

TP- 00532

TP- 00532

NOAA FORM 76-35 (3-76)	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
DESCRIPTIVE REPORT	
Map No. TP-00532	Edition No. 1
Job No. CM-7704	
Map Classification FINAL, FIELD EDITED MAP	
Type of Survey SHORELINE	
LOCALITY	
State California	
General Locality San Francisco and San Pablo Bays	
Locality Alameda	
1977 TO 1980	
REGISTRY IN ARCHIVES	
DATE	

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.	
DESCRIPTIVE REPORT - DATA RECORD		TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED	
PHOTOGRAMMETRIC OFFICE Coastal Mapping Division, Norfolk, VA		SURVEY TP-00532 MAP EDITION NO. (1) MAP CLASS Final JOB 770 CM-7704	
OFFICER-IN-CHARGE Roy Matsushige, CDR, NOAA		LAST PRECEDING MAP EDITION TYPE OF SURVEY <input type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED JOB PH. _____ MAP CLASS _____ SURVEY DATES: 19__ TO 19__	
I. INSTRUCTIONS DATED			
1. OFFICE		2. FIELD	
Aerotriangulation April 13, 1977 Compilation Aug. 3, 1977 Compilation Amendment 1 April 20, 1978 Compilation Amendment 2 April 6, 1979 Compilation Amendment 3 July 30, 1979 Compilation July 2, 1981		Control - Premarking Feb. 7, 1977	
II. DATUMS			
1. HORIZONTAL: <input checked="" type="checkbox"/> 1927 NORTH AMERICAN		OTHER (Specify)	
2. VERTICAL: <input checked="" type="checkbox"/> MEAN HIGH-WATER <input type="checkbox"/> MEAN LOW-WATER <input checked="" type="checkbox"/> MEAN LOWER LOW-WATER <input type="checkbox"/> MEAN SEA LEVEL		OTHER (Specify)	
3. MAP PROJECTION Lambert Conformal		4. GRID(S) STATE California ZONE 3	
5. SCALE 1:10,000		STATE ZONE	
III. HISTORY OF OFFICE OPERATIONS			
OPERATIONS		NAME	DATE
1. AEROTRIANGULATION BY METHOD: Analytic LANDMARKS AND AIDS BY		R. Kelly	July 1977
2. CONTROL AND BRIDGE POINTS PLOTTED BY METHOD: Coradomat CHECKED BY		S. Solbeck S. Solbeck	July 1977 July 1977
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY COMPILATION CHECKED BY INSTRUMENT: Wild B-8 SCALE: 1:15,000 CONTOURS BY CHECKED BY		D. Butler J. Byrd NA NA	June 1978 June 1978
4. MANUSCRIPT DELINEATION PLANIMETRY BY CHECKED BY CONTOURS BY CHECKED BY METHOD: Graphically Smooth Drafted HYDRO SUPPORT DATA BY SCALE: 1:10,000 CHECKED BY		D. Butler J. Roderick NA NA D. Butler J. Roderick	July 1978 Sept. 1978 July 1978 Sept. 1978
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY		J. Roderick	Sept. 1978
6. APPLICATION OF FIELD EDIT DATA BY		J. Minton	Nov. 1980
7. COMPILATION SECTION REVIEW BY		W. Richter	Dec. 1980
8. FINAL REVIEW BY		J. Hancock	Feb. 1982
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY		J. Hancock	Feb. 1982
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY		R. Kelly	Apr. 1982
11. MAP REGISTERED - COASTAL SURVEY SECTION BY		H. D. Wolfe	MAR 10 1983

NOAA FORM 76-36B
(3-72)U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEYTP-00532
COMPILATION SOURCES

1. COMPILATION PHOTOGRAPHY

CAMERA(S) Wild R. C. 10 "B" (B = 152.74 mm)		TYPES OF PHOTOGRAPHY LEGEND		TIME REFERENCE	
TIDE STAGE REFERENCE <input type="checkbox"/> PREDICTED TIDES <input checked="" type="checkbox"/> REFERENCE STATION RECORDS <input checked="" type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY*		(C) COLOR (P) PANCHROMATIC (I) INFRARED		ZONE Pacific	<input checked="" type="checkbox"/> STANDARD
				MERIDIAN 120° W.	<input type="checkbox"/> DAYLIGHT
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
77B(P)2544 thru 2546	Mar 4, 1977	11:43	1:30,000	Not determined	
77B(I)2833, 2835*	Mar 5, 1977	10:43	1:30,000	0.17 below MHW	
77B(I)3101, 3103 and 3104*	Mar 10, 1977	11:27	1:30,000	0.15 ft. above MLLW	
77B(I)3431*	Mar 18, 1977	13:37	1:30,000	0.37 below MHW	
77B(P)3497 thru 3500**	Mar 18, 1977	11:06	1:30,000	Not determined	
77B(P)3509 thru 3512**	Mar 18, 1977	11:24	1:30,000	Not determined	
77B(P)3698 thru 3699**	Mar 18, 1977	13:37	1:30,000	Not determined	

REMARKS Photographs 77B(P)2544 thru 2546 were used for stereoscopic instrument compilation of the interior detail and the selection of pass points common to the hydro support and tide controlled infrared photography. **Hydro support photography.

2. SOURCE OF MEAN HIGH-WATER LINE:

The mean high water line was compiled graphically from the above listed tide coordinated infrared photography controlled with pass points selected and dropped during the stereo instrument compilation. Additions and modifications to the mean high water line may have resulted from the compilation of the field edit data listed on form 76-36C.

3. SOURCE OF MEAN LOW-WATER OR MEAN LOWER LOW-WATER LINE:

The mean lower low-water line was compiled graphically from the above listed tide coordinated infrared photography controlled with pass points selected and dropped during the stereo instrument compilation. Additions and modifications to the mean lower low water line may have resulted from the compilation of the field edit data listed on form 76-36C.

4. CONTEMPORARY HYDROGRAPHIC SURVEYS (List only those surveys that are sources for photogrammetric survey information.)

SURVEY NUMBER	DATE(S)	SURVEY COPY USED	SURVEY NUMBER	DATE(S)	SURVEY COPY USED
H-9844	1979-1981	None; see Review Report, item 64			

5. FINAL JUNCTIONS

NORTH	EAST	SOUTH	WEST
TP-00529 TP-00530	TP-00533	TP-00534	TP-00531

REMARKS

There are no shoreline junctions with TP-00531 or TP-00534. TP-00534 is 1:20,000 scale; all other maps are 1:10,000 scale.

NOAA FORM 76-36C
(3-72)U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TP-00532

HISTORY OF FIELD OPERATIONS

I. ☒ FIELD INSPECTION OPERATION (Premarking) ☐ FIELD EDIT OPERATION.

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	R. B. Melby	Feb. 1977
2. HORIZONTAL CONTROL	RECOVERED BY R. B. Melby ESTABLISHED BY R. B. Melby PRE-MARKED OR IDENTIFIED BY L. L. Riggers	Feb. 1977 Feb. 1977 Feb. 1977
3. VERTICAL CONTROL	RECOVERED BY None ESTABLISHED BY None PRE-MARKED OR IDENTIFIED BY None	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY R. B. Melby LOCATED (Field Methods) BY None IDENTIFIED BY None	Feb. 1977
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY <input checked="" type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY None	
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY Not Applicable	

II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

2. VERTICAL CONTROL IDENTIFIED

None

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
77B(P)3511	Alameda NAS East Breckwater North Light, 1953 (Sub Pt. 1)		

3. PHOTO NUMBERS (Clarification of details)

None

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

None

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME

5. GEOGRAPHIC NAMES: ☐ REPORT ☒ NONE6. BOUNDARY AND LIMITS: ☐ REPORT ☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

None

8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)

1 each; form 76-53, HP-65, Position Computation and 1 field report.

TP-00532
HISTORY OF FIELD OPERATIONSI. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	D. R. Taylor, LCDR, NOAA	04/11/80
2. HORIZONTAL CONTROL	RECOVERED BY D. D. Smith, LtJG, NOAA	04/11/80
	ESTABLISHED BY D. D. Smith, LtJG, NOAA	04/11/80
	PRE-MARKED OR IDENTIFIED BY None	
3. VERTICAL CONTROL	RECOVERED BY None	
	ESTABLISHED BY None	
	PRE-MARKED OR IDENTIFIED BY None	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY D. D. Smith, LtJG, NOAA	04/11/80
	LOCATED (Field Methods) BY D. D. Smith, LtJG, NOAA	04/11/80
	IDENTIFIED BY None	
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY <input checked="" type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY D. D. Smith, LtJG	04/11/80
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY None	

II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

None

2. VERTICAL CONTROL IDENTIFIED

None

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION

3. PHOTO NUMBERS (Clarification of details)

77B(P) 3510 and 3511

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

None

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME

5. GEOGRAPHIC NAMES: ☐ REPORT ☒ NONE6. BOUNDARY AND LIMITS: ☐ REPORT ☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

None

8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)

Original and duplicate field edit report,
Field edit sheet with field notes, 1 sounding volume containing fix and sketch data.

NOAA FORM 76-36D
(3-72)TP-00532
RECORD OF SURVEY USEU. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

I. MANUSCRIPT COPIES

COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Compilation complete pending field edit	Sept. 1978	Class III Manuscript	Sept. 1978	Sept. 1978
Field edit applied	Nov. 1980	Class I Manuscript	None	Dec. 1980
Final Review	Feb. 1982	Final Map	Mar. 1982	Mar. 1982

II. LANDMARKS AND AIDS TO NAVIGATION

1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

NUMBER	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
2 Pages		Mar. 1982	Appropriate forms (76-40) are attached with this Descriptive Report; no forms were for- warded prior to final review.

2. ☐ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: _____3. ☐ REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: _____

III. FEDERAL RECORDS CENTER DATA **

1. ☐ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.
2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☒ FORM NOS ~~XXX~~ SUBMITTED BY FIELD PARTIES. 76-40
TP-00534
3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C. and TP-00535
ACCOUNT FOR EXCEPTIONS: **TP-00530, TP-00531, TP-00532, and TP-00533, completes
CM-7704. Data held for completion, is being forwarded to the Federal Record
Center.
4. ☐ DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED: SEPTEMBER 14, 1982

IV. SURVEY EDITIONS (This section shall be completed each time a new map edition is registered)

SECOND EDITION	SURVEY NUMBER TP - _____ (2)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	
THIRD EDITION	SURVEY NUMBER TP - _____ (3)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	
FOURTH EDITION	SURVEY NUMBER TP - _____ (4)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	

OFFICIAL MILEAGE FOR COST ACCOUNTS

SHEET NO.	SQ. MILES
TP-00524	11
TP-00525	16
TP-00526	20
TP-00527	9
TP-00528	4
TP-00529	3
TP-00530	4
TP-00531	3
TP-00532	3
TP-00533	3
TP-00534	10
TP-00535	8
TP-00536	5
TP-00537	11
TP-00538	10
TOTAL:	120

CM-7704
SAN FRANCISCO & SAN PABLO BAYS
CALIFORNIA
SHORELINE MAPPING
SCALE 1:10,000 & 1:20,000

SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT

TP-00532

This 1:10,000 scale final shoreline map is one of fifteen maps, TP-00524 thru TP-00538 that comprise project CM-7704, San Francisco and San Pablo Bays, California. This project consists of eight 1:20,000 maps, six 1:10,000 maps featuring San Francisco Bay entrance and one 1:10,000 inset map of the Redwood Creek area.

The initial purpose of this project was to provide data in support of hydrographic operations beginning in the Fall of 1978. However, due to rapid cultural coast development, field activity has been temporarily delayed. Photogrammetry memo/instruction dated July 2, 1981, has reassigned this project, in its present stage, for final review and registration. Registration will include 10 Final Maps and 5 Final Class III Maps. Immediately afterwards, a Revision Survey using 1981 photography is scheduled to facilitate hydrography that has not been accomplished and to provide Nautical Charts with current shoreline information.

This final shoreline map corresponds geographically with portions of hydrographic surveys H-9844 (1979-81), H-9873 (1980-81) and H-9927 (1981). At the time of final review, processing of these hydrographic surveys had been deferred pending receipt of the final shoreline maps. A copy of this map was forwarded to the Hydrographic Surveys Division.

This Final Map is a 1:10,000 scale shoreline map that portrays a portion of San Francisco Bay from Alameda Naval Air Station to Bay Farm Island.

Field work prior to compilation was accomplished in March 1977; this involved the establishment of horizontal control in order to meet aerotriangulation requirements. During this period, ground support was provided for obtaining tide-coordinated photography and several of the project's navigational aids and landmarks for Charts were field determined.

Photo coverage was provided in March 1977 for aerotriangulation and compilation using panchromatic film with the "B" camera at 1:50,000 and 1:30,000 scales. Hydro support photography was taken using panchromatic film with the "B" camera at 1:30,000 scale. Tide coordinated black and white infrared photography at MHW and MLLW was supplied using the "B" camera at 1:40,000 and 1:30,000 scales. At the time of final review, the 1981 revision survey photography, at 1:40,000 scale, became available and was used to evaluate the existing Class I map.

Analytic aerotriangulation was adequately provided by the Washington Science Center in July 1977.

TP-00532

Compilation was performed at the Atlantic Marine Center in September 1978. The Class III manuscript was forwarded to the Pacific Marine Center for the combined field edit and hydrographic operation.

Field edit was performed in conjunction with hydrographic survey H-9844 in April 1980 by personnel assigned to the Pacific Hydrographic Party.

Application of field edit was performed at the Pacific Marine Center in December 1980. Copies of the Class I map were released to the Hydrographic Verification Branch for smooth sheet application. However, due to reoccurring discrepancies with preceding Class I maps, processing of the corresponding hydrographic surveys have been deferred until receipt of this final map.

Final Review, involving a complete evaluation of all office and field activities, was performed at the Atlantic Marine Center in February 1982. Approved tide data was not available for determining offshore obstruction heights at the time of field edit application. This data was acquired during final review and applied accordingly.

A Chart Maintenance Print was prepared during final review and forwarded to the Marine Charts Division. This final map will supersede the former Class III print previously submitted in September 1978. Only revisions to the former Class III map will be indicated on this final maintenance print as no Class I copy was forwarded to Marine Charts. Also a copy of the final map indicating all revisions will be forwarded to the Hydrographic Surveys Division.

The context of this Descriptive Report contains all pertinent information used to compile this Final Map except for the field records used to establish horizontal control and locate the nonfloating aids to navigation. The horizontal control data was previously forwarded to the National Geodetic Survey and the navigational aid records were submitted with contemporary hydrographic survey H-9844. Listings of these features are attached with this report on NOAA forms 76-40 and 76-41.

The original base manuscript and all pertinent data was forwarded to the Washington Science Center for final registration and preparation for the 1981 Revision Survey.

FIELD INSPECTION

TP-00532

There was no field inspection prior to compilation. Field work accomplished was limited to the recovery and establishment of horizontal control necessary for the aerotriangulation of the project.



10

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Pacific Marine Center

April 4, 1977

CPM17/RBM

TO: C3415 Coastal Mapping

FROM:

Robl B. Melby 4/5/77
Robert B. Melby
Chief, PMC Photo Party

SUBJECT: Field Operations Project CM-7704, San Francisco and San Pablo Bays, California

Horizontal Control:

Twenty-five horizontal control stations were paneled for aerial photography as indicated on the project diagram that was furnished to the photo-field party. A majority of the stations were paneled by the sub. pt. method as the stations did not lend themselves to being paneled direct. Distances up to about 2 miles were determined to the sub. points (panels), utilizing a Ranger III, laser distance measuring instrument. It was rapid, accurate and unaffected by electronic disturbances, normal to a high population and/or industrial area like the project encompassed.

Vandalism was a problem, in regard to panels, as several were disturbed and required relaying or substituting with photo identifiable points.

Several aids to navigation and landmarks for charts were located by third-order tirangulation intersection methods. The aids to navigation (lights) marking the channel through San Bruno shoal would have been difficult to positively photo-identify.

All photo-panels were removed after photography to verify their being in place at the required time and to maintain a "cleanup" policy. All panels were in place by March 1, 1977.

Tide Controlled Photography:

The South San Francisco Bay shoreline was photography and controlled by nine, preselected tide stations. With the aid of the Pacific Tide Party, California Boundary Project, all nine stations were manned at the same time. A coordination point was selected in the southeast section of the City of Oakland that was capable of direct F.M. radio communications with all the stations and the photo-mission aircraft.



C3415 Coastal Mapping
April 4, 1977
Page 2

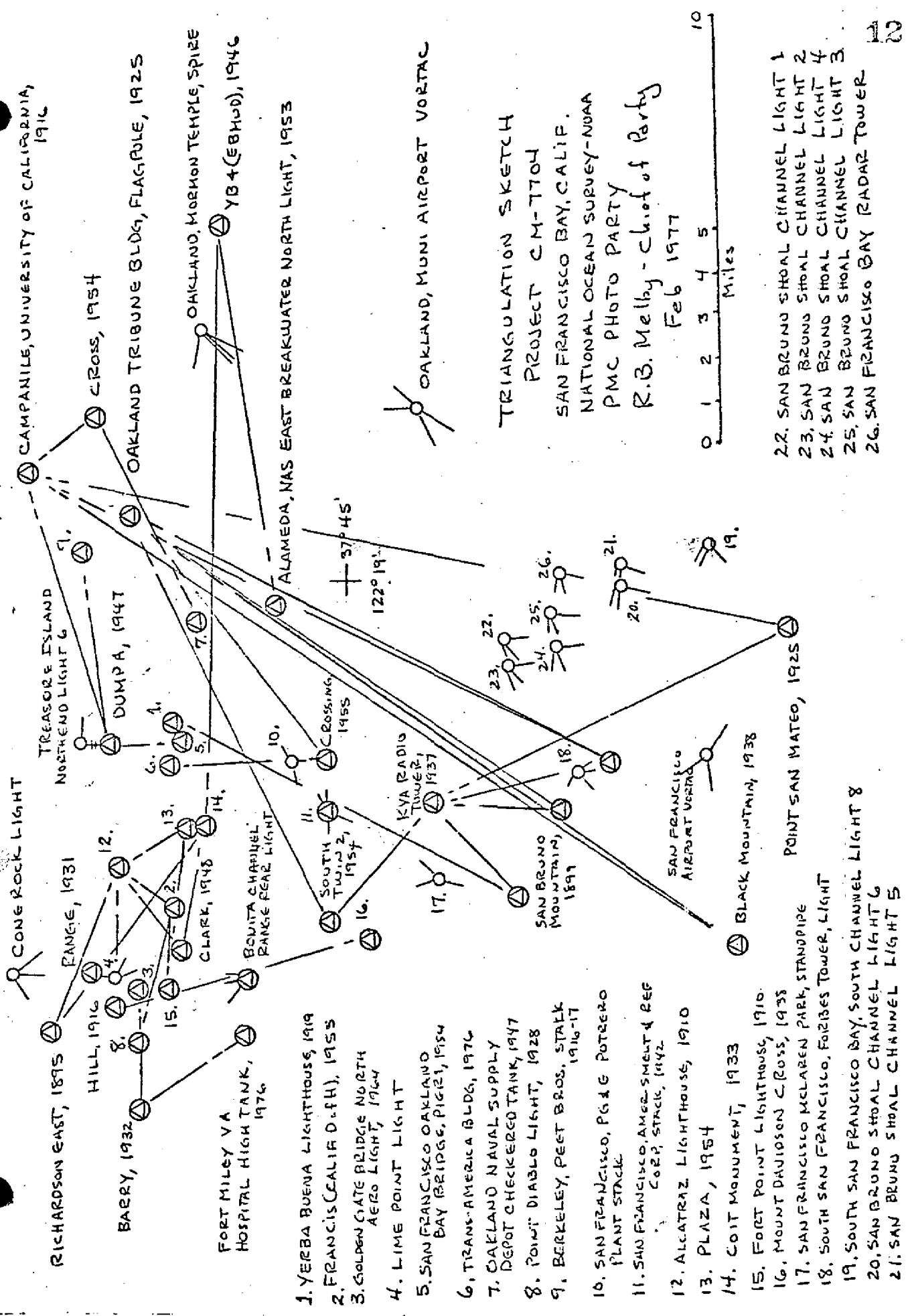
The coordinator would transmit time checks and receive tide staff readings of involved stations and filter and transmit to the aircraft the flight lines that were within the required tide ranges and maintain a summary of staff readings.

Because of the elevation of the coordination site a Motorola Walkie-Talkie was sufficient to maintain communications to all sites and the aircraft.

The operation was rather smooth as all observers were on station at the required time and no radio or transportation failures were experienced at the required times. The only difficulty encountered was an erratic tidal behavior during one series of projected favorable tides when during an unusual high pressure atmospheric condition the predicted tide range decreased by about 0.7 foot, causing stations to go out of range and greatly altering the tidal pattern.

Recommendations:

It is recommended that the field data, tidal predictions, etc., be furnished to the field units, with ample advance time to allow a thorough research and planning of the field phases of the project.



PHOTOGRAMMETRIC PLOT REPORT
SAN FRANCISCO & SAN PABLO BAYS
CALIFORNIA

Job CM-7704

July 22, 1977

21. Area Covered

This report covers eight 1:20,000 sheets, TP-00524, TP-00525, TP-00526, TP-00527, TP-00534, TP-00535, TP-00537, TP-00538, and seven 1:10,000 sheets TP-00528, TP-00529, TP-00530, TP-00531, TP-00532, TP-00533, and TP-00536 of San Francisco Bay and San Pablo Bay, California

22. Method

Seven strips of 1:50,000 scale panchromatic photography, taken with the "B" camera were bridged by analytic aero-triangulation methods and adjusted to ground on the California Zone 3. Common pass points were positioned between the 1:50,000 scale and 1:30,000 scale panchromatic photography, also taken with the "B" camera to provide horizontal control for compilation of the 1:10,000 and 1:20,000 scale maps.

Tide-coordinated supplemental photography, 1:30,000 and 1:40,000 scale MHW and MLLW were tied to the 1:50,000 scale bridging photography for shoreline compilation of 1:10,000 and 1:20,000 scale maps by means of positioning common points for ratio prints.

The 1:30,000 scale hydro support photography was also tied to 1:50,000 scale bridging photography by common points to determine the exact ratios. Tie points were used to augment datum between bridging strips. After running a strip adjustment on strip 5, it was found, for no apparent reason, that the control and tie points did not fit. This was resolved by running a block adjustment. Ruling of manuscripts and plotting of points was done on the Coradomat. A list was forwarded with this job, CM-7704, to AMC for selection of ratios to be ordered.

23. Adequacy of Control

The horizontal control provided was adequate except for Bench Mark H - 111, 1932 paneled substation, which did not hold in strips 5 and 7. The home station was plotted on a USGS quadrangle and did not fall in the area given in the description. All other control held within the accuracy required by National Standards of Maps at 1:10,000 and 1:20,000 scale.

24. Supplemental Data

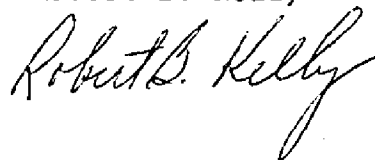
Local shoreline and USGS quadrangles were used to provide elevations for vertical adjustments of bridges.

25. Photography

The photography was adequate as to placement of flight lines consistent quality, definition and absence of haze.

Submitted by:

Robert B. Kelly



Approved and Forwarded:



John D. Perrow, Jr
Chief, Aerotriangulation Section

KEY TO NUMBERED CONTROL
STATIONS USED IN ADJUSTMENT
AND CLOSURES

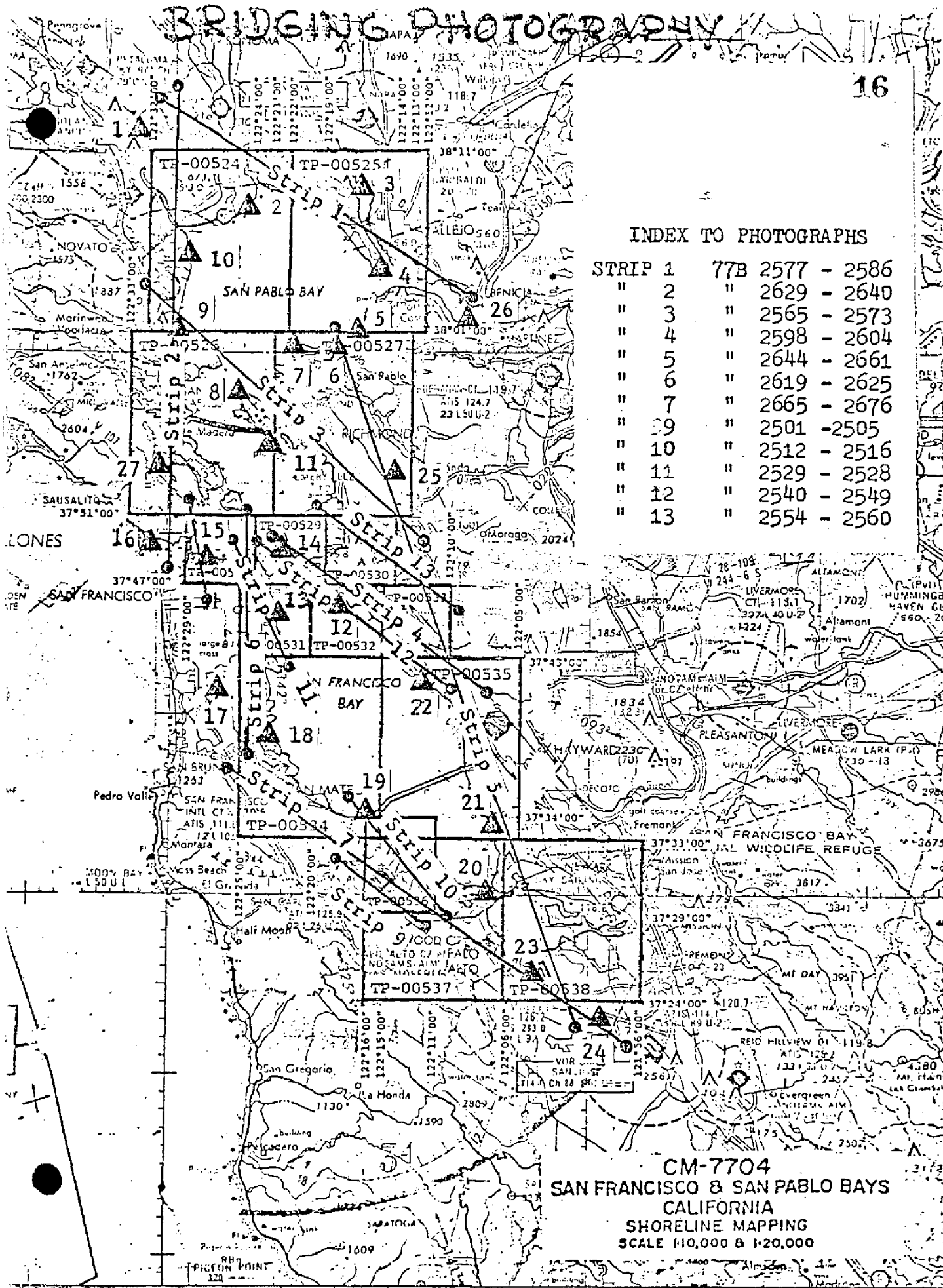
1 LAKEVILLE, SQUARE TANK ON HILL, 1951	TANK(1.04,-3.77)
	PANEL(-.25, .23)
2 BUG (SLC), 1951	COULD NOT SEE
3 SLAUGHTERHOUSE PT. 3, 1921	(-2.22, .52)
4 MARE ISLAND SOUTHEAST=, 1952	{ 3.02, -.23 }
5 PINOLE HERCULES POWDER CO., TANK, 1947	{ .38, -.17 }
6 WILSON, 1852	{ .08, -.10 }
7 POINT PINOLE ATLAS DOCK, SHED E. GABLE, 1950	COULD NOT SEE
8 SAN PABLO RIDGE, 1897	(2.14, -1.21)
9 GROVE POINT 2, 1887	(-.65, .49)
10 PETALUMA CREEK, 1851	(1.70, -.24)
11 RICHARD, 1932	(-2.08, .91)
12 ALAMRDA N.A.S. E! BREAKWATER N. LT. 1953	(.00, .00)
13 CROSSING, 1955	(-.09, -.42)
14 T I C9, 1947	(.00, .00)
15 CLARK, 1948	(.45, .74)
16 BARRY, 1932	(-3.36, -.98)
17 SAN BRUNO MTN. (RADIO STA. KNBC MAST), 1899	(.03, .49)
18 POINT SAN BRUNO, 1925	(.04, -.19)
19 GUANO ISLAND, 1851	(3.33, -1.50)
20 DUM, 1930	(-1.31, 1.01)
21 RED HILL, 1851	(-.05, .01)
22 SAN, 1947	(.27, .20)
23 BENCH MARK H 111, 1932	DID NOT FIT ADJUSTMENT
24 COFFIN 2, 1974	(.07, -.02)
25 BALDOPRAK (EBMUD), 1946	(-.15, .02)
26 BUCK, 1949	(-1.04, -.52)
27 MANZANITA (CADH), 1972	(-1.01, -1.09)

BRIDGING PHOTOGRAPHY

16

INDEX TO PHOTOGRAPHS

STRIP 1	77B 2577 - 2586
" 2	" 2629 - 2640
" 3	" 2565 - 2573
" 4	" 2598 - 2604
" 5	" 2644 - 2661
" 6	" 2619 - 2625
" 7	" 2665 - 2676
" 9	" 2501 - 2505
" 10	" 2512 - 2516
" 11	" 2529 - 2528
" 12	" 2540 - 2549
" 13	" 2554 - 2560



CM-7704
 SAN FRANCISCO & SAN PABLO BAYS
 CALIFORNIA
 SHORELINE MAPPING
 SCALE 1:10,000 & 1:20,000

15

50. MILES

TP-00524	11
TP-00525	16
TP-00526	20
TP-00527	9
TP-00528	4
TP-00529	3
TP-00530	4
TP-00531	3
TP-00532	3
TP-00533	3
TP-00534	10
TP-00535	8
TP-00536	5
TP-00537	11
TP-00538	10

TOTAL: 120

SHORELINE MAPPING
SCALE 1:10,000 & 1:20,000

HIGH - LOW WATER INFRARED PHOTOGRAPHY

1:30,000 MLLW
MHW
MLW

18

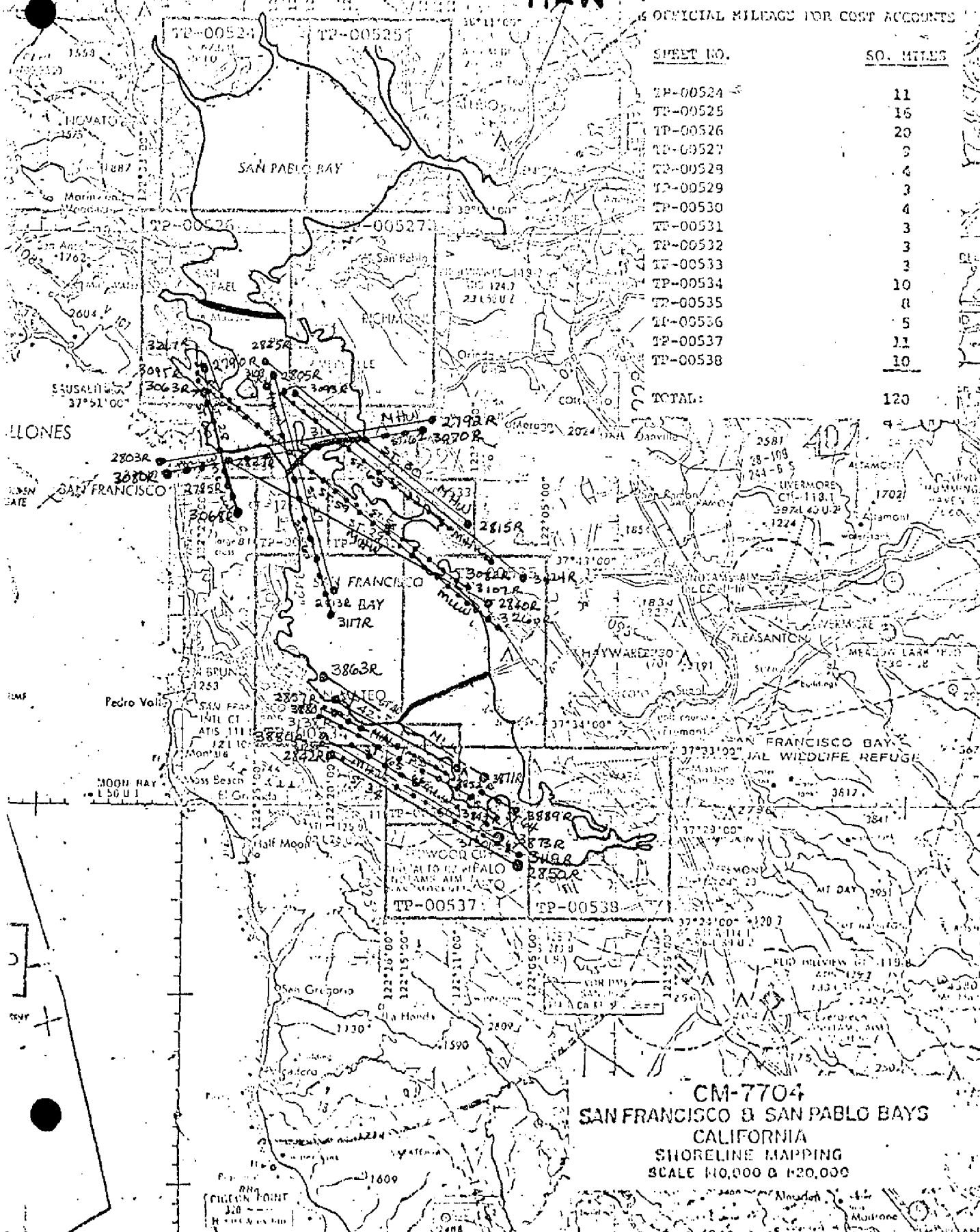
OFFICIAL MILEAGE FOR COST ACCOUNTS

SHEET NO.

SO. MILES

TP-00524	11
TP-00525	16
TP-00526	20
TP-00527	9
TP-00528	4
TP-00529	3
TP-00530	4
TP-00531	3
TP-00532	3
TP-00533	3
TP-00534	10
TP-00535	8
TP-00536	5
TP-00537	11
TP-00538	10

TOTAL: 120



AIDRO-SUPPORT PHOTOGRAPHY

1:30,000

19

OFFICIAL MILEAGE FOR COST ACCOUNTS

SHEET NO.

SO. MILES

TP-00524	11
TP-00525	16
TP-00526	20
TP-00527	9
TP-00528	4
TP-00529	3
TP-00530	4
TP-00531	3
TP-00532	3
TP-00533	3
TP-00534	10
TP-00535	8
TP-00536	5
TP-00537	11
TP-00538	10

TOTAL: 120

CM-7704
SAN FRANCISCO & SAN PABLO BAYS
CALIFORNIA
SHORELINE MAPPING
SCALE 1:10,000 & 1:20,000

COMPILATION PHOTOGRAPHY

1:30,000

20

OFFICIAL MILEAGE FOR COST ACCOUNTS

SHEET NO.	SO. MILES
TP-00524	11
TP-00525	16
TP-00526	20
TP-00527	9
TP-00528	4
TP-00529	3
TP-00530	4
TP-00531	3
TP-00532	3
TP-00533	2
TP-00534	10
TP-00535	8
TP-00536	5
TP-00537	11
TP-00538	10
TOTAL:	120

CM-7704
SAN FRANCISCO & SAN PABLO BAYS
CALIFORNIA
SHORELINE MAPPING
SCALE 110,000 & 120,000

DESCRIPTIVE REPORT CONTROL RECORD

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MAP NO. TP-00532	STATION NAME	JOB NO. CM-7704	GEODEIC DATUM North American 1927		ORIGINATING ACTIVITY Photogrammetric Br., P.M.C.	
			SOURCE OF INFORMATION (Index)	AEROTRI- ANGULATION POINT NUMBER	COORDINATES IN FEET STATE California ZONE 3	GEOGRAPHIC POSITION φ LATITUDE λ LONGITUDE
	ALAMEDA INTAKE LIGHT, 1980 (Field Position)	Field Form 76-40			x= 37° 45' 35.118"~ y= 122° 16' 19.304"~	1082.7m (767.1m) 472.5m (996.2m)
	ALAMEDA N.A.S. CHANNEL LIGHT 3, 1980 (Field Position)	Field Form 76-40			x= 37° 46' 36.634"~ y= 122° 19' 47.929"~	1129.4m (720.4m) 1172.9m (295.4m)
	ALAMEDA N.A.S. CHANNEL LIGHT 4, 1980 (Field Position)	Field Form 76-40			x= 37° 46' 24.347"~ y= 122° 19' 44.619"~	750.6m (1099.2m) 1092.0m (376.4m)
	ALAMEDA N.A.S. CHANNEL LIGHT 5, 1980 (Field Position)	Field Form 76-40			x= 37° 46' 34.336"~ y= 122° 19' 02.145"~	1058.6m (791.2m) 52.5m (1415.9m)
	ALAMEDA N.A.S. CHANNEL LIGHT 6, 1980 (Field Position)	Field Form 76-40			x= 37° 46' 21.696"~ y= 122° 19' 03.318"~	668.9m (1180.9m) 81.2m (1387.2m)
	ALAMEDA N.A.S. CHANNEL RANGE REAR LIGHT, 1953	371221			x= 37° 46' 26.616"~ y= 122° 17' 53.335"~	820.6m (1029.2m) 1305.3m (163.1m)
	ALAMEDA N.A.S. DAYBEACON 8, 1980 (Field Position)	Field Form 76-40			x= 37° 46' 09.956"~ y= 122° 18' 16.603"~	306.9m (1542.9m) 406.4m (1062.1m)
	ALAMEDA N.A.S. EAST BREAKWATER NORTH LIGHT, 1953	371221			x= 37° 46' 06.358"~ y= 122° 18' 25.368"~	196.0m (1653.8m) 620.9m (847.6m)
	ALAMEDA N.A.S. EAST BREAKWATER NORTH LIGHT, 1953 Sub Point	Field Form 76-53 Attachment 211			x= 37° 46' 14.939"~ y= 122° 17' 34.330"~	460.6m (1389.3m) 840.2m (628.3m)
	ALAMEDA N.A.S. EAST BREAKWATER SOUTH LIGHT, 1953	371221			x= 37° 46' 02.560"~ y= 122° 18' 25.638"~	78.9m (1770.9m) 627.5m (841.0m)
COMPUTED BY J.R. Minton			DATE 11/18/80	COMPUTATION CHECKED BY W. Richter	DATE 12/2/80	
LISTED BY J.R. Minton			DATE 11/18/80	LISTING CHECKED BY W. Richter	DATE 12/2/80	
HAND PLOTTING BY J.R. Minton			DATE 11/18/80	HAND PLOTTING CHECKED BY W. Richter	DATE 12/2/80	

SUPERSEDES NOAA FORM 76-41, 2-71 EDITION WHICH IS OBSOLETE.

DESCRIPTIVE REPORT CONTROL RECORD

MAP NO. TP-00532	STATION NAME	JOB NO. CM-7704	GEODETTIC DATUM North American 1927		ORIGINATING ACTIVITY Photogrammetric Br., P.M.C.	
			COORDINATES IN FEET STATE California ZONE 3	AEROTRI- ANGULATION POINT NUMBER	GEOGRAPHIC POSITION φ LATITUDE λ LONGITUDE	Departures Front (Back)
ALAMEDA, ST. JOSEPHS HOSPITAL SQUARE WHITE CUPOLA, 1925			x= 1,493,481		φ 37° 45' 46.39"	1430.2m (419.6m)
			y= 464,561		λ 122° 15' 08.30"	203.2m (1265.4m)
BALLENA, 1979 (FIELD POSITION)	Field Form		x=		φ 37° 46' 01.554"	47.9m (1801.9m)
			y=		λ 122° 16' 43.132"	1055.7m (412.9m)
BALLENA BAY LIGHT 1, 1980 (Field Position)	Field Form 76-40		x=		φ 37° 45' 49.066"	1512.7m (337.1m)
			y=		λ 122° 16' 53.582"	1311.5m (157.1m)
BALLENA BAY RADAR REFLECTOR TOWER, 1980 (Field Position)	Field Form 76-40		x=		φ 37° 45' 33.845"	1043.5m (806.4m)
			y=		λ 122° 16' 32.315"	791.0m (677.7m)
BALLENA BAY REAR RANGE MARKER 1980 (Field Position)	Field Form 76-40		x=		φ 37° 45' 53.263"	1642.1m (207.7m)
			y=		λ 122° 16' 20.306"	497.0m (971.6m)
DISK B, 1979	Field Form 76-45		x=		φ 37° 44' 24.915"	768.1m (1081.7m)
			y=		λ 122° 15' 35.623"	872.2m (596.9m)
HOSPITAL, 1947	371221	213	x= 1,493,486.50		φ 37° 45' 46.418"	1431.1m (418.7m)
			y= 464,563.61		λ 122° 15' 08.227"	201.4m (1267.2m)
*ALAMEDA NAS WEST BREAKWATER EAST LIGHT, 1980	*Field printout		x=		φ 37° 46' 06.900"	
			y=		λ 122° 18' 34.812"	
*ALAMEDA NAS WEST BREAKWATER WEST LIGHT, 1980	*Field printout		x=		φ 37° 46' 18.724"	
			y=		λ 122° 18' 59.993"	
*Original 1953 NGS stations; Hydrographic survey H-9844	redetermined during (1981).		x=		φ	
			y=		λ	
COMPUTED BY J.R. Minton			COMPUTATION CHECKED BY W. Richter		DATE 12/2/80	
LISTED BY J.R. Minton			LISTING CHECKED BY W. Richter		DATE 12/2/80	
HAND PLOTTING BY J.R. Minton			HAND PLOTTING CHECKED BY W. Richter		DATE 12/2/80	

SUPERSEDES NOAA FORM 76-41, 2-71 EDITION, WHICH IS OBSOLETE.

COMPILATION REPORT

TP-00532

31. DELINEATION

Delineation was by instrument methods using the Wild B-8 stereoplotter. Compilation photography was adequate. The mean high water and the mean lower low water lines were compiled graphically from the tide coordinated infrared ratio photos indicated on form 76-36B.

32. CONTROL

Horizontal control was adequate. See the attached Photogrammetric Plot Report, dated July 22, 1977.

33. SUPPLEMENTAL DATA

None

34. CONTOURS AND DRAINAGE

Contours are not applicable to the project. Drainage was delineated by the Wild B-8 stereoplotter and by office interpretation of the photographs.

35. SHORELINE AND ALONGSHORE DETAILS

Alongshore details were delineated by the Wild B-8 stereoplotter and by office stereoscopic interpretation of the ratioed photographs.

See form 76-36B, items 2 and 3 for delineation of the mean high water and mean lower low water lines.

36. OFFSHORE DETAILS

No unusual problems.

37. LANDMARKS AND AIDS

Preliminary 76-40 forms consisting of 2 pages of Navigational Aids and 1 page of Landmarks for charts were prepared for field edit.

38. CONTROL FOR FUTURE SURVEYS

NONE

TP-00533

39. JUNCTIONS

See the attached form 76-36B, item 5 of the Descriptive Report concerning junctions.

40. HORIZONTAL AND VERTICAL ACCURACY

See item #32.

46. COMPARISON WITH EXISTING MAPS

A comparison was made with the following 1:24,000 scale U.S. Geological Survey Quadrangles:

Oakland West, Calif., 1959, photorevised 1968 and 1973.
Hunters Point, Calif., 1956, photorevised 1968.

47. COMPARISON WITH NAUTICAL CHARTS

A comparison was made with the following National Ocean Survey chart: No. 18650, scale 1:20,000, 32nd ed., July 3, 1976

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None

ITEMS TO BE CARRIED FORWARD

None

Submitted by:

for *Greg L. Hancock*
David P. Butler
Cartographic Technician
July 28, 1978

Approved:

for *J. L. Byrd, Jr.*
Albert C. Rauck, Jr.
Chief, Coastal Mapping Section

Addendum to the Compilation Report - Field Edit

TP-00532

The field edit data listed on form 76-36C, Field Edit, was applied by the Photogrammetric Branch of the Pacific Marine Center rather than the original compilation activity. The edit was applied by standard methods utilizing approved tides data. The horizontal control report for H-9844, which is referenced in the field edit report, has not been forwarded to this activity as of this date, consequently the field positions listed on the final 76-40/41 forms were transcribed from the field edit 76-40s and not checked against the actual field geographic position list.

The field 76-40 position for Alameda Intake Light, 1980 differs slightly from the position on the signal tape provided with the edit data. The 76-40 position was listed on the final office forms.

Also, during the computation of departures for plotting new third order control, it became apparent the inverse distances listed on the Geodetic/Photogrammetric Position Comparison page of the Edit Report were incorrect. A copy with the corrected distances and an explanatory note has been inserted behind the original page in the Field Edit Report.

A number of Navy maintained "aids" are listed on the original office 76-40 even though they were not listed in the current Light List at the time of compilation. They were all deleted from the Light List between 1974 and 1977. They are currently plotted on the manuscript since they have third order positions and listed on the 76-41s only.

The field editor located a light - fix 0006 - on a pier on the east side of Fortmann Basin in Brooklyn Basin South Channel. The editor did not indicate that the light should be entered as a new aid or list the light on the field form 76-40. Nor did the editor specify whether the light was privately maintained. After examining the Light Lists, I have assumed the light is not a maintained aid and not of Landmark significance. I have illustrated the light as a map feature and did not list it on the final 76-40.

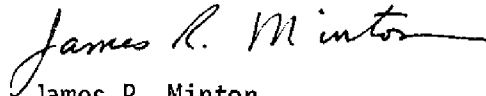
The field editor verified ruins within Alameda N.A.S. Inner Basin in response to a question on the field edit ozalid. However, the ruins are not compiled on the manuscript or visible on the photographs. Consequently, the dashed line detailed on the manuscript is only an approximation of the ruins illustrated on 1:20,000 scale chart 18650. Although the editor identified objects in the foreshore area of the east side of Alameda N.A.S. Inner Basin as buttresses remaining from an old bridge, I have not compiled the features since they are inshore of the water line and are not of landmark value, and appear to constitute no hazard to navigation.

Addendum to the Compilation Report
TP-00532

The original compilation activity incorrectly named Alameda N.A.S. East Breakwater North Light, 1953 Sub Point, as Alameda N.A.S. East Breakwater South Light, 1953 Sub Point.

The manuscript has been upgraded to class I status.

Submitted by:

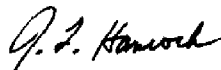


James R. Minton
Cartographic Technician
November 28, 1980

Contrary to the previous remark concerning obstruction heights, approved tide data was not available at the time of field edit application. This data was acquired during final review and applied accordingly.

The two groins at Lat. $37^{\circ}45.5'$, Long. $122^{\circ}15.7'$ were delineated from field sketches submitted during field edit. The positions for these features are suspicious as their locations are based on references to questionable street patterns along the shore. These features were compiled as position approximate.

J. L. Hancock



Final Review
February 1982

PHOTOGRAMMETRIC OFFICE REVIEW
TP - 00532

1. PROJECTION AND GRIDS J.D.R.	2. TITLE J.D.R.	3. MANUSCRIPT NUMBERS J.D.R.	4. MANUSCRIPT SIZE J.D.R.
CONTROL STATIONS			
5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY J.D.R.	6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations) None		7. PHOTO HYDRO STATIONS None
8. BENCH MARKS None	9. PLOTTING OF SEXTANT FIXES None	10. PHOTOGRAMMETRIC PLOT REPORT J.D.R.	11. DETAIL POINTS J.D.R.
ALONGSHORE AREAS (Nautical Chart Data)			
12. SHORELINE J.D.R.	13. LOW-WATER LINE J.D.R.	14. ROCKS, SHOALS, ETC. J.D.R.	15. BRIDGES J.D.R.
16. AIDS TO NAVIGATION J.D.R.	17. LANDMARKS J.D.K.	18. OTHER ALONGSHORE PHYSICAL FEATURES J.D.R.	19. OTHER ALONGSHORE CULTURAL FEATURES J.D.R.
PHYSICAL FEATURES			
20. WATER FEATURES J.D.R.	21. NATURAL GROUND COVER None		22. PLANETABLE CONTOURS None
23. STEREOSCOPIC INSTRUMENT CONTOURS J.D.R.	24. CONTOURS IN GENERAL None	25. SPOT ELEVATIONS None	26. OTHER PHYSICAL FEATURES J.D.R.
CULTURAL FEATURES			
27. ROADS J.D.R.	28. BUILDINGS J.D.R.	29. RAILROADS J.D.R.	30. OTHER CULTURAL FEATURES J.D.R.
BOUNDARIES			
31. BOUNDARY LINES Not applicable		32. PUBLIC LAND LINES Not applicable	
MISCELLANEOUS			
33. GEOGRAPHIC NAMES J.D.R.	34. JUNCTIONS J.D.R.		35. LEGIBILITY OF THE MANUSCRIPT J.D.R.
36. DISCREPANCY OVERLAY J.D.R.	37. DESCRIPTIVE REPORT J.D.R.	38. FIELD INSPECTION PHOTOGRAPHS None	39. FORMS J.D.R.
40. REVIEWER Joanne D. Roderick Sept. 20, 1978		SUPERVISOR, REVIEW SECTION OR UNIT Albert C. Rauck, Jr.	
41. REMARKS (See attached sheet)			
FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT			
42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted under item 43.			
COMPILER <i>James R. Minton</i> James R. Minton William A. Richter <i>William A. Richter</i>		SUPERVISOR James W. Massey	
43. REMARKS The field edit was applied from the data sources itemized in Part III of form 76-36C, Field Edit, included within this report.			

PHOTOGRAMMETRIC OFFICE PRE-HYDRO AND FIELD EDIT REVIEW

28

TP-00532

PROJECTION AND GRIDS JR	TITLE JR	HORIZONTAL CONTROL JR	PHOTOGRAMMETRIC PLOT REPORT. JR
DETAIL POINTS AND PASS POINTS JR	PROCESSED RATIOS JR	AIDS TO NAVIGATION JR	LANDMARKS JR
MEAN HIGH WATER LINE JR	LOW-WATER LINE JR	ROCKS, SHOALS, ETC. JR	ALONG SHORE AND OTHER PHYSICAL FEATURES JR
WATER FEATURES JR	ALONG SHORE AND OTHER CULTURAL FEATURES JR	BRIDGES JR	ROADS JR
BUILDINGS JR	RAILROADS JR	CONTOURS AND SPOT ELEVATIONS NA	GEOGRAPHIC NAMES JR
JUNCTIONS JR	LEGIBILITY OF THE MANUSCRIPT JR	COMPILATION REPORT JR	FIELD EDIT OZALID JR
COMPARISON WITH NAUTICAL CHARTS JR	COMPARISON WITH PRIOR SURVEYS JR	COMPARISON WITH EXISTING MAPS JR	FIELD PRINTS AND OTHER COPIES JR
REVIEWER Joanne Roderick	DATE Sept. 1978	SUPERVISOR A. C. Rauck	DATE July 1978

REMARKS

PHOTOGRAMMETRIC OFFICE POST-HYDRO AND FIELD EDIT REVIEW

MANUSCRIPT NUMBERS WR, JH	FORMAT STICK-UP JH	MANUSCRIPT SIZE JH	HORIZONTAL CONTROL JH
PHOTO HYDRO STATIONS WR	PLOTTING OF SEXTANT FIXES WR, JH	AIDS TO NAVIGATION WR, JH	LANDMARKS WR, JH
MEAN HIGH WATER LINE WR, JH	LOW-WATER LINE JH	ROCKS, SHOALS, ETC. WR, JH	ALONG SHORE AND OTHER PHYSICAL FEATURES WR, JH
WATER FEATURES WR	ALONG SHORE AND OTHER CULTURAL FEATURES WR, JH	PIPELINES, CABLES, ETC. WR, JH	BRIDGES JH
ROADS JH	BUILDINGS JH	RAILROADS JH	CONTOURS AND SPOT ELEVATIONS NA
GEOGRAPHIC NAMES JH	JUNCTIONS JH	FIELD EDIT PHOTOGRAPHS WR, JH	FIELD EDIT OZALID WR, JH
GEOGRAPHIC FIX POSITIONS WR, JH	FIELD FORMS WR, JH	FIELD EDIT REPORT WR, JH	APPROVED TIDES JH (Feb. 1982)
CHART MAINTENANCE PRINT AND OTHER COPIES JH (Feb. 1982)	PREPARATION FOR FINAL REVIEW WR, JH	COMPILER James R. Minton	DATE November 1980
REVIEWER William A. Richter	DATE December 1980	SUPERVISOR James W. Massey	DATE December 1980

REMARKS

A complete office review after the application of field edit was not performed prior to advancing the manuscript to a Class I map. Consequently, an extensive and thorough office review was accomplished during the final review. Heights for alongshore features were applied from approved tides during final review.

Jerry L. Hancock
Final Review, Feb. 1982

FIELD EDIT REPORT
TP-00532 Scale 1:10,000
OPR-L123-PHP-80

BAY AREA SURVEY EXPEDITION
SAN FRANCISCO BAY
CALIFORNIA

PACIFIC HYDROGRAPHIC PARTY

DIRK R. TAYLOR, LCDR. NOAA
CHIEF OF PARTY

I. METHODS

Field edit for TP-00532 was conducted in accordance with chapter 11 of the Manual of Coastal Mapping Procedures by personnel of the Pacific Hydrographic Field Party. Shoreline inspection was accomplished from a 17' "Boston Whaler" at **zero** or negative stages of tide on April 11 (J.D. 102), 12 (J.D. 103), and 17 (J.D. 108), 1980. Compilation of the sheet was verified by direct inspection of the photography during field edit. Features which were not visible on the photography or had changed since the time of the photography were located by ground survey using sextant resection and measurements from photo-identifiable points. Additional position data collected during hydrographic survey H-9844 (using 3 electronic or visual lines of position) was used to locate uncompiled features and verify compiled features on TP-00532. Care was taken to assure that duplicate positions for the same feature were not submitted with field edit and hydrographic data. Changes, additions, and deletions to the sheet were noted on the field edit sheet, chronapaque photos 77B (P) 3510 and 77B (P) 3511, or in the field edit notebook. Compiled positions of all fixed aids to navigation were verified by ground survey. Fixed aids not located photographically during compilation were located geodetically to 3rd order, class I standards (see "Horizontal Control Report to Accompany Hydrographic Survey H-9844"). Photopositions were replaced by geodetic positions (when available) on form 76-40. Landmarks were inspected from seaward and verified or revised as necessary on form 76-40. All elevations were recorded in feet and times were recorded in GMT (Zulu time) on this survey. Copies of triangulation recovery notes and station descriptions for the area covered by this survey were included with the data package. Originals were submitted with the "Horizontal Control Report to Accompany Hydrographic Survey H-9844".

II. ADEQUACY AND COMPLETENESS OF COMPILATION

Compilation of TP-00532 in general was complete and adequate. Most changes in compilation and answers to the compiler's questions are recorded on the field edit sheet or photos and are self-explanatory. The following items require further explanation:

The crib line pilings shown on chart 18649 off Bay Farm Island (Lat. 37 44' 20" N, Long. 122 15'30" W) and Alameda Island (Lat. 37 45' 10" N, Long. 122 16'00" W) were investigated during hydrographic survey H-9844 (see descriptive report for H-9844). no piles are visible in these areas at MLLW.

The submerged dolphin shown off Alameda Naval Air Station (Lat. 37 46'50" N, Long. 122 19' 45" W) was disproved by wire drag during hydrographic survey H-9844.

The floats shown at the north entrance to Ballena Bay Yacht Harbor were removed and replaced with 2 floating breakwater structures made of tires bound on rigid foam blocks. The new breakwaters are plotted on the field edit sheet in red.

A standing pipe and wreck lying on the bottom in Ballena Bay were located during hydrographic survey H-9844 (see descriptive report). These positions were submitted with H-9844 and are plotted on TP-00532 in red to avoid duplication on the two surveys.

III. GEOGRAPHIC NAMES

The placement of the name "Ballena Bay" is incorrect as shown on the manuscript. The correct placement is indicated on the field edit sheet. All other geographic names on the manuscript are correct as shown.

IV. MANUSCRIPT ACCURACY

Work incidental to hydrographic survey H-9844 required that several photo-located features also be located geodetically providing a convenient check of the horizontal accuracy of the sheet. The following table compares 3rd order, class I geodetic positions and photo positions for the fixed aids to navigation located during the survey.


V. RECOMMENDATIONS

In an area changing as rapidly as the Oakland Inner Harbor it is recommended that manuscripts be field edited as soon after compilation as possible to reduce the amount of ground survey work required of the field edit team. It is also recommended that low water photos and matte copies of the photos be included as part of the field edit package. These items were not included with the data package for TP-00532.

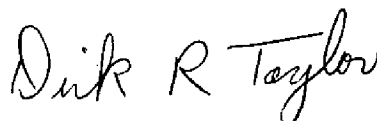
VI. UNCHARTED DANGERS AND OBSTRUCTIONS TO NAVIGATION

A 3' diameter concrete pipe located at the south entrance of the Ballena Bay yacht basin extends a considerable distance off the spit of land into the harbor entrance. The elevation of the pipe ranges from 3' above MLLW to 3' below MLLW. This outfall is a hazard to boats entering the yacht harbor and should be included on the chart.

SUBMITTED BY:


DOUGLAS D. SMITH, LTJG, NOAA

APPROVED AND FORWARDED BY:


DIRK R. TAYLOR, LCDR, NOAA
CHIEF OF PARTY

40 of Robert W. Crown Memorial state beach park. The fire hydrant is
40 located 8 ft. - 2.5M west of the apex of the U-shaped walkway in front
40 of the snack bar restroom building. The station is located in a grove
40 of cypress trees known as the Arthur F. Strehlow Grove as witnessed
40 by a bronze plaque mounted on a brown boulder that is 17 ft. - 5.2M east
40 of the station. The station is 78 ft. - 23.8M west of the westernmost
40 curb of the westernmost paved access road along the central parking
40 lot facilities in the Beach Park

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REVIEW REPORT TP-00532
SHORELINE

61. GENERAL STATEMENT:

An extensive final review was performed for this final shoreline map. No major discrepancies were encountered; however, minor revisions were made during final review which will affect previously forwarded Class III and Class I information. For a more complete analysis of the office and field operations, refer to the Summary included in this Descriptive Report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS:

Not applicable.

63. COMPARISON WITH MAPS OF OTHER AGENCIES:

A comparison was made with the following 1:24,000 scale U.S.G.S. quadrangles:

Oakland West, Calif., 1959, photorevised 1968 and 1973
Hunters Point, Calif., 1956, photorevised 1968

No significant differences were noted.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:

This final shoreline map corresponds geographically with portions of hydrographic surveys H-9844 (1979-81), H-9873 (1980-81) and H-9927 (1981). No comparison was made as these hydrographic surveys have not been processed. Prior to final review, a Class I map copy was forwarded to the Hydrographic Verification Branch at PMC. However, due to reoccurring discrepancies with preceding Class I maps, processing of the hydrographic surveys have been deferred pending receipt of this final map.

The nonfloating aids to navigation delineated on this final shoreline map were field determined by 3rd order ground survey methods during the combined hydrographic survey/field edit operation. All field records for the preliminary positions listed on the attached 76-40 forms were submitted with hydrographic survey H-9844.

65. COMPARISON WITH NAUTICAL CHARTS:

A comparison was made with the following National Ocean Survey charts:

TP-00532

No. 18650, 36th edition, 1:20,000 scale, dated June 7, 1980
No. 18649, 48th edition, 1:40,000 scale, dated February 14, 1981

The following Lights were reported by the field editor as still existing but not in operation during field edit. Their positions are listed on the control record forms (76-41) attached with this descriptive report.

Alameda N.A.S. East Breakwater North Lt., 1953
Alameda N.A.S. East Breakwater South Lt., 1953
Alameda N.A.S. West Breakwater East Lt., 1953/1980
Alameda N.A.S. West Breakwater West Lt., 1953/1980
Alameda N.A.S. Channel Range Rear Light, 1953

Ballena Bay Rear Range Marker, 1980 was field determined as a new navigational aid during field edit. The field description does not describe the lights function, structure or relationship to a front range marker; consequently, its position was listed only on the 76-41 control form. A copy of the station description is attached with the Field Report within this Descriptive Report. In addition to this light, all original field records for the navigational aids on this map were submitted with contemporary hydrographic survey H-9844.

A Chart Maintenance Print was not submitted to the Marine Charts Division at the Class I stage; consequently, only revisions to the Class III map will be indicated on the Final Chart Maintenance Print.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS:

This Final Map and accompanying Descriptive Report represent revised data as a result of final review and supersedes all previous map classifications.

This map complies with the Project Instructions, and meets the requirements for National Standards of Map Accuracy.

Submitted by:

Jerry L. Hancock
Jerry L. Hancock
Final Reviewer

Approved for forwarding:

Billy H. Barnes
Billy H. Barnes

Approved:

George W. Ball
Chief, Photogrammetric Branch, Rockville

John D. Perrault
Chief, Photogrammetry Division

October 14, 1981

GEOGRAPHIC NAMES

FINAL NAME SHEET

CM-7704 (San Francisco and San Pablo Bays, California)

TP-00532

Alameda

Alameda Belt Line (RR)

Alameda Naval Air Station

Ballena Bay

Bay Farm Island

Encinal Basin

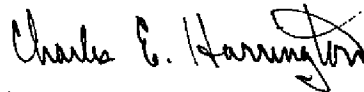
Fortmann Basin

Government Island

Oakland Inner Harbor

San Francisco Bay

Approved by:



Charles E. Harrington
Chief Geographer, OA/C3x5

DISSEMINATION OF PROJECT MATERIAL

CM-7704

San Francisco and San Pablo Bays

NATIONAL ARCHIVES/FEDERAL RECORD

PACKAGE (BOX)

Field Edit Ozalid(s)
Engineer Plan(s)
Field Sketch(es)
NOAA Forms 76-40
Master Station Lists
Fix Vol(s) (275)
NOAA Forms 76-41
Revision Survey Photographs
Field Edit Ratio Photographs
Plot Report(s) (Duplicate copy(ies))

Project Completion Report

BUREAU ARCHIVES

Registered Copy(ies) of Map(s)
Descriptive Report(s) of Map(s)

REPRODUCTION DIVISION

8x Reduction Negative(s) of Map(s)

OFFICE OF STAFF GEOGRAPHER

Geographer Name Standard(s)

MARINE CHART DIVISION

Chart Maintenance Print(s) of Map(s)

NOAA FORM 76-40 (8-74) Replaces C&GS Form 367.										U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NONFLOATING AIDS TO NAVIGATION FOR CHARTS										ORIGINATING ACTIVITY <input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> COMPILATION ACTIVITY <input type="checkbox"/> FINAL REVIEWER <input type="checkbox"/> QUALITY CONTROL & REVIEW GRP. <input type="checkbox"/> COAST PILOT BRANCH (See reverse for responsible personnel)			
<input checked="" type="checkbox"/> TO BE CHARTED <input type="checkbox"/> TO BE REVISED <input type="checkbox"/> TO BE DELETED		REPORTING UNIT (Field Party, Ship or Office) Photogrammetric Br., P.M.C., Seattle, Wa.		STATE California		LOCALITY San Francisco and San Pablo Bays		DATE 11/18/80															
The following objects HAVE <input checked="" type="checkbox"/> BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.				JOB NUMBER CM-7704		SURVEY NUMBER TP-00532		DATUM North American 1927															
CHARTING NAME		DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)		LATITUDE ° / ' " D.M. Meters		LONGITUDE ° / ' " D.P. Meters		METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED													
LIGHT		(Alameda N.A.S. Channel Light 3, 1980 (Field Position))		37 46		122 19		F-2-6-L 04/11/80		18649 18650													
LIGHT		(Alameda N.A.S. Channel Light 4, 1980 (Field Position))		37 46		122 19		77B(P) 3512 Mar. 18, 1977		18649 18650													
LIGHT		(Alameda N.A.S. Channel Light 5, 1980 (Field Position))		37 46		122 19		77B(P) 3512 Mar. 18, 1977		18649 18650													
LIGHT		(Alameda N.A.S. Channel Light 6, 1980 (Field Position))		37 46		122 19		F-2-6-L 04/11/80		18649 18650													
DAYBEACON		(Alameda N.A.S. Daybeacon 8, 1980 (Field Position))		37 46		122 18		77B(P) 3511 Mar. 18, 1977		18649 18650													
LIGHT		(Ballena Bay Light 1, 1980 (Field Position))		37 45		122 16		F-3-6-L 04/11/80		18649 18650 18652													
LIGHT		(Alameda Intake Light, 1980 (Field Position))		37 45		122 16		F-2-6-L 04/11/80		18649 18650 18652													

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	D. D. Smith, Lt(jg), NOAA
POSITIONS DETERMINED AND/OR VERIFIED	D. D. Smith, Lt(jg), NOAA
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	J. R. Minton
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'	
(Consult Photogrammetric Instructions No. 64.)	
OFFICE	J. L. Hancock, Final Review, Feb, 1982
1. OFFICE IDENTIFIED AND LOCATED OBJECTS	
Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.	
EXAMPLE: 75E(C)6042	
8-12-75	
FIELD	
1. NEW POSITION DETERMINED OR VERIFIED	
Enter the applicable data by symbols as follows:	
F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field Identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant
A. Field positions* require entry of method of location and date of field work.	
EXAMPLE: F-2-6-L	
8-12-75	
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	
FIELD (Cont'd)	
B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.	
EXAMPLE: P-8-V	
8-12-75	
74L(C)2982	
11. TRIANGULATION STATION RECOVERED	
When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.	
EXAMPLE: Triang. Rec.	
8-12-75	
111. POSITION VERIFIED VISUALLY ON PHOTOGRAPH	
Enter 'V-Vis.' and date.	
EXAMPLE: V-Vis.	
8-12-75	
**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.	

[illegible]

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	D. D. Smith, Lt(jg), NOAA
POSITIONS DETERMINED AND/OR VERIFIED	D. D. Smith, Lt(jg), NOAA
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	J. R. Minton
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'	
(Consult Photogrammetric Instructions No. 64.)	
OFFICE	FIELD (Cont'd)
<p>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</p> <p>Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.</p> <p>EXAMPLE: 75E(C)6042 8-12-75</p>	<p>B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.</p> <p>EXAMPLE: P-8-V 8-12-75 74L(C)2982</p>
<p>FIELD</p> <p>II. NEW POSITION DETERMINED OR VERIFIED</p> <p>Enter the applicable data by symbols as follows:</p> <p>F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection</p> <p>P - Photogrammetric Vis - Visually 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant</p> <p>A. Field positions* require entry of method of location and date of field work.</p> <p>EXAMPLE: F-2-6-L 8-12-75</p>	<p>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</p> <p>Enter 'V-Vis.' and date.</p> <p>EXAMPLE: V-Vis. 8-12-75</p> <p>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</p>
<p>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</p>	