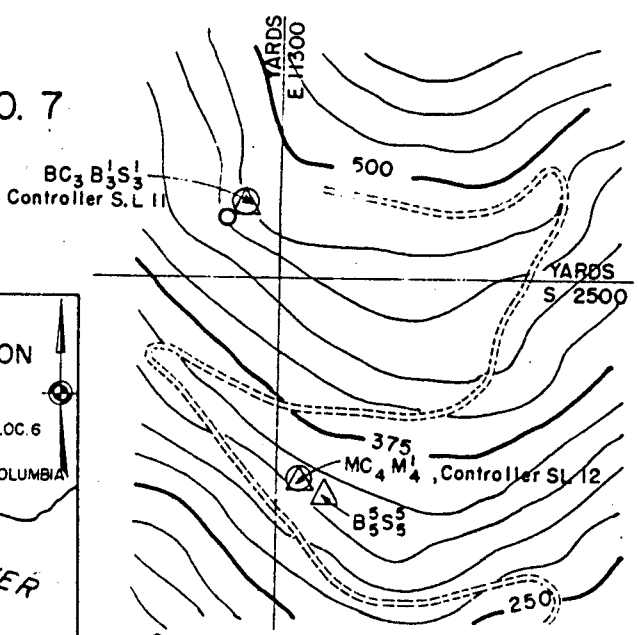
LOCATION NO. 6



Contour Interval - 20 feet

REGRADED UNCLASSIFIED
ORDER SEC ARMY BY TAG PER 7068

LOCATION NO. 7



Contour Interval - 25 feet



HARBOR DEFENSES OF THE COLUMBIA TERRAIN MAP LOCATIONS 6 & 7		REVISED DATE:
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 19 MAY 1944 EX. 20-B ANNEX B	

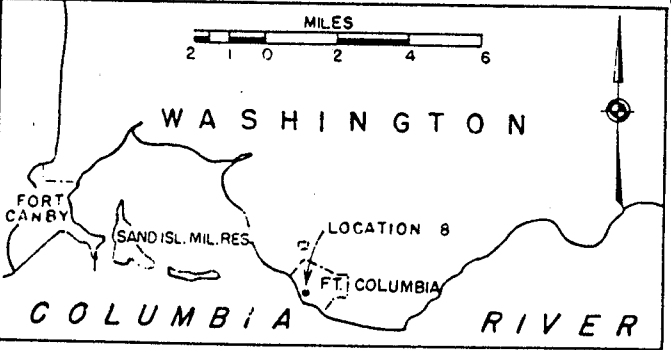
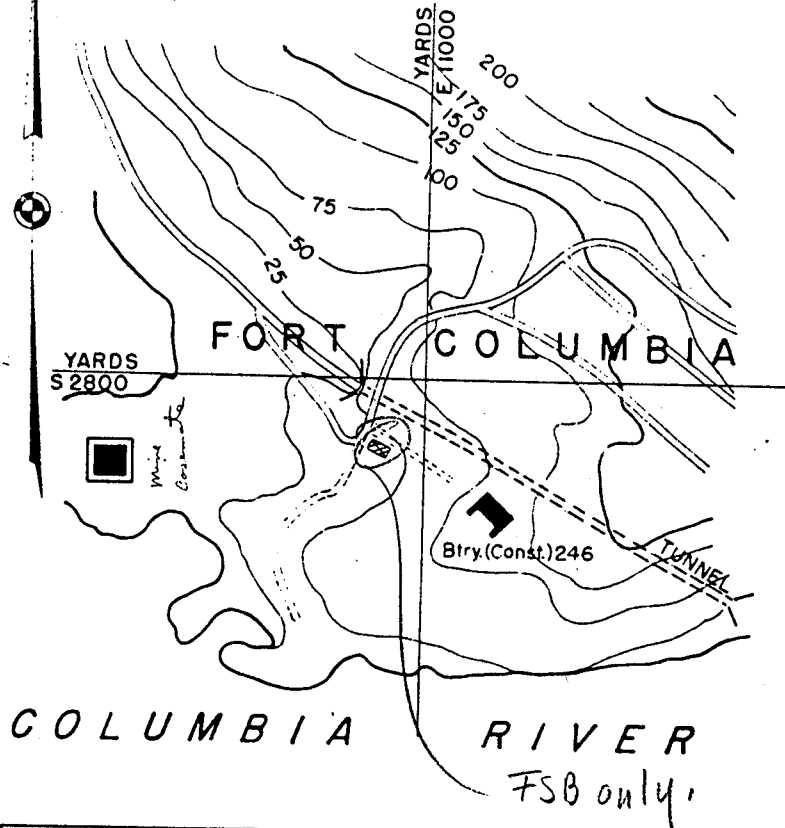
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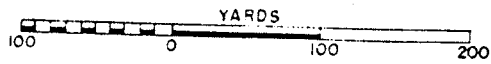
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By *W. H. NARS*, Date *5/21/94*

LOCATION No. 8



Contour Interval 25 feet



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ORDER 512 AUTH BY 116 FTR 7063

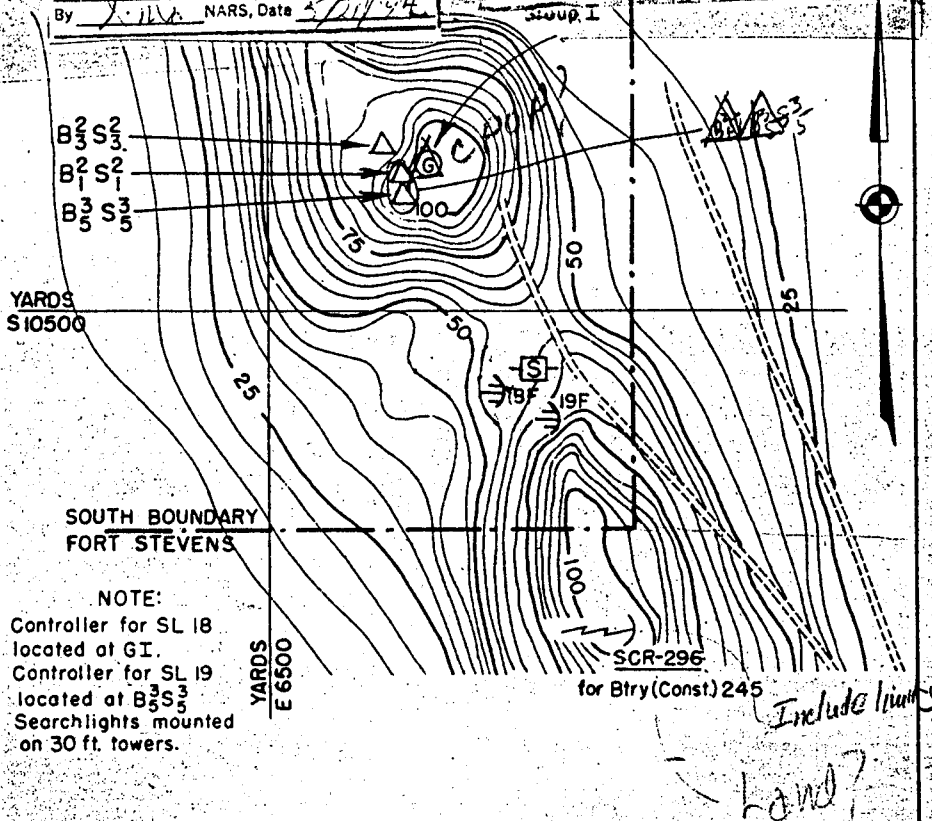
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LOCATION 8		
PREPARED BY:	DATE 29 MAY 1944	
OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	EX 21-B ANNEX B	

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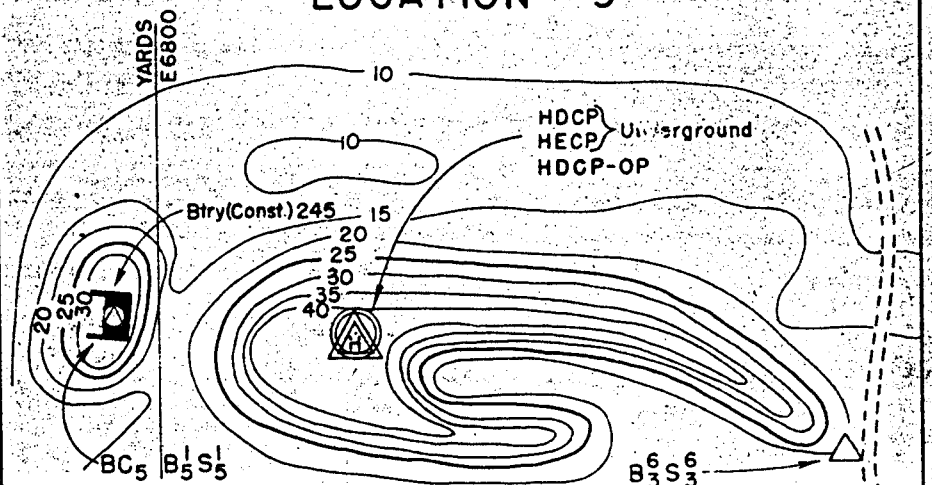
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REPRODUCED AT THE NATIONAL ARCHIVE

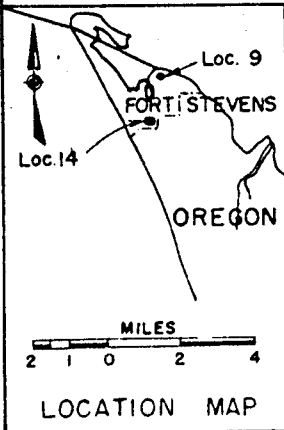
By *J. L. W.* NARS, Date *5/21/94*



LOCATION 9



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DATE 11/27/98 BY 7063



YARDS S 8500

YARDS

100 50 0 100 200

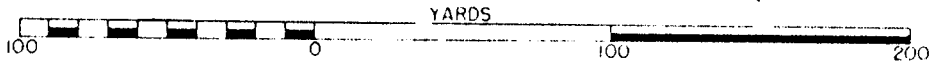
Contour Interval 5 feet

HARBOR DEFENSES OF THE COLUMBIA		REVISED DATE:
TERRAIN MAP		
LOCATIONS 9 & 14		
PREPARED BY	DATE: 15 JULY 1944	
OFFICE OF THE ART. ENG.		
FORT STEVENS, OREGON	EX 22-B ANNEX B	

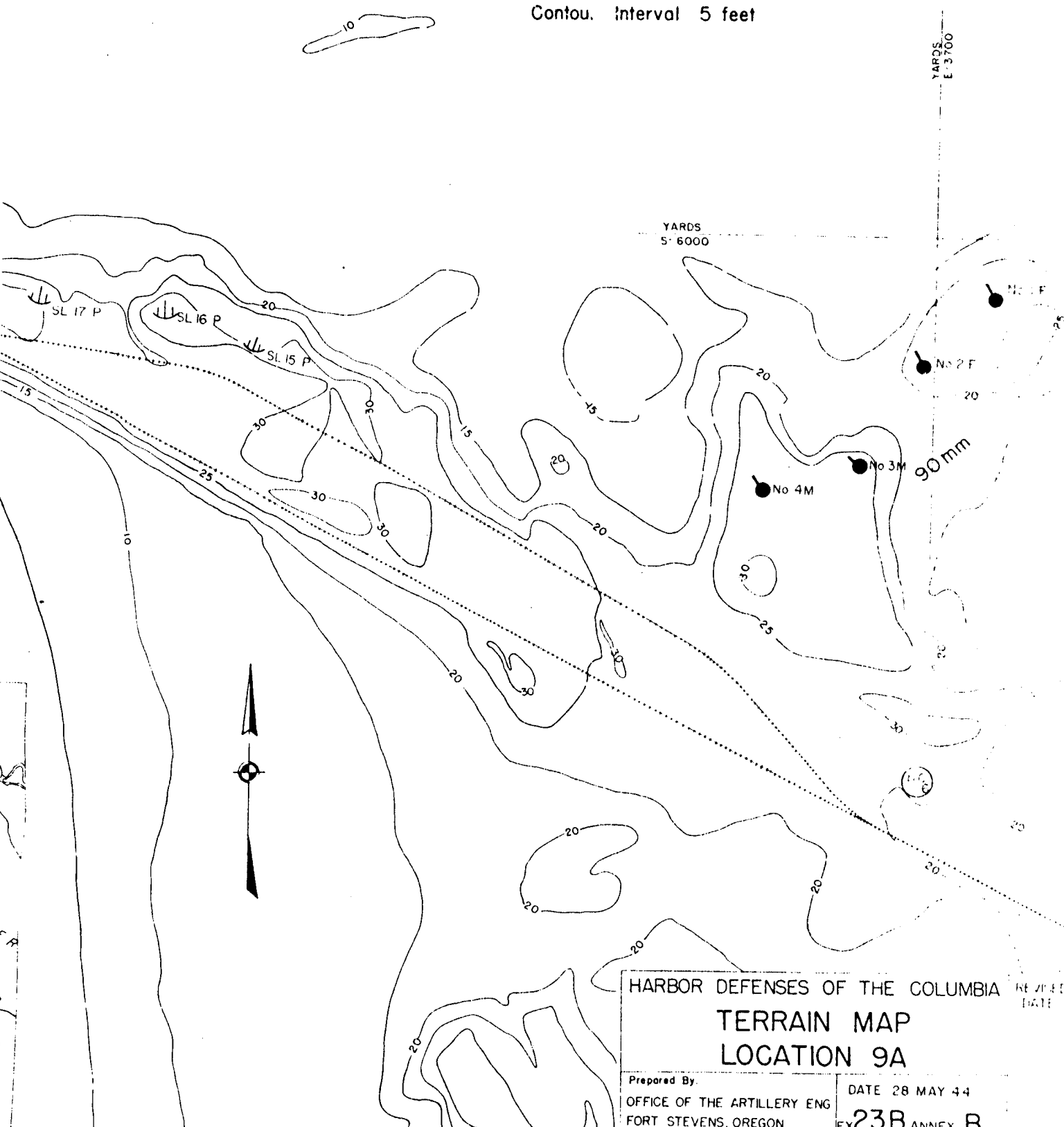
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SECRET

RECORDED PHOTO
ORDER SEE FILE BY 101 7063



Contou. Interval 5 feet



HARBOR DEFENSES OF THE COLUMBIA
TERRAIN MAP
LOCATION 9A

Prepared By
OFFICE OF THE ARTILLERY ENG
FORT STEVENS, OREGON

DATE 28 MAY 44

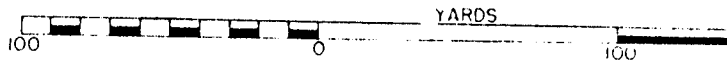
EX-23B ANNEX B

SECRET

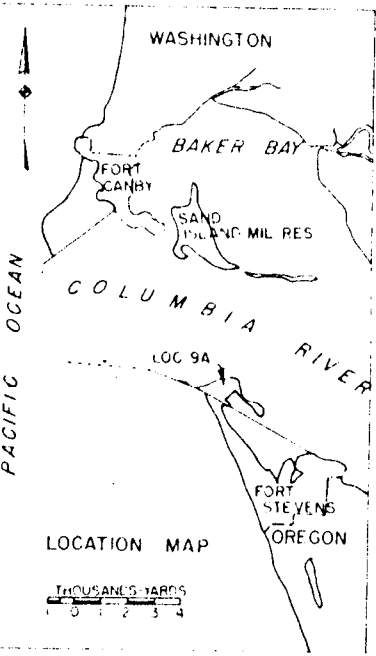
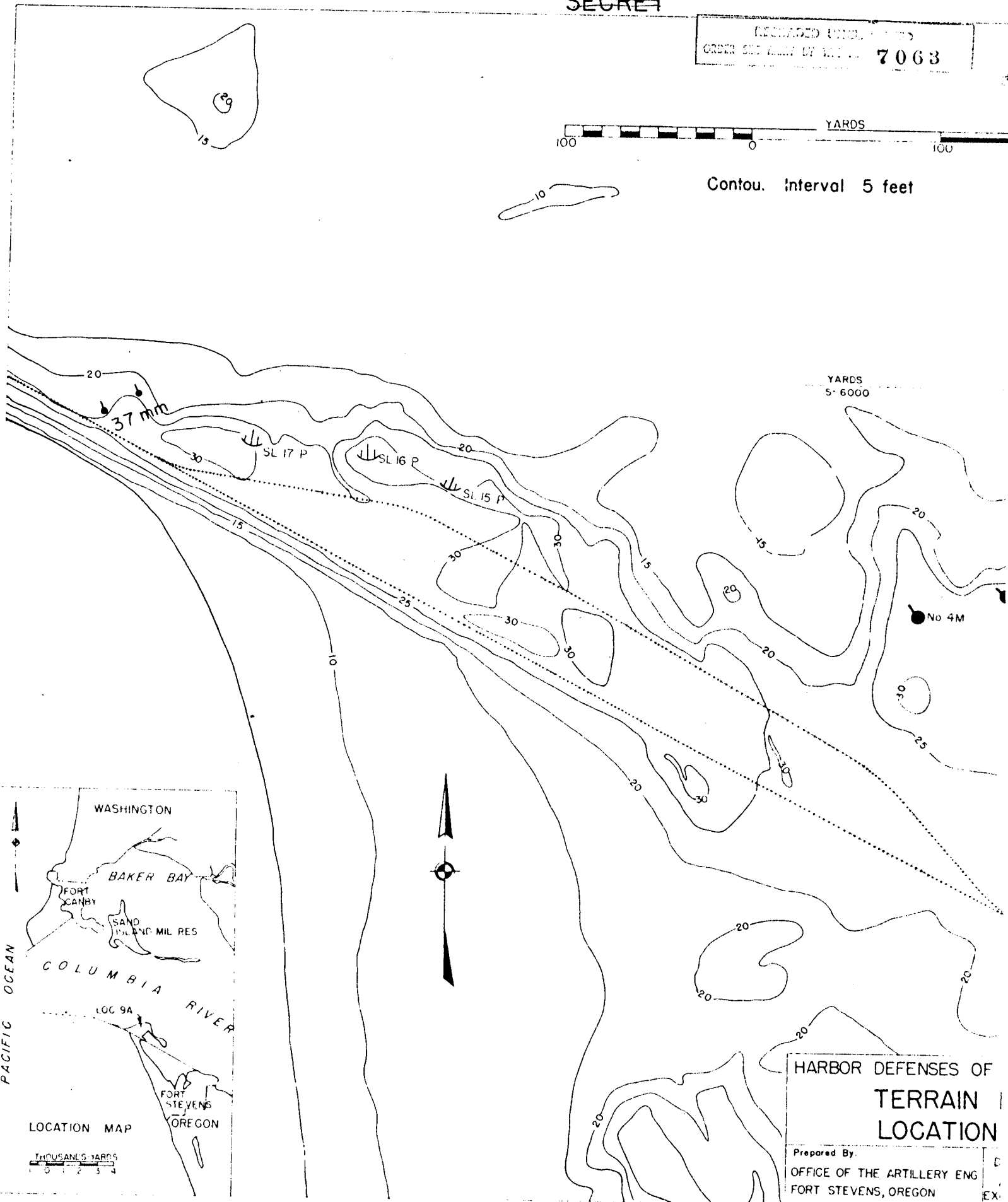
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Authority 260162

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Contou. Interval 5 feet



HARBOR DEFENSES OF
TERRAIN
LOCATION

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SECRET

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Authority 760162

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By *J. W. NARS*, Date *5/21/44*

NOTE. Controller for SL 13 located at M₄³
Controller for SL 14 located at B₃S₃⁶
Searchlights mounted on 40 ft. towers

LOCATION No. II

COLUMBIA RIVER

YARDS
E 8000

STEVENS

SEA WALL

H.D. Radio Transmitting Station

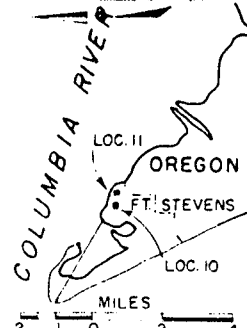
LOCATION No. 10

FORT

Contour Interval 5 feet

YARDS
0 100 200

DECLASSIFIED UNCLASSIFIED
ORDER NUMBER 7063



HARBOR DEFENSES OF THE COLUMBIA
TERRAIN MAP
LOCATIONS 10 & 11

REVISED
DATE

PREPARED BY:
OFFICE OF THE ART. ENG.
FORT STEVENS, OREGON

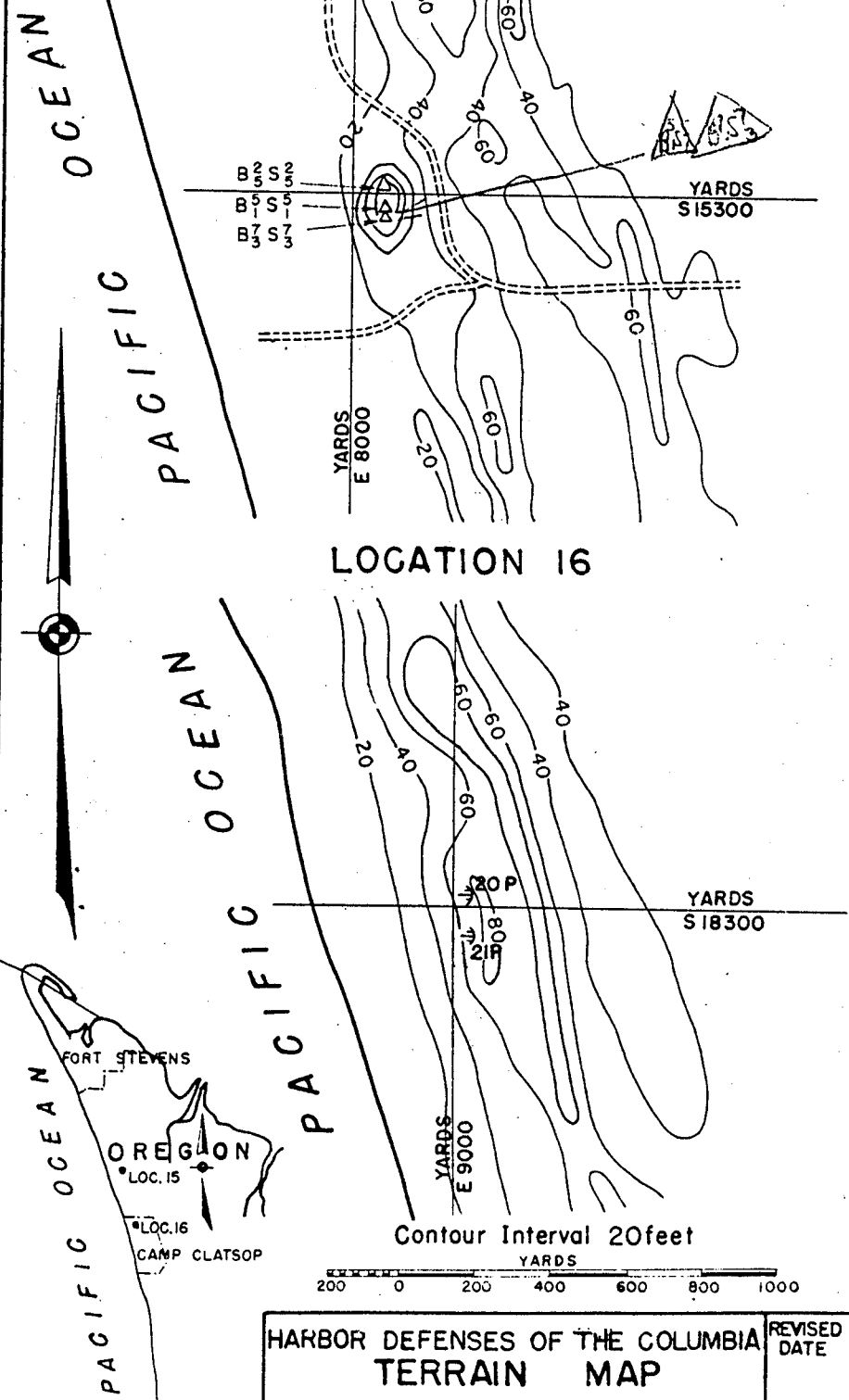
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EX. 24-B ANNEX B

SECRET

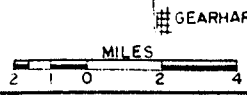
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 By *[Handwritten]* NARS, Date *5/21/94*

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 UNDER EXECUTIVE ORDER 11652 FEB 7 063

HARBOR DEFENSES OF THE COLUMBIA TERRAIN MAP LOCATIONS 15 & 16		REVISED DATE
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 28 MAY 1944 EX 25-B ANNEX B	

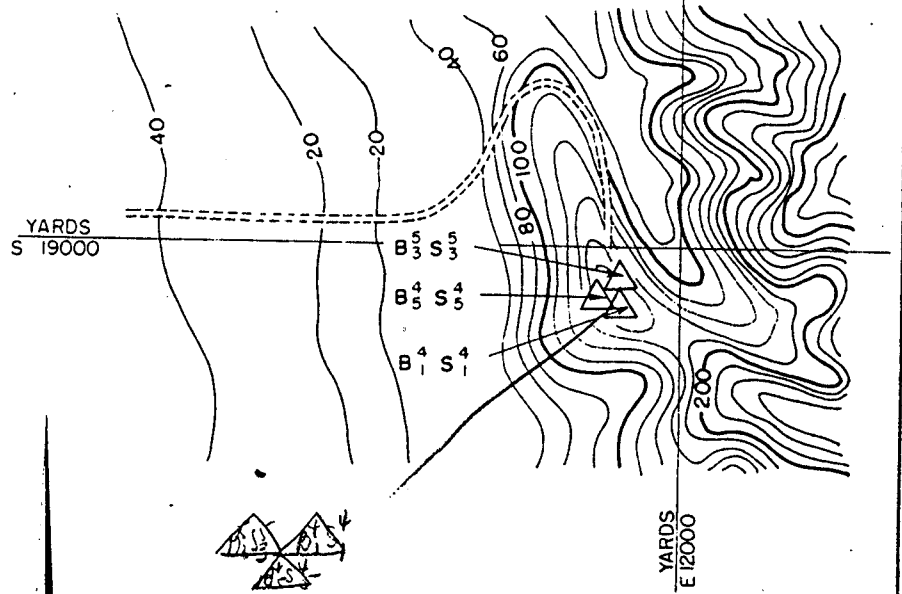


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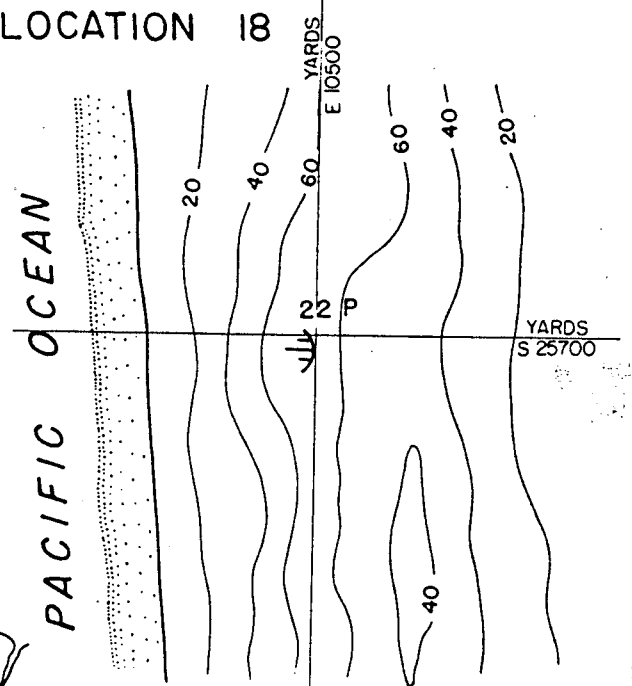
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By *[Signature]* NARS, Date *1/11/84*

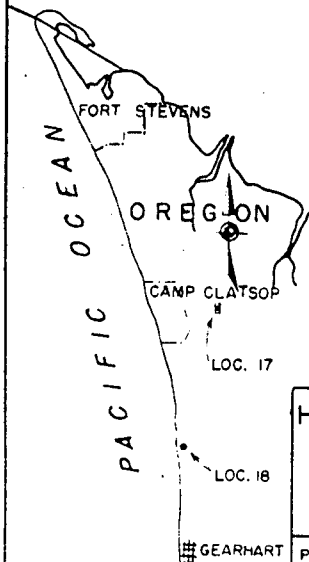
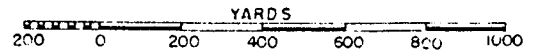


LOCATION 18

PACIFIC OCEAN

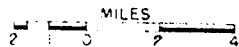


Contour Interval 20 feet



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ORDER REF ID: A67063

HARBOR DEFENSES OF THE COLUMBIA		REVISED DATE:
TERRAIN MAP		
LOCATIONS 17 & 18		
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 26 MAY 1944 EX. 26-B ANNEX B	



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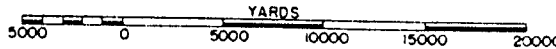
By J. W. W. NARS, Date 5/17/94



P A C I F I C O C E A N

NOTE: MAXIMUM RANGE OF DETECTION
AO TYPE TARGET 98000 YARDS.
UNDER EXCELLENT CONDITIONS

AVERAGE ARC OF DETECTION AO TYPE TARGET 45000 YARDS
DISTANCE TO HORIZON AT ELEVATION OF DIPOLES 36800 YARDS



7063

HARBOR DEFENSES OF THE COLUMBIA
ARC OF DETECTION &
MASKED WATER AREAS
SCR-296 Btry.(Constr.)247
LOCATION 3A FORT CANBY

REVISED
DATE

PREPARED BY:
OFFICE OF THE ART. ENG.
FORT STEVENS, OREGON

DATE: 1 JUNE 1944
EX. 27-B ANNEX B

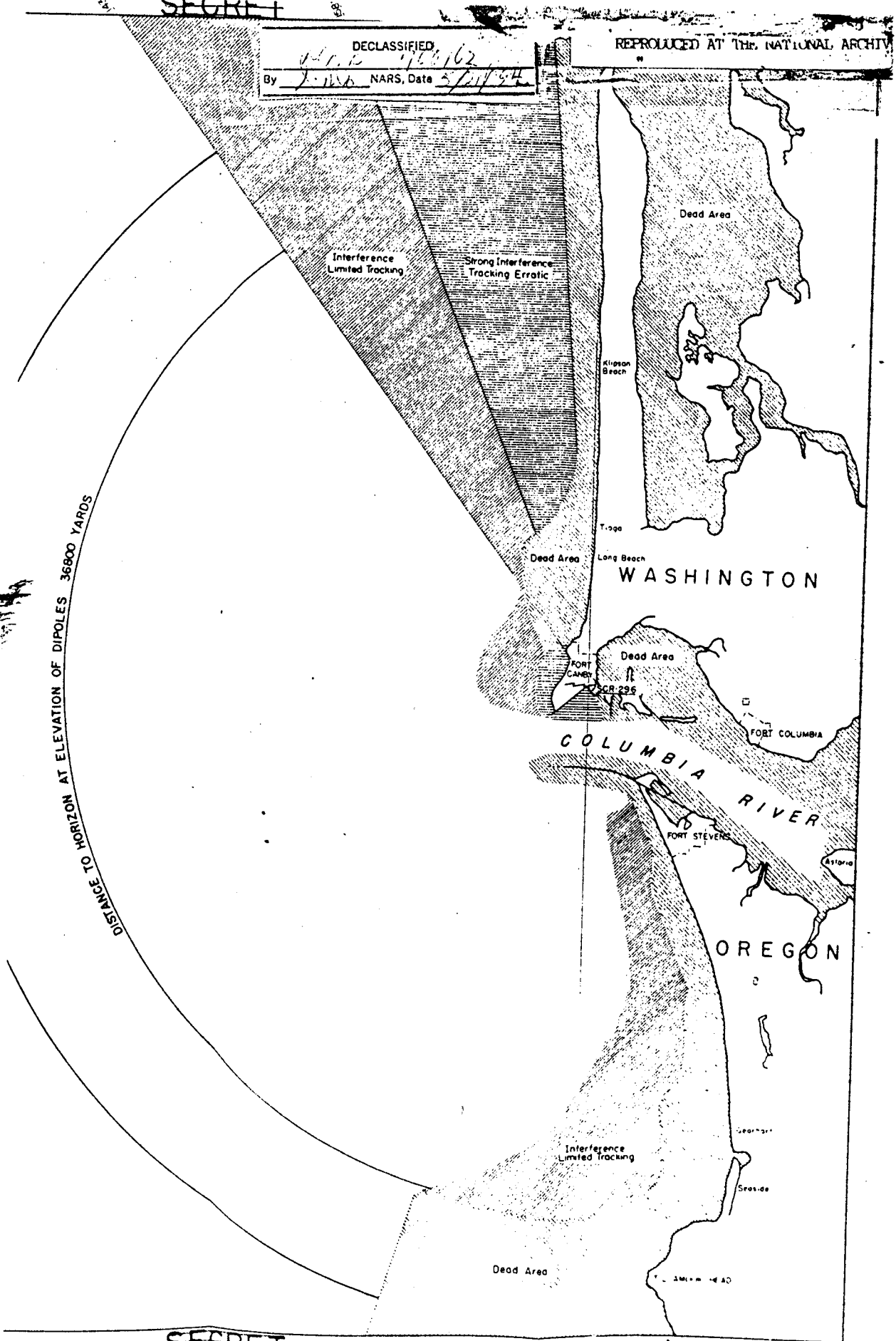
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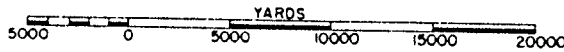


P A C I F I C O C E A N

AVERAGE ARC OF DETECTION AO TYPE TARGET 50000 YARDS

DISTANCE TO HORIZON AT ELEVATION OF DIPOLES 47300 YARDS

NOTE: MAXIMUM RANGE OF
DETECTION AO TYPE
TARGET 98000 YARDS
UNDER EXCELLENT CONDITIONS



UNCLASSIFIED
ORDER NO. 7-10 BY TAG PER 7068

HARBOR DEFENSES OF THE COLUMBIA
ARC OF DETECTION &
MASKED WATER AREAS
SCR-296 Btry.(Constr.)246
LOCATION 2 FORT CANBY

REVISED
DATE

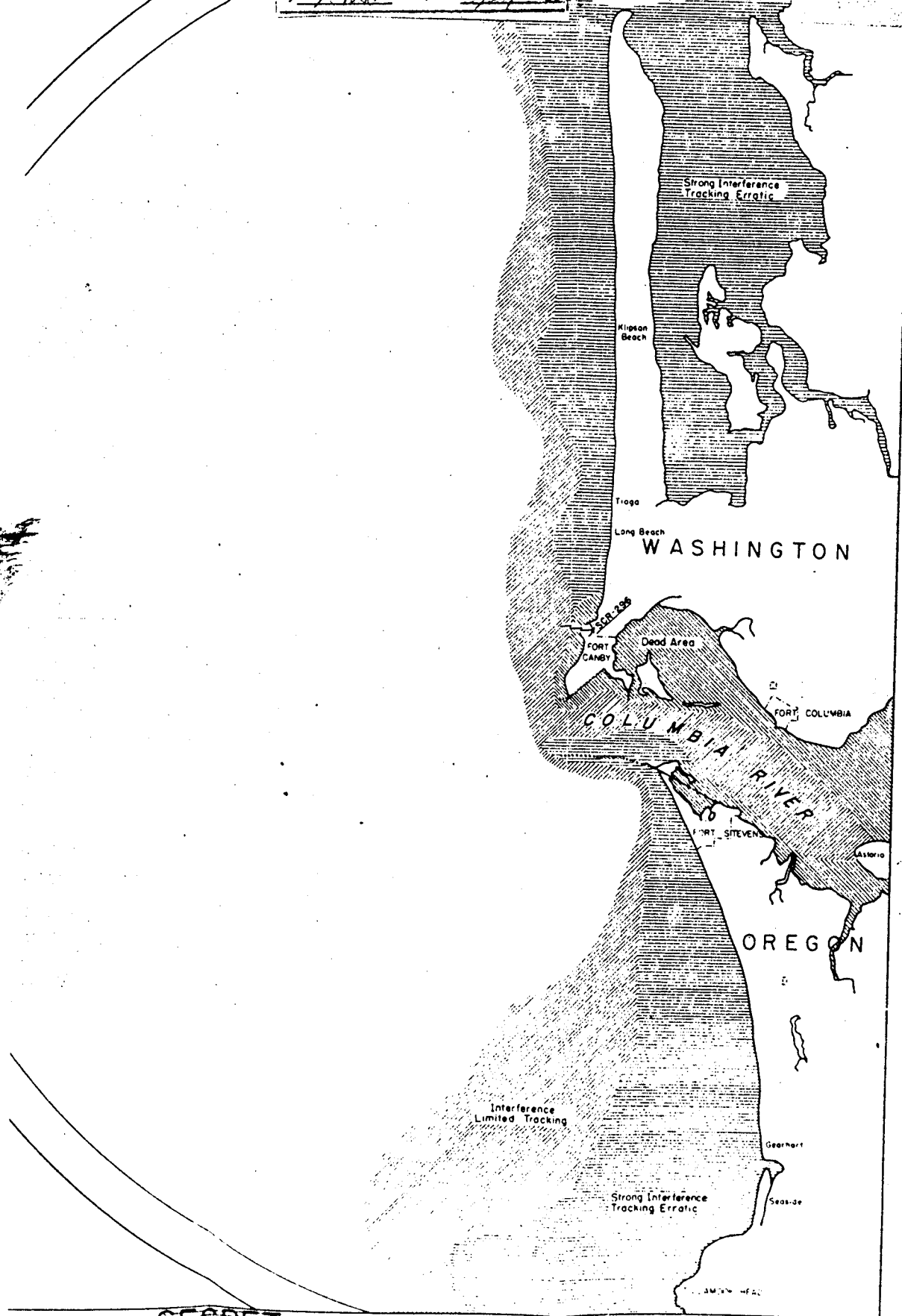
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OFFICE OF THE ART. ENG.
FORT STEVENS, OREGON

DATE: 1 JUNE 1944
EX.29-B ANNEX B

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By J. M. W. NARS, Date 5/21/94



P A C I F I C O C E A N

NOTE: MAXIMUM RANGE OF DETECTION
AO TYPE TARGET 98000 YARDS
UNDER EXCELLENT CONDITIONS

AVERAGE ARC OF DETECTION - AO TYPE TARGET - 45000 YARDS



HARBOR DEFENSES OF THE COLUMBIA
ARC OF DETECTION &
MASKED WATER AREAS
SCR-296 Btry. (Constr.) 245
LOCATION 14 FORT STEVENS

REVISED
DATE

PREPARED BY:
OFFICE OF THE ART. ENG.
FORT STEVENS, OREGON

DATE: 4 JUNE 1944
EX. 30-B ANNEX B

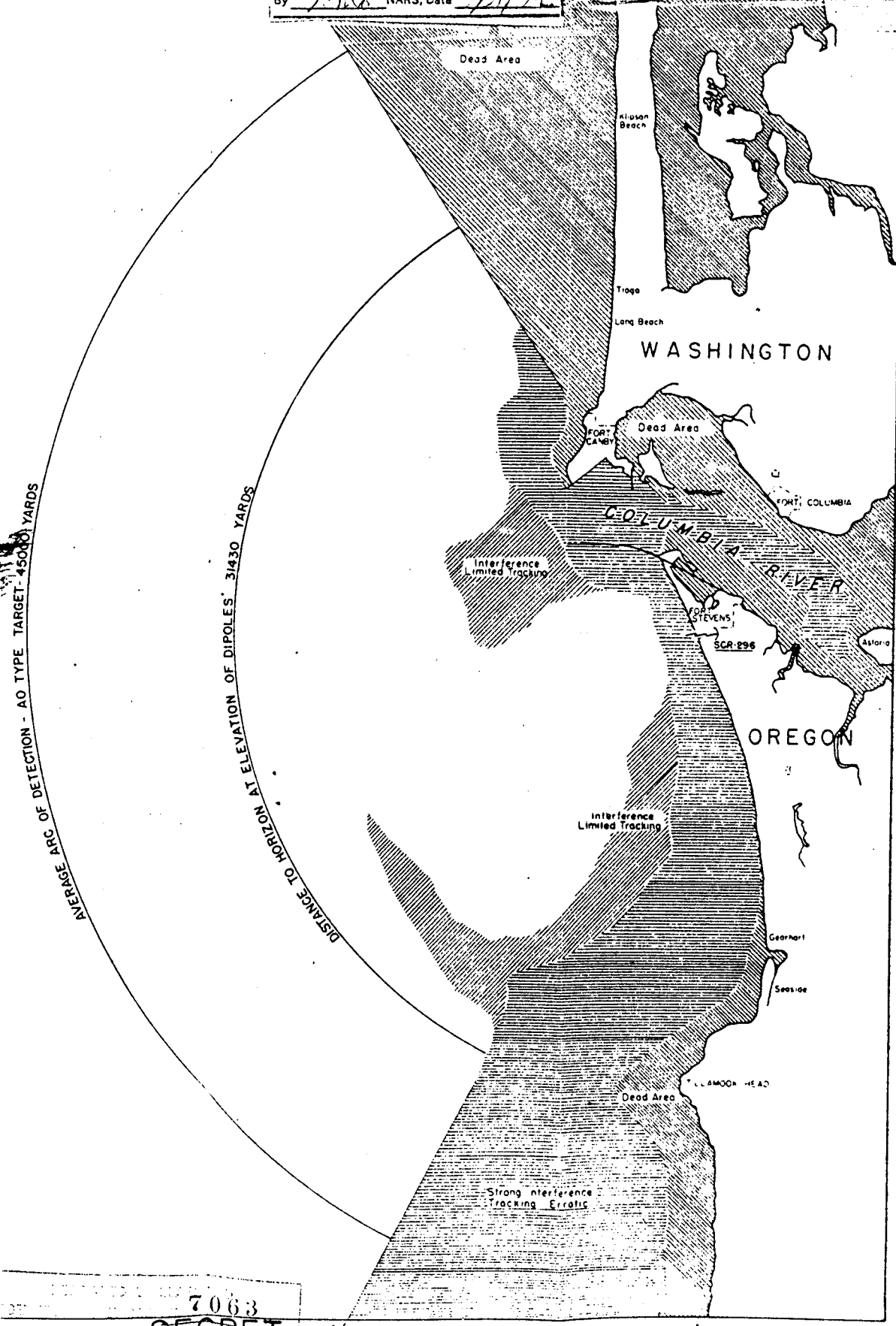
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DATE 08/11/00 BY 1042 PEP

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By J. W. W. NARS, Date 1/1/94



7063
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By 11/11/62 NARS, Date 1/17/44



HARBOR DEFENSES OF THE COLUMBIA
DATUM POINTS

REVISED DATE

PREPARED BY

DATE 2 JUNE 1944

OFFICE OF THE ART ENG
FORT STEVENS, OREGON

EX 32-B ANNEX B

RELEASABLE UNDER E.O. 13526
ORDER SEC 1.5 BY THE SECRETARY OF DEFENSE

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12 MAR 1955

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ANNEX C - SEACOAST SEARCHLIGHTS

INDEX

Paragraph 1 - General.	Page 2.
Paragraph 2 - Assignment of Lights.	Page 2.
Paragraph 3 - Tabulation of Searchlight Data.	Page 3.
Paragraph 4 - Construction Requirements.	Page 6.
Paragraph 5 - Land Acquisition.	Page 6.

EXHIBITS

1-C, Fields of Illumination.

~~SECRET~~

RECLASSIFIED UNCLASSIFIED ORDER BY EXECUTIVE ORDER 7063
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SECRET

ANNEX C - SEACOAST SEARCHLIGHTS

1. GENERAL.

a. Searchlight efficiency in this locality is greatly reduced because of adverse visibility conditions which prevail throughout the year.

b. Beach formations on the south side of the river, and the river area, require the lights to be emplaced considerable distance inland to take advantage of heights of site sufficient to clear the varied sand dunes on the beaches. The fixed lights on the north side of the river only are raised on towers to afford additional height of site. The wide dispersion of the lights renders central control impracticable.

c. Initial control of lights is under the direction of the Harbor Defense Commander from the Searchlight Command Post located in HDCP-OP. When lights are released to groups or batteries, direction and control becomes the responsibility of the commander concerned.

2. ASSIGNMENT OF SEARCHLIGHTS.

a. The following tabulation indicates the assignment of searchlights, by tactical number to groups, and the batteries for each the fields of fire can be illuminated. Location and fields of illumination are indicated on Exhibit 1-C.

Tactical No. of S/L	Normal Group Assignment	Illumination For
1	Group I	Btry #1
2	Group I	Btry #1
3	Group I	Btry #1
4	Group I	Btry #1
5	Group I	Btrys #1, #3, #5
6	Group I	Btrys #1, #3, #5
7	Group II	Btrys #1, #2, #3, #4, #5, #6
8	Group II	Btrys #2, #3, #4, #5, #6
* 9	Group II	Btrys #2, #3, #4, #5, #6
10	Group II	Btrys #1, #2, #3, #4, #5, #6
11	Group II	Btrys #3, #4, #5
12	Group II	Btrys #3, #4, #5
† 13	Group II	Btrys #3, #4, #5
x 14	Group II	Btrys #3, #4, #5
15	Group II	Btrys #1, #2, #3, #4, #5, #6
16	Group II	Btrys #1, #2, #3, #4, #5, #6
17	Group II	Btrys #1, #2, #3, #4, #5, #6
18	Group I	Btrys #1, #3, #5, #6
19	Group I	Btrys #1, #3, #5, #6
20	Group I	Btrys #1, #3, #5
21	Group I	Btrys #1, #3, #5
22	Group I	Btrys #1, #3, #5

SECRET

ANNEX D

ANNEX E

Paragraph 5. REGULATION OF SUBMUNITIONS.

Tactical No.	Loc. No.	Exh. No.	Type	Type of Emplacement or Mounting	Height of Ground at Position	Height of Tower	Location from which S/L is Controlled	Type of Power Plant	Location of Power Plant	Place of Storage or Shelter	On Hand
1 *	1-A	16-B	Portable Sperry 1937 AA	Standard Portable Chassis	39 ft.	None	Within 500 ft. of Light	Portable Hercules AA Gas	Within 200 ft. fr. Light	At Location	Yes
2 *	1-A	16-B	Portable Sperry 1937 AA	Standard Portable Chassis	39 ft.	None	Within 500 ft. of Light	Portable Hercules AA Gas	Within 200 ft. fr. Light	At Location	Yes
3 *	1	16-B	Portable Sperry 1937 AA	Standard Portable Chassis	24 ft.	None	B ⁶ S ₁ I	Portable Hercules AA Gas	Within 200 ft. fr. Light	At Location	Yes
4 *	1	16-B	Portable Sperry 1941 AA	Standard Portable Chassis	24 ft.	None	B ⁶ S ₁ I	Portable Hercules AA Gas	Within 200 ft. fr. Light	At Location	Yes
5	2	16-B	Fixed HD, GE Form N-10	Concrete Shelter	146 ft.	None	B ² S ₁ I	Fixed 25 K.W. 1912 GE	35 Yd E of Light, Concrete Shelter	Fixed Shelter	Yes
6	2	16-B	Fixed HD, 1911 Form N-2	Concrete Shelter	170 ft.	None	B ² S ₁ I	Fixed 25 K.W. 1912 GE	20 Yd NE of Light, Concrete Shelter	Fixed Shelter	Yes
7	5	18-B	Portable Sperry 1941 AA	Standard Portable Chassis	189 ft.	None	Within 500 ft. of Light	Portable Hercules AA Gas	Within 200 ft. fr. Light	At Location	Yes

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ANNEX D
UNIT E

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Paragraph 3. (Contd.)

Tactical No.	Loc. No.	Exh. No.	Type	Type of Emplacement or Mounting	Height of Ground at Position	Height of Tower	Location From Which S/L is Controlled	Type of Power Plant	Location of Power Plant	Place of Storage or Shelter	On Hand
8	5	18-B	Portable Sperry 1911 AA Search Form N-10	Standard Portable Chassis	200ft.	None	Within 500 ft. of Light G II.	Portable Hercules AA Gas	Within 200 ft. fr. Light	At Location	Yes
9	5	18-B	Fixed HD, 1917 Form N-10	Concrete Base - Metal Shelter	99 ft.	None	G II.	Fixed 25 K.W. 1912 GE	65 Yd NW of Light	At Location	Yes
10	5-A	18-B	Portable Sperry 1911 AA	Standard Portable Chassis	20 ft.	None	Within 500 ft. of Light	Portable Hercules AA Gas	Within 200 ft. fr. Light	At Location	Yes
11	6-A	19-B	Fixed HD, 1911 Form N-5	Concrete Shelter	75 ft.	None	BC - B ₃ S ₃	Fixed 25 K.W. 1912 GE	125 Yds SE of Light, Concrete Shelter	At Location	Yes
12	6-A	19-B	Fixed HD, 1917 Form N-10	Concrete Shelter	83 ft.	None	MC - M ₄	Fixed 25 K.W. 1912 GE	100 Yds SE of Light, Concrete Shelter	At Location	Yes
13	11	21-B	Fixed HD, 1917 Form N-10	Concrete Base on Wooden Tower H.D.	10 ft.	40 ft.	M ₄	Fixed 25 K.W. 1912 GE	100 Yds SW of Light, Concrete Shelter	At Location	Yes

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ANNEX 3
ANNEX 3

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Tactical No.	Loc. No.	Exh. No.	Type	Type of Emplacement or Mounting	Height of Ground at Position	Height of Tower	From Which S/L is Controlled	Type of Power Plant	Location of Power Plant	Storage or Shelter	On Hand
14	11	24-B	Fixed HD, 1911 Form N-2	Concrete Base - on Wooden Tower H.D.	10 ft.	40 ft.	B3 S3 5	Fixed 25 K.W. 1912 GE	125 Yds SE of Light, Concrete Shelter	At Location	Yes
15	9-A	23-B	Portable Sperry 1941 AA	Standard Portable Chassis	30 ft.	None	Within 500 ft. of Light	Portable Hercules AA Gas	Within 200 ft. fr. Light	At Location	Yes
16	9-A	23-B	Portable Sperry 1941 AA	Standard Portable Chassis	30 ft.	None	Within 500 ft. of Light	Portable Hercules AA Gas	Within 200 ft. fr. Light	At Location	Yes
17	9-A	23-B	Portable Sperry 1941 AA Spread-Beam	Standard Portable Chassis	30 ft.	None	Within 500 ft. of Light	Portable Hercules AA Gas	Within 200 ft. fr. Light Under-ground	At Location	Yes
18	14	22-B	Fixed HD, 1911 Form N-2	Concrete Base - on Wooden Tower H.D.	57 ft.	30 ft.	G-1	Fixed 25 K.W. 1912 GE	80 Yds E of Light, Concrete Shelter	At Location	Yes
19	14	22-B	Fixed HD, 1911 Form N-2	Concrete Base - on Wooden Tower H.D.	67 ft.	30 ft.	B3 S3 5	Fixed 25 K.W. 1912 GE	25 Yds N of Light, Concrete Shelter	At Location	Yes

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ANNEX D

ANNEX E

12957
12 MAR 1955

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Paragraph 3. (Continued.)

Tactical No.	Loc. No.	Exh. No.	Type	Type of Emplacement or Mounting	Height of Ground at Position	Height of Tower	Location From Which S/L is Controlled	Type of Power Plant	Location of Power Plant	Place of Storage or Shelter	On Hand
20	16	25-B	Portable Sperry 1937 AA	Standard Portable Chassis	70 ft.	None	Within 500 ft. of Light	Portable Hercules AA Gas	Within 200 ft. fr. Light	At Location	Yes
21 **	16	25-B	Portable Sperry 1941 AA	Standard Portable Chassis	70 ft.	None	Within 500 ft. of Light	Portable Hercules AA Gas	Within 200 ft. fr. Light	At Location	Yes
22 **	18	26-B	Portable Sperry 1939 AA	Standard Portable Chassis	60 ft.	None	Within 500 ft. of Light	Portable Hercules AA Gas	Within 200 ft. fr. Light	At Location	Yes

NOTE: * Stored in searchlight shelter, Fort Canby, Washington, until tactical situation requires emplacement.
 ** Stored in searchlight shelter, Fort Stevens, Oregon, until tactical situation requires emplacement.

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- 4. No other construction is approved (r required).
- 5. No additional real estate is required for seacoast searchlight defense.

ANNEX D
ANNEX E

WILLAPA BAY

Klipsan Beach

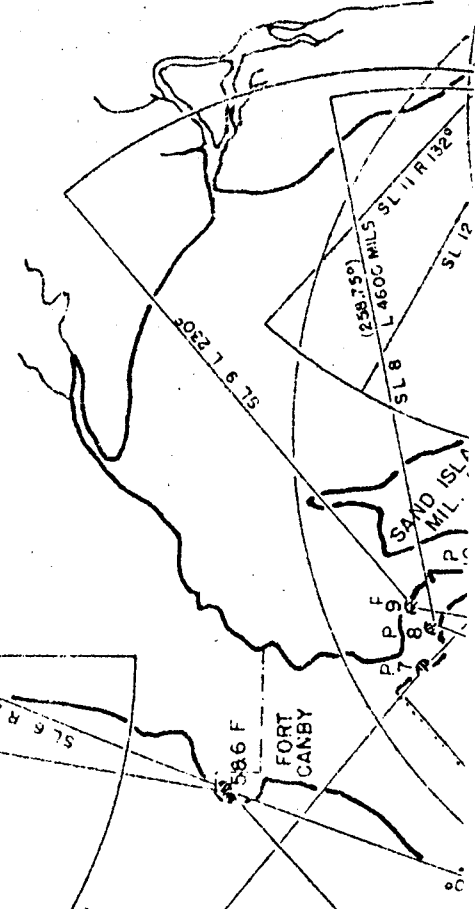
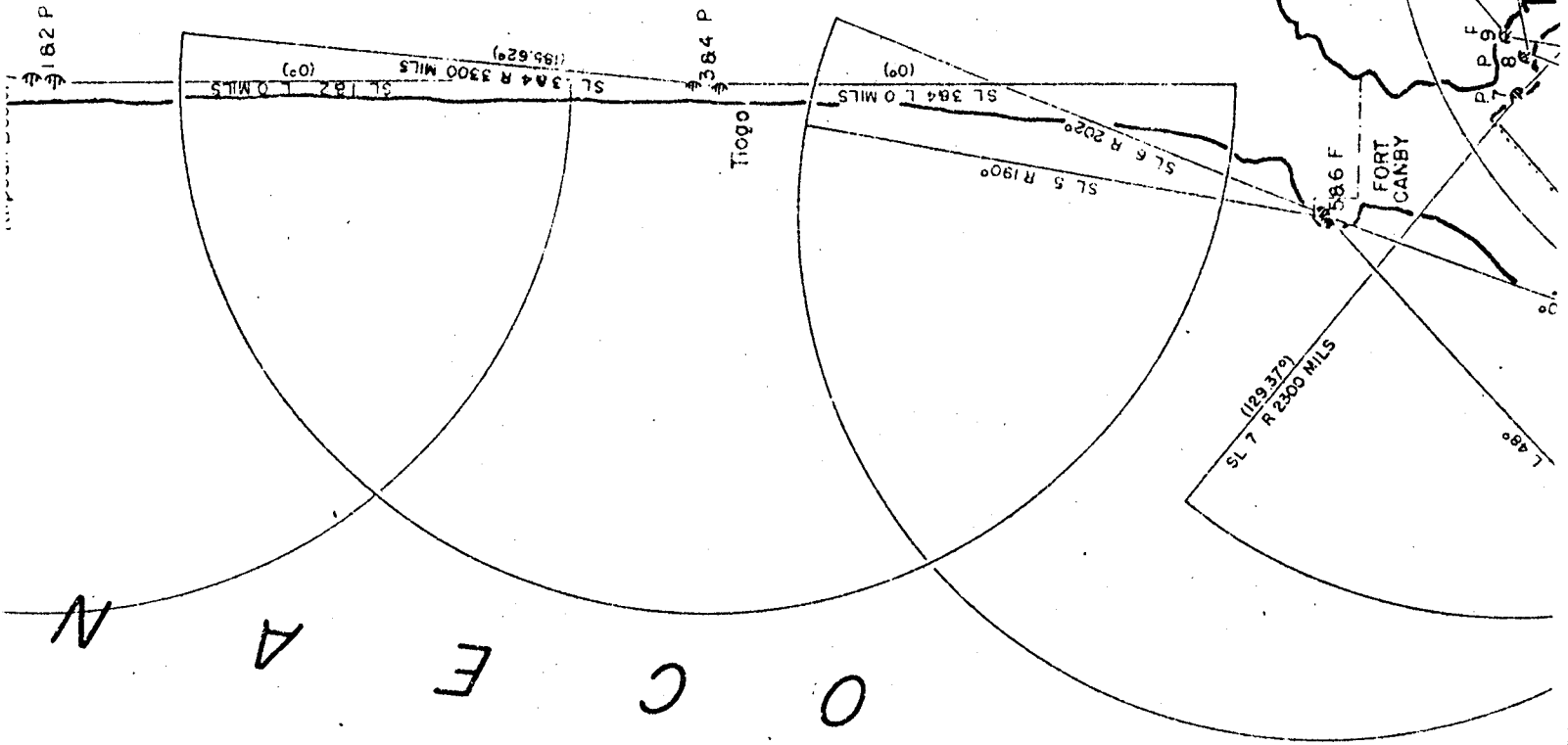
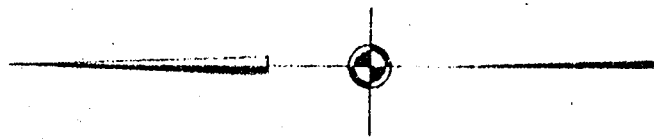
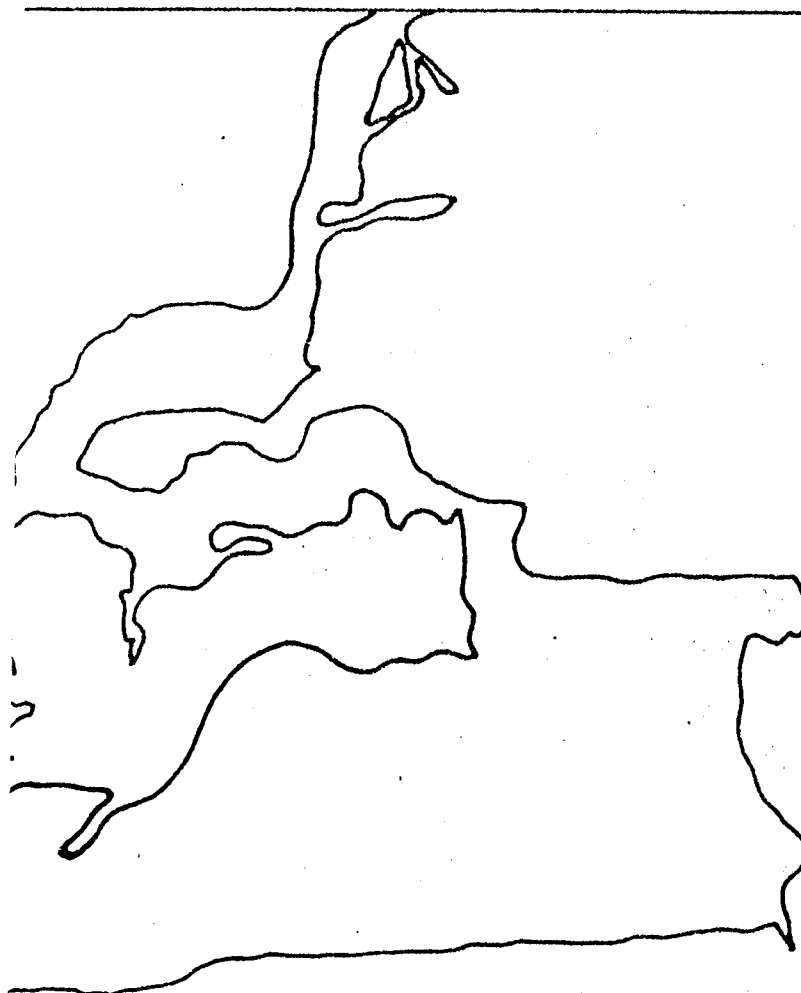
182 P

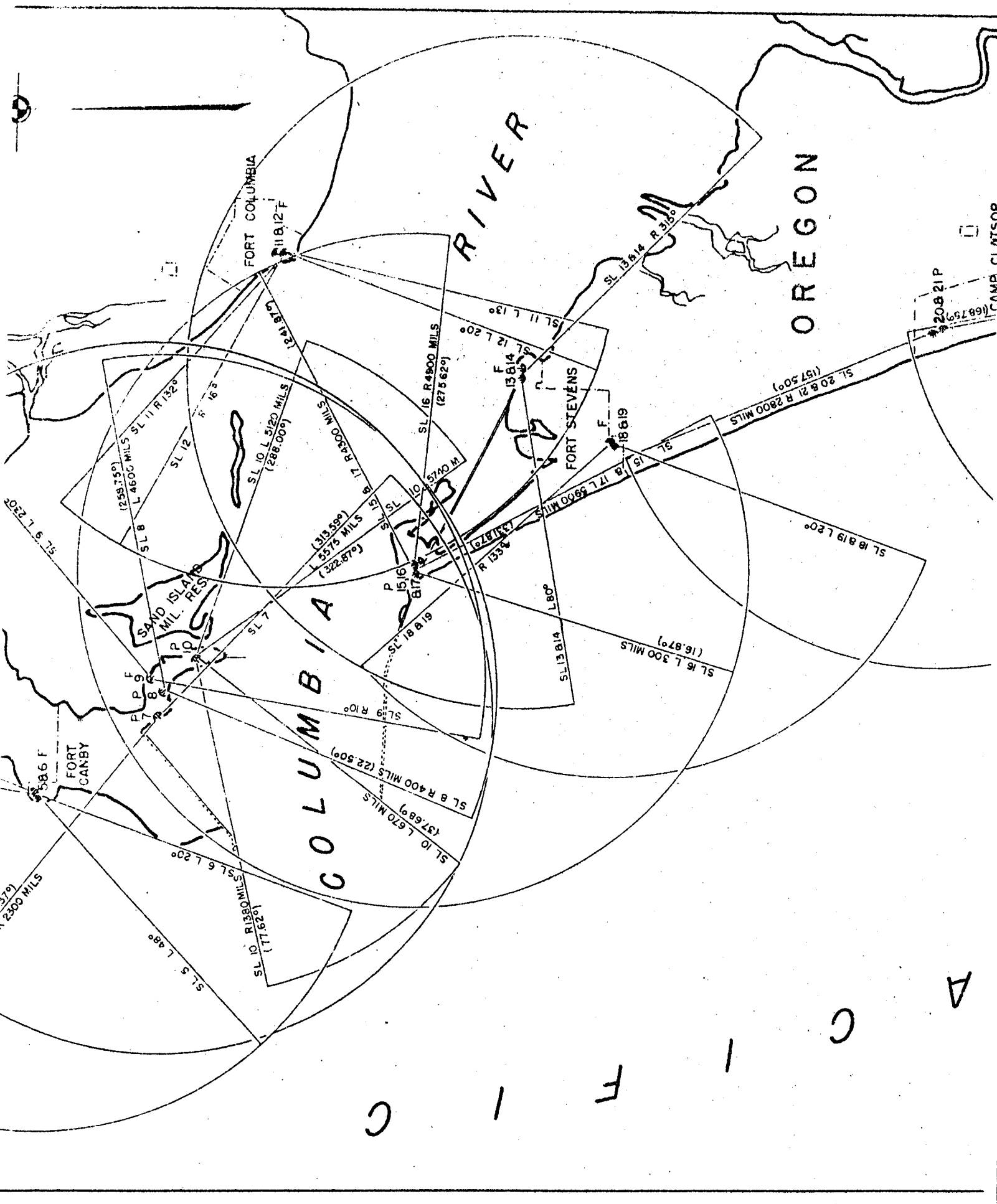
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(188.40)

SL 182 L 0 MILS
84 R 3300 MILS
(09) 35.620)

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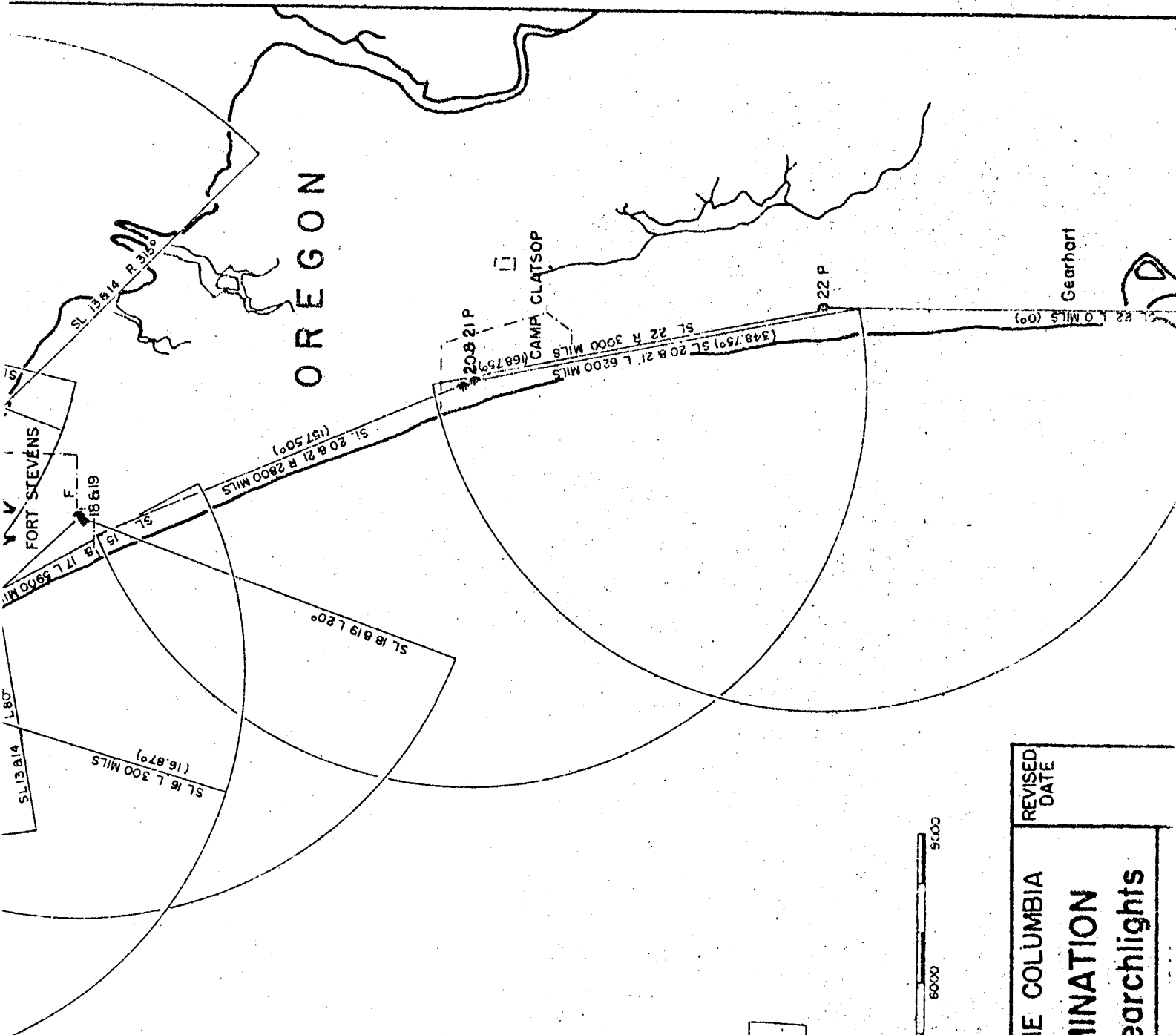
WASHINGTON





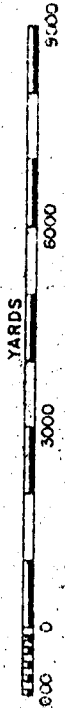
C I F I C A

DECLASSIFIED
 Authority 260162



REPRODUCED UNCLASSIFIED
 ORDER SEC ARMY BY TAG FILE 7063

Note: Arcs of illumination - 8000 yds.
 All azimuths 0° - Ori South



HARBOR DEFENSES OF THE COLUMBIA
FIELDS OF ILLUMINATION
 Seacoast Artillery Searchlights

REVISED DATE

S E C R E T

ANNEX D - UNDERWATER DEFENSE

INDEX

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Paragraph 2 - Controlled Submarine Mine Project	2
Paragraph 3 - Mine Shore Facilities	3
Paragraph 4 - Mine Field Protection	5
Paragraph 5 - Storage of Mine Explosives	5
Paragraph 6 - Land Requirements	5

EXHIBITS

- Exhibit 1-D - Underwater Defense Project, Ground Mines, M4.
- Exhibit 2-D - Mine Shore Facilities, Fort Stevens.
- Exhibit 3-D - Mine Shore Facilities, Fort Columbia.
- Exhibit 4-D - Mine Shore Facilities, Sand Island & Fort Canby.

0 12-9-53
12 MAR 53

S E C R E T

ANNEX D - UNDERWATER DEFENSE

1. AUTHORITY.

- lc (1). a. Original Buoyant Project - Reference Annex A, paragraph
b. Conversion to Ground Mine Project - Reference Annex A, paragraph 1c (2) and (3).

obsolete

2. CONTROLLED SUBMARINE MINE PROJECT.

a. Underwater Portion of Defense (Exhibit 1-D):

- (1) The controlled submarine mine field consists of twelve (12) groups of thirteen (13) M-4 ground mines each.
- (2) The project is planted in three (3) lines of four (4) groups each. The lines are spaced approximately 800 yards apart with a one hundred fifty (150) foot interval between mines.
- (3) The following tabulation is the average submergence of each group referred to mean low water:

Group Number	Submergence
1	30 ft.
2	53 ft.
3	58 ft.
4	35 58 ft.
5	35 ft.
6	38 ft.
7	60 ft.
8	28 ft.
9	32 ft.
10	41 ft.
11	32 ft.
12	63 ft.

- (4) The single conductor cables are routed from the distribution boxes of the three (3) lines of mines to three (3) cable huts located on Sand Island. Two (2) seven-conductor cables connect the three (3) cable huts to the shore installation located at Fort Columbia. See Exhibit No. 1-D.
- (5) The project includes four (4) concrete cable huts to facilitate the routing of the submarine mine cables. Three huts are located on the easterly end of Sand Island, the fourth hut is constructed at the water's edge of the rock knoll at Chinook Point, Fort Columbia, and ties the mine field into the casomate.
- (6) The Audio Reception System, M-1, is installed seaward from the front line of mines. The Navy has no sound ranging equipment, underwater listening devices, or net and boom defenses in the Columbia River, or approaches thereto.

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ANNEX D - UNDERWATER DEFENSE
 (Continued)

b. Submarine Mine Flotilla.

The vessels indicated below are assigned to the submarine mine flotilla for controlled submarine mine work. These vessels are fully capable of performing the various functions of submarine mine operations. All vessels listed are required due to the excessive maintenance caused during spring and winter months as a result of rough water, high wind velocities, and storm conditions prevailing during these seasons.

	<u>Vessel</u>	<u>Length</u>	<u>Beam</u>	<u>Draft</u>	<u>Authority</u>
(1)	Mine Planter USAMP #7	188'	37'	11'	Letter, OCT, file 565.4H, MP-7, dated 12 Nov 42.
(2)	Distribution L-64	64'	18'	6'	Letter, OCT, file 565.4H, Asgmt of L-64 and L-75, dated 20 Sep 42.
	Box Boats L-75	64'	18'	7'	
(3)	Yawls M-296	26'	8'	3'3"	Letter, AGO, file 565.4, Asgmt of M-296, dated 20 Nov 39.
	M-332	26'	8'	3'	Unknown.
	M-333	26'	8'	3'	Unknown.
	M-380	26'	8'	2'7"	Letter, OCT, file 565.4H, M-380, Asgmt of M-380, dated 29 Jun 42.
	M-463	26'	8'	2'7"	Letter, OCT, file 565.4H, M-463, Asgmt of M-463, dated 29 Aug 42.
	J-796	27'6"	7'6"	3'	Letter, OCT, file
	J-797	26'9"	7'6"	3'	565.4H, Asgmt of
J-798	30'	8'3"	2'6"	J-796, J-797, J-798,	
J-799	32'	9'6"	2'6"	J-799, dated 8 Aug 42.	

c. The FB-535, a ninety-eight (98) foot diesel powered boat, is now being used to provide ferry service between Fort Stevens and Fort Canby. This boat was used for planting activities prior to receipt of the USAMP #7 and the equipment necessary to convert it back to an auxiliary mine planter is maintained in local storage.

3. REQUIRED SHORE FACILITIES FOR SUBMARINE MINE PURPOSES.

a. Wharves. - Exhibit No. 2-D.

(1) Mine Wharf - Location 11.

Used for mine material and capable of berthing the mine planter and one DB boat for loading operations only. An open dock on the Columbia River is not suitable for permanent berthing of vessels.

(2) Boat Dock - Location 11.

A newly constructed wood piling dock, 300 feet long, capable of berthing two DB boats, two harbor boats, and several yawls or similar size boats. This dock is protected by a breakwater and is satisfactory for permanent berthing.

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ANNEX D - UNDERWATER DEFENSE
(Continued)

b. Boathouses and Small Boat Basin. - Exhibit No. 2-D.

(1) Boathouse - Location 11.

An existing wood frame corrugated iron structure, located at the land end of the mine wharf. Shelter for four mine yawls is provided.

(2) Small Boat Basin - Location 11.

Adjoins the new mine storeroom with a boat ramp and narrow (3') gauge railway which extends from a minus four feet MLW to a piling supported dock built adjacent to the mine storeroom. The basin includes 5 landing floats, each 10' x 40'.

c. Mine Loading Room. - Exhibit No. 2-D.

A new reinforced concrete structure at Location 11. Inside dimensions: 42' x 25' x 18' high, with an adjoining section 25' x 25' x 10' high. The structure contains necessary heavy duty equipment for handling ground mines and is satisfactory except that it does not meet the quantity distant table requirements.

d. Mine Storehouses. - Exhibit No. 2-D.

(1) Mine Storeroom No. 1 - Location 13.

A reinforced concrete structure 127' x 40' with overhead crane facilities and "run in" narrow gauge (3') railway connecting to the mine loading room and mine wharf.

(2) Mine Storeroom No. 2 - Location 11.

A new wood frame structure on piling foundation adjoining the small boat basin. Inside dimensions: 39' x 131' x 19' high which includes an office inside the structure, 19' x 14' x 8' high.

(3) Cable Tank House - Location 13.

A wood frame, corrugated iron siding, structure 146' x 20' containing three cable tanks; two each 17'7" x 36'2" x 6', and one 17'6" x 22'2" x 7'3". It is adequate and satisfactory.

e. Explosive Storage Magazines. - Exhibit No. 2-D.

Two (2) reinforced concrete earth-covered, igloo-type structures at Location 12. Inside dimensions: 17' x 26' x 8' high. These structures have a total capacity of 143,000 pounds of TNT which is adequate for the "30% overage" of approximately 140,000 pounds required for the approved ground type project. Fuzes are stored in abandoned Battery Smur at Location 10. The storage plan complies with the provisions of TM 9-1900.

f. Mine Casemate. - Exhibit No. 3-D.

An adequate reinforced, concrete, earth-covered, bomb-proof and gasproof structure, defiladed behind the rocky knoll at Chinook Point at Location 8. The inside dimensions of the structure are 32' x 50' x 10' high and include the operating room, gasproof equipment and gasproof compartments, latrine, power generator room, and storerooms. Fourteen (14) control panels are installed, or on hand to be installed. Two (2) panels are spares.

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ANNEX D - UNDERWATER DEFENSE
(Continued)

g. Mine Plotting Room. - Exhibit No. 3-D.

An existing concrete dug-in structure located in the lower level of Station MC-M₄ at Location 7. Reference: Paragraph ~~8d (a)~~, Annex B.

7d.(8)

h. Mine Group and Battery Command Stations.

(1) Mine Group Station - Location 5.

Located on Cape Disappointment in an existing concrete structure. Reference: Paragraph ~~3b (1)~~, 3C, Annex B. This site provides a controlling field of view of the mine field and all approaches thereto.

(2) Mine Battery Command Station - Location 7.

Located in MC-M₄.

i. Mine Observation Stations.

Reference: Paragraph ~~8d~~, Annex B, and Exhibit 13-B, 2-D, 3-D, and 4-D.

7d.

4. MINE FIELD PROTECTION.

a. Two AMTB Batteries, Tactical No. 2 and No. 6, are directly under the control of the Mine Group Commander. Their fields of fire as well as that of two 6" BC gun batteries, Tactical No. 3 and No. 5, can cover all water areas in the mine field and approaches thereto. See Exhibit 3-A and 4-A.

b. The following numbered searchlights are located to provide illumination over the mine field and approaches thereto: Nos. 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 and 17.

5. STORAGE OF EXPLOSIVES.

a. All TNT used in mine field operations is stored in the concrete igloo-type structures referred to in paragraph 3e above.

b. The igloos are situated beyond minimum quantity-distance table requirements of any inhabited building and meet the requirements of TM 9-1900.

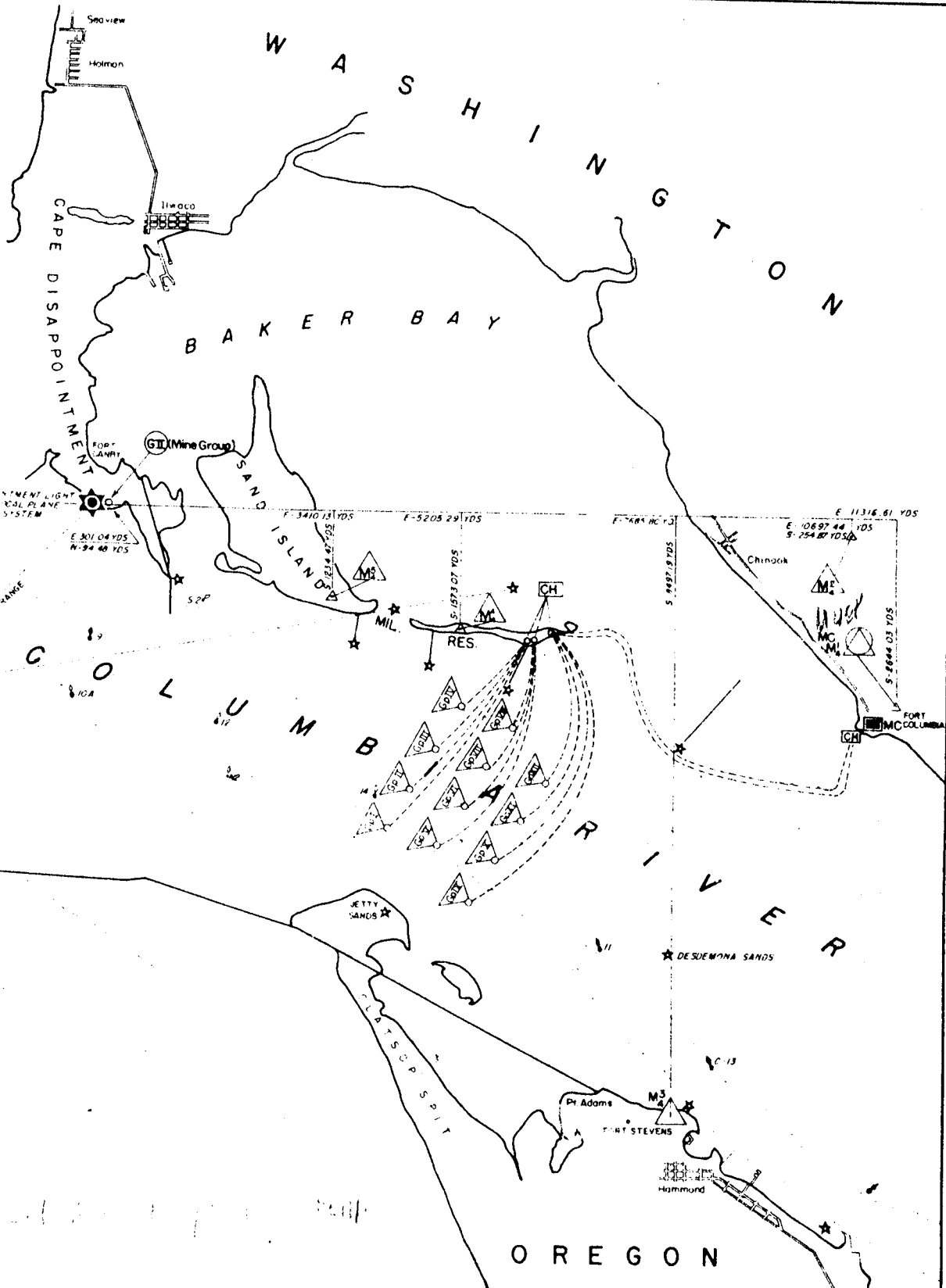
c. Fuzes are stored separately from all TNT in an abandoned battery emplacement.

6. LAND REQUIREMENTS.

a. None.

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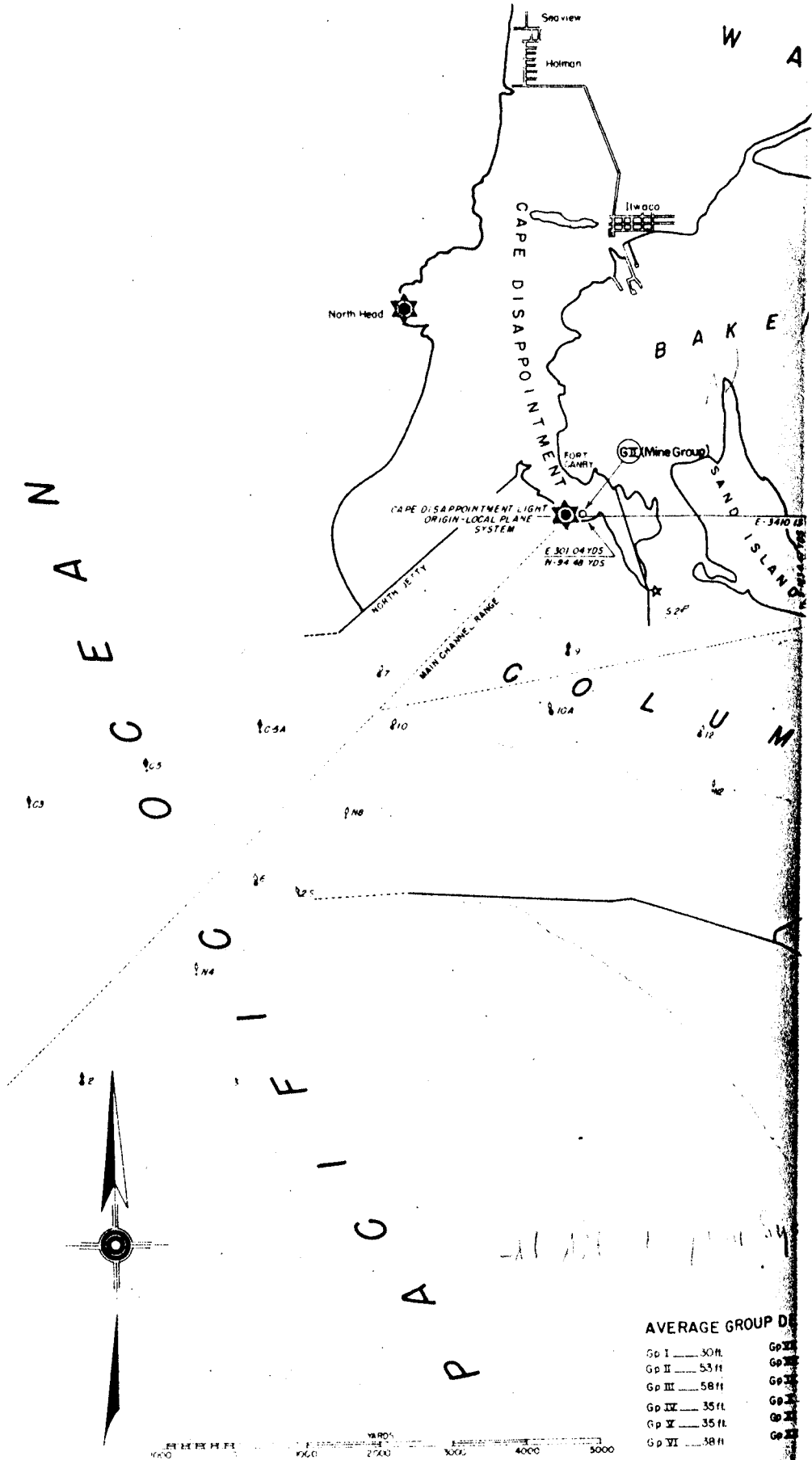
AVERAGE GROUP DEPTHS

Gp I ... 30 ft	Gp VII ... 60 ft
Gp II ... 53 ft	Gp VIII ... 28 ft
Gp III ... 58 ft	Gp IX ... 32 ft
Gp IV ... 35 ft	Gp X ... 41 ft
Gp V ... 35 ft	Gp XI ... 32 ft
Gp VI ... 38 ft	Gp XII ... 63 ft

<p>HARBOR DEFENSES OF THE COLUMBIA UNDERWATER DEFENSE PROJECT GROUND MINES M-4</p>		REVISED DATE
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 1 JUNE 1944 EX. 1-D ANNEX D	

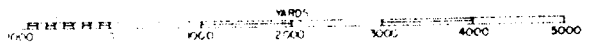
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AVERAGE GROUP DE

Gp I	30 ft	Gp VII	38 ft
Gp II	53 ft	Gp VIII	38 ft
Gp III	58 ft	Gp IX	35 ft
Gp IV	35 ft	Gp X	35 ft
Gp V	35 ft	Gp XI	35 ft
Gp VI	38 ft	Gp XII	35 ft

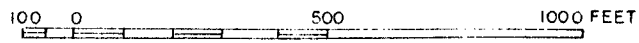
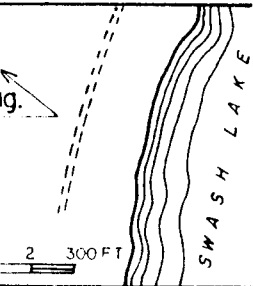
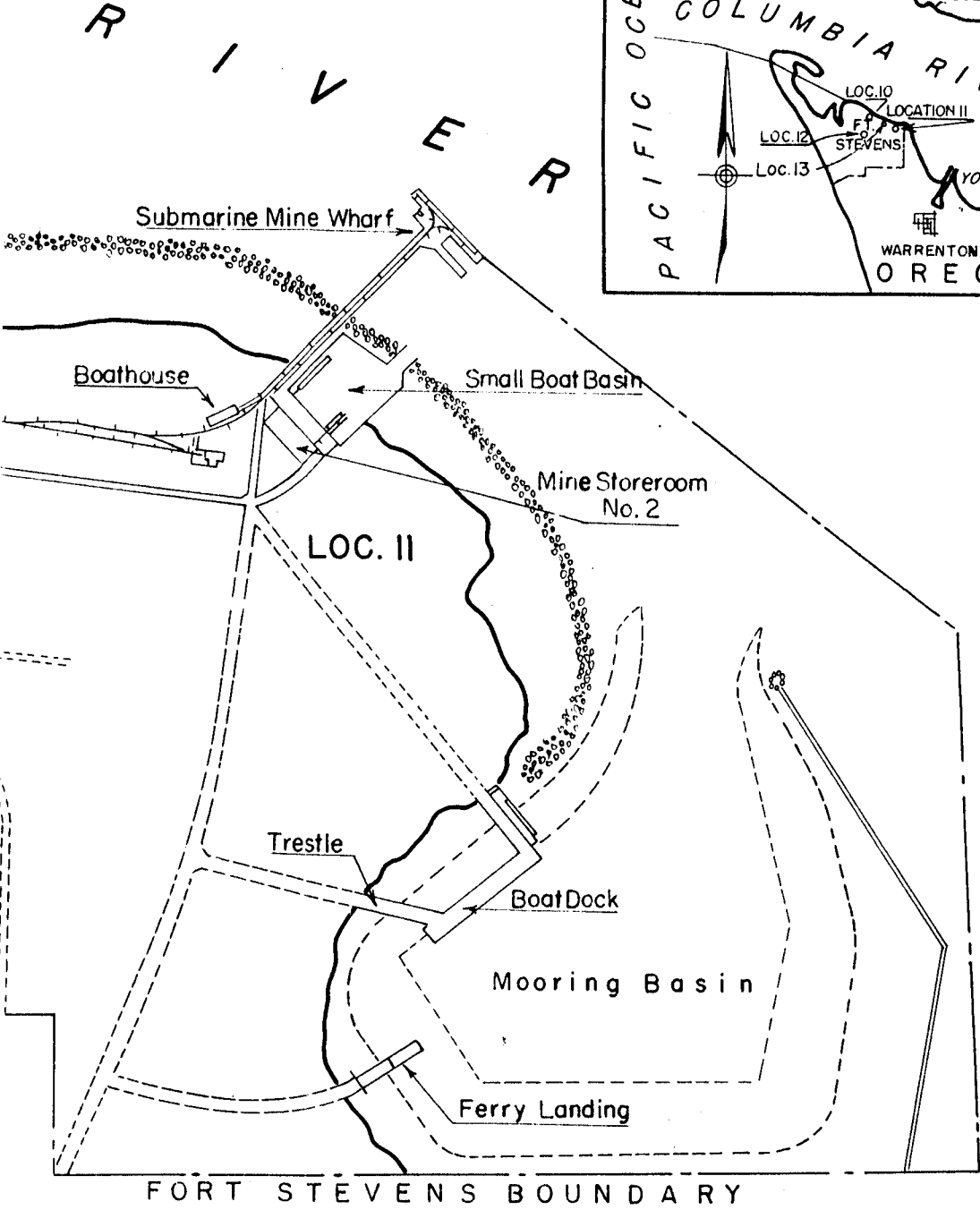
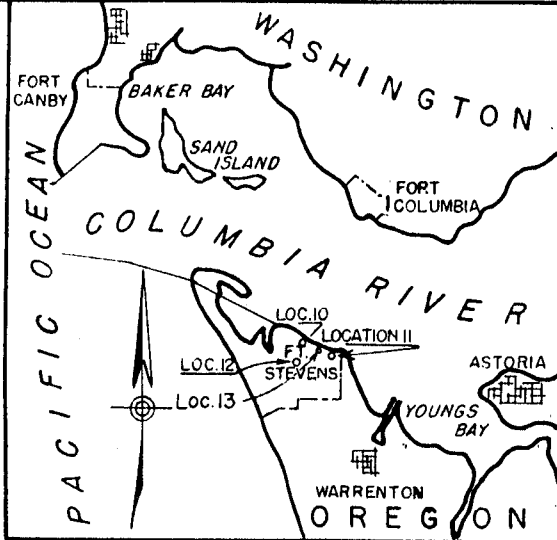


UNITED STATES GOVERNMENT
NAVY DEPARTMENT
OFFICE OF NAVAL ARCHITECTURE
WASHINGTON, D. C.

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HARBOR DEFENSES OF THE COLUMBIA
MINE SHORE FACILITIES
FORT STEVENS

PREPARED BY:
 OFFICE OF THE ART. ENG.
 FORT STEVENS, OREGON

DATE: 1 JUNE 1944
 EX. 2D ANNEX D

REVISED
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C O L U M B I A R

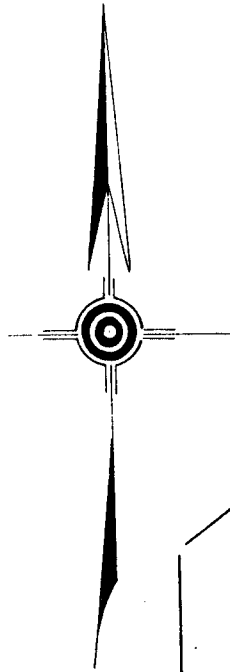
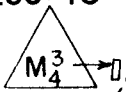
Sea Wall

Fuze Storage Mag.
Btry. Smur
(salvaged)

Mine Loading Room

Boat

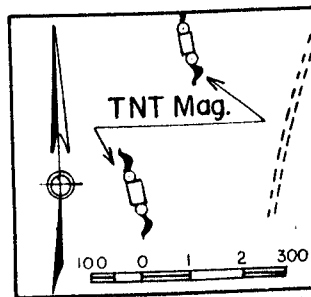
Loc. 10



Cable Tank House

Mine Storeroom No. 1

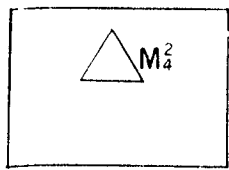
LOC. 13



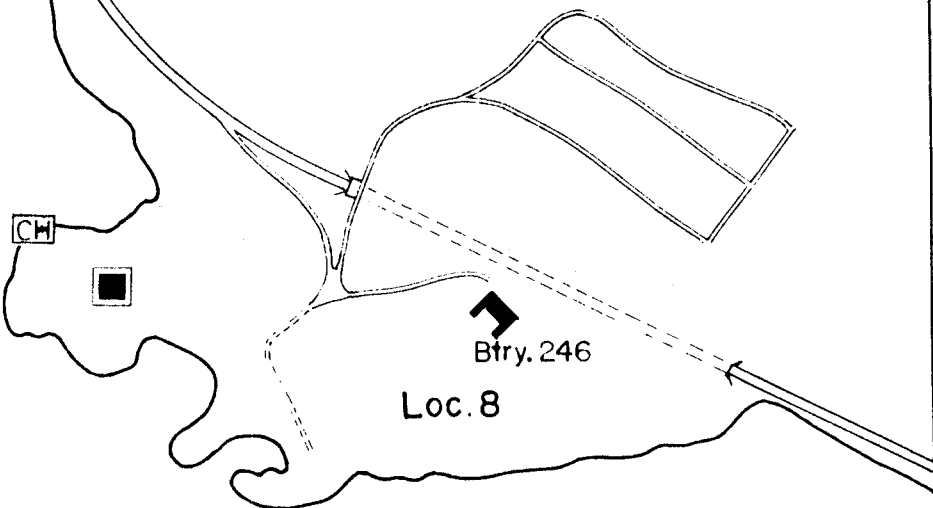
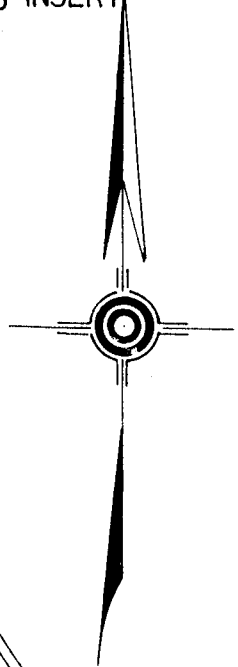
LOCATION 12 IN

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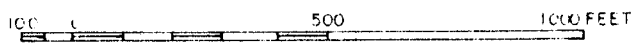
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Loc. 6 INSERT



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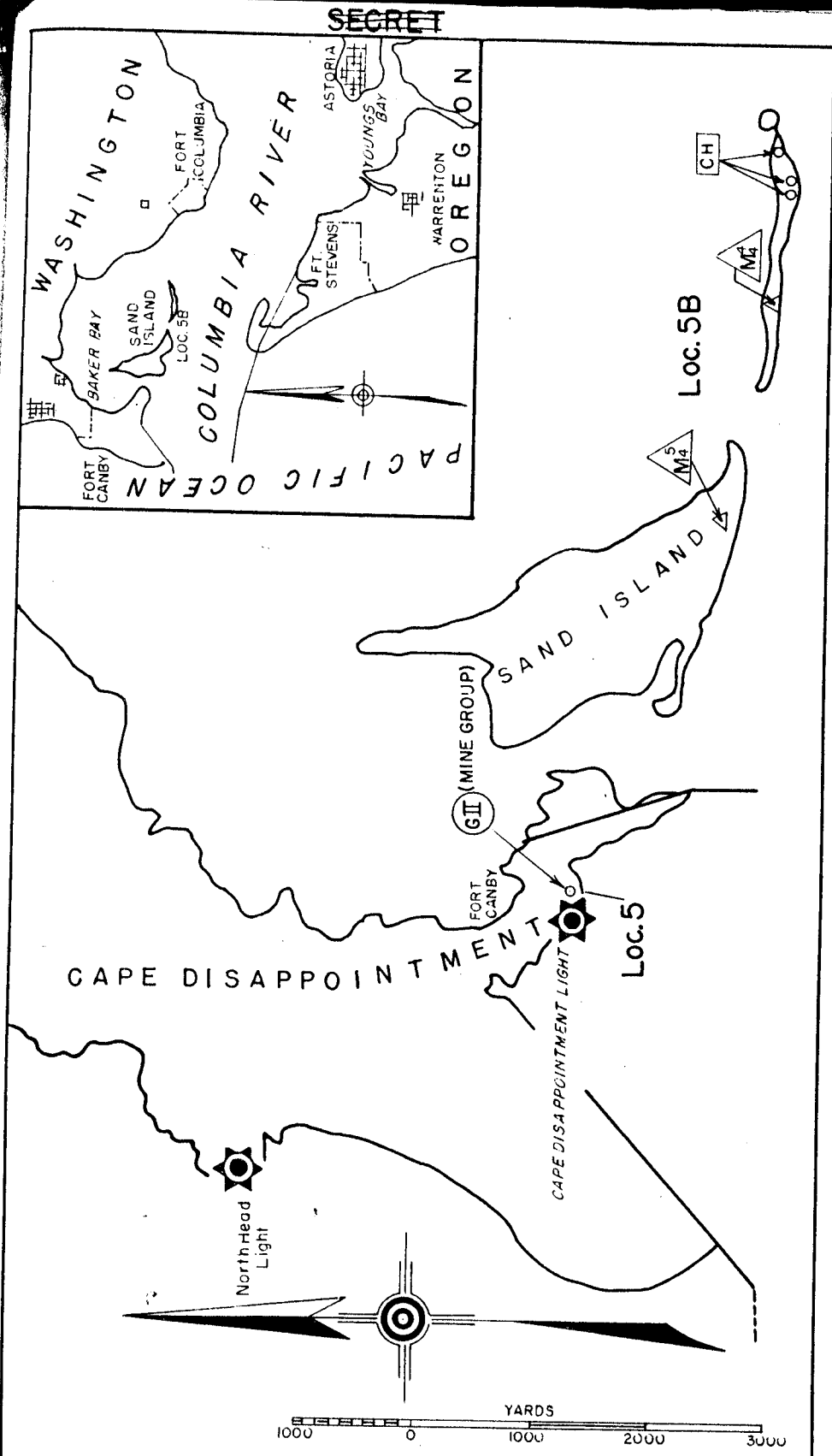


HARBOR DEFENSES OF THE COLUMBIA		REVISED DATE
MINE SHORE FACILITIES		
FORT COLUMBIA		
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE: 1 JUNE 1944	
	EX 3-D ANNEX D	

ANNEX E
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ANNEX H

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ANNEX E

ANNEX F

ANNEX G

HARBOR DEFENSES OF THE COLUMBIA
MINE SHORE FACILITIES
 SAND ISLAND-FORT CANBY

REVISED DATE

PREPARED BY:
OFFICE OF THE ART. ENG.
FORT STEVENS, OREGON

DATE: 1 JUNE 1944
EX. 4-D ANNEX D

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ANNEX E - ANTI-AIRCRAFT ARTILLERY (HD)

INDEX

Paragraph 1 - Organization.	Page 2.
Paragraph 2 - Operational Control.	Page 2.
Paragraph 3 - Antiaircraft Equipment.	Page 2.
Paragraph 4 - Ammunition Allowance and Storage.	Page 5.
Paragraph 5 - Land Acquisition.	Page 5.

EXHIBITS

- 1-E, Location & Fields of Fire AA Automatic Weapons, Harbor Defenses of the Columbia.
- 2-E, Location & Fields of Fire, AA Automatic Weapons, Fort Stevens.
- 3-E, Location & Fields of Fire AA Automatic Weapons, Fort Canby.
- 4-E, Location & Fields of Fire AA Automatic Weapons, Fort Columbia.

ANNEX E

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ANNEX E - ANTI-AIRCRAFT ARTILLERY (HD)

1. ORGANIZATION.

a. No organic or attached antiaircraft artillery organizations are assigned to these Harbor Defenses. Batteries No. 2 and No. 6 (AMTB) have a secondary mission of antiaircraft defense.

2. OPERATIONAL CONTROL.

a. AMTB armament, ~~except automatic weapons~~, when released for antiaircraft defense is under the operational control of the Fourth Air Force. Automatic weapons provided for the close-in defense of installations are under the tactical control of the Harbor Defense Commander. Liaison with the Fourth Air Force is established through the Harbor Defense Command Post and the Joint Operations Center, Seattle, Washington, over the tactical telephone net. Neither AAAS or AWS systems affect the project.

b. With the total automatic weapons indicated in paragraph 3c, it is estimated that the following mobile antiaircraft units will be required to provide a minimum antiaircraft defense for these Harbor Defenses against hostile aircraft **IN THE EVENT A HIGHER CATEGORY OF DEFENSE IS APPROVED:**

(1) Two (2) mobile, 90mm. AA ~~separate~~ battalions.

(2) Four (4) mobile, AA batteries.

3. ANTI-AIRCRAFT EQUIPMENT.

a. Gun defense - Includes four (4) 90mm. AA mobile and four (4) 90mm. AA fixed guns and one (1) SCR-547 Radar unit. Primary mission AMTB, secondary mission AA. Authority: Reference paragraph 1c, Annex A, and Secret Radio No. 4702, dated 3 February 1944, from Commanding General, Army Service Forces, to Commanding General, Western Defense Command.

b. Searchlight, radar equipment, and sound locator defense - None authorized in project for AA defense. Six (6) portable searchlights are located in positions applicable for both seacoast and antiaircraft defense, but would be ineffective against aircraft without radar or sound locators.

c. Automatic weapons defense - Will consist of the following when all armament approved for these Harbor Defenses is received:

<u>No.</u>	<u>Type</u>	<u>Authority</u>
12	40mm AA Guns	Paragraph 1a(3), Annex A (Includes T/BA allowance of 6 guns for 3-6" gun batteries.)
4	37mm AA Guns	Paragraph 1c(1), Annex A (2 each per AMTB Battery.)
12	Cal..50 AA M/G	Paragraph 1a(3), Annex A (Includes T/BA allowance of 6 guns for 3-6" gun batteries.)
8	Cal..50 AA M/G	Paragraph 1c(1), Annex A (4 each per AMTB Battery.)
2	Cal..50 AA M/G T/BA No. 4, 1 July 1942	(2 each per USAMP.)

Total: 12 - 40mm AA Guns,
4 - 37mm AA Guns,
22 - Cal..50 AA Machine Guns, WC.

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ANNEX E - ANTI-AIRCRAFT ARTILLERY (HD)

3. ANTI-AIRCRAFT EQUIPMENT (Contd.)

d. Antiaircraft Artillery Intelligence Service - None provided in project.

e. Fire Control Telephone Net - The approved seacoast artillery fire control net is not adequate for estimated requirements of supporting anti-aircraft units. However, it is assumed that such units will be equipped to provide organic communications to fulfill their mission with the aid of a minimum number of pairs in the cross-river cable.

f. Radio Net - None provided for AA defense.

g. All anti-aircraft weapons are stored at automatic weapon emplacements except Cal..50 machine guns not required to be emplaced under Category of Defense "A," JAAN, these are maintained at gun emplacements of armament to which assigned. Status of anti-aircraft weapons and major items of fire control equipment is as follows:

Btry No.	Type Btry	Armament and Equipment Auth		Armament and Equipment on Hand		Equipment Short		Location & Field of Fire
		No.	Type	No.	Type	No.	Type	
1	2-6" BC	2	Guns, Machine Cal..50 AA M2 (WC)	2	Guns, Machine Cal..50 AA M2 (WC)	0		Exh 3-E
		2	Guns, 40mm AA M1 on carriage M2A1	0		2	Guns, 40mm AA M1 on carriage M2A1	
		2	Directors, M5, AA	2	Directors, M5, AA	0		
2	AMTB	*2	Guns, 90mm M1 on fixed M3 carriage	2	Guns, 90mm M1 on fixed M3 carriage	0		Exh 4-A
		*2	Guns, 90mm M1 on mobile M1A1 carriage	2	Guns, 90mm M1 on mobile M1A1 carriage	0		
		*2	Guns, 37mm M1A2 on carriage M3A1	2	Guns, 37mm M1A2 on carriage M3A1	0		
		4	Guns, Machine Cal..50 AA M2 (WC)	4	Guns, Machine Cal..50 AA M2 (WC)	0		Exh 3-E
		*1	Director M9, AA	1	Director M9, AA	0		
		*1	Finder, Height M1	1	Finder, Height M1	0		
		*1	Radio Set SCR 547	1	Radio Set SCR 547	0		
3	2-6" BC	2	Guns, Machine Cal..50 AA M2 (WC)	2	Guns, Machine Cal..50 AA M2 (WC)	0		Exh 4-E
		2	Guns, 40mm AA M1 on carriage M2A1	0		2	Guns, 40mm AA M1 on carriage M2A1	
		2	Directors M5 AA	2	Directors M5 AA	0		

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ANNEX E - ANTI-AIRCRAFT ARTILLERY (HD)

3. ANTI-AIRCRAFT EQUIPMENT (Contd.)

Ctry No.	Type Btry	Armament and Equipment Auth		Armament and Equipment on Hand		Equipment Short		Location & Field of Fire	
		No.	Type	No.	Type	No.	Type		
5	2-6" BC	2	Guns, Machine Cal..50 AA M2 (WC)	2	Guns, Machine Cal..50 AA M2 (WC)	0		Exh 2-E	
		2	Guns, 40mm AA M1 on carriage M2A1	0		2	Guns, 40mm AA M1 on carriage M2A1		
		2	Directors M5, AA	2	Directors M5, AA	0			
6	AMTB	*2	Guns, 90mm M1 on fixed M3 carriage	2	Guns, 90mm M1 on fixed M3 carriage	0		Exh 4-A	
		*2	Guns, 90mm M1 on mobile M1A1 carriage	0	These weapons are authorized but not required.				
		*2	Guns, 37mm M1A2 on carriage M3A1	2	Guns, 37mm M1A2 on carriage M3A1	0			
		4	Guns, Machine Cal..50 AA M2 (WC)	4	Guns, Machine Cal..50 AA M2 (WC)	0			Exh 2-E
		*1	Director, M9 AA	1	Director, M9 AA	0			
		*1	Finder, Height M1	1	Finder, Height M1	0			
US AMP #7		2	Guns, Machine Cal..50 AA, M2 (WC)	2	Guns, Machine Cal..50 AA, M2 (WC)	0		None	
Assigned for close-in AA defense of strategic HD installations		6	Guns, Machine Cal..50 AA M2 (WC)	6	Guns, Machine Cal..50 AA M2 (WC)	0		Exh 1-E	
Assigned for close-in AA defense of strategic HD installations		6	Guns, 40mm AA M1 on carriage M2A1	0		6	Guns, 40mm AA M1 on carriage M2A1	Exh 1-E	
		6	Directors, M5 AA	2	Directors, M5 AA	4	Directors, M5, AA	None	
		3	Directors, M5 AA, spares Ratio 1:4	0		3	Directors, M5, AA, spares	None	

*Primary mission AMTB; secondary mission AA.

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ANNEX E - ANTI-AIRCRAFT ARTILLERY (HD)

4. AMMUNITION ALLOWANCE AND STORAGE.

a. Tabulation of total quantities of ammunition authorized for AMTB and/or AA gun defense.

Weapon		Ammunition Allowance		Place of Storage	Remarks
No.	Type	No. Rds.	Type		
4	Guns, 90mm, M1, Fixed	448 960	Shell M71 Fuze TM M43	In Btry Storage	Par. 6b, Annex A
		1854 1800	Shell M71 Fuze PD, M48	In Btry Storage	
		28 60	Shot AP M-77	In Btry Storage	
4	Guns, 90mm, M1, Mobile	448 960	Shell M71 Fuze TM M43 , M43	In Btry Storage	Par. 6b, Annex A
		1854 1800	Shell M71 Fuze PD, M48	In Btry Storage	
		28 60	Shot AP M-77	In Btry Storage	

b. Tabulation of total ammunition authorized for automatic weapons.

Weapon		Ammunition Allowance		Place of Storage	Remarks
No.	Type	No. Rds.	Type		
12	Guns, 40mm, AA	6480 5184	Cartridge HE-T MK II	In Btry Storage	Auth: Par. 6a(2), Annex A
		720 576	Cartridge AP-T M81	In Btry Storage	
4	Guns, 37mm, M1A2 AMTB	2100 1728	Shell HE M54	In Btry Storage	Par. 6b, Annex A
		240 192	Shot AP M74	In Btry Storage	
22	Guns, Machine, Cal. .50 AA M2 (WC)	26400 13200	Cal. .50 AP	In Btry Storage	Auth: Par. 6a(2), Annex A
		26400 13200	Cal. .50 In-condiary	In Btry Storage	
		13200 6600	Cal. .50 Tracer	In Btry Storage	

5. LAND ACQUISITION.

a. None required.

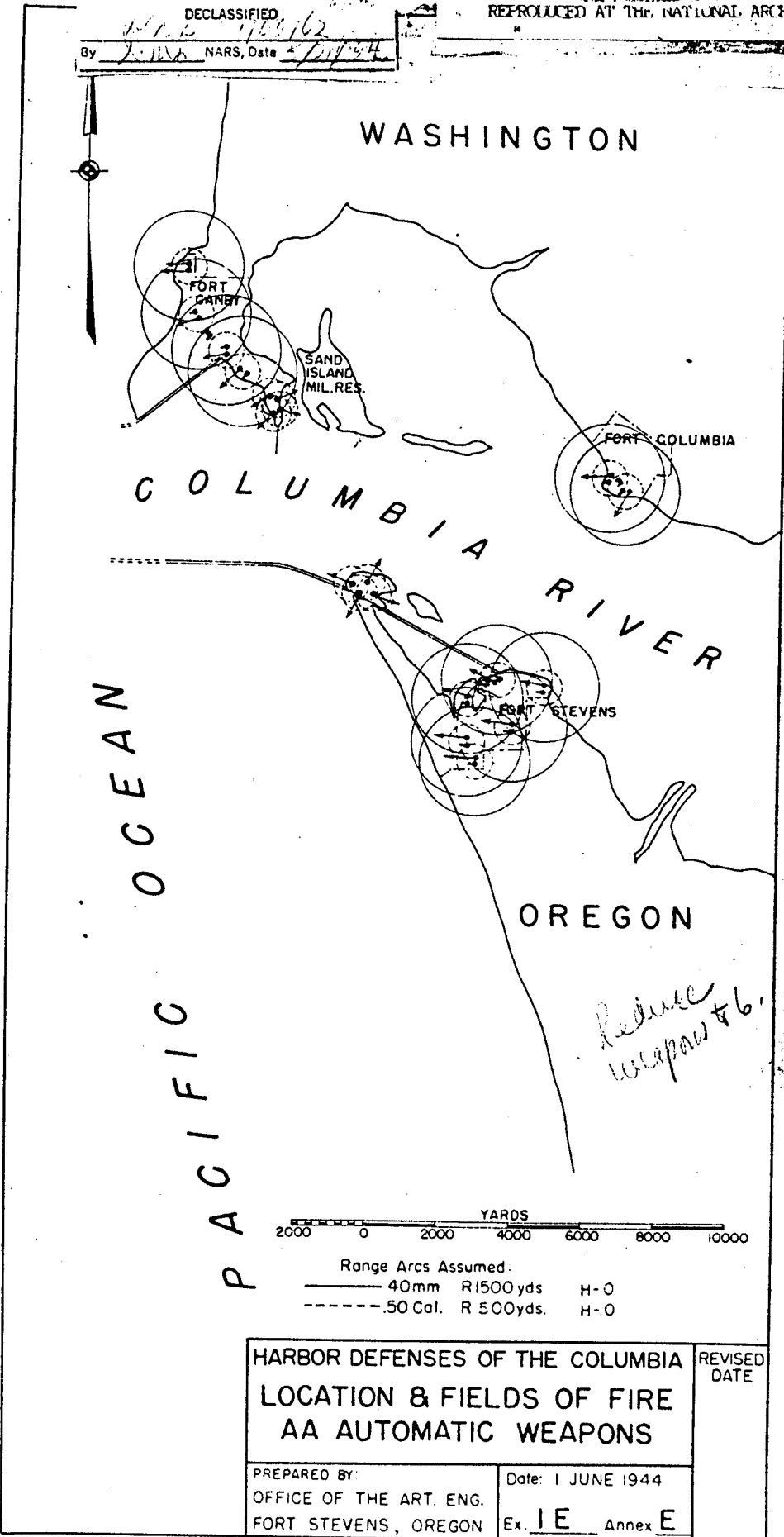
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ANNEX E

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By J. W. A. NARS, Date 5/24/94



*Reduce
Weapons to 6.*

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HARBOR DEFENSES OF THE COLUMBIA LOCATION & FIELDS OF FIRE AA AUTOMATIC WEAPONS		REVISED DATE
PREPARED BY: OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	Date: 1 JUNE 1944 Ex. <u>IE</u> Annex <u>E</u>	

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By *J. M. ...* NARS, Date *5/21/64*

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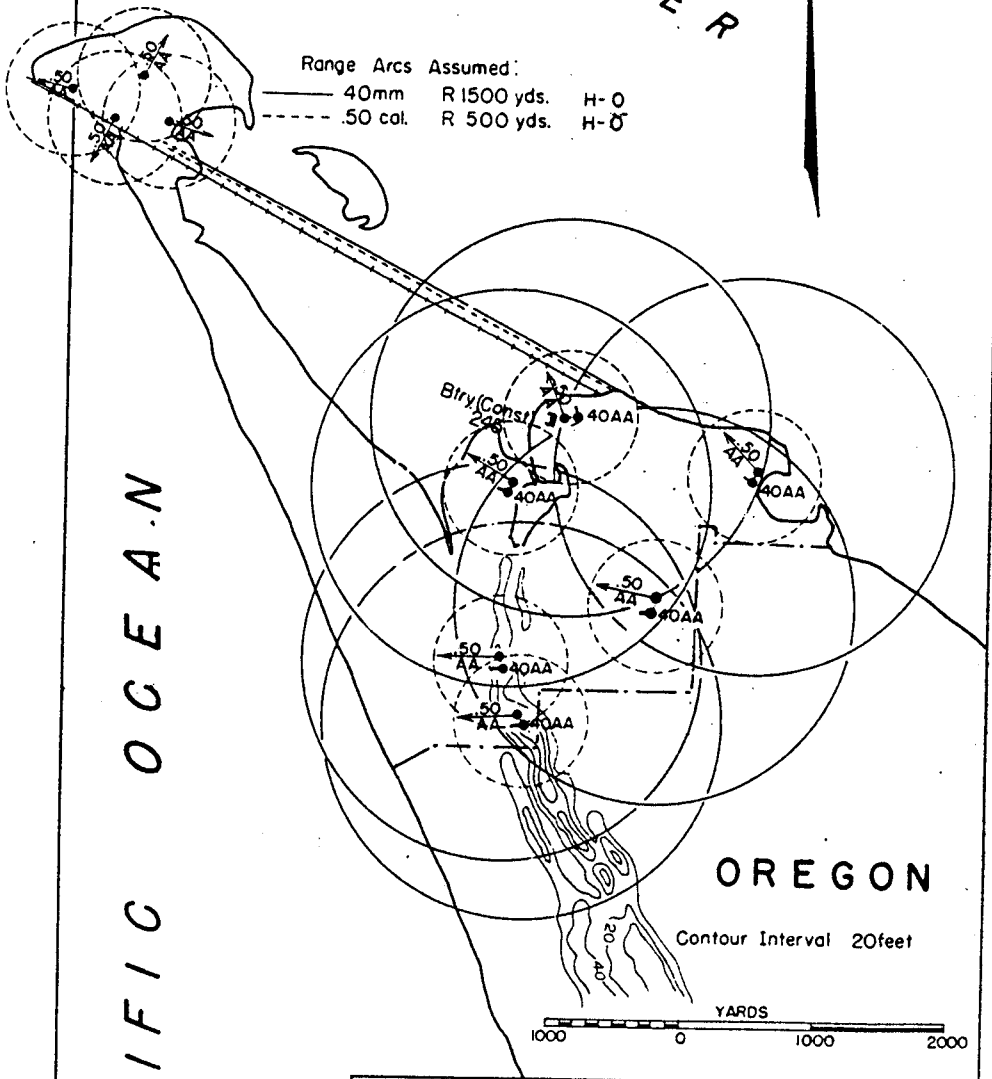
COLUMBIA RIVER



Range Arcs Assumed:

— 40mm R 1500 yds. H-O

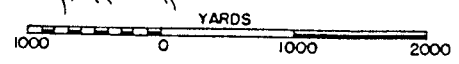
- - - 50 cal. R 500 yds. H-O



PACIFIC OCEAN

OREGON

Contour Interval 20feet



HARBOR DEFENSES OF THE COLUMBIA
 LOCATION & FIELDS OF FIRE
 AA AUTOMATIC WEAPONS
 Fort Stevens Oregon

REVISED DATE

PREPARED BY:
 OFFICE OF THE ART. ENG.
 FORT STEVENS, OREGON

Date: 1 JUNE 1944

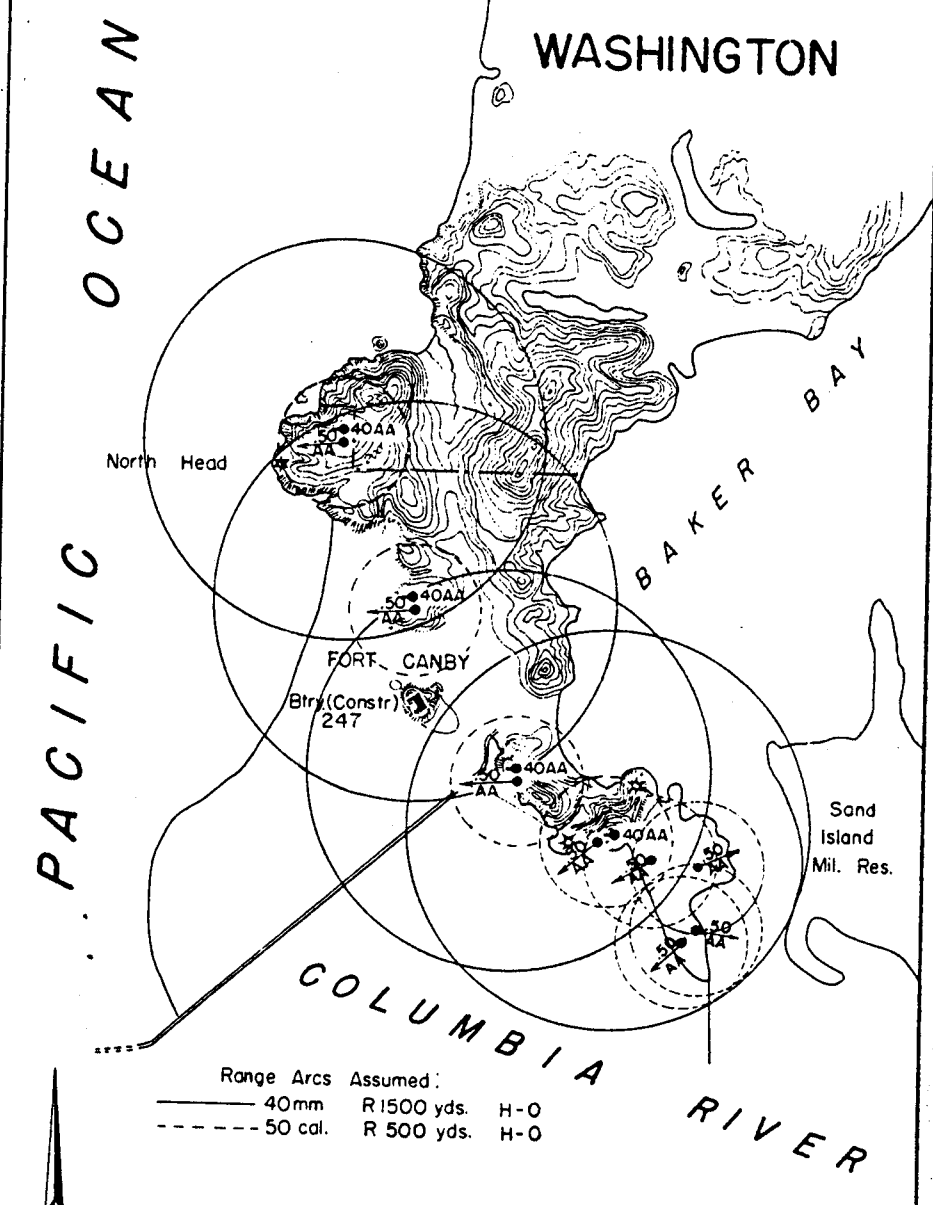
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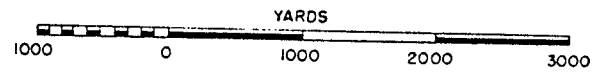
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ORF By *J. M. ...* NARS, Date *2/14/62*



Range Arcs Assumed:
 ——— 40mm R 1500 yds. H-O
 - - - 50 cal. R 500 yds. H-O



Contour Interval 20 feet

HARBOR DEFENSES OF THE COLUMBIA LOCATION & FIELDS OF FIRE AA AUTOMATIC WEAPONS Fort Canby Washington		REVISED DATE
Prepared By OFFICE OF THE ART. ENG. FORT STEVENS, OREGON	DATE 1 JUNE 1944	Ex 3E Annex E

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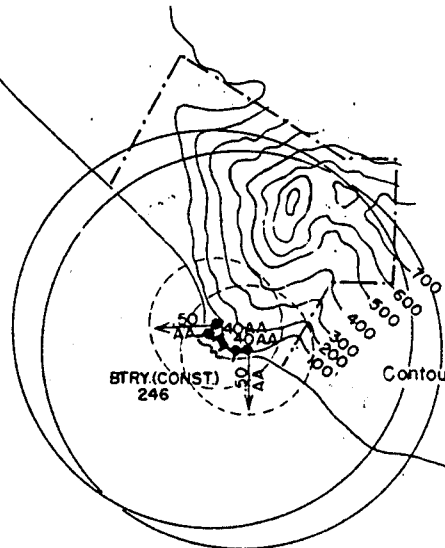
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DECLASSIFIED TAG FOR 7063

WASHINGTON



BTRY.(CONST) 246

Contour Interval 100 feet

COLUMBIA RIVER

Range Arcs Assumed.

———— 40mm R1500 yds. H-O
- - - - 50 cal. R 500 yds. H-O



HARBOR DEFENSES OF THE COLUMBIA
LOCATION & FIELDS OF FIRE
AA AUTOMATIC WEAPONS
Fort Columbia Washington

REVISED
DATE

PREPARED BY:

Date: 1 JUNE 1944

OFFICE OF THE ART. ENG.
FORT STEVENS, OREGON

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ANNEX F - GAS DEFENSE

INDEX

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Paragraph 1 - Unusual Requirements	2
Paragraph 2 - Tabulation of Gasproof Installations	3 & 4

EXHIBITS

None.

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ANNEX F
ANNEX H

SECRETANNEX F - GAS DEFENSE1. UNUSUAL REQUIREMENTS.

a. There are no unusual requirements for protection against chemical attacks in the Harbor Defenses of the Columbia. No chemical company or detachments are assigned. All personnel are given continuing instruction in defense against chemical attacks and practical training in decontamination.

2. TABULATION OF GASPROOF INSTALLATIONS.

a. The following tabulation indicates the structures, activities, and gas-proofed space, which are available as approved in the modernization program.

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Paragraph 2a. Tabulation - Gasproof Structures.

Installation for which Collective Protection Is to be Provided	Type of Structure	Degree of Protection	Purpose of Structure	Strength of Detail of Operating Structure	Cu. Ft. of Gas Proofed Space	No. of Collective Protectors Required	No. of Reserve Canisters Required
HDCP-HECP (Combined)	Concrete Underground	HSB or LBB	HECP and HDCEP	24	50,000	2	4
Swbd Room - Fcrt Stevens	Concrete Underground	HSB or LBB	Adm. and Fire Control Swbd	21	12,800	2	4
Swbd Room - Fort Canby-	Concrete Underground	HSS	Adm. and Fire Control Swbd	8	3,700	2 ✓	4
Swbd Room - Fcrt Columbia	Concrete Underground	HSB	Fire Control Swbd	5	4,200	2	4
HD Radio Transmitter Room	Concrete Underground	HSB or LBB	Army & Navy Radio Transmitters Generators Radio Repair Room Reserve Power Equip.	8	3,700	2	4
Battery No. 5 (Const. #245)	Concrete Underground	BB	Plotting Room Spotting Room Latrine Coll. Prot. Room	20	5,500	2	4
Battery No. 3 (Const. #246)	Concrete UNDERGROUND	BB	Plotting Room Spotting Room Latrine Coll. Prot. Room	20	8,700	2	4

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Paragraph 2a. Tabulation - Gasproof Structures (Continued)

Installation for which Collective Protection Is to be Provided	Type of Structure	Degree of Protection	Purpose of Structure	Strength of Detail of Operating in the Structure	Cu. Ft. of Gas Proofed Space	No. of Collective Protectors Required	No. of Reserve Canisters Required
Battery No. 1 (Const. #247)	Concrete Underground	BB	Plotting Room Spotting Room Latrine Coll. Prot. Room	20	5,500	2	4
Mine Casemate	Concrete Underground	BB	Mine casemate equipment and 5-man dormitory	5	6,600	3	6

Note: Symbols used in column headed "Degree of Protection" represent the following:

- "BB" - Bombproof
- "LBB" - Light Bombproof
- "HSB" - Heavy Splinterproof
- "SB" - Splinterproof

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ANNEX G - EQUIPMENT

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	<u>Page</u>
Paragraph 1 - Reference to Exhibits and Authorities	2

EXHIBITS

- 1-G - Consolidated Summary of Harbor Defense Elements.
- 2-G - Consolidated Summary of Battery ~~Elements~~ **INSTALLATIONS.**
- 3-G-1 - Consolidated Summary of Signal Requirements.
- 3-G-2 - Consolidated Summary of Ordnance Requirements.
- 3-G-2(a) - Consolidated Summary of Ordnance Requirements, Submarine Mines.
- 3-G-3 - Consolidated Summary of Engineer Requirements.
- 3-G-4 - Consolidated Summary of Chemical Warfare Requirements.

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~~SECRET~~ANNEX G - EQUIPMENT1. REFERENCE TO EXHIBITS AND AUTHORITIES.

a. Installations enumerated under Exhibits 1-G and 2-G were approved under reference in paragraph 1a (3), Annex A.

b. Installations and equipment enumerated under Exhibits 3-G-1, 3-G-2, 3-G-2(a), 3-G-3, and 3-G-4, are authorized under

Table of Basic Allowances No. 4, 1 July 1942, and changes thereto

Table of Allowances 4-4, 19 September 1943

except for specific authorities shown in the footnotes following each exhibit.

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EXHIBIT 1-G

CONSOLIDATED SUMMARY OF HARBOR DEFENSE ELEMENTS
HARBOR DEFENSES OF THE COLUMBIA

Installation	Number
HD Command Post	1
HD Observation Post	1 ✓
Harbor Entrance Control Post	1 ✓
Gun Group Command Post	1 2 ✓
HECP-HDCP Signal Station	1 ✓
Forts	3 ✓
Fire Control Switchboard Installations	3 ✓
Searchlight Command Post	*3 ○
Meteorological Station	1
Tide Station	1 ✓
Mine Group Command Post	1 ✓
Mine Plotting Room	1 ✓
Mine Casemate	1 ✓
Mine Loading Room	1
Cable Tank House	1
TNT Magazines	2
Mine Storehouses	2
Boat House	1
Mine Planter	1 ✓
DB Boats	2 ✓
Mine Wharf	1
Boat Dock	1
Groups of Mines	12 ✓
Portable Seacoast Searchlights	13
Fixed Seacoast Searchlights	9
Searchlight Oper. (Cont) Post (F or P)	22 ✓
SCR-682	1 ✓
*1 each S/L CP at HDCP-OP, GI, GII	

HARBOR DEFENSES OF THE COLUMBIA

CONSOLIDATED SUMMARY OF
HARBOR DEFENSE ELEMENTS

Date: 2 June 1944 Exh 1-G

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EXHIBIT 2-G

CONSOLIDATED SUMMARY OF BATTERY INSTALLATIONS
HARBOR DEFENSES OF THE COLUMBIA

1	2	3	4	5	6	7	8	9
Battery	Flank Obs. Sta. 90 Ft. /	Other Obs. Sta. 125 Ft. /	Obs. Station Not Included in 2 & 3	BC Sta.	Spot- ting Str.	Mag- azines	Bat- tery Power Plant	SCR- 296
²⁴⁷ Tactical No. 1	1	2	3	1	6	1	1	1
Tactical No. 2	0	0	0	1	10	0	2	0
²⁴⁶ Tactical No. 3	2	2	3	1	7	1	1	1
Tactical No. 4	0	2	3	1	0	2	2	0
²⁴⁵ Tactical No. 5	2	2	3	1	7	1	1	1
Tactical No. 6	0	0	0	1	1	0	2	0

HARBOR DEFENSES OF THE COLUMBIA

CONSOLIDATED SUMMARY OF BATTERY
INSTALLATIONS

Date: 2 June 1944 Exh 2-G

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EXHIBIT 3-G-1

CONSOLIDATED SUMMARY OF MAJOR ITEMS OF EQUIPMENT
(Signal Items for Complete Project)

Stock No. or Cat. No.	Article	Required
	Battery Storage, Exide, EM-9, 160	
7A302	AH, 30-volts (15 cells)	3 (Note 1)
4Z309	Barometer, ML-2	1
4H113	Bell, MC-9	10
4B303	Bell, T.I., MC-153	38 (Note 2) T/O
1C401	Box, Telephone, BE-63	62
1C404	Cable, WC-401	1530 ft.
1C404	Cable, WC-404	2627 ft.
1C407	Cable, WC-407	7622 ft.
1C409	Cable, WC-409	2365 ft.
1D364	Cable, WC-364	38800 ft.
1D366	Cable, WC-366	34516 ft.
1D367	Cable, WC-367	32905 ft.
1D368	Cable, WC-368	5460 ft.
	Cable, submarine, 38-quad, 16 Ga., DWA	28000 ft. (Note 3) D/O
	Cable, subterranean, 38-quad, 16 Ga., Tape armored	23600 ft. (Note 3) D/O
1C822.100/4	Cable, Swb. #22, 100 pr., DCC., LC.	50 ft.
1E532	Cable, Swb. #22, 50 pr., Oval	150 ft.
3B839	Cases, CS-39	40
6E438A	Cipher Device, M-138-A	2
6E1009	Converter, M-209	5
3E1478	Cord, CD-478	20
3C114	Coil, C-114	25
4B417-3	Chest Unit, TD-3	51
2C1411B	Frequency meter set, SCR-211	1
6A1826B	Flag Kit, M-26-B	2
6A1144.1	Flag, MC-44	4
6Z4809-8	Gloves, LC-9	1
4B1112A	Handset, TS-12-A	70
4B1277A	Head & Chest Set, HS-17-A (Chest Set TD-2 in lieu of)	248 (Note 4 & 6)
2B830	Head Set HS-30	248 (Note 5 & 6)
6M657A	Holder, M-167	33
7A981-5	Hose, ML-81	1
7A	Hydrogen generator, ML-185	1
6Q63521	Lineman's equipment, TE-21	6
7A1200-SCM12	Meteorological Obsn Set SCM-12	1
2B1630	Microphone, T-30	51
7A119A-196	Nozzle, ML-196	1
3H4065	Panel, BD-65	3
4E3675	Panel, BD-75	5
6A3533	Panel Set, AP-33	1
6A3534	Panel Set, AP-34	1
2C6903-31-1D	Radio Set, BC-447 transmitter with Hammarlund super pro receiver	1 (Note 7)
2C6632RA.1	Radio Set, 32 R. "Collins" transmitter with Hammarlund super pro receiver	1 (Note 7)
2S177B	Radio Set, SCR-177 w/motor generator	1 (Note 7)
2S281A	Radio Set, SCR-281-A	9 (Note 8)
2S536	Radio Set, SCR-536	16
2S808-V13	Radio Set, SCR-808	1 (Note 9)
2S838A	Radio Set, SCR-828	4 (Note 9&10)

HARBOR DEFENSES OF THE COLUMBIA

CONSOLIDATED SUMMARY OF MAJOR
ITEMS OF EQUIPMENT
- Signal -

Date: 2 June 1944 Exh 3-G-1

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EXHIBIT 3-G-1

CONSOLIDATED SUMMARY OF MAJOR ITEMS OF EQUIPMENT
(Signal Items for Complete Project)

Stock No. or Cat. No.	Article	Required
2S296	Radio Set, SCR-296 (Radar)	3
2S682	Radio Set, SCR-682 (Radar)	1
2S547	Radio Set, SCR-547 (Radar)	1 (Note 11)
6H6231	Reel Unit, RL-31	9
4A2037	Relay, SW-37	7
6B818	Signal Lamp Equipment EE-80	2
4C9972	Switchboard, BD-72	2
4C9974	Switchboard, BD-74	12
4C9995.4	Switchboard, BD-95 (Cordless) 20 lines	17
4B5008	Telephone, EE-8	102
4B8191	Telephone, EE-91	313 (Note 6)
5C2713	Terminal, JB 13	9 (Note 3)
5C2710	Terminal, JB 10	23 (Note 3)
4E9304	Terminal, Strip, TM-184	2
	Terminal Huts	2 (Note 3)
3F3927A	Test Equipment, IE-17-A	1
3F4065	Test Set, EE-65	3
3F4049	Test Set, I-49	1
3F4056	Test Set, I-56	8 (Note 12)
4H3086A	Time Interval Apparatus, EE-86-A	4
6R38041	Tool Equipment, TE-41 (Radio)	6
6R38056.1	Tool Equipment, TE-56	2
6J1038	Trailer, K-38	2
6M1688	Typewriter, MC-88	2 3
3F6050	Voltammeter, I-50	36
1B110B	Wire, W-110-B (On DR-4 reels)	42240 ft.

NOTE:

1. Ltr fr C Sig O to CG FE NSC dated 17 January 1944, file SPSLP 665.1 - 9th SC (17 Jan 44), subject: "Power Supply for Fire Control Switchboards."
2. a. Two (2) Bells, MC-153, authorized for two (2) SCR-296 radars for batteries 245 and 246 by 6th Indorsement, Hq ASF, file SPRMS 660.2 (13 August 1943) to ltr fr Hq HDC, file 660.2 dated 13 August 1943 to CG WDC & 4th Army, subject: "Project for SCR 296 - Batteries (Const) No. 245 and 246."
 b. One (1) Bell, MC-153, authorized for SCR-296, Battery 247, by 13th Indorsement C/E file C of E 665 (Columbia River) MR 3468 SPEOF Detector, SCR 296, dated 23 April 1942, to ltr fr CG WDC to CG Ninth Coast Artillery District file 660.2 HDP, dated 12 November 1941, subject: "Surface Craft Detector, SCR 296".
3. Authorized by 5th Indorsement, WD AGO, 19 November 1943, file AG 676.4 (21 Aug 43) OB-S-E, to letter, Hq HDC, 21 August 1943, file 660.2, subject: "Proposed 75 pair Cable, Harbor Defenses of the Columbia."

HARBOR DEFENSES OF THE COLUMBIA

CONSOLIDATED SUMMARY OF MAJOR
ITEMS OF EQUIPMENT
- Signal -

Date: 2 June 1944 Exh 3-G-1
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ANNEX II

EXHIBIT 3-G-1

CONSOLIDATED SUMMARY OF MAJOR ITEMS OF EQUIPMENT
(Signal Items for Complete Project)

AND FOUR (204)

Two hundred ~~seventeen (177)~~ Chest Sets TD-2 based on Head and Chest Sets, HS 17A, authorized by T/B 4 prior to Change 5, and authorization quoted in Note 6. ~~Thirty Four (34)~~ **PORTABLE (44)** additional Chest Sets TD-2 added to authorized total for ~~mobile~~ **PORTABLE** use with EE-91 telephones authorized for 6" SC guns and ~~mobile~~ SC SL's not provided with transmitters.

ONE HUNDRED AND NINE (193)

~~Two hundred (200)~~ **FIFTY FIVE (55)** Head Sets HS-30 authorized by T/B 4 and Note 6. ~~Thirty one (31)~~ additional Headsets HS-30 added to authorized total for use with EE 91 telephones authorized for 6" SC guns and ~~mobile~~ SC SL's not provided with receivers. **SCR-296, SCR-682**

- a. Eighth Ind., Hq ASF, 18 Oct 43 file SPRMS 413.42 (10 July 43) to ltr fr Hq HDPS thru CG NWS WDC to CG WDC & 4th Army 10 July 43 file 413.42, subject: "Additional Phones for SCR-296". Authorized 5 - Telephone Box EE 91, 4 - Head and Chest Sets HS 17A, and 1 Hand Set HS 30 for each of 3 Radio Sets SCR-296.
- b. Twelfth Ind, Office C of E, 17 Dec 42 to ltr Hq HDC, 3 June 42, to CG WDC & 4th Army, file 334x660.2 subject: "Local Board Proceedings, Harbor Defenses of the Columbia". Authorized 2 Telephones Box EE 91, 2 Head and Chest Sets HS 17A, and one Hand Set TS 12A.
- 7. Authorized by 4th Ind, Hq WDC, 7 Dec 43, file 676.3 (Sig) to letter Hq WDC, 9 Nov 43, file 676.3 (Sig), Subject: "Radio Equipment, Harbor Defenses of the Columbia," to the CG, NWS, WDC.
- 8. 1 additional set over T/B 4 authorized by 9th indorsement, Office of Chief of Engineers, 22 May 1942, file C of E, 665 (Columbia River) NR 4537, SPNOF, to letter, Hq Ninth Coast Artillery District, 26 January 1942, file 660.2, Subject: "Modernization Program of Harbor Defense Project, Continental United States."
- 9. One (1) radio set SCR-808 and two (2) radio sets SCR 828, authorized by 4th Ind, WD AGO, file 413.42 (12 June 43) OB-S-2, dated 9 September 1943, to ltr, fr Hq WDC & 4th Army, file 413.42 (HD Gen) (C.), dated 12 June 1943, subject: "Harbor Defense Radio Equipment."
- 10. Two (2) additional radio sets, SCR-828 authorized by 5th Ind WD AGO, file AG 413.42 (8 Dec 43) OB-S-2, dated 12 February 1944, to ltr Hq HDSD, file 676.3 (AG), 8 December 1943, subject: "Special Authorization for Radio Equipment, Harbor Defenses of San Diego."
- 11. Authorized by Secret radio No. 4702, dated 3 February 1944, from CG ASF, to CG WDC.
- 12. a. Two (2) Bells, HC-153, authorized for two (2) SCR-296 radars for Batteries 245 and 246 by 6th Ind, Hq ASF, file SPRMS-660.2-(13 Aug 43) to ltr Hq HDC, file 660.2, dated 13 August 1943 to CG WDC & 4th Army, subject: "Project for SCR-296 Batteries (Const) No. 245 and 246".

HARBOR DEFENSES OF THE COLUMBIA
CONSOLIDATED SUMMARY OF MAJOR
ITEMS OF EQUIPMENT
- Signal -
Date: 2 June 1944 Exh 3-G-1
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ANNEX H

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EXHIBIT 3-G-1

CONSOLIDATED SUMMARY OF MAJOR ITEMS OF EQUIPMENT
(Signal Items for Complete Project)

~~b. One (1) Bell, MG-153, authorized for SCR 296, Battery 247, by 13th Ind, O/D, file G of E-665 (Columbia River) MR 3406 SPECOP Detector, SGR-296, dated 23 April 1942 to ltr fr 33 WDC to CG Ninth Coast Artillery District, file 600.2, HDO, dated 12 November 1941, subject: "Surface Craft Detector, SGR-296".~~

12. THREE (3) TUBE CHECKERS FOR USE WITH RADIO SETS, SCR-296, AUTHORIZED BY 1ST INDORSEMENT, ASF, OCSigO, FILE SPSMA 413.44 SCR-296 (4 JUNE 1944), 14 JUNE 1944, TO LETTER, Ng WDC, FILE 600.2 HDSF (Sq), 4 JUNE 1944, SUBJECT: "AUTHORIZATION FOR TUBE CHECKER FOR RADIO SET SCR 296."

HARBOR DEFENSES OF THE COLUMBIA

CONSOLIDATED SUMMARY OF MAJOR
ITEMS OF EQUIPMENT

- Signal -

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ANNEX II

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EXHIBIT 3-G-2

CONSOLIDATED SUMMARY OF MAJOR ITEMS OF EQUIPMENT
(Ordnance Items for Complete Project)

Stock No. or Cat. No.	Article	Required
SNL E-1	Gun, 6-inch BC, Complete	6
SNL D-2	Gun, 90mm, M1, fixed carriage M-3, complete w/ fuze setter, M13, on carriage parts, r.c.s., M13, elbow telescope, M24 and M26, and sight mounts M47 and M46	4
SNL D-2	Gun, 90mm, M1 mobile carriage, M1A1, w/ fuze setter M13, on carriage parts, r.c.s., M2 elbow telescopes, M24 and M26, and sight mounts, M28 and M29	4
SNL A-1	Gun, 37mm, AA, M1A2, on carriage M3 or M3E1, complete with on carriage sighting equipment	4
SNL D-2	Gun, 40mm, AA, M1, on carriage M2A1	12
SNL A-1	Gun, Machine, AA, Cal..50, w/c, Browning, M2	22
SNL A-1	Gun, Machine, Cal..30, Browning, M1917A1	50
SNL A-1	Gun, Submachine, Cal..45, M3	52
SNL A-1	Mount, AA, MG, Cal..50, M3	22
SNL A-1	Mount, Tripod, Cal..30, M1917A1	50
SNL F-1	Binoculars, M3	7
SNL F-2	Board, Adjustment, Fire, M1	3
SNL F-2	Board, Correction, Range, M1A1	3
SNL F-2	Board, Deflection, M1	3
SNL F-2	Board, plotting, M3	3
SNL F-2	Board, plotting, Submarine, M1906 or M1918A1	1
SNL F-2	Board, Spotting, M3	3
SNL F-2	Clinometer, M1912A1	3
SNL F-2	Corrector, Percentage, M1	5
SNL F-2	Computer, Gun data, M8	3
SNL F-2	Director, AA, M5	15
SNL F-2	Director, AA, M9	2
SNL F-2	Finder, Depression position, Swasey, AII	1
SNL F-2	Finder, Depression position, Lewis 1907(C1 A)	1
SNL F-2	Finder, Depression position, M1 (C1 4)	3
SNL F-2	Finder, Depression position, M2 (C1 3)	5
SNL F-2	Finder, Depression position, M2 (C1 4)	5
SNL F-2	Finder, Depression position, M2 (C1 5)	1
SNL F-2	Finder, Height, 13 1/2 ft, M1	2
SNL F-2	Finder, Range, Self-contained type, 15 ft.	1
SNL F-2	Generating Unit, M6 (For base end power)	18 16
SNL F-2	Generating Unit, M5 (For 40mm guns & directors, M5)	18
SNL F-2	Generating Unit, M7, w/trailer	2
SNL	Generating Unit, M7, w/skids	2
SNL	Indicator, powder, temperature, M13	4
SNL F-2	Instrument, Azimuth, M1910A1	35
SNL F-2	Instrument, Azimuth, M2	9
SNL F-2	Instrument, Observation, AA, BC, M1	4 (Note 1)
SNL F-2	Predictor, Mine, M1916	1
SNL B-1	Projector and Support, Signal Ground, M4	1 (Note 2)
SNL F-2	Quadrant, gunners, M1 (mils)	8
SNL F-2	Quadrant, gunners, M1898, degrees	6
SNL F-2	Rule, Set Forward, Type B	3
SNL F-2	Rule, Slide, M1	8
SNL F-2	Set Control Equipment, AA, M1 (37mm)	2

HARBOR DEFENSES OF THE COLUMBIA

CONSOLIDATED SUMMARY OF MAJOR
ITEMS OF EQUIPMENT
- Ordnance -

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EXHIBIT 3-G-2

CONSOLIDATED SUMMARY OF MAJOR ITEMS OF EQUIPMENT

(Ordnance Items for Complete Project)

Stock No. or Cat. No.	Article	Required
SNL F-2	Setter, Fuzo, AA, 90mm, M13 (extra)	2
SNL F-2	Sight, Bore	14
SNL F-2	System, Cable, M10 or M1	2
SNL F-2	System, Data Transmission, M7	3
SNL F-2	Telescope, Observation, M1903	1
SNL F-1	Tester, Stereoscopic, M1A1	2
SNL M-5	Thermometer, Powder Temp, M1	6
SNL F-1	Watch, Stop, Type B, Class 15	34
SNL F-1	Watch, Wrist, 7-jewel, complete	37-33

(Note 1) 2 additional instruments, AA, BC, M1, over T/AA authorized by letter, WD, AGO, file AG 413.74 (18 Nov 43) OD-S-SPDDG, 22 Nov 43, subject: "Instrument, Observation, AA, BC, M1" to CG, MDC. ✓

(Note 2) Authority - T/A #20, 5 April 44.

HARBOR DEFENSES OF THE COLUMBIA

CONSOLIDATED SUMMARY OF MAJOR
ITEMS OF EQUIPMENT

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EXHIBIT 3-G-2(a)

CONSOLIDATED SUMMARY OF MAJOR ITEMS OF EQUIPMENT
(Submarine Mine Equipment Items for Complete Project)

Stock No. or Cat. No.	Article	Required
1110	Anchor, cast iron, 1000-lb.	4
1130	Anchor, cast iron, 3000-lb.	24
9500	Audio reception system, M1, complete	2
1900C	Box, distribution, M2	16
2050A	Box, junction, M2	32
4501F	Box, selector, M4	16
2150	Cable, mine, 1-conductor, class A, M4	605000 ft.
2130A	Cable, shore, 7-conductor, class A	70000 ft.
8200	Can, booster, f/ground mine, M4	203
5541	Cap, blasting, (fuzo) electric, waterproof	1280
2192	Clamp, cable, M2	203
8503	Coil, rod, 43-inch, f/ground mine	68
8509	Coil, rod, 72-inch, f/ground mine	135
8250	Device, firing, complete, (M-5) (JDE)	68
8250	Device, firing, complete, (M-5) (FG)	135
5536	Explosive, (TNT)	609000 lbs.
7232	Frame, f/4-group panels	2
7233	Frame, f/1-supervisory, 1-jack and 2 group panels	3
	Mine case, ground, M-4	203
7342	Motor generator, Motor 110 volts AC, generator, 250 volts DC	3
7343	Motor generator, 250-watts, AC DC, set, 4-bearing, motor 110-volts AC, generator, 110 volts, DC	3
7400	Panel, distribution, M-3, complete	1
7600	Panel, group, M3, complete	14
770C	Panel, jack, M3, complete	3
7500	Panel, power, M3, complete	3
7705	Panel, supervisory, M3, complete	3
5640	Rope, wire, Marline, covered, 1-inch	56800 ft.
3550A	Shackle, anchor, f/anchor & mine, complete	355
5075	Thimble, f/1-inch wire rope	355
5073	Clip, w/nuts	913
4900	Reeler, cable, portable, M1, complete	1
2400	Crane, 2-ton, tractor	1
	Control, Mine, Emergency, M4	1
	Consists of:	
7950	Cable, inter-unit, M4 (1)	
7390	Cable, power, M4 (1)	
5265	Indicator, Speed (1)	
7650	Panel, Operating, M4 (1)	
7550	Power pack, M4 (1)	
7381	Power unit, KE-75-J (1)	
1120	Anchor, 2000-lb.	32

LANDOR DEFENSES OF THE COLUMBIA

CONSOLIDATED SUMMARY OF MAJOR
ITEMS OF EQUIPMENT
- Submarine Mines -
Date: 2 June 1944 Exh 3-G-2(a)
Page 1 of 1 Page.

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EXHIBIT 3-G-3

CONSOLIDATED SUMMARY OF MAJOR ITEMS OF EQUIPMENT

(Engineer Items for Complete Project)

Stock No. or Cat. No.	Article	Required
18-2100. 5-35 300-630	Board, drawing, 42" x 60", w/2 adjustable trestles (CS 26-1)	2
	Camouflage Set A	29
430-06	Drafting equipment, C.A., H.D.	1
430-07	Drafting equipment, C.A., Regt.	1
430-04	Drafting equipment, C.A., Sn.	3
16-4273. 300-400	Instrument, drawing, field set	1
18-1572.11-1	Arrows, steel, 10 inch, set of 11 (CS 42-1-5)	3
18-2732. 300-100	Chain, surveyor's, 100 ft.	1
18-5686. 300-300	Pole, ranging, metal, tubular, 6 ft., 2 section, 6 inch, red and white gradu- ations, w/canvas case	3
18-6250. 300-550	Rod, level, Philadelphia, graduated in feet and tenths (CS 42-28)	3
18-6235. 100-400	Rod, stadia, 12 foot, folding (CS 42-27)	4
41-8288. 300-300	Tape, chain, steel, 300 ft, 5/16" x .015" graduated every foot, and feet graduated to tenths, blank space at each end, w/reel	1
41-8519. 100-500	Tape, steel, 100 ft. graduated in meters and centimeters on one side and in feet, tenths, and hundredths on the other	0
16-8876. 300-200	Transit, engineers, least reading, one min- ute, w/accessories and tripod	1
	Gage, tide	1
	Searchlight, 30, 60 inch, complete w/power plant and control equipment, fixed	0
760-10	Searchlight, portable searchast, 30 inch complete with power plant, control equip- ment and spread beam attachment	2
760-10	Searchlight, portable searchast, 60-inch complete with power plant and control equipment	11

WARREN DEPTENSES OF THE COLUMBIA

CONSOLIDATED SUMMARY OF MAJOR
ITEMS OF EQUIPMENT

- Engineer -

Date: 2 June 1944 Exh 3-G-3

Page 1 of 1 Page.

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12 MAR 1953

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EXHIBIT 3-G-4

CONSOLIDATED SUMMARY OF MAJOR ITEMS OF EQUIPMENT
(Chemical Warfare Service Items for Complete Project)

Stock No. or Cat. No.	Article	Required
VB-123	Canister, Collective Protector, Field	57
VB-477	Protector, Collective, M2	19

ARMOR DEFENSES OF THE COLUMBIA

CONSOLIDATED SUMMARY OF MAJOR
ITEMS OF EQUIPMENT
- Chemical Warfare -
Date: 2 June 1944 Exh 3-G-4
Page 1 of 1 Page.

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ANNEX H - REAL ESTATE REQUIREMENTS

I N D E X

r. 1 - Real Estate to be procured Page 2

2 - Appraisal Reports and Cost Estimates Page 2

Subitems

1-H-1 - Land to be acquired - Tioga

1-H-2 - " " " " - North Head

1-H-3 - " " " " - Tract "F"

1-H-4 - " " " " - Tract "A"

1-H-5 - Easement to be acquired - Tracts "B" & "D"

1-H-6 - " " " " - Tract "C"

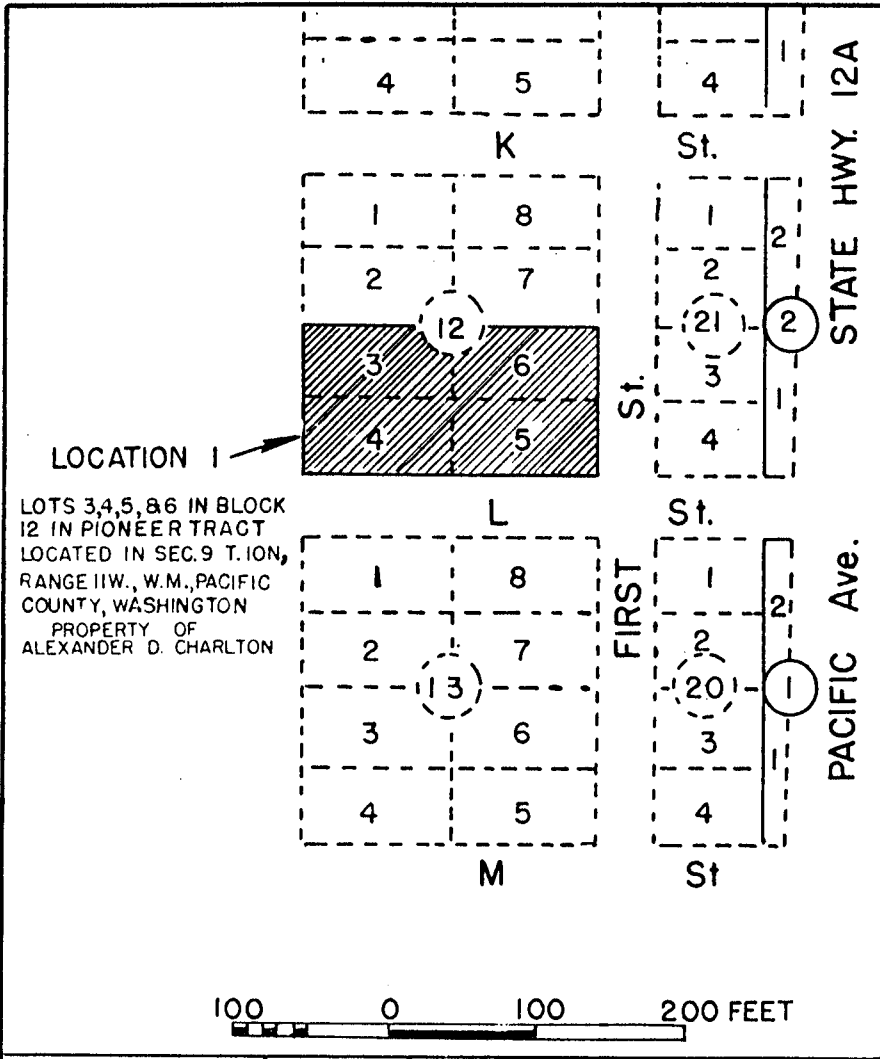
1-H-7 - Land to be acquired - Galena, Tract "E"

2-H-1 - " " " " - ~~Tioga and North Head~~ LOCATION 1 AND 2

2-H-2 - " " " " - ~~Tracts "A" to "F" inclusive~~ LOCATION 14 AND 15

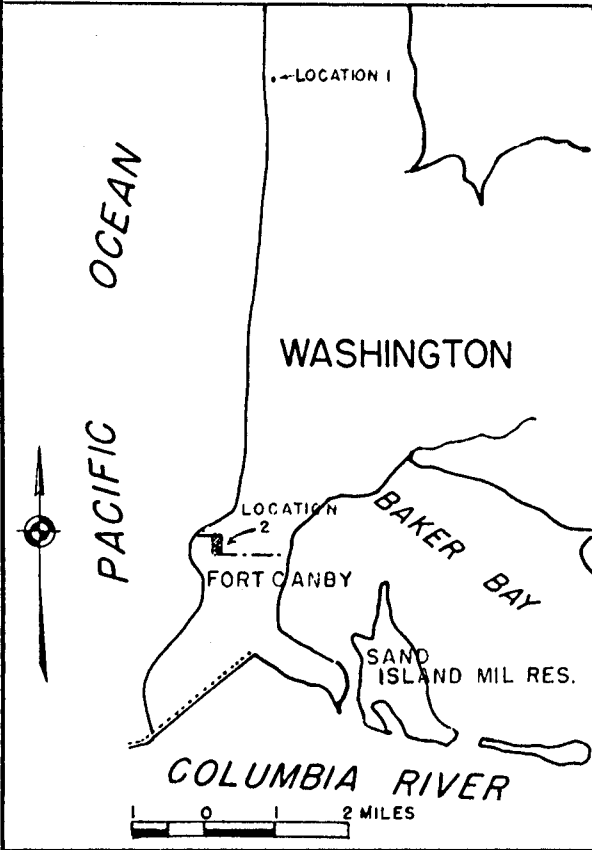
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REF ID: A66483
GROUP 1 EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION
7063



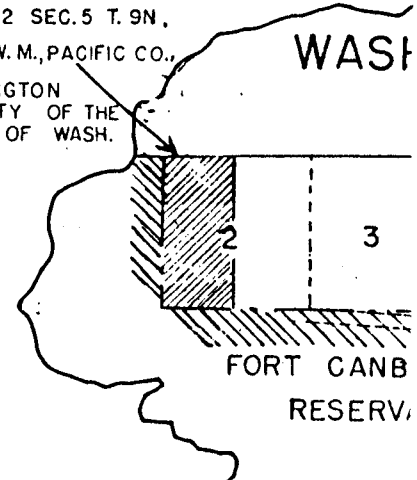
LOTS 3,4,5, & 6 IN BLOCK 12 IN PIONEER TRACT LOCATED IN SEC. 9 T. 10N, R. 11W., W.M., PACIFIC COUNTY, WASHINGTON PROPERTY OF ALEXANDER D. CHARLTON

OCEAN



LOCATION 2

WEST 600 FEET OF GOVT. LOT NO. 2 SEC. 5 T. 9N, R. 11W., W.M., PACIFIC CO., WASHINGTON PROPERTY OF THE STATE OF WASH.



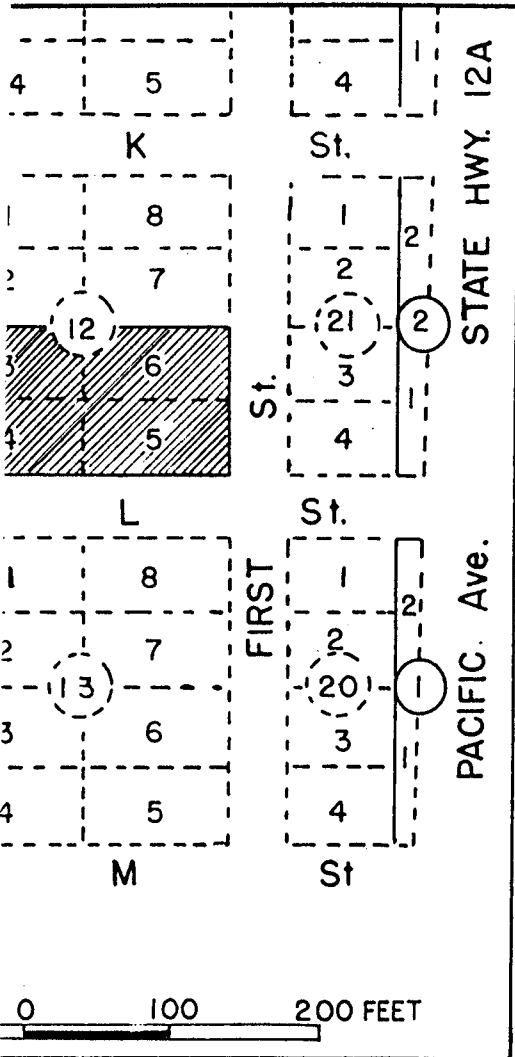
PACIFIC

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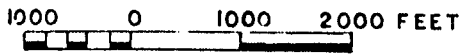
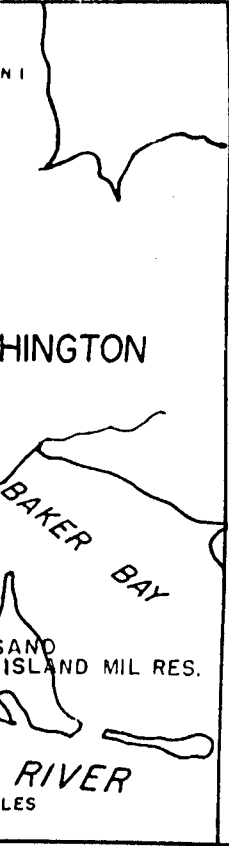
REGRADED UNCLASSIFIED ORDER SEC ARMY BY TAG REG 7063

HARBOR DEFENSES LANDS ACQU LOCATION

PREPARED BY: OFFICE OF THE ART. ENG FORT STEVENS, OREGON



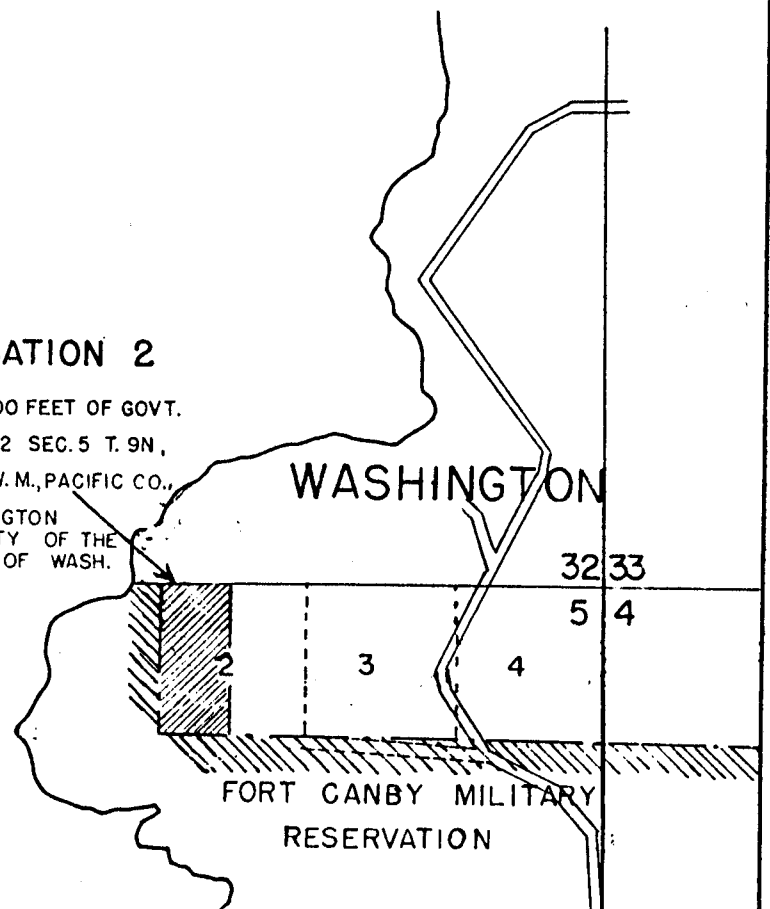
OCEAN



PACIFIC

LOCATION 2

WEST 600 FEET OF GOVT.
LOT NO. 2 SEC. 5 T. 9N.,
R. 11W., W. M., PACIFIC CO.,
WASHINGTON
PROPERTY OF THE
STATE OF WASH.

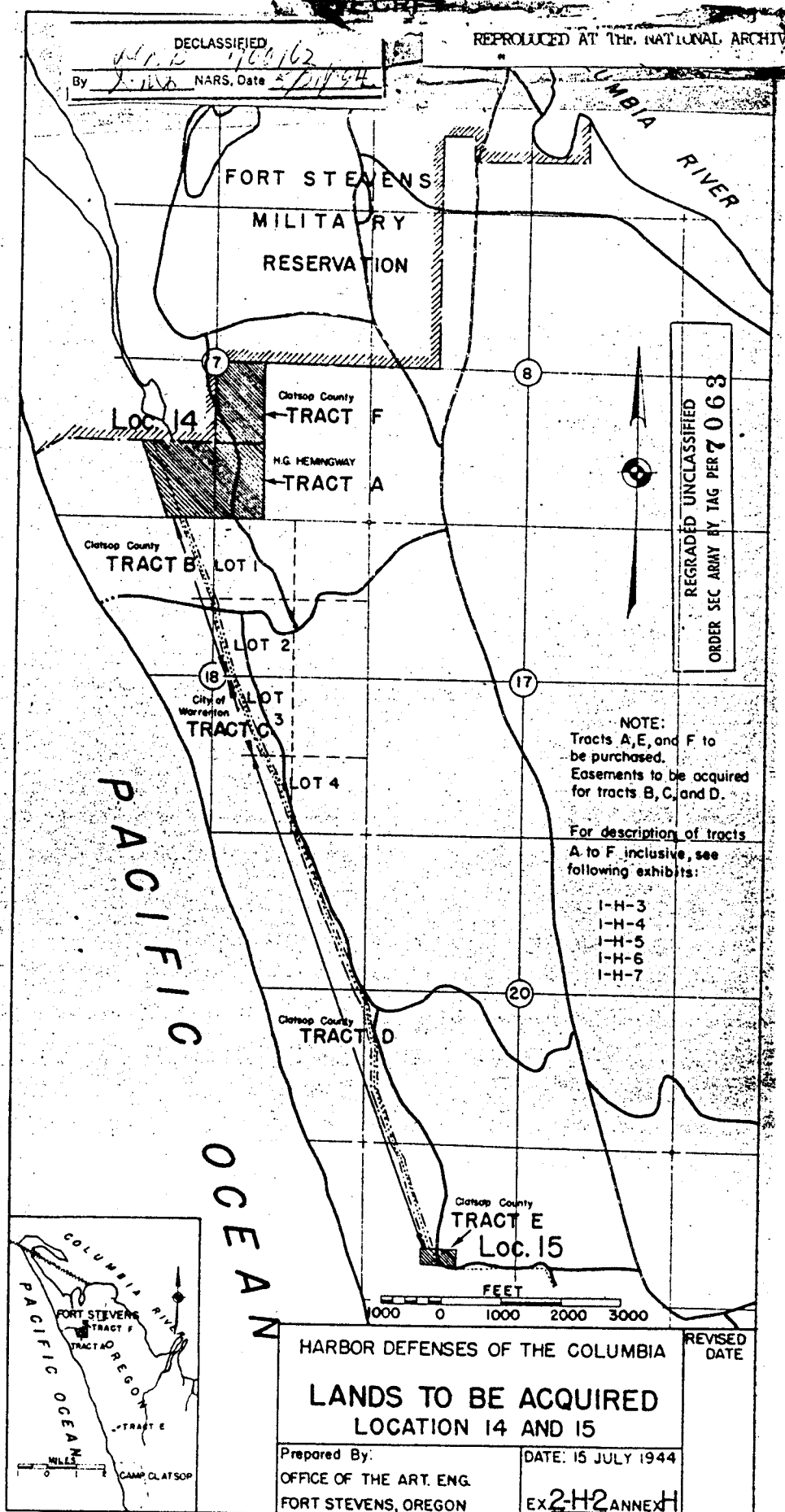


HARBOR DEFENSES OF THE COLUMBIA		REVISED DATE
LANDS TO BE ACQUIRED		
LOCATION 1 AND 2		
PREPARED BY:	DATE: 15 JULY 1944	
OFFICE OF THE ART. ENG FORT STEVENS, OREGON	Ex-2-H1 Annex H	

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 By *J. W. NARS* Date *2/11/84*

REPRODUCED AT THE NATIONAL ARCHIVE



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NOTE:
 Tracts A, E, and F to be purchased.
 Easements to be acquired for tracts B, C, and D.

For description of tracts A to F inclusive, see following exhibits:

- I-H-3
- I-H-4
- I-H-5
- I-H-6
- I-H-7

HARBOR DEFENSES OF THE COLUMBIA REVISED DATE

**LANDS TO BE ACQUIRED
 LOCATION 14 AND 15**

Prepared By:
 OFFICE OF THE ART. ENG.
 FORT STEVENS, OREGON

DATE: 15 JULY 1944

EX-2-H2 ANNEX H

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