

5928

9810

Diag'd. On Diag. Ch. No. 5530-4

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Photogrammetric Shoreline
Survey

Field No. CS-262-C Office No. T-5928

LOCALITY

State California

General locality San Francisco Bay

Locality Point Richmond

194 1-'45

CHIEF OF PARTY

E. H. Pagenhart

LIBRARY & ARCHIVES

DATE

June, 1949

B-1870-1 (1)

5928

T-5928

17 March 1950

Rear Admiral K.T. Adams
Acting Director
United States Coast and Geodetic Survey
Department of Commerce

Dear Admiral Adams:

Your memorandum, file No. 731-eal, dated 12 December 1949, addressed to the Director of Intelligence, United States Air Force, forwarding seventeen (17) maps for security clearance, was referred to the Assistant Chief of Staff, G-2 for action.

There is no objection to the publication of the following maps as unclassified:

T-5920 Point Avisadero - Point San Bruno
T-5929 San Quentin - California City
T-5931 Davis Point - Pinole Point
T-5936 Vallejo, California

Provided minor deletions are made as indicated on each map, there is no objection to publication of the following maps as unclassified:

T-5922 (M&S) San Francisco Bay and Oakland Area, California
T-5923 San Francisco Bay and Oakland Area, California
T-5924 (E&W) San Francisco Bay and Oakland Area, California
T-5928 San Francisco Bay and Oakland Area, California
T-5939 San Pablo Bay Area, California
T-5941 Suisan Bay Area, California
T-5942 (2 sheets) Suisan Bay Area, California
T-5943 Suisan Bay Area, California

The remainder of the maps forwarded with your memorandum have not yet been returned from the field agencies where they were sent for examination. Follow up action has been taken requesting that the return of the maps be expedited.

Sincerely,

1 Incl
12 maps
(as listed above)

ERNEST A. BARLOW
Colonel, OSC
Chief, Security & Training Division
the Assistant Chief of Staff, G2

DATA RECORD

T-5928

Quadrangle (II):

Project No. (II): CS 262 C
Shoreline

Field Office: San Francisco, Calif.

Chief of Party: Capt. E. J. Pagenhart

Compilation Office: Tampa, Florida

Chief of Party: George E. Morris Jr.
Lt. Comdr.

Instructions dated (II III): 8 Feb. 1944

Copy filed in ^{Division of} Descriptive
Report No. ~~T~~ ^(VI)

Photogrammetry Office Files

Completed survey received in office;

Reported to Nautical Chart Section;

Reviewed: Dec 31, 1944

Applied to chart No. 5532

Date: 19 Mar 1948

Redrafting Completed;

Registered: 14 June 1949

Published;

Compilation Scale: 1:10,000

Published Scale:

Scale Factor (III): None

Geographic Datum (III): N.A. 1927

Datum Plane (III): ^{N.H.W.} M.S.L.

Reference Station (III): Tall concrete Stack, 1921

Lat.: 37 56' 27" 688 (853.6 m.) Long.: 122 23' 32" 645 (797.1 m.) Adjusted
~~Unadjusted~~

State Plane Coordinates (VI):

X =

Y =

Military Grid Zone (VI)

PHOTOGRAPHS (III)

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Scale</u>	<u>Stage of Tide</u>	
6361 - 65 incl.	9/3/41	12:17	1:10,000	5.2 ft.	5.22
6377 - 81 incl.	9/3/41	12:37	"	5.0 ft.	4.90
6387 - 90 incl.	9/3/41	1:05	"	4.6 ft.	4.43
11444-46 "	10/27/42		1:5,000		
14030-31 "	June 1943				
11V: 21-23 "	Aug 1, 1945		1:20,000	unknown.	
31-33 "					
#12349	8/27/44 (NAS Alameda, Calif.), single lens, Richmond Shipyards.				

see "Tide" 275

Tide from (III): Pt. Richmond - San Francisco

Mean Range: 4.2 ~~Diurnal~~ Range, 5.9 ft.

Camera: (Kind or source) U.S.C. & G.S. 9 Lens $8\frac{1}{4}$ " focal length

Field Inspection by: Capt. E. J. Pagenhart date: 1943

Field Edit by: None date:

Date of Mean High-Water Line Location (III): Aug 12-14, 1944

Projection and Grids ruled by (III) SR - BRC date: Dec. 13, 1944

" " " checked by: BRC date: Dec. 15, 1944

Control plotted by: D.G.S. date: April 13, 1945

Control checked by: B.H. Lyon date: " 13, 1945

Radial Plot by: B.H. Lyon date: March 14, 1945

Detailed by: R.A. Reece date: Feb., March, May '46

Reviewed in compilation office by: J.A. Giles date: June 1946

Elevations on Field Edit Sheet checked by: date:

STATISTICS (III)

Land Area (Sq. Statute Miles): 13.5.

Shoreline (More than 200 meters to opposite shore): 18.5

Shoreline (Less than 200 meters to opposite shore): 17.5

Number of Recoverable Topographic Stations established: 13

Number of Temporary Hydrographic Stations located by radial plot: None

Leveling (to control contours) - miles:

Roman numerals indicate whether the item is to be entered by,

(II) Field Party, (III) Compilation Party, or, (VI) the Washington Office.

When entering names of personnel on this record give the surname
and initials (not initials only).

Remarks:

Field Inspection Report T-5928

The Field Inspection Report for the area of
T-5928 could not be located at the time of
registering the map. /

K. N. Maki
6/17/49 *K.N.M.*

MAIN RADIAL PLOT
SHEETS T-5927 and 5928
PROJECT CS-262, California

Projections for these two sheets were received in this office on 25 August 1944. Control was carefully plotted and checked by members of the Control section; using the beam compass and meter bar method.

A circle, with 14 inch radius, was drawn upon each photograph in order to facilitate use of the central portion of each photograph in preference to the outer extremities. Pass Points were picked as nearly as possible in a regular scheme of quadrilaterals, 5 inches on a side, in order to strengthen the graphic control scheme. Extreme care was exercised in plotting primary control on the photographs and this was done without regard for the 14 inch circle.

All azimuths between centers were established by means of the stereoscope and radial liner method.

The photographs used for this plot were printed on unmounted positype paper, therefore it was necessary to treat for the effect of paper distortion. This has been accomplished by means of the distortion templet, constructed from non-shrinking vinylite material.

Discussion of the main Radial Plot follows:

A. CONTROL

The following control stations were used to control this plot: -

- ✓ Pt. San Pablo 3, 1940 ✓ 1940.
- ✓ Sholin, 1940 ✓ 1942.
- ✓ San Pablo Ridge, 1897 ✓ 1942.
- ✓ Section Corner offset, 1940 ✓ 1942.
- ✓ Harbor Line No. 3 (U.S.E.D., 1937) ✓ 1942.
- ✓ Tall conc. stack, 1921 ✓ 1942.
- ✓ Richard, 1932 ✓ 1944.
- ✓ Richmond Ford Motor Co Water Tank, 1932 (9150) ✓ 1944.
- ✓ Red Rock Naval Beacon, 1932
- ✓ East Bros. Is. Lighthouse (Top) ✓ 1942.
- ✓ Richmond Airway Landmark Bn, 1932
- ✓ Mound 2, 1921
- ✓ Richmond City Hall, Flagstaff, 1921
- ✓ Pullman shops, Black Stack, 1921
- ✓ Jarge, 1944

Triangulation Station "Point San Pablo 3, 1940" could not be held in the plot. The point which had been identified for this station was cut in on the plot and was found to fall approximately 43 meters N.E. from the plotted G.P.. The approximate location

of the station on the Photograph was determined and marked on the field print and returned to the field for verification. The new location as picked in the Tampa office was verified in the field as correct, (See Field Print No. 6390).

Control was well distributed and, with the single exception mentioned above, well identified, therefore control for this plot is considered to be adequate.

B. PHOTOGRAPHS.

The following nine lens photographs were used in this plot: -

6361	6377	6387	14030 (June 1943)
62	78	88	14031
63	79	89	
64	80	90	
65	81		

Photograph coverage is adequate for 4 or more intersections in all parts of the sheet. Coverage is sufficient to locate existing detail at the time the Photographs were flown, but the photographs are considerably outdated.

C. CLOSURE AND ADJUSTMENT

Regular procedure was followed in laying templets with strongest fixes first, then progressively laying through templets with weaker fixes.

Tilt which may have approached 3° was present in some photographs, but not in sufficient amount to be considered excessive, or to necessitate tilt computation. All azimuths to adjacent centers were held, and excellent intersections were obtained throughout.

D. AREAS OF QUESTIONABLE ACCURACY

It is believed that all parts of this plot fall well within the prescribed limits of accuracy.

E. GENERAL

Pass Points were picked on the sheet and shown by double blue inked circles of 2.8 mm. and 1.5 mm. radii. The sheet was released to the draftsman for the addition of detailing points which are to be shown in blue ink with 2.0 mm. circles.

Respectfully submitted,

Bennie H. Lyon
Bennie H. Lyon
Asst. Photo Engineer.

Forwarded by:

George E. Morris Jr.
Lieut. Comdr. George E. Morris Jr.

DESCRIPTIVE REPORT TO
ACCOMPANY
SHEET NO. T-5928 - PROJECT C S 262-C

26 and 27 CONTROL AND RADIAL PLOT

A special report by B. H. Lyon, Asst. Photogrammetric Engineer, covering main radial plot is submitted herewith.

Attention is called to a letter from Capt. E. ^{H.} Pagenhart, dated Feb. 27, 1945 stating that all necessary notes and forms covering the triangulation and topographic stations have been forwarded to the Washington Office.

28 DELINEATING

The delineating of this sheet has been done according to the current instructions for this project dated February 8, 1944.

In the delineation of this map manuscript it was necessary to use a 6300 series of 9 lens photographs dated 9/3/41 and a single lens photograph of approximately 1:10,000 scale. The later was received from the Alameda Naval Air Station, and was dated 8/27/44. The single lens photograph showed the Richmond shipyards, which, for the most part, were constructed after the 9 lens photographs were taken. The projector was used in transferring detail from the Single lens photograph because of the difference in scale. The area on the 9 lens photographs which joins with the single lens photograph does not match very well, so it is likely that the area outside of that covered by the single lens photograph is not up to date.

The photographs were clear and of a reasonably good scale. Some difficulty was experienced, however, in selecting common points for detail points in the area covered by the single lens photograph due to the numerous cultural changes between 1941 and 1944.

* The field inspection was adequate for the photographs used.

29 SUPPLEMENTAL DATA

A City Plan of Richmond compiled by E. A. Hoffman, City Engineer, in 1944 was used for comparison. No pertinent information was gotten from it.

A Property Map showing property owned by the Kaiser Company Inc. was used in conjunction with the single lens photograph of the Richmond Shipyards. It was quite useful in delineating the area.

The Naval Operating Base, San Francisco, Calif. furnished a General Plot Plan of Wharf and Causeway at Molate Point. This feature has been added since the 1:10,000 Aerial Photographs were taken. However, a 9 lens Aerial Photograph, 1:5,000 (approx.) scale, taken while the causeway was being constructed, proved helpful in delineating the wharf, causeway and surrounding area. This photograph is numbered 11444. Two other photographs, Nos. 11445 and 11446, of the same series were used for comparison. For the most part, little change has taken place in the shoreline details during the two years between photographing flights. This is with the exception of the Richmond Shipyard area.

* The field inspection Report for the area of T-5928 could not be located.
K.H.M. 6/17/49

Army, 1945
1:5,000
1:V: 24 x 25
175

30 MEAN HIGH WATER LINE

The H. W. L. has been shown according to field inspection notes, and so have the areas where the shoreline is indefinite. Water line structures of piers, shipways, and sea walls take up a goodly proportion of the shoreline.

*

31 LOW WATER AND SHOAL LINES

M. L. W. lines and shoal lines have been shown wherever recovered by field inspector.

32 DETAILS OFFSHORE FROM THE HIGH WATER LINE

A ship that is moored and aground below Castro Point should be investigated by the hydrographic party. This hulk appears on the early photographs (1941) and on the latest available photographs (1944). It is not shown on the latest nautical chart in this office bearing a print date of 8 Dec. 1943.

33 WHARVES AND SHORELINE STRUCTURES.

There are quite a number of shoreline structures. They have been delineated as indicated by the photographs and field inspection.

34 LANDMARKS AND AIDS TO NAVIGATION.

All landmarks and aids to navigation, identifiable, have been listed on form No. 567 and made a part of this report.

35 HYDROGRAPHIC CONTROL.

Instructions to field party, dated February 8, 1944, state that no hydrographic stations need be selected by them for this project.

36 LANDING FIELDS AND AERONAUTICAL AIDS.

Inapplicable.

37 to 43 (no additional items - inapplicable)

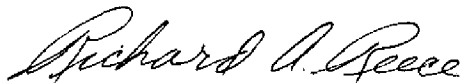
44 COMPARISON WITH EXISTING TOPOGRAPHIC QUADRANGLES.

Comparison was made with a quadrangle done by the Corps of Engrs. in 1892 - 94, revised in 1914. The scale, 1:62,500, is too small to make a detailed comparison. In general, the shoreline shows little change with the exception of the area embracing the Richmond Shipyards, where considerable change has taken place.

45 COMPARISON WITH NAUTICAL CHARTS.

Chart No. 5332 published by the U. S. C. & G. S. bearing a print date of 8 Dec. 1943 was used for comparison. The scale, 1:40,000, made it difficult to compare any of the finer details, but the general shoreline compared favorably. (See paragraphs No. 32)

Respectfully submitted,



Richard A. Reece
Engineering Draftsman.

Approved and Forwarded



Lt. Comdr. George E. Morris Jr.
Chief of Party

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

For Coast Pilot

~~NON-FLOATING AID~~ LANDMARKS FOR CHARTSTO BE CHARTED
TO BE DELETED

STRIKE OUT ONE

Tampa Photogrammetric Office 24 June 1945

I recommend that the following objects which have ~~been~~ been inspected from seaward to determine their value as landmarks, be charted on ~~(delete from)~~ the charts indicated.

The positions given have been checked after listing by W. V. Dewsey, Photogrammetric Aid

Lt. Comdr. George E. Morrie Jr.

Chief of Party.

STATE		California				POSITION					METHOD OF LOCATION AND SURVEY NO.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
CHARTING NAME	DESCRIPTION	SIGNAL NAME	LATITUDE		LONGITUDE		DATUM									
			°	'	D. M. METERS	°		'	D. P. METERS							
Stack ✓	Richmond Ford Motor Co.	None	37	54	1065	122	21	583	N.A. 1927	Radial Plot	8/11/44			X		5532 ✓
Tank ✓	Water	"	"	"	1087	122	21	505	"	Triang.	1932			X		5532 ✓
Stack ✓	(No of 2) Old Brickyard	"	"	"	1363	122	22	1010	"	Radial Plot	8/11/44			X		" ✓
Stack ✓	(S. of 2) "	"	"	"	1536	122	22	1017	"	"	"			X		" ✓
Tank ✓	most westerly of 3 - Ft. Richmond	"	"	"	1523	122	23	876	"	"	1944			X		" ✓
Tank	Gas	"	37	55	1660	122	22	117	"	"	1944			X		" 5532 ✓
Tree ✓	Molate Point	"	37	56	1561	122	25	375	"	"	"			X		" 5533 5532 ✓
Tank	Coast - argente of 3 - Ft. Richmond	"	37	54	1295	122	23	248	"	"	"			X		" 5532 ✓
Tank	narrow black Δ	"	37	59	254	122	21	660	"	Triang.	1921			X		" 5533 5532 ✓
Tank ✓	Elev. Steel	"	37	56	1943	122	21	1567	"	Radial Plot	1944			X		" 5532 ✓
Tank ✓	Water, steel aluminum	"	37	58	1155	122	21	71	"	"	"			X		" 5533 5532 ✓
Tank ✓	"	"	37	58	255	122	21	189	"	"	"			X		" 5532 ✓
														</		

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and *nonfloating* aids to navigation, if redetermined, shall be reported on this form. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

For Coast Pilot

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

**TO BE CHARTED
TODAY. ASK EXPERTS**

STRIKE OUT ONE

Tampa Photogrammetric Office 27 June, 1946

I recommend that the following objects which have ~~(been inspected)~~ been inspected from seaward to determine their value as landmarks, be charted on ~~(selected from)~~ the charts indicated.

The positions given have been checked after listing by W. W. Dawsey, Photogrammetric Aid

Lt. Comdr. George E. Morris *Chief of Party.*

[illegible]

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and *nonfloating aids* to navigation, if redetermined, shall be reported on this form. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

GEOGRAPHIC NAMES

Survey No.

T-5928

1

Name on Survey

On Chart
No.

On previous survey
No.

On U. S. quadrangle
Maps

From local
information

On local Maps

P. O. Guide or Map

Rand McNally Atlas

U. S. Light List

A

B

C

D

E

F

G

H

K

California

USGB

1

San Francisco Bay

"

2

Atchison, Topeka & Santa Fe

3

Southern Pacific

4

Southampton Shoal

5

Brooks Island

(abbreviation for one island is I., not
Is.)

USGB

6

Bird Island

7

Richmond

8

~~Richmond Inner Harbor~~

(delete as shown here, as it is properly more to
eastward: this is Richmond Harbor proper)

9

Parr Canal

10

Lauritzen Canal

(next west of Parr Canal, and longer)

11

Santa Fe Channel

USGB

Richmond Yacht Harbor

(at head of Santa Fe Channel)

12

East Richmond

13

Point Richmond

(apply name only to point, and delete other
usage for a residential area)

14

Shoal Point

(not Potrero Point: Shoal Point is USGB decision,
but case is being referred to Board for possible
revision of older decision)

16

Standard Oil Pier

(Two places)

17

Red Rock

18

Castro Rocks

19

Castro Point

20

Richmond-San Rafael Ferry Landing

21

Molate Point

22

Naval Fuel Depot Pier

23

~~Winehaven~~ Winehaven

(delete name: village no longer exists)

24

Winehaven Pier

(this name is still in use)

25

Point Orient

26

Point San Pablo

27

GEOGRAPHIC NAMES

Survey No.

T-5928

2 Name on Survey

On Chart No.
On previous survey No.
On U. S. quadrangle Maps
From local information
On local Maps
P. O. Guide or Map
Rand McNally Atlas
U. S. Light List

The Brothers

1

San Pablo Bay

2

Marsh Island

3

Castro Creek

4

San Pablo Canal

(new name: extends SWly from Castro Creek)

5

San Pablo Creek

6

Wildcat Creek

7

8

Names underlined in red are approved. 4/22/48 L. Heck.

9

10

11

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13

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27

Division of Photogrammetry

Review Report of

Shoreline Survey Map T-5928

Paragraph numbers not used in this Review Report have been adequately covered in other parts of this report. This map manuscript is adequate.

26. Control.-

Four triangulation stations were plotted on the map manuscript by the reviewer. These stations were not used in the radial plot, and are indicated merely for additional horizontal control.

28. Detailing.- Extensive corrections and additions were made to the compilation from 1945 single-lens army photographs. Notable changes were made at Potrero Point, (Shoal Point on quadrangles and chart), Molate Point, and an area east of Wine Haven. Interior changes were made to show some recent major developments. Enough points, common to the old and the new photographs, were found so that the vertical projector could be used to transfer the more recent detail.

44. Comparison with Existing Topographic Surveys.-

T-388	1:10,000	1853	T-3650	1:10,000	1917
T-561	1:10,000	1856	T-4022	1:10,000	1927
T-1621	1:10,000	1881	T-4271	1:20,000	1927
T-2445	1:10,000	1898	T-4438	1:10,000	1929
T-2941	1:10,000	1909	T-6301	1:10,000	1934

U.S.G.S. San Francisco, California, 1:62,500, rep. 1932
U.S.E. San Francisco, California, 1:50,000, 1939, rev. 1946
The shore line and immediately adjacent detail on this map manuscript supersedes the same features on the previous surveys and quadrangles in all common areas.

45. Comparison with Nautical Charts.-

No. 5532 1:40,000 December 1943

This map manuscript has not been applied to nautical charts as of the date of this review report.

Reviewed by:

Reviewed under direction of

Lena T. Stevens
Lena T. Stevens
Photogrammetrist
12-31-46

S. V. Griffith
S. V. Griffith
Chief, Review Section

APPROVED BY:

B. G. Jones per SM
Technical Assistant to the
Chief, Div. of Photogrammetry

M. E. Johnston
Chief, Nautical Chart Br.
Division of Charts

K. T. Adams
Chief, Div. of Photogrammetry

W. M. Scaife 190
Chief, Div. of Coastal Surveys

Tide Tables: Pacific, 1941

Ref. Sta.

San Francisco (Golden Gate)

Table 2. (p. 220) Tidal D.F. & Constants

Point Richmond:

Time of Tide: ± 0.40

Ratio of Ranges: ± 1.1

Mean Range: ± 4.2

Tidal difference: ± 0.2

Table 1. p. 33

Sept. 3, 1941. M.H.W. $10:20$ o.c.l. = 5.0 ft

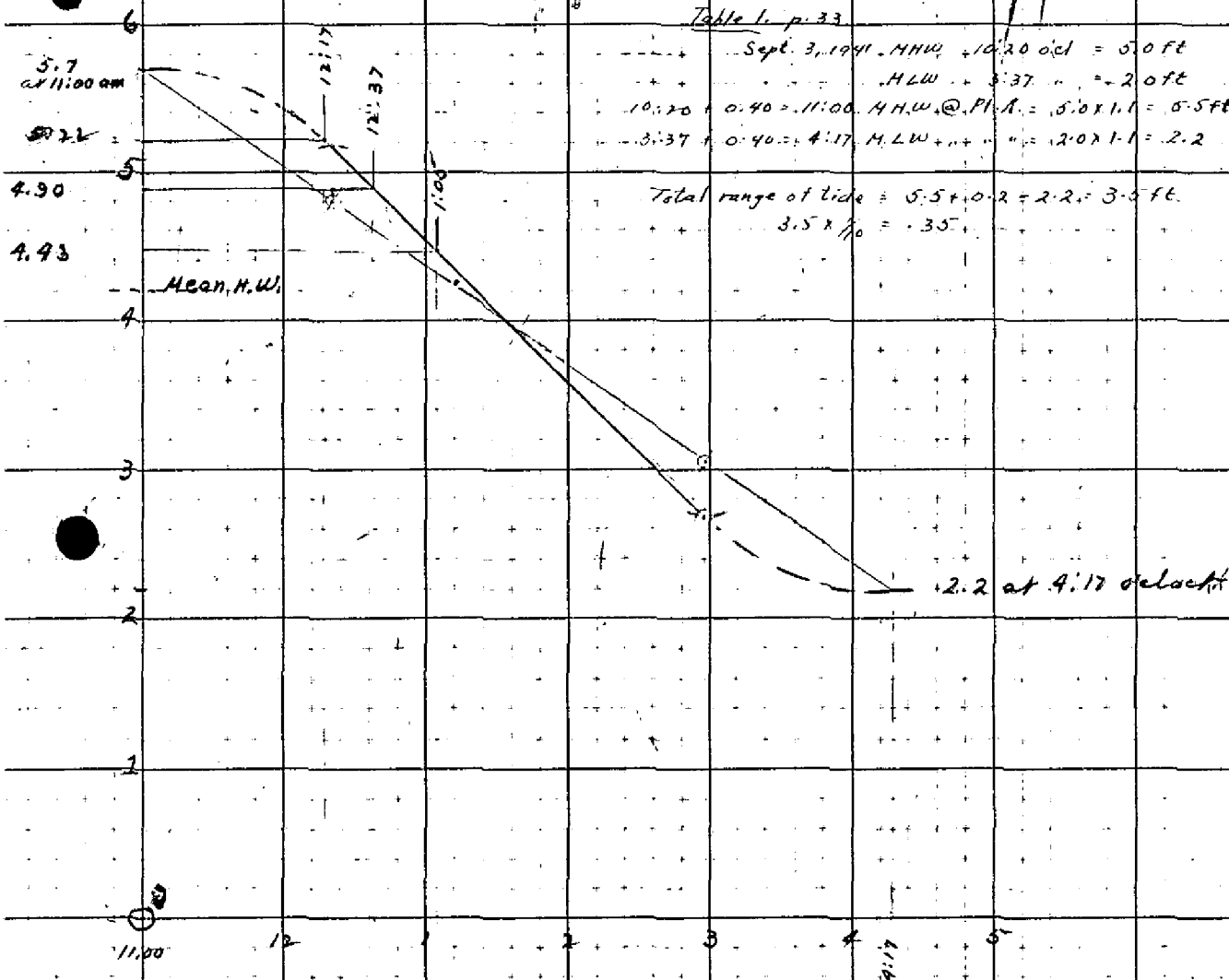
M.L.W. $3:37$ = 2.0 ft

$10:20 + 0.40 = 11:00$ M.H.W. @ P.R. = $5.0 \times 1.1 = 5.5$ ft + 0.2

$3:37 + 0.40 = 4:17$ M.L.W. = $2.0 \times 1.1 = 2.2$

Total range of tide = $5.5 + 0.2 = 2.2 = 3.5$ ft.

$3.5 \times \frac{1}{10} = .35$



turn = Mean low water of two low waters each day: Datum

L.T. & Co.

Oct. 18, 1946

$.35 = \frac{1}{10}$ of range of tide

T-5428

+ 5.7 @ 11.00

5'

4'

3'

2'

1'

11:00

12:

1:

2:

3:

4:

5:

+ 2.2 @ 4:17

PT. RICHMOND
SAN FRANCISCO (GOLDEN GATE)

Plotted by: R. A. Reece

Checked by: R. J. Pate

(see over)

NAUTICAL CHARTS BRANCH

SURVEY NO. _____

Record of Application to Charts

[illegible]

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.