

TP- 00527

TP-00527

NOAA FORM 76-35 (3-76) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
<h2>DESCRIPTIVE REPORT</h2>	
Map No. TP-00527	Edition No. 1
Job No. CM-7704	
Map Classification FINAL, FIELD EDITED MAP	
Type of Survey SHORELINE	
<b>LOCALITY</b>	
State California	
General Locality San Francisco and San Pablo Bays	
Locality Richmond Inner Harbor	
<div style="border: 1px solid black; padding: 5px; display: inline-block;">           1977 TO 1979         </div>	
<b>REGISTRY IN ARCHIVES</b>	
DATE	

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.	
<b>DESCRIPTIVE REPORT - DATA RECORD</b>		TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED	
PHOTOGRAMMETRIC OFFICE Coastal Mapping Div., AMC Norfolk, Virginia		SURVEY TP. <u>00527</u> MAP EDITION NO. <u>(1)</u> MAP CLASS <u>Final</u> JOB <u>PH-CM-7704</u>	
OFFICER-IN-CHARGE  Roy K. Matsushige, CDR		LAST PRECEDING MAP EDITION TYPE OF SURVEY <input type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED JOB <u>PH-</u> MAP CLASS <u></u> SURVEY DATES: 19 <u></u> TO 19 <u></u>	
<b>I. INSTRUCTIONS DATED</b>			
<b>1. OFFICE</b>  Aerotriangulation April 13, 1977 Compilation August 3, 1977 Compilation Amendment 1 April 20, 1978 Compilation Amendment 2 April 6, 1979 Compilation Amendment 3 July 30, 1979 Compilation July 2, 1981		<b>2. FIELD</b>  Control and Premarking Feb. 7, 1977	
<b>II. DATUMS</b>			
<b>1. HORIZONTAL:</b> <input checked="" type="checkbox"/> 1927 NORTH AMERICAN		OTHER (Specify)	
<b>2. VERTICAL:</b> <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)	
<b>3. MAP PROJECTION</b>  Lambert Conformal		<b>4. GRID(S)</b> STATE <u>California</u> ZONE <u>3</u> STATE <u></u> ZONE <u></u>	
<b>5. SCALE</b> 1:20,000		STATE <u></u> ZONE <u></u>	
<b>III. HISTORY OF OFFICE OPERATIONS</b>			
OPERATIONS		NAME	DATE
<b>1. AEROTRIANGULATION</b> BY METHOD: Analytic LANDMARKS AND AIDS BY		R. Kelly	July 1977
<b>2. CONTROL AND BRIDGE POINTS</b> PLOTTED BY METHOD: Coradomat CHECKED BY		S. Solbeck	July 1977
<b>3. STEREOSCOPIC INSTRUMENT</b> PLANIMETRY BY COMPILATION CHECKED BY INSTRUMENT: Wild B-8 CONTOURS BY SCALE: 1:25,000 CHECKED BY		R. Kravitz	May 1978
<b>4. MANUSCRIPT DELINEATION</b> PLANIMETRY BY METHOD: Graphic CHECKED BY Smooth Draft CONTOURS BY SCALE: 1:20,000 CHECKED BY HYDRO SUPPORT DATA BY		R. Kravitz	June 1978
<b>5. OFFICE INSPECTION PRIOR TO FIELD EDIT</b> BY		J. Roderick	June 1978
<b>6. APPLICATION OF FIELD EDIT DATA</b> BY		J. Minton	June 1980
<b>7. COMPILATION SECTION REVIEW</b> BY		W. Richter	July 1980
<b>8. FINAL REVIEW</b> BY		W. Richter	July 1980
<b>9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH</b> BY		J. Hancock	Nov. 1981
<b>10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH</b> BY		J. Hancock	Dec. 1981
<b>11. MAP REGISTERED - COASTAL SURVEY SECTION</b> BY		R. Kelly	FEB. 1982
NOAA FORM 76-36A		SUPERSEDES FORM C&GS 181 SERIES	

NOAA FORM 76-36B  
(3-72)U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEYTP-00527  
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 checked="" 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) 2568 thru 2572	03/04/77	1214	1:50,000	Not Determined	
77B(P) 2644 thru 2645*	03/04/77	1413	1:50,000	4.3 ft. above MLLW	
77B(P) 3474 thru 3477*	03/18/77	1050	1:30,000	5.3 ft. above MLLW	
77B(P) 3534 thru 3536	03/18/77	1135	1:30,000	Not Determined	
77B(P) 3692 thru 3694	03/18/77	1337	1:30,000	Not Determined	
77B(I) 2870 thru 2874**	03/05/77	1152	1:40,000	0.20 ft. above MHW	
77B(I) 3811 thru 3815**	03/28/77	1200	1:40,000	0.12 ft. below MLLW	

REMARKS Photographs 77B(P)2568 thru 2572 and 77B(P)2644 thru 2645 were used for stereo compilation to compile interior detail and select pass points common to the panchromatic and infrared ratio-prints.

## 2. SOURCE OF MEAN HIGH-WATER LINE:

South of Lat. 37°59.0' the mean high water line was compiled graphically from the above listed tide coordinated infrared photography. No infrared photography was available for the remaining portion of this map; consequently, the MHW line was compiled graphically from hydro support photographs 77B(P) 3474, 3475 and 3476. Based on predicted tide data, the stage of tide for these photos was within 0.2 ft. (5.5 ft. = MHW) of mean high water. The infrared and hydro support ratio prints were controlled by pass points established during instrument compilation.

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

A partial mean lower low water line was graphically compiled from the above listed tide controlled infrared photography. A mean lower low water line could not be compiled North of Lat. 37°59.0' as tide coordinated photography was not available.

## 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-9794	Nov. 1978	Verified	H-9810	DA-10-1-79	None (see Review Report)
H-9811	April 1979	Verified			

## 5. FINAL JUNCTIONS

NORTH	EAST	SOUTH	WEST
TP-00525	No Survey	TP-00529 and TP-00530	TP-00526

## REMARKS

TP-00529 and TP-00530 are 1:10,000 manuscripts.

NOAA FORM 76-36C  
(3-72)U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEYTP-00527  
HISTORY OF FIELD OPERATIONSI. ☒ FIELD INSPECTION OPERATION (Premarking) ☐ FIELD EDIT OPERATION.

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	R. B. Melby	02/77
2. HORIZONTAL CONTROL	RECOVERED BY R. B. Melby	02/77
	ESTABLISHED BY R. B. Melby	02/77
	PRE-MARKED OR IDENTIFIED BY R. B. Melby & L. L. Riggers	02/77
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 None	
	LOCATED (Field Methods) BY None	
	IDENTIFIED BY None	
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY BY <input checked="" type="checkbox"/> NO INVESTIGATION	None
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY	None
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY	None

## II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED		2. VERTICAL CONTROL IDENTIFIED	
		None	
PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
77B(P)3192	Point Pinole 4, 1940		
77B(P)2644	Wilson, 1852 (Sub Pt)		
77B(P)2644	Pinole, hercules Powder Co., Tank, 1947		
77B(P)2569	Richard, 1932 (Sub Pt)		
77B(P)2571	Bald Peak Eb mud, 1946		

## 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)

5 forms 76-53, 1 Ranger observation form, 1 form HP-65, 1 form 77-53, and  
1 Field Report

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

TP-00527

## HISTORY OF FIELD OPERATIONS

I. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	C. W. Hayes D. R. Taylor	05/05/79 04/15/80
2. HORIZONTAL CONTROL	RECOVERED BY C. Lawrence/ B. Lund ESTABLISHED BY C. Lawrence PRE-MARKED OR IDENTIFIED BY None	05/79, 5/80 05/05/79
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 None LOCATED (Field Methods) BY C. Lawrence IDENTIFIED BY T. Peasley	05/05/79 05/05/79
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 T. A. Peasley	05/05/79
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY N. A.	

## II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED  
None2. VERTICAL CONTROL IDENTIFIED  
None

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION

## 3. PHOTO NUMBERS (Clarification of details)

77B(P)3535 and 77B(P)3694

## 4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

(See below).

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME
77B(P)3694	Berkeley Marina Channel Light 3		
77B(P)3694	Berkeley Reef Light 1		
77B(P)3694	Berkeley Breakwater Center Light		

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

## 7. SUPPLEMENTAL MAPS AND PLANS

Field sketch (#6) for location of Berkeley Breakwater Center Light.

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

Field Edit Report, Sounding Volume containing fix data, and Field Edit Ozalid.

NOAA FORM 76-36D  
(3-72)U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATIONTP-00527  
RECORD OF SURVEY USE

## I. MANUSCRIPT COPIES

COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Compilation complete pending field edit	June 1978	Class III manuscript	Aug. 1978	Sept. 1978
Field edit applied, com- pilation complete	July 1980	Class I manuscript	None	July 1980
Final Review	Nov. 1981	Final Map	Feb. 1982	Feb. 1982

## II. LANDMARKS AND AIDS TO NAVIGATION

## 1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

NUMBER	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
5 Pages	112/1982	Feb. 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 \*\*

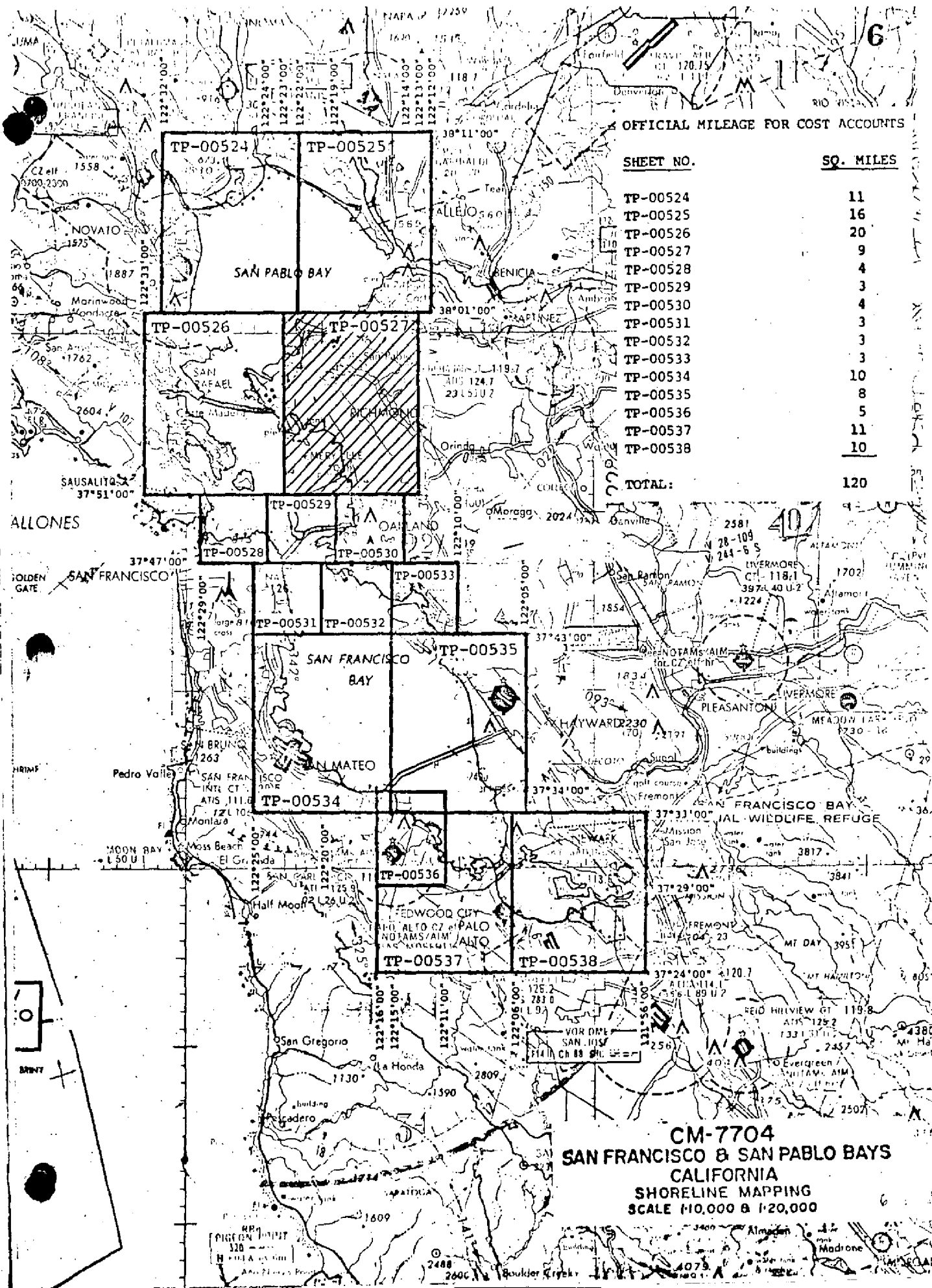
1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.  
 2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☐ FORM NOS 567 SUBMITTED BY FIELD PARTIES.  
 3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.  
 ACCOUNT FOR EXCEPTIONS: \*\*All indicated data will be forwarded to Federal  
 Records Center upon completion of the entire project.  
 4. ☐ DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED: MARCH 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
<b>TOTAL:</b>	<b>120</b>



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

7

SUMMARY TO ACCOMPANY  
DESCRIPTIVE REPORTS  
TP-00527

This 1:20,000 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.

Contemporary hydrographic surveys were performed in areas common to this map. Portions of three 1:10,000 scale surveys H-9794, RA-10-3-78; H-9810, DA-10-1-79; and H-9811, DA-10-2-79 received shoreline and off-shore detail from the Class I map.

This Final Map is a 1:20,000 scale shoreline map that incorporates a northeast portion of San Francisco Bay featuring Richmond Inner Harbor. The harbor area includes an abundance of port facilities for the city of Richmond while the remaining shoreline for this map consists of little industrial development except for the recreational marina at Berkeley Yacht Harbor.

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 partially provided using the "B" camera at 1:40,000 scale. This infrared coverage included a majority of the map except for the shoreline north of



TP-00527

Lat. 37°59.0'. Consequently, the mean high water line for this area was compiled from the hydro support photography which was within 0.2 ft. of MHW based on predicted tide data. A substitute source for delineation of the mean lower low water line was not available. At the time of final review the 1981 revision survey photography, at 1:40,000 scale, was available for inspection; however, this photography was used only to clarify and verify the existing 1977 photo compilation and the 1979 field edit activity.

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

Compilation was performed at the Atlantic Marine Center in June 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 surveys H-9810 and H-9811 in April 1979 by personnel aboard the NOAA Ship DAVIDSON.

Application of field edit was performed at the Pacific Marine Center in July 1980. Afterward, copies of the Class I map were released to the Hydrographic Verification Branch. Unfortunately, discrepancies concerning the Class I maps have delayed the registration of the contemporary hydrographic surveys until final review of the shoreline maps has been accomplished.

Final Review was performed at the Atlantic Marine Center in November 1981. At this time a complete office review involving evaluation of all office and field activity was accomplished. In several cases, inaccurate field methods were used during the field edit operation to locate off-shore and alongshore features. Other than a general delineation on the field edit ozalid, no supporting document was submitted for an accurate office determination. For each of these features, an individual office inspection of all available photography was made in an attempt to accurately locate or verify the ozalid position. If the object could not be photo identified and the feature was considered significant, depending on its characteristics and charting value, the field ozalid position was accepted and compiled as position approximate.

Revisions made during final review to the previous Class I map are reflected on this final map. Revised data indicating all changes will be resubmitted to the Hydrographic Surveys Division and a chart maintenance print will be prepared for the Marine Chart 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 nonfloating aids to navigation.

TP-00527

This field data was previously forwarded to the National Geodetic Survey and was not evaluated during final review. 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-00527

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.



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

11

April 4, 1977

CPM17/RBM

TO: C3415 Coastal Mapping

FROM:

*Robert 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 triangulation 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

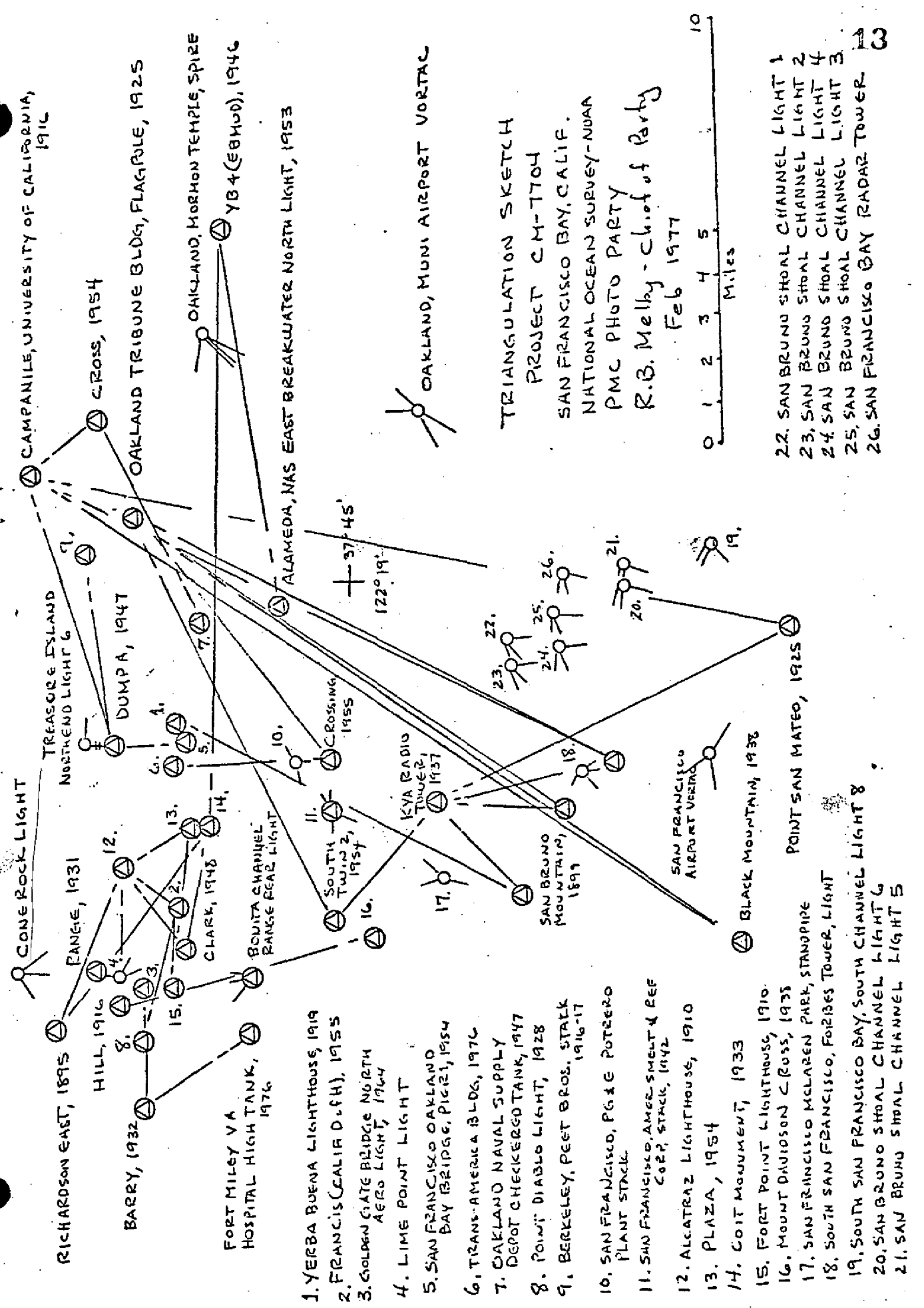
The coordinator would transmit time checks and receive tide staff readings of involved stations and filter and transmit to the aircraft the flight lines that were within the required tide ranges and maintain a summary of staff readings.

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.



CONE ROCK LIGHT

RICHARDSON EAST, 1895

HILL, 1916

BARRY, 1932

FORT MILEY VA  
HOSPITAL HIGH TANK, 1976

YERBA BUENA LIGHTHOUSE, 1919

FRANCIS (CALIF D.F.H.), 1955

GOLDEN GATE BRIDGE NORTH  
AERO LIGHT, 1964

4. LIME POINT LIGHT

5. SAN FRANCISCO OAKLAND  
BAY BRIDGE, PIER 21, 1954

6. TRANS-AMERICA BLDG, 1976

7. OAKLAND NAVAL SUPPLY  
DEPOT CHECKERED TANK, 1947

8. POINT DIABLO LIGHT, 1928

9. BERKELEY, PEET BROS. STACK  
1916-17

10. SAN FRANCISCO, PG&E POTTERO  
PLANT STACK

11. SAN FRANCISCO, AMER-SMELT & REF  
CORP. STACK, 1942

12. ALCATRAZ LIGHTHOUSE, 1910

13. PLAZA, 1954

14. COIT MONUMENT, 1933

15. FORT POINT LIGHTHOUSE, 1910

16. MOUNT DAVIDSON CROSS, 1935

17. SAN FRANCISCO MCLAREN PARK, STANDPIPE

18. SOUTH SAN FRANCISCO, FORBES TOWER, LIGHT

19. SOUTH SAN FRANCISCO BAY, SOUTH CHANNEL LIGHT 8

20. SAN BRUNO SHOAL CHANNEL LIGHT 6

21. SAN BRUNO SHOAL CHANNEL LIGHT 5

22. SAN BRUNO SHOAL CHANNEL LIGHT 1

23. SAN BRUNO SHOAL CHANNEL LIGHT 2

24. SAN BRUNO SHOAL CHANNEL LIGHT 4

25. SAN BRUNO SHOAL CHANNEL LIGHT 3

TREASURE ISLAND  
NORTHEND LIGHT 6

DUMPA, 1947

CROSS, 1954

OAKLAND TRIBUNE BLDG, FLAGPOLE, 1925

OAKLAND, MORMON TEMPLE, SPIRE

YB 4 (EBHUB), 1946

ALAMEDA, NAS EAST BREAKWATER NORTH LIGHT, 1953

OAKLAND, MUNI AIRPORT VORTAC

CROSSING, 1955

KVA RADIO  
TOWER, 1937

SOUTH  
TOWER, 1954

SAN BRUNO  
MOUNTAIN, 1899

SAN FRANCISCO  
AIRPORT VORTAC

BLACK MOUNTAIN, 1938

POINT SAN MATEO, 1925

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

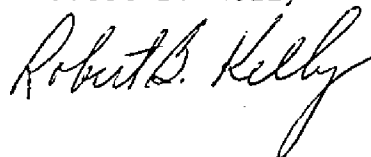
Local shoreline and USGS quadrangles were used to provide elevations for vertical adjustments of bridges.

25. Photography

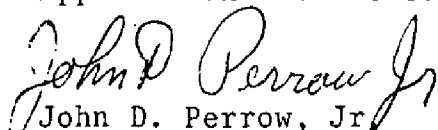
The photography was adequate as to placement of flight lines consistent quality, definition and absence of haze.

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

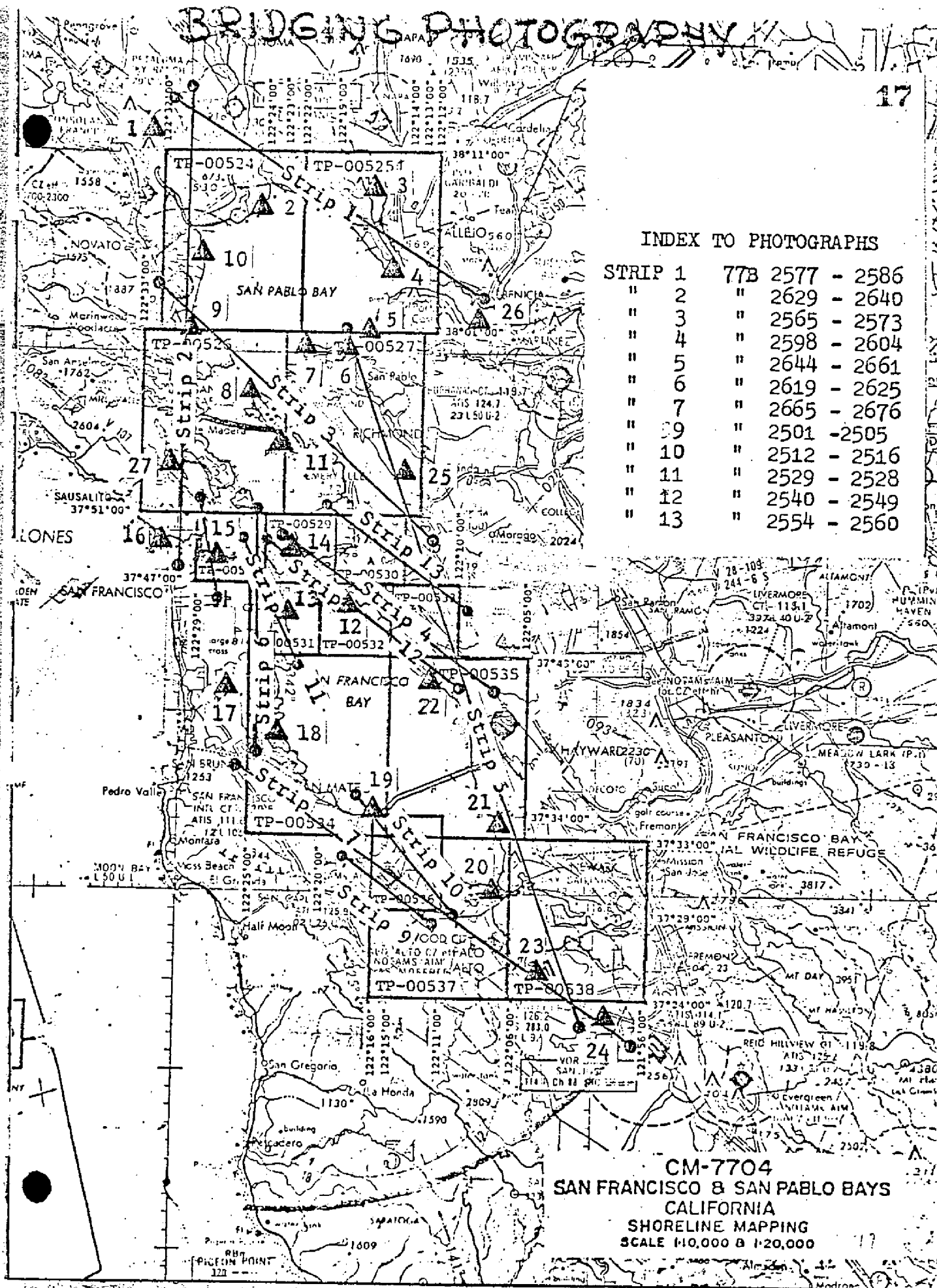
1 LAKEVILLE, SQUARE TANK ON HILL, 1951	TANK( 1.04, -3.77)
	PANEL( -.25, .23)
2 BUG (SLC), 1951	COULD NOT SEE
3 SLAUGHTERHOUSE PT. 3, 1921	(-2.22, .52)
4 MARE ISLAND SOUTHEAST=, 1952	( 3.02, -.23)
5 PINOLE HERCULES POWDER CO., TANK, 1947	( .38, -.17)
6 WILSON, 1852	( .08, -.10)
7 POINT PINOLE ATLAS DOCK, 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 BALDEPRAK (EBMUD), 1946	( -.15, .02)
26 BUCK, 1949	(-1.04, -.52)
27 MANZANITA (CADH), 1972	(-1.01, -1.09)

# BRIDGING PHOTOGRAPHY

17

## 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



# HIGH & LOW WATER INFRARED PHOTOGRAPHY

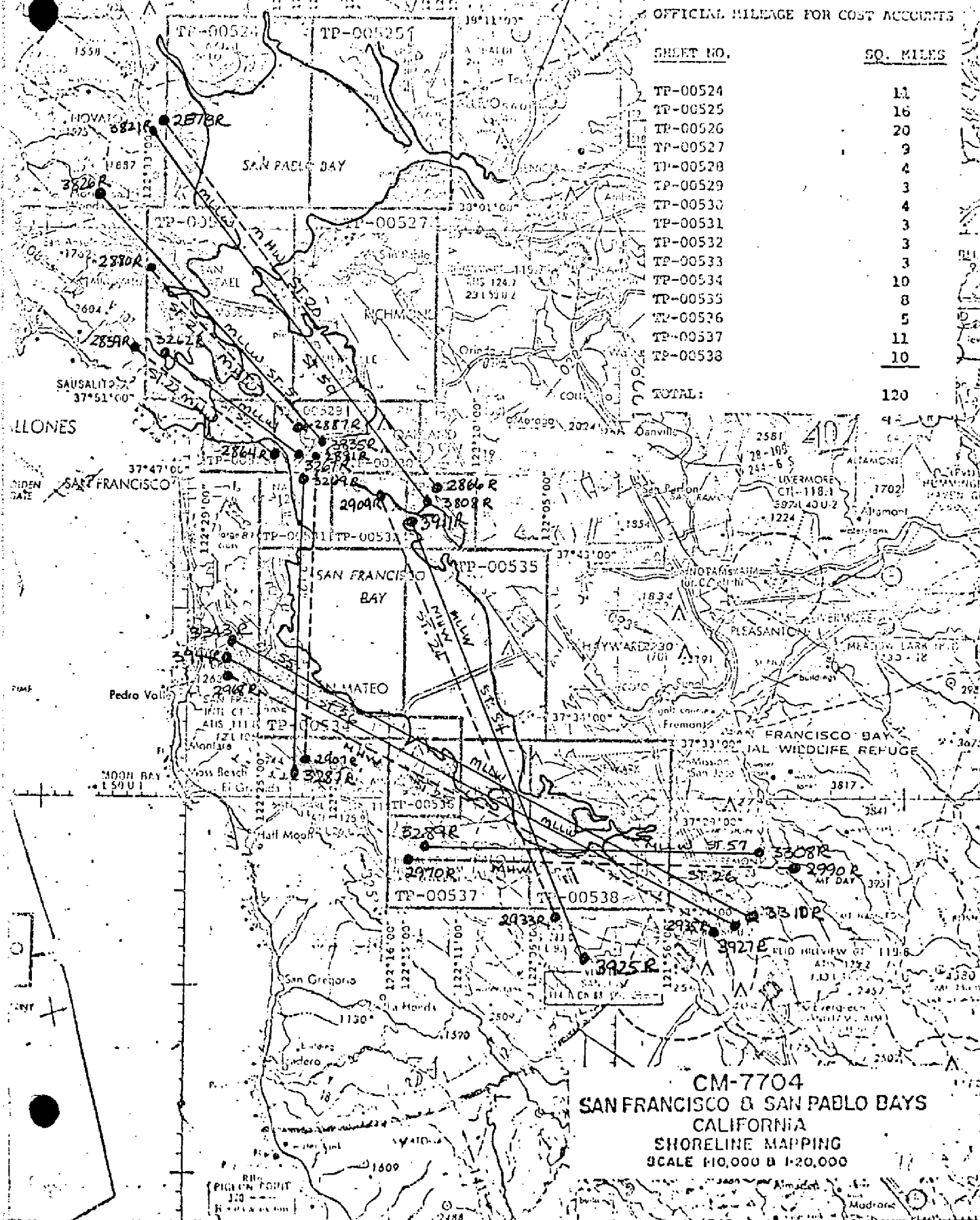
1:40,000

MLLW  
mHW

18

OFFICIAL MILEAGE FOR COST ACCOUNTS

SHEET NO.	SQ. MILES
TP-00524	13
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
<b>TOTAL:</b>	<b>120</b>



# HIGH & LOW WATER INFRARED PHOTOGRAPHY

1:30,000 MLLW  
MHW  
MLW

19

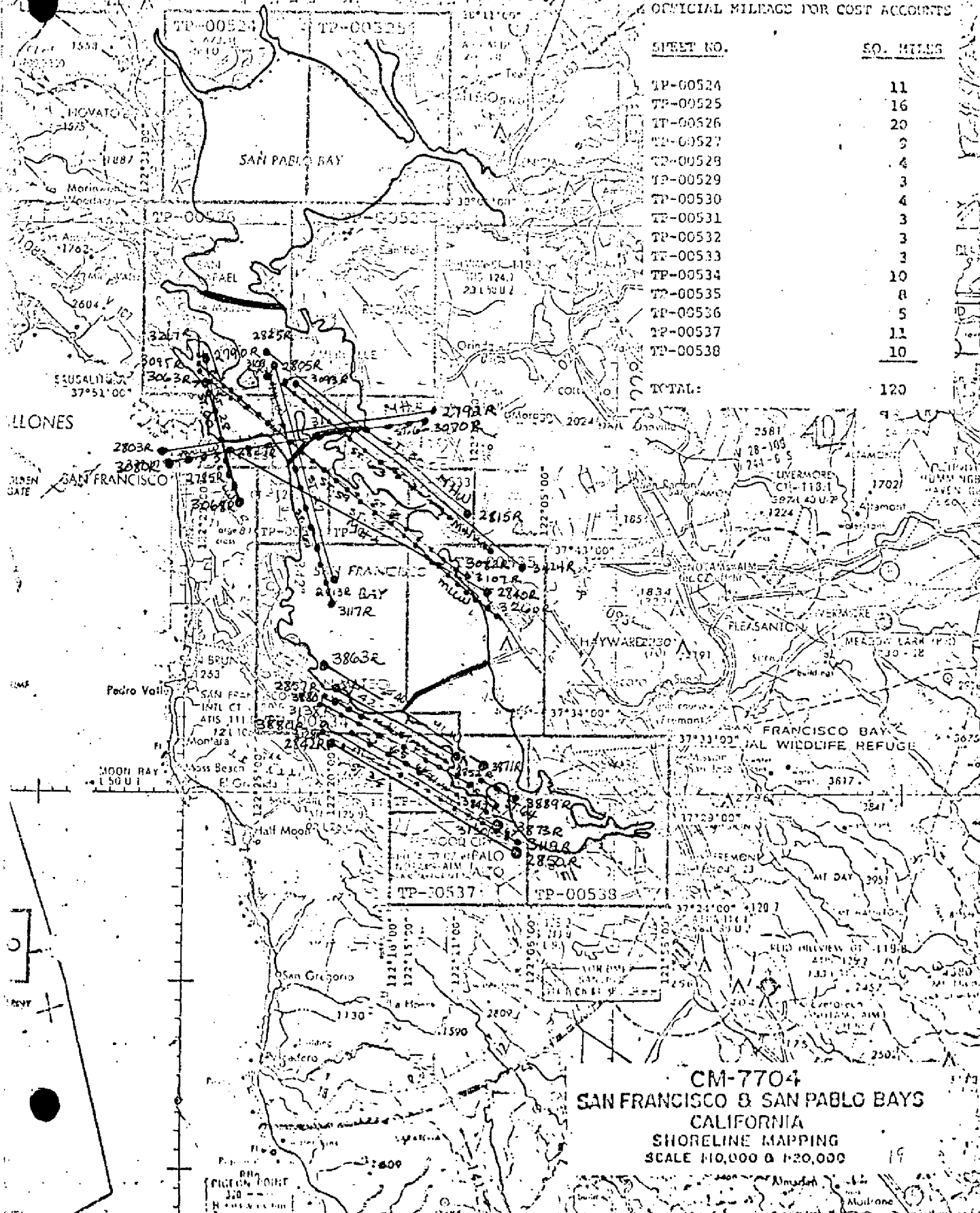
OFFICIAL MILEAGE FOR COST ACCOUNTS

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 1:30,000 & 1:20,000

# HYDRO-SUPPORT PHOTOGRAPHY

1:30,000

20

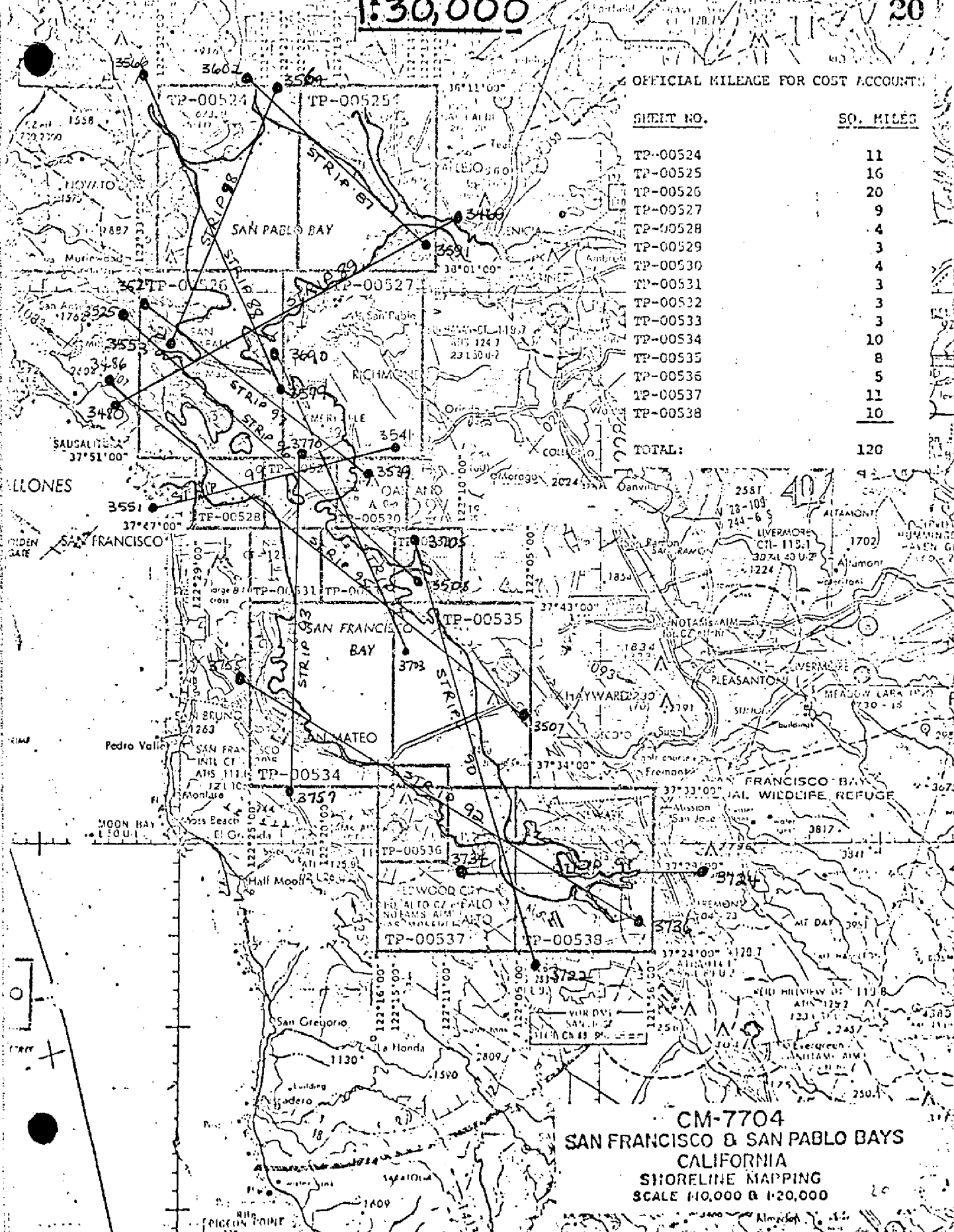
OFFICIAL MILEAGE FOR COST ACCOUNTS

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	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

21

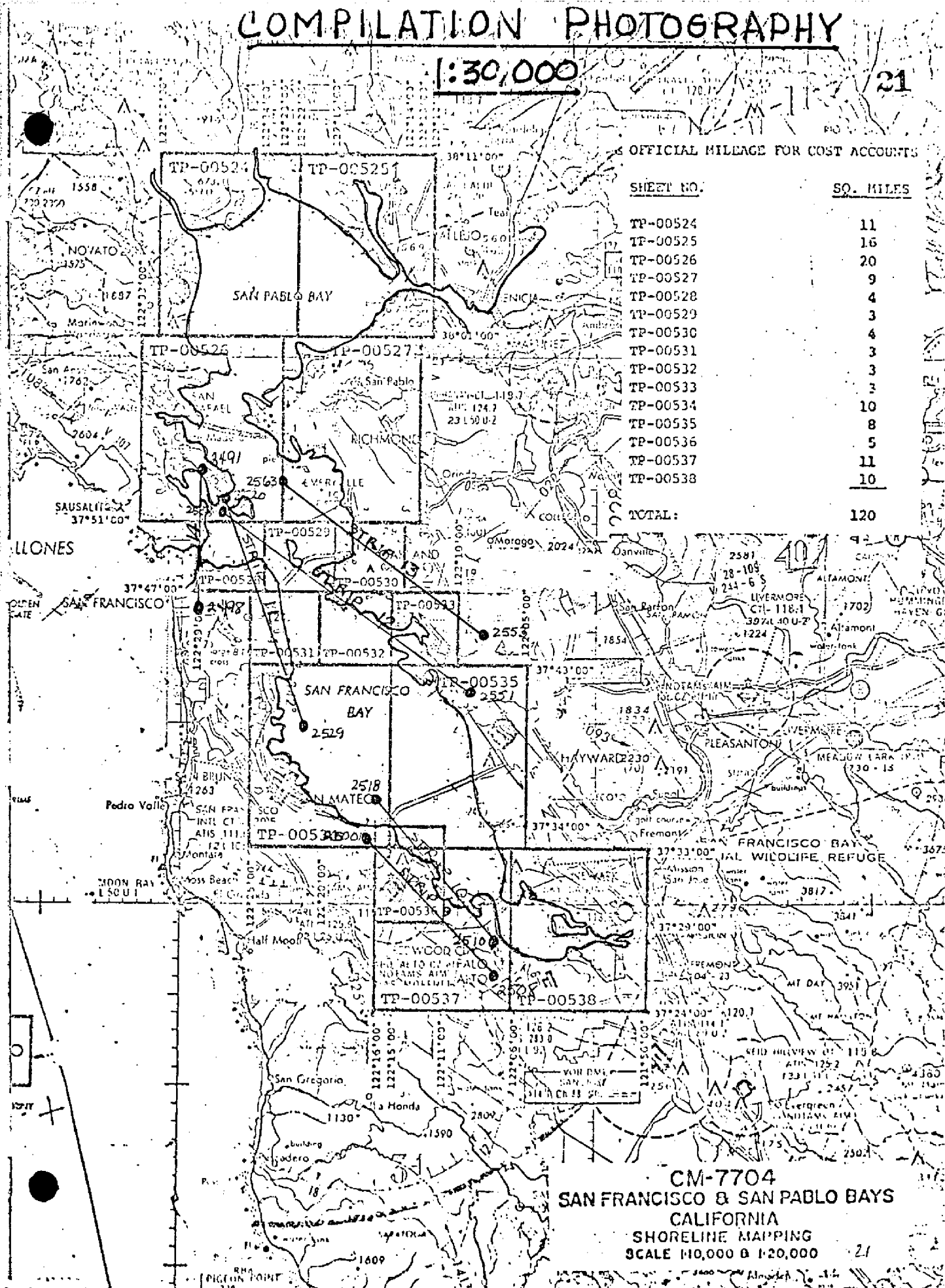
OFFICIAL MILEAGE FOR COST ACCOUNTS

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 TO 1:20,000

## DESCRIPTIVE REPORT CONTROL RECORD

MAP NO. TP 00527	STATION NAME	JOB NO. CM-7704	GEODETTIC DATUM		AEROTRI- ANGULATION POINT NUMBER	COORDINATES IN FEET		GEOGRAPHIC POSITION		REMARKS
			SOURCE OF INFORMATION (Index)	STATE		ZONE	φ LATITUDE	λ LONGITUDE		
	BALD PEAK HERMUD, 1946	3712214		North American 1927		California	3		PMG Photogrammetric Br.	
	BERKELEY, DURKEE FAMOUS FOODS CO. TANK, 1947	3712214	194					φ 37° 53' 01.091" ✓ λ 122° 13' 15.234" ✓		33.6m (1816.3m) 372.3m (1093.9m)
	BERKELEY, H. J. HEINZ CO., TANK, 1947	3712214	195					φ 37° 51' 09.097" ✓ λ 122° 17' 35.611" ✓		280.5m (1569.4m) 870.6m (596.2m)
	BERKELEY MARINA NORTH LIGHT, 1979 (Field Position)	Field G.P. List						φ 37° 51' 11.51" ✓ λ 122° 17' 16.97" ✓		354.9m (1495.0m) 414.9m (1052.0m)
	BERKELEY MARINA SOUTH LIGHT, 1979 (Field Position)	Field G.P. List						φ 37° 52' 01.646" ✓ λ 122° 19' 01.880" ✓		50.7m (1799.0m) 46.0m (1421.6m)
	BERKELEY NORTH BASE, 1947	3712214	187					φ 37° 51' 58.132" ✓ λ 122° 19' 00.565" ✓		1792.3m (57.6m) 13.8m (1452.8m)
	BERKELEY, PEET BROTHERS, STACK, 1916	3712214	193					φ 37° 52' 47.358" ✓ λ 122° 18' 13.077" ✓		1460.1m (389.8m) 319.6m (1146.7m)
	BROOKS ISLAND 2, 1905	3712214	180					φ 37° 51' 21.636" ✓ λ 122° 17' 41.861" ✓		667.1m (1182.8m) 1023.3m (443.4m)
	CAMPANILE, UNIVERSITY OF CALIFORNIA, 1916	3712214	190					φ 37° 53' 47.366" ✓ λ 122° 21' 16.177" ✓		1460.3m (389.5m) 395.3m (1070.3m)
	HARBOR (USE), 1929	3712214	181					φ 37° 52' 19.650" ✓ λ 122° 15' 24.080" ✓		605.8m (1244.1m) 592.0m (874.4m)
	COMPUTED BY Lowell O. Neterer, Jr.		DATE 08/31/77	COMPUTATION CHECKED BY Albert C. Rauck, Jr.				φ 37° 54' 34.400" ✓ λ 122° 21' 34.121" ✓		1060.6m (789.3m) 833.5m (632.2m)
	LISTED BY Albert C. Rauck, Jr.		DATE 05/17/77	LISTING CHECKED BY Frank Margiotta						DATE 09/15/77
	HAND PLOTTING BY Robert Kravitz		DATE 05/17/78	HAND PLOTTING CHECKED BY Fay Mauldin						DATE 08/17/77
										DATE 05/19/78

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

## DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.	STATION NAME	SOURCE OF INFORMATION (Index)	AEROTRIANGULATION POINT NUMBER	GEODEIC DATUM		ORIGINATING ACTIVITY		REMARKS
				North American 1927	COORDINATES IN FEET STATE California ZONE 3	PHC Photogrammetric Branch	GEOGRAPHIC POSITION φ LATITUDE λ LONGITUDE	
TP-00527								
	NARROW BLACK TANK, 1921	3712214	119	x=	φ 37° 57' 14.76" - λ 122° 21' 26.98" -			455.1m (1394.8m) 658.7m (806.1m)
	PINOLE HERCULES POWDER CO., TANK, 1947	381222	104	x=	φ 38° 00' 15.735" - λ 122° 17' 06.329" -			1410.1m (439.8m) 154.4m (1309.3m)
	POINT PINOLE 4, 1940	38122	106	x=	φ 38° 00' 12.148" - λ 122° 21' 56.319" -			1299.5m (550.4m) 1373.9m (89.8m)
	POINT RICHMOND P. G. and E. GAS TANK, 1951	3712214	178	x=	φ 37° 54' 14.193" - λ 122° 22' 37.471" -			1362.5m (487.3m) 915.3m (550.3m)
	RICHARD, 1932	3712214	570100	x=	φ 37° 55' 13.782" - λ 122° 22' 51.504" -			424.9m (1425.0m) 1258.0m (207.5m)
	RICHMOND AMER. R. and S. S. Corp., Tank, 1951	3712214	120	x=	φ 37° 56' 56.530" - λ 122° 21' 55.990" -			1742.9m (107.0m) 1367.0m (97.9m)
	RICHMOND HARBOR CHANNEL LIGHT 10, 1979 (Preliminary Adjusted Field Position)	Prelim. Adj. Posit's List		x=	φ 37° 54' 13.315" - λ 122° 22' 30.328" -			410.5m (1439.4m) 740.9m (724.9m)
	YACHT, 1947	3712214	188	x=	φ 37° 51' 50.416" - λ 122° 18' 55.354" -			1554.4m (295.5m) 1353.1m (113.6m)
	WILSON, 1852	371222	105	x=	φ 38° 00' 42.884" - λ 122° 18' 54.568" -			1322.2m (527.7m) 1331.6m (132.1m)
				x=	φ			
				y=	λ			
COMPUTED BY	Lowell O. Neterer, Jr.		DATE 08/31/77	COMPUTATION CHECKED BY		Albert C. Rauck, Jr.		DATE 09/15/77
LISTED BY	Albert C. Rauck, Jr.		DATE 05/17/77	LISTING CHECKED BY		Frank P. Margiotta		DATE 08/17/77
HAND PLOTTING BY	Robert K. Kravitz		DATE 05/19/78	HAND PLOTTING CHECKED BY		Fay Mauldin		DATE 05/19/78

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



## Compilation Report

TP-00527

31. Delineation

Delineation was by instrument methods using the Wild B-8 stereoplotter. Compilation photography was adequate. Tide coordinated infrared photo coverage was available for most of the manuscript with the exception of shoreline north of Lat.  $37^{\circ}59.0'$ . For specific delineation of the mean high water and mean lower low water lines refer to form 76-36B, items 2 and 3 attached with this Descriptive Report.

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 interpretation of the photographs. See form 76-36B, items 2 & 3 for delineation of the MHW and MLLW lines.

36. Offshore Details

Numerous charted offshore features such as piles, pipes and stakes could not be located from the photography; these items were addressed to the field editor and/or hydrographer.

37. Landmarks and Aids

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

TP-00527

38. Control for Future Surveys

None

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 U. S. Geological Survey 1:24,000 scale Quadrangles.

Mare Island, Calif., 1959, photorevised 1968  
Richmond, Calif., 1959, photorevised 1968 and 1973  
Oakland, West, Calif., 1959, photorevised 1968 and 1973  
San Quentin, Calif., 1959, photorevised 1968

47. Comparison with Nautical Charts

A comparison was made with the following National Ocean Survey chart.

No. 18652, 16th edition, dated March 26, 1977, 1:40,000/  
1:80,000 scale

Items to be applied to the Nautical Chart immediately

None

Items to be carried forward

None

Submitted by:

*Robert R. Kravitz*  
Robert R. Kravitz  
Cartographic Technician  
June 15, 1978

Approved by:

*for Jim Boyd*  
Albert C. Rauck, Jr.  
Chief, Coastal Mapping Section

## Addendum to the Compilation Report

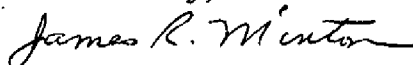
## Field Edit

TP-00527

The field edit for this manuscript was applied in the Photogrammetric Branch of the Pacific Marine Center rather than the original Compilation Activity. The edit was applied from the data sources itemized in part II of form 76-36C, Field Edit included elsewhere in this report. No unusual difficulty was encountered in applying the edit. The heights of rocks and other features in the water were determined with the tide corrector listings for hydro surveys H-9810 and H-9811. These listings were based on the approved hourly heights and tide notes provided by the Rockville Datums and Information Branch.

While no specific field edit item addressed the alignment of the Berkeley Pier, the pier was realigned after Berkeley Marina Channel Light 2 was plotted. A third order field position for the light was included in the edit for TP-00529 and the light is described as being at the end of the Berkeley Pier. Examination of the photography and existing charts confirm that the pier is straight and that the shoreline attachment is correct. Consequently, the pier was rotated to align with the light.

Submitted by;



James R. Minton  
Cartographic Technician  
June 9, 1980

NOAA FORM 75-74 (7-75)		U.S. DEPARTMENT OF COMMERCE NOAA NATIONAL OCEAN SURVEY	
<b>PHOTOGRAMMETRIC OFFICE REVIEW</b> TP - 00527			
1. PROJECTION AND GRIDS	2. TITLE	3. MANUSCRIPT NUMBERS	4. MANUSCRIPT SIZE
J. R.	J. R.	J. R.	J. R.
<b>CONTROL STATIONS</b>			
5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY	6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations)		7. PHOTO HYDRO STATIONS
J. R.	Not Applicable		Not Applicable
8. BENCH MARKS	9. PLOTTING OF SEXTANT FIXES	10. PHOTOGRAMMETRIC PLOT REPORT	11. DETAIL POINTS
J. R.	Not Applicable	J. R.	J. R.
<b>ALONGSHORE AREAS (Nautical Chart Data)</b>			
12. SHORELINE	13. LOW-WATER LINE	14. ROCKS, SHOALS, ETC.	15. BRIDGES
J. R.	J. R.	J. R.	J. R.
16. AIDS TO NAVIGATION	17. LANDMARKS	18. OTHER ALONGSHORE PHYSICAL FEATURES	19. OTHER ALONGSHORE CULTURAL FEATURES
J. R.	J. R.	J. R.	J. R.
<b>PHYSICAL FEATURES</b>			
20. WATER FEATURES	21. NATURAL GROUND COVER		22. PLANETABLE CONTOURS
J. R.	Not Applicable		Not Applicable
23. STEREOSCOPIC INSTRUMENT CONTOURS	24. CONTOURS IN GENERAL	25. SPOT ELEVATIONS	26. OTHER PHYSICAL FEATURES
J. R.	Not Applicable	Not Applicable	J. R.
<b>CULTURAL FEATURES</b>			
27. ROADS	28. BUILDINGS	29. RAILROADS	30. OTHER CULTURAL FEATURES
J. R.	J. R.	J. R.	J. R.
<b>BOUNDARIES</b>			
31. BOUNDARY LINES		32. PUBLIC LAND LINES	
Not Applicable		Not Applicable	
<b>MISCELLANEOUS</b>			
33. GEOGRAPHIC NAMES	34. JUNCTIONS		35. LEGIBILITY OF THE MANUSCRIPT
J. R.	J. R.		J. R.
36. DISCREPANCY OVERLAY	37. DESCRIPTIVE REPORT	38. FIELD INSPECTION PHOTOGRAPHS	39. FORMS
J. R.	J. R.	None	J. R.
40. REVIEWER		SUPERVISOR, REVIEW SECTION OR UNIT	
Joanne Roderick		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		SUPERVISOR <i>James W. Massey</i> James W. Massey	
Reviewer <i>William A. Richter</i> William A. Richter			
43. REMARKS			

## PHOTOGRAMMETRIC OFFICE PRE-HYDRO AND FIELD EDIT REVIEW

TP-00527

PROJECTION AND GRIDS J. R.	TITLE J. R.	HORIZONTAL CONTROL J. R.	PHOTOGRAMMETRIC PLOT REPORT J. R.
DETAIL POINTS AND PASS POINTS J. R.	PROCESSED RATIOS J. R.	AIDS TO NAVIGATION J. R.	LANDMARKS J. R.
MEAN HIGH WATER LINE J. R.	LOW-WATER LINE J. R.	ROCKS, SHOALS, ETC. J. R.	ALONG SHORE AND OTHER PHYSICAL FEATURES J. R.
WATER FEATURES J. R.	ALONG SHORE AND OTHER CULTURAL FEATURES J. R.	BRIDGES J. R.	ROADS J. R.
BUILDINGS J. R.	RAILROADS J. R.	CONTOURS AND SPOT ELEVATIONS N. A.	GEOGRAPHIC NAMES J. R.
JUNCTIONS J. R.	LEGIBILITY OF THE MANUSCRIPT J. R.	COMPILATION REPORT J. R.	FIELD EDIT OZALID J. R.
COMPARISON WITH NAUTICAL CHARTS J. R.	COMPARISON WITH PRIOR SURVEYS None	COMPARISON WITH EXISTING MAPS J. R.	FIELD PRINTS AND OTHER COPIES J. R.
REVIEWER J. Roderick	DATE June 1978	SUPERVISOR A. C. Rauck, Jr.	DATE June 1978

REMARKS

## PHOTOGRAMMETRIC OFFICE POST-HYDRO AND FIELD EDIT REVIEW

MANUSCRIPT NUMBERS JLH	FORMAT STICK-UP JLH	MANUSCRIPT SIZE JLH	HORIZONTAL CONTROL JLH
PHOTO HYDRO STATIONS WAR	PLOTTING OF SEXTANT FIXES WAR, JLH	AIDS TO NAVIGATION WAR, JLH	LANDMARKS WAR, JLH
MEAN HIGH WATER LINE JLH	LOW-WATER LINE JLH	ROCKS, SHOALS, ETC. WAR, JLH	ALONG SHORE AND OTHER PHYSICAL FEATURES JLH
WATER FEATURES JLH	ALONG SHORE AND OTHER CULTURAL FEATURES JLH	PIPELINES, CABLES, ETC. JLH	BRIDGES JLH
ROADS JLH	BUILDINGS JLH	RAILROADS JLH	CONTOURS AND SPOT ELEVATIONS N.A.
GEOGRAPHIC NAMES JLH	JUNCTIONS JLH	FIELD EDIT PHOTOGRAPHS WAR, JLH	FIELD EDIT OZALID WAR, JLH
GEOGRAPHIC FIX POSITIONS WAR, JLH	FIELD FORMS WAR, JLH	FIELD EDIT REPORT WAR, JLH	APPROVED TIDES WAR, JLH
CHART MAINTENANCE PRINT AND OTHER COPIES None	PREPARATION FOR FINAL REVIEW JLH	COMPILER J. R. Minton	DATE July 1980
REVIEWER * W. A. Richter	DATE July 1980	SUPERVISOR J. W. Massey	DATE July 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.

Final Reviewer  
J. L. Hancock  
November 1981

FIELD EDIT REPORT  
 TP-00527  
 San Francisco Bay, California  
 OPR-L123-DA-79  
 NOAA SHIP DAVIDSON  
 MAR-APR 1979

## 51. METHODS

Field Edit on Manuscript TP-00527 was performed by Timothy A. Peasley, Ensign, NOAA. Field Edit was accomplished in accordance with Project Instructions OPR-L123-DA-79, San Francisco Bay, California dated 15 January 1979, Project Instruction Changes Nos. 1, 2 and 3 all dated 15 January 1979 and the *Manual of Coastal Mapping Field Procedures* (Chapter 11). Features were located by photo identification by three-point sextant fix (with check angle). All discrepancies were transferred from the discrepancy print to the Field Work Sheet before field edit began.

The *Field Print* was taken into the field along with the cronapaque photos. Photos used in the field were:

Nos. 77B-3474; 77B-3476; 77B-3536; 77B-3576; 3577; 77B-3692, 3693, 3694, 3695.

It was necessary to take the cronapaque photos into the field since no matte photos were provided for field operations. Field edit was conducted from a skiff and on foot for near shore items. (For days and times of field edit see appended ABSTRACT OF TIME OF FIELD EDIT). The data was compiled and inked onto the MYLAR Field Edit Sheet. Data collected by field edit methods has been duplicated on the Hydrographic Final Field Sheet. All times are referenced to Greenwich Mean Time.

Standard Ink Colors as per PMC OPORDER No. 2-77 dated 23 March 1977, as modified by changes suggested by the Photogrammetric Branch at the Pacific Marine Center 6th Annual Hydrographic Conference, were used to process field edit data. Colors used are as follows:

### Photographs and Field Edit Sheet

Violet - verification/additions/changes (violet only on photos)  
 Red - to reference hydrographic data only  
 Green - deletions

### Final Field Sheet

Black - manuscript, no change  
 Red - additions (hydrography, D.P.'s)

Original data was recorded on the *Field Print* and in a fix notebook. Cronapaque photos Nos. 77B-3535 and 77B-3694 were used for clarification of detail. Weather observations for the days of field edit were generally as follows: winds - 0 - 15 knots; sky - partly cloudy and temperatures 60 - 75°F.

Controlling tide guages operational during times of field edit were as follows:

<u>Location (Lat./Long.)</u>	<u>Installed/Maintained by</u>
Pt. Orient (37°57.5'N, 122°25.5'W)	Pacific Tides Party
Corte Madera Creek (37°56.6'N, 122°30.8'W)	NOAA Ship DAVIDSON
Angel Island (37°51.2'N, 122°25.1'W)	California Tides Party
Berkeley Yacht Harbor (37°51.7'N, 122°19.8'W)	California Tides Party
Pier 22½ (37°47.4'N, 122°23.2'W)	NOAA Ship McARTHUR
Richmond Inner Harbor (37°54.6'N, 122°21.5'W)	Pacific Tides Party

#### 52. ADEQUACY OF COMPILATION

The map compilation of obstructions and shallow zones is adequate. The map compilation is adequate and complete for charting with this field edit applied.

#### 53. MAP ACCURACY

The high waterline as depicted on the map is accurate.

#### 54. RECOMMENDATIONS

The manuscript should be considered complete with corrections compiled from this field edit.

#### 56. MISCELLANEOUS

NOAA Form 76-40 "NONFLOATING AIDS OR LANDMARKS" for charts has been completed for this manuscript and has been submitted along with this report.

Submitted by:

*Timothy A. Peasley*

Timothy A. Peasley  
ENS, NOAA  
NOAA Ship DAVIDSON

Approved and Forwarded by:

*C. William Hayes*

C. William Hayes  
CDR, NOAA  
Commanding Officer  
NOAA Ship DAVIDSON

TAP:jaf

REVIEW REPORT TP-00527  
SHORELINE

61. GENERAL STATEMENT: An extensive final review was performed in order to meet map accuracy requirements for this final shoreline map. Office compilation, field edit and the application of field edit were thoroughly evaluated due to the discovery of numerous discrepancies associated with the contemporary hydrographic surveys, the nautical chart and the Class I map. This map represents various revisions made to the Class I map during final review; 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.

Mare Island, Calif., 1959, photorevised 1968  
Richmond, Calif., 1959, photorevised 1968 and 1973  
Oakland, West, Calif., 1959, photorevised 1968 and 1973  
San Quentin, Calif., 1959, photorevised 1968

No significant differences were noted.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS: A comparison was made with two 1:10,000 scale contemporary hydrographic surveys, H-9794 and H-9811, of which portions are common to this map. Shoreline data for these smooth sheets was acquired from Class I maps supplied to the Hydrographic Verification Branch at the Pacific Marine Center.

Survey H-9794, dated May 14, 1981, corresponds with a very small segment of shoreline that includes the south side of Brooks Island. No discrepancies involving this verified smooth sheet were noted.

Survey H-9811, dated February 13, 1981, corresponds with an area common to this map beginning at Lat. 37°53.8' and extending north to 37°58.0'. Because of shoreline discrepancies discovered during quality evaluation in the Hydrographic Surveys Division, Quality Control Branch, registration of this hydrographic survey has been delayed pending receipt of the final reviewed map. As a result of final review, revised data indicating all discrepancies and a copy of the final map will be forwarded to the Hydrographic Surveys Division.



TP-00527

Survey H-9810, DA-10-1-79 incorporates the southern half of this map beginning at Lat.  $37^{\circ}55'$ . No comparison was made with this survey during final review as the smooth sheet is still being processed in the Hydrographic Verification Branch at the Pacific Marine Center. Since original Class I data is presently being applied to the smooth sheet, a copy of the final map will be forwarded to the Hydrographic Surveys Division for proper distribution of the revised data resulting from this final review.

Presently, there has been no contemporary hydrographic survey accomplished that includes the remaining northern portion of this map beginning at Lat.  $37^{\circ}58.0'$ .

65. COMPARISON WITH NAUTICAL CHARTS: A comparison was made with the following National Ocean Survey charts:

No. 18649, 48th edition, 1:40,000 scale, dated February 14, 1981  
No. 18654, 30th edition, 1:40,000 scale, dated May 23, 1981  
No. 18652, 20th edition, 1:80,000 scale, dated May 16, 1981

On August 7, 1978, a Class III chart Maintenance Print was forwarded to the Marine Charts Division from the Coastal Mapping Section, Atlantic Marine Center. As a result of this function, two "piles" were charted north of Pinole Point at Lat.  $38^{\circ}00'58"$ , Long.  $122^{\circ}21'58"$ . These "piles" DO NOT EXIST as they were inadvertently compiled due to misinterpretation of the March 1977 photography. A 1225 ft. fishing pier that now exists in the vicinity is the most seaward structure beyond Pinole Point except for the newly established navigational light (LL 766.50) listed according to Local Notice to Mariners, No. 40/81. Information concerning this area was furnished by Mr. Bob Owen, Chief Administrator of the East Bay Regional Park, Oakland, California, phone 8-415-531-9300. In addition to this correspondence, the May 1981 photography flown for the photogrammetric revision survey confirmed the nonexistence of the "piles."

The "shallow" and "foul with stakes" limits located in the northwest portion of this map were derived from general delineation field methods and were included on this final map as an advisory to the hydrographer for the proposed hydrographic survey. These areas appear to be adequately represented as currently charted.

Three 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. Prior to final review the original field records were forwarded to NGS for network evaluation; subsequently, only the preliminary positions are listed on the 76-40 forms attached with this report.

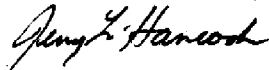
TP-00527

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 should be used in lieu of the previous Class I product.


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

Submitted by,



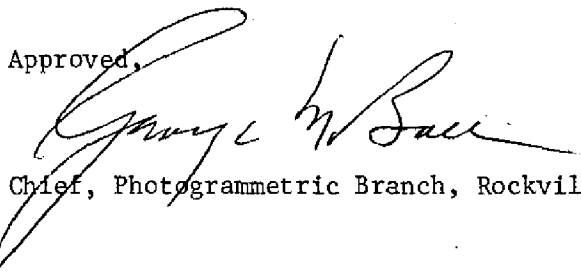
Jerry L. Hancock  
Final Reviewer

Approved for forwarding,



Billy H. Barnes  
Chief, Photogrammetric Branch, AMC

Approved,



Chief, Photogrammetric Branch, Rockville



Chief, Photogrammetry Division

October 14, 1981

GEOGRAPHIC NAMES

FINAL NAME SHEET

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

TP-00527

Albany	Point Isabel
Atchison Topeka and Santa Fe (RY)	Point Potrero
Berkeley	Richmond
Berkeley Aquatic Park	Richmond Inner Harbor
Berkeley Yacht Harbor	Richmond Marina Bay
Bird Island	San Pablo
Brooks Island	Sab Pablo Bay
Fleming Point	San Pablo Creek
Gateley	San Francisco Bay
Nitro	Sobrante
Pinole	Southern Pacific (RR)
Pinole Creek	Wildcat Creek
Pinole Point	Wilson Point

Approved by:

*Charles E. Harrington*

Charles E. Harrington  
Chief Geographer, OA/C3x5

NOAA FORM 76-40 (8-74) Replaces C&GS Form 567.				U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION				ORIGINATING ACTIVITY			
NONFLOATING AIDS				FOR CHARTS							
REPORTING UNIT (Field Party, Ship or Office)		STATE		LOCALITY		DATE					
Photogrammetric Branch, PWC, Seattle, Wa. <td colspan="2">California <td colspan="2">San Francisco and San Pablo Bays <td colspan="2">06/06/80 <td colspan="4"></td> </td></td></td>		California <td colspan="2">San Francisco and San Pablo Bays <td colspan="2">06/06/80 <td colspan="4"></td> </td></td>		San Francisco and San Pablo Bays <td colspan="2">06/06/80 <td colspan="4"></td> </td>		06/06/80 <td colspan="4"></td>					
The following objects HAVE <input checked="" type="checkbox"/> BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.		SURVEY NUMBER		DATUM							
OPR PROJECT NO.		JOB NUMBER		SURVEY NUMBER							
411		CM-7704		TP-00527							
CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses.)	LATITUDE		LONGITUDE		METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED			
		° /	'	° /	'	OFFICE	FIELD				
		D.M.	Meters	D.M.	Meters						
LIGHT	Berkeley Marina Channel Light 3	37° 51'	27.60"	22° 20'	53.96"		P-5 04/04/79 77B(P) 3694	18649			
LIGHT	Berkeley Breakwater Light 1	37° 51'	54.82"	22° 19'	04.64"	77B(P) 3694 Mar. 18, 1977	F-V-Vis. 04/15/79	18649			
LIGHT	Berkeley Breakwater Center Light	37° 51'	58.19"	22° 19'	06.63"		P-L-5.4/11/79 Field Sketch #6 77B(P) 3694	18649			
LIGHT	Berkeley Breakwater Light 2	37° 52'	01.15"	22° 19'	08.67"	77B(P) 3694 Mar. 18, 1977	F-V-Vis 3/26/79	18649			
LIGHT	(Berkeley Marina North Light, 1979 (Field Position))	37° 52'	01.646"	22° 19'	01.880"		F-3-6-L 04/15/79	18649			
LIGHT	(Berkeley Marina South Light, 1979 (Field Position))	37° 51'	58.132"	22° 19'	00.565"		F-3-6-L 04/15/79	18649			
LIGHT	Berkeley Reef Light 1	37° 52'	27.41"	22° 19'	56.63"		P-5, 04/04/79 77B(P) 3694	18649			
LIGHT	Brickyard Cove Harbor Light 1	37° 54'	25.82"	22° 22'	54.58"	77B(P) 3534 Mar. 18, 1977	F-V-Vis. 03/25/79	18649			
LIGHT	Brickyard Cove Harbor Light 2	37° 54'	24.98"	22° 22'	53.62"	77B(P) 3534 Mar. 18, 1977	F-V-Vis. 03/25/79	18449			
LIGHT	Richmond Harbor Channel Light 9	37° 54'	19.15"	22° 22'	27.92"	77B(P) 3534 Mar. 18, 1979	F-V-Vis. 03/25/79	18449			

RESPONSIBLE PERSONNEL		ORIGINATOR	
TYPE OF ACTION	NAME		
OBJECTS INSPECTED FROM SEAWARD	T. A. Peasley, Ens., NOAA	<input checked="" type="checkbox"/> PHOTO FIELD PARTY	
		<input type="checkbox"/> HYDROGRAPHIC PARTY	
		<input type="checkbox"/> GEODETIC PARTY	
		<input type="checkbox"/> OTHER (Specify)	
POSITIONS DETERMINED AND/OR VERIFIED	T. A. Peasley, Ens., NOAA	FIELD ACTIVITY REPRESENTATIVE	
	J. R. Minton	OFFICE ACTIVITY REPRESENTATIVE	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE	
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'			
(Consult Photogrammetric Instructions No. 64.)			
<b>OFFICE</b> <b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> 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			
<b>FIELD</b> <b>I. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection P - Photogrammetric Vis - Visually 5 - Field Identified 6 - Theodolite 7 - Planetable 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.			
<b>FIELD (Cont'd)</b> <b>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.</b> EXAMPLE: P-8-V 8-12-75 74L(C)2982 <b>III. TRIANGULATION STATION RECOVERED.</b> 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 <b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75 <b>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</b>			

[illegible]

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	T. A. Peasley, Ens., NOAA
POSITIONS DETERMINED AND/OR VERIFIED	T. A. Peasley, Ens., 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.)	
<b>OFFICE</b> <b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> 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	<b>FIELD (Cont'd)</b> <b>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:</b> EXAMPLE: P-8-V 8-12-75 74L(C)2982
<b>FIELD</b> <b>I. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection P - Photogrammetric Vis - Visually 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	<b>II. TRIANGULATION STATION RECOVERED</b> 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 <b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75 <b>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</b>
<b>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</b>	

NOAA FORM 76-40 (8-74) Replaces C&GS Form 567.										U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION										LANDMARKS FOR CHARTS										ORIGINATING ACTIVITY																																																		
REPORTING UNIT (Field Party, Ship or Office) Photogrammetric Branch PAC, Seattle, Wa.										STATE California										LOCALITY San Francisco and San Pablo Bays										DATE 06/06/80										<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)																																								
OPR PROJECT NO. 411										JOB NUMBER CW-7704										SURVEY NUMBER TP-00527										DATUM North American 1927										METHOD AND DATE OF LOCATION (See instructions on reverse side)										CHARTS AFFECTED																														
CHARTING NAME										DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)										LATITUDE										LONGITUDE										OFFICE										FIELD																														
																				° /										° /																																																		
																				D.M. Meters										D.P. Meters																																																		
TANK	(Berkeley Durkee Famous Foods Co Tank, 1947)										37° 51'										122° 17'										35.611'										810.6										77B(P) 3695 Mar. 18, 1977										Triang. Rec. Mar. 28, 1979										18649									
TANK	(Berkeley, H. J. Heinz Co., Tank, 1947)										37° 51'										122° 17'										16.97'										414.9										77B(P) 3695 Mar. 18, 1977										Triang. Rec. Mar. 28, 1979										18649									
STACK	(Berkeley Peet Brothers Stack, 1916)										37° 51'										122° 17'										41.861'										1023.3										77B(P) 3695 Mar. 18, 1977										Triang. Rec. Mar. 28, 1979										18649									
TOWER	(Campanile, University of California, 1916)										37° 52'										122° 15'										24.221'										592.0										77B(P) 2572 Mar. 4, 1977										Triang. Rec. Mar. 28, 1979										18649									
TANK											37° 52'										122° 18'										06.37"										156										77B(P) 3694 Mar. 18, 1977										P-V-Vis. Mar. 15, 1979										18649									
STACK											37° 54'										122° 21'										24.16"										590										77B(P) 3534 Mar. 18, 1977										P-V-Vis. Mar. 26, 1979										18649									
GAS TANK	(Point Richmond, P. G. and E., Gas Tank, 1951)										37° 54'										122° 22'										37.471'										915.3										77B(P) 3534 Mar. 18, 1977										Triang. Rec. Mar. 12, 1979										18649									
TANK											37° 55'										122° 22'										56.57'										1382										77B(P) 3534 Mar. 18, 1977										P-V-Vis. Mar. 19, 1979										18649									
TANK	(Richmond Amer. R. and S. S. Corp., Tank, 1947)										37° 56'										122° 21'										55.990'										1367.0																				Triang. Rec. Mar. 28, 1979										18649									
TANK	(Narrow Black Tank, 1921)										37° 57'										122° 21'										26.98"										658.7																				Triang. Rec. Mar. 28, 1979										18649									

8345



RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	T. A. Peasley, Ens. NOAA
POSITIONS DETERMINED AND/OR VERIFIED	T. A. Peasley, Ens., 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.)	
<b>OFFICE</b> <b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> 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	<b>FIELD (Cont'd)</b> <b>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.</b> EXAMPLE: P-8-V 8-12-75 74L(C)2982
<b>FIELD</b> <b>I. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection P - Photogrammetric Vis - Visually 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	<b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> 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.
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	

[illegible]

RESPONSIBLE PERSONNEL		ORIGINATOR	
TYPE OF ACTION	NAME		
OBJECTS INSPECTED FROM SEAWARD	T. A. Peasley, Ensign, NOAA	<input checked="" type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)	
POSITIONS DETERMINED AND/OR VERIFIED	T. A. Peasley, Ensign, NOAA	FIELD ACTIVITY REPRESENTATIVE	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	J. R. Minton	<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE	
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'			
(Consult Photogrammetric Instructions No. 64.)			
<b>OFFICE</b> <b>1. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> 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		<b>FIELD (Cont'd)</b> <b>8. Photogrammetric field positions** require</b> 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	
<b>FIELD</b> <b>1. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection P - Photogrammetric Vis - Visually 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75		<b>11. TRIANGULATION STATION RECOVERED</b> 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 <b>111. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75 <b>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</b>	
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.			

NOAA FORM 76-40 (8-74) Replaces C&GS Form 567.				U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION				LANDMARKS FOR CHARTS				ORIGINATING ACTIVITY			
REPORTING UNIT (If field party, ship or office)		STATE		LOCALITY		DATE		METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED		ORIGINATING ACTIVITY			
TO BE CHARTED		California		San Francisco and San Pablo Bays		06/06/80						<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)			
TO BE REVISED															
TO BE DELETED															
The following objects HAVE <input checked="" type="checkbox"/> BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS. OPR PROJECT NO. 411				JOB NUMBER CM-7704				SURVEY NUMBER TP-00527							
CHARTING NAME		DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses.)		LATITUDE ° / ' "		LONGITUDE ° / ' "		OFFICE		FIELD		CHARTS AFFECTED			
TANK		* (San Pablo, Amer. R. and S. S. Corp., Single Tank, 1947) Listed as lost in current control quad 371124 and not recovered or verified by field editor.		37° 58'		122° 21'		02.918"				18652 18649			
TANK		* (San Pablo Amer. R. and S. S. Corp., Double Tank, 1947) Listed as lost in current control quad 371224 and not recovered or verified by field editor.		37° 58'		122° 21'		07.45"				18652 18649			
		*Have been deleted from Chart, Nov. 1981. Final Review.													

1959/5

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	T. A. Peasley Ens., NOAA
POSITIONS DETERMINED AND/OR VERIFIED	T. A. Peasley Ens., 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.)	
<b>OFFICE</b> <b>I. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> 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	<b>FIELD (Cont'd)</b> <b>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.</b> EXAMPLE: P-8-V 8-12-75 74L(C)2982
<b>FIELD</b> <b>I. NEW POSITION DETERMINED OR VERIFIED</b> 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	<b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> 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.
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	