

TP-00533

TP-00533

NOAA FORM 76-35 (3-76) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
<h1>DESCRIPTIVE REPORT</h1>	
<i>Map No.</i> TP-00533	<i>Edition No.</i> 1
<i>Job No.</i> CM-7704	
<i>Map Classification</i> FINAL, FIELD EDITED MAP	
<i>Type of Survey</i> SHORELINE	
<b>LOCALITY</b>	
<i>State</i> California	
<i>General Locality</i> San Francisco and San Pablo Bays	
<i>Locality</i> San Leandro Bay	
<div style="border: 1px solid black; padding: 5px; display: inline-block;">           19 77 TO 1980         </div>	
<b>REGISTRY IN ARCHIVES</b>	
<b>DATE</b>	



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

TP-00533

## 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 120th	<input type="checkbox"/> DAYLIGHT
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
77B(P)2545-2548	Mar. 4, 1977	11:21	1:30,000	Not computed	
77B(P)3705-3707	Mar. 18, 1977	13:50	"	" "	
77B(P)3508	Mar. 18, 1977	11:20	"	" "	
77B(I)3085 & 3087*	Mar. 10, 1977	11:12	"	0.01 ft. below MLLW	
77B(I)3105*	Mar. 10, 1977	11:27	"	0.15 ft. above MLLW	
77B(I)3429*	Mar. 18, 1977	10:16	"	0.37 ft. below MHW	
77B(I)2836*	Mar. 5, 1977	10:43	"	0.17 ft. below MHW	

REMARKS Photo's 77B(P)2545-2548 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. Photo's 77B(P)3705-3707 and 3508 were prepared for hydro support.

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

The above listed Mean High Water tide controlled infrared photography was used to graphically compile the Mean High Water Line. The photography was controlled with pass points that were selected and dropped during the stereo instrument compilation of the interior detail. Corrections and modifications to the Mean High Water Line may have resulted from the application of the field edit data listed in part II of 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 Mean Lower Low Water tide controlled infrared photography and controlled with pass points selected and dropped during the stereo compilation of the interior detail. Changes to the original Mean Lower Low Water line may have resulted from the application of the field edit data listed in part II of 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-9927	1981	None; see Review Report, item #64			

## 5. FINAL JUNCTIONS

NORTH	EAST	SOUTH	WEST
TP-00530	No survey	TP-00535	TP-00532

## REMARKS

TP-00535 is 1:20,000 scale; all others are 1:10,000 scale.

TP-00533

## HISTORY OF FIELD OPERATIONS

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

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	R. Melby	Feb. 1977
2. HORIZONTAL CONTROL	RECOVERED BY R. Melby ESTABLISHED BY None PRE-MARKED OR IDENTIFIED BY "	Feb. 1977
3. VERTICAL CONTROL	RECOVERED BY " ESTABLISHED BY " PRE-MARKED OR IDENTIFIED BY "	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY " LOCATED (Field Methods) BY " IDENTIFIED BY "	
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY BY <input checked="" type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY None	
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY NA	

## 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) None			
4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED None			
PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME
5. GEOGRAPHIC NAMES: <input type="checkbox"/> REPORT <input checked="" type="checkbox"/> NONE		6. BOUNDARY AND LIMITS: <input type="checkbox"/> REPORT <input checked="" type="checkbox"/> NONE	
7. SUPPLEMENTAL MAPS AND PLANS None			
8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division) 1-Field Report			

TP-00533

## HISTORY OF FIELD OPERATIONS.

I. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION.

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	D. Taylor	Sept. 1980
2. HORIZONTAL CONTROL	RECOVERED BY B. Lund	Sept. 1980
	ESTABLISHED BY None	
	PRE-MARKED OR IDENTIFIED BY None	
3. VERTICAL CONTROL	RECOVERED BY "	
	ESTABLISHED BY "	
	PRE-MARKED OR IDENTIFIED BY "	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY B. Lund	Sept. 1980
	LOCATED (Field Methods) BY None	
	IDENTIFIED BY B. Lund	Sept. 1980
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION	
	<input type="checkbox"/> COMPLETE	
	<input checked="" type="checkbox"/> SPECIFIC NAMES ONLY BY	
	<input type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY B. Lund	Sept. 1980
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY NA	

## 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)3705-3708

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

See below

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME
77B(P)3705	Tower(s)		
77B(P)3706	Elevator		
77B(P)3707	Aero		

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

7. SUPPLEMENTAL MAPS AND PLANS

Construction plans in San Leandro Bay and small boat harbor opposite Government Island.

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

Field edit report, Field edit ozalid, 13 field sketches, signal overlay, 1 sounding volume containing fix data.

NOAA FORM 76-36D  
(3-72)U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATIONTP-00533  
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	July 1978	Class III manuscript	Aug. 1978	Sept. 1978
Field edit applied Compilation complete	Dec. 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
3 Pages		Mar. 1982	Appropriate forms (76-40) are attached with this Descriptive Report; no forms were for- warded prior to final review.

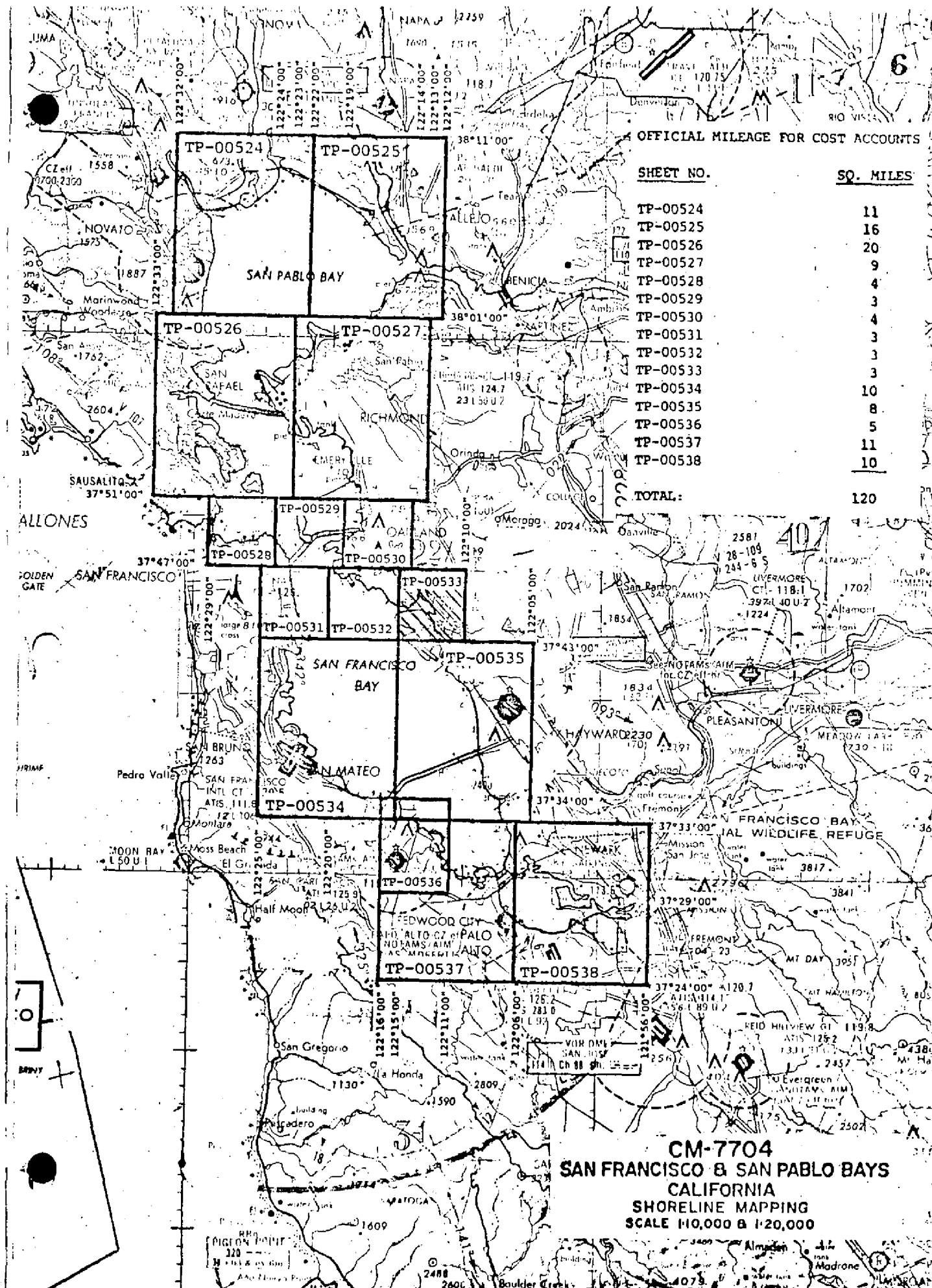
2. ☐ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: \_\_\_\_\_3. ☐ REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: \_\_\_\_\_

## III. FEDERAL RECORDS CENTER DATA \*\*

1. ☐ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☒ FORM NOS ~~76-40~~ SUBMITTED BY FIELD PARTIES. 76-403. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C, and ~~TP-00533~~ TP-00534  
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 REPORTS

TP-00533

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.

Hydrographic Survey H-9927 (1981) geographically corresponds with portions of this shoreline map. At the time of final review for this map, processing of the hydrographic survey had not begun. A copy of this final map was forwarded to the Hydrographic Surveys Division.

This Final Map is a 1:10,000 scale shoreline map that portrays the southern portion of Oakland Inner Harbor, including San Leandro Bay.

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 projects' 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-00533

Compilation was performed at the Atlantic Marine Center in July 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 September 1980 by personnel assigned to the Pacific Hydrographic Party and personnel from the Photogrammetry Branch, Pacific Marine Center. This field edit was accomplished approximately a year before the hydrographic survey (H-9927).

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 hydrographic survey (H-9927) has 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 August 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 nonfloating aids to navigation. 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 Report

TP-00533

There was no field inspection prior to compilation. Field work accomplished was limited to the recovery 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

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 aerotriangulation 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

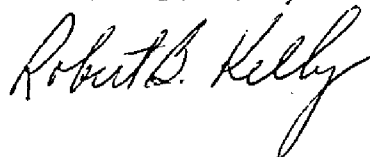
Local shoreline and USGS quadrangles were used to provide elevations for vertical adjustments of bridges.

25. Photography

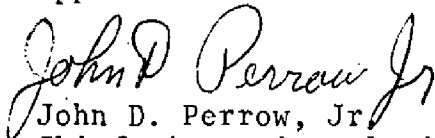
The photography was adequate as to placement of flight lines consistent quality, definition and absence of haze.

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

# HIGH & LOW WATER INFRARED PHOTOGRAPHY

1:40,000

MLLW

MHW

17

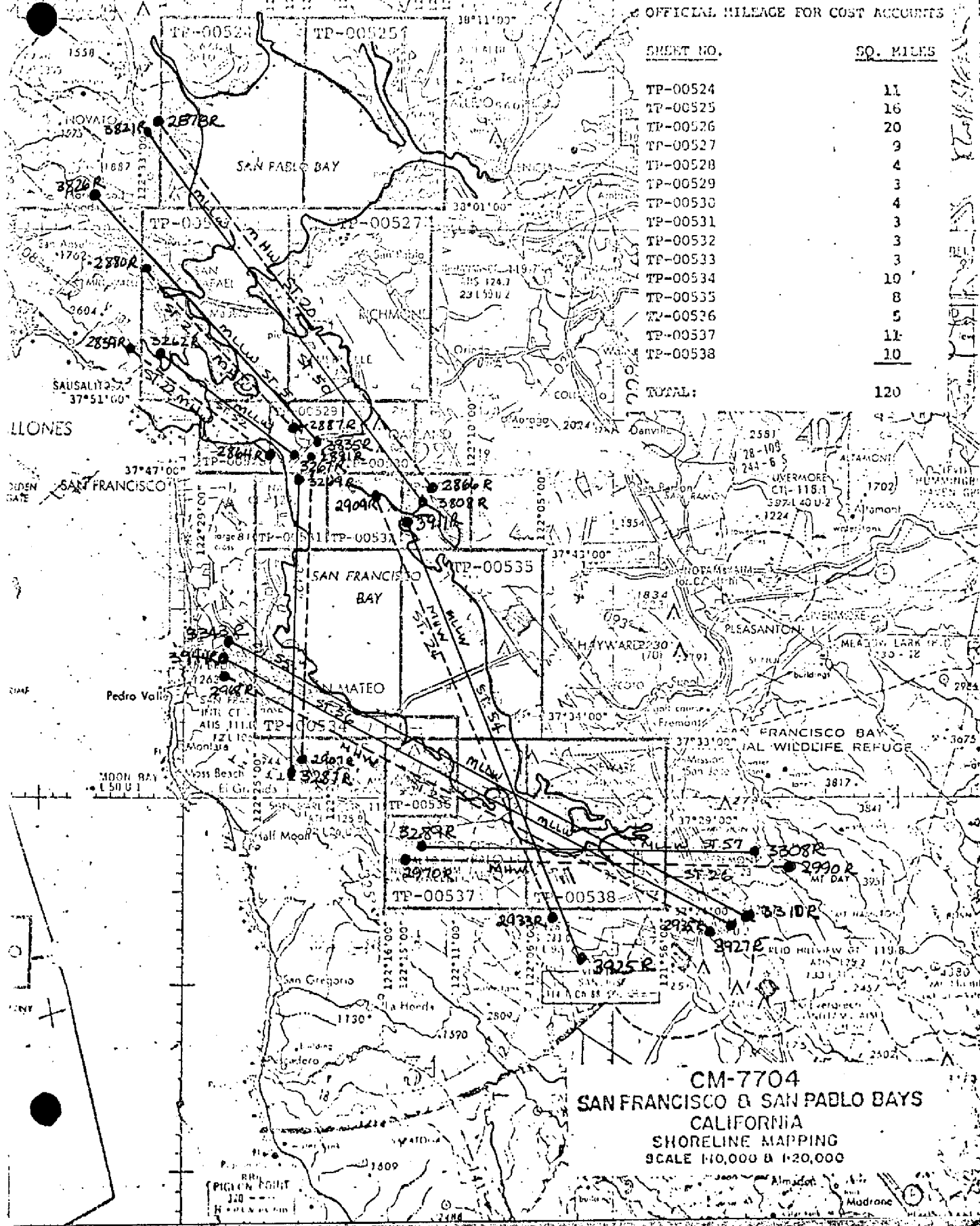
OFFICIAL MILEAGE FOR COST ACCOUNTS

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



# HIGH & LOW WATER INFRARED PHOTOGRAPHY

1:30,000 MLLW  
MLW

18

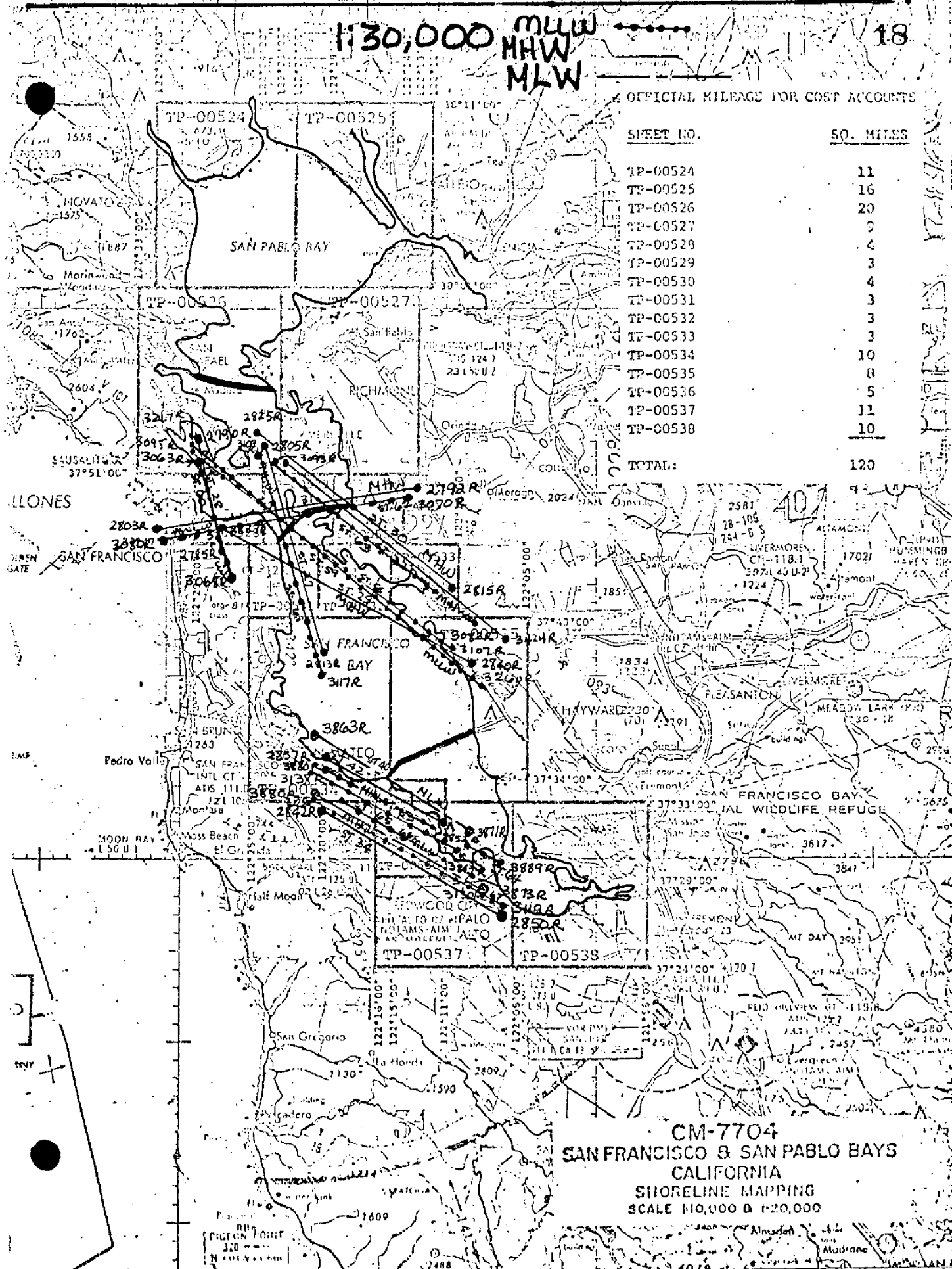
OFFICIAL MILEAGE FOR COST ACCOUNTS

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 10,000 & 120,000

# HYDRO-SUPPORT PHOTOGRAPHY

1:30,000

19

OFFICIAL MILEAGE FOR COST ACCOUNTS

SHEET NO.

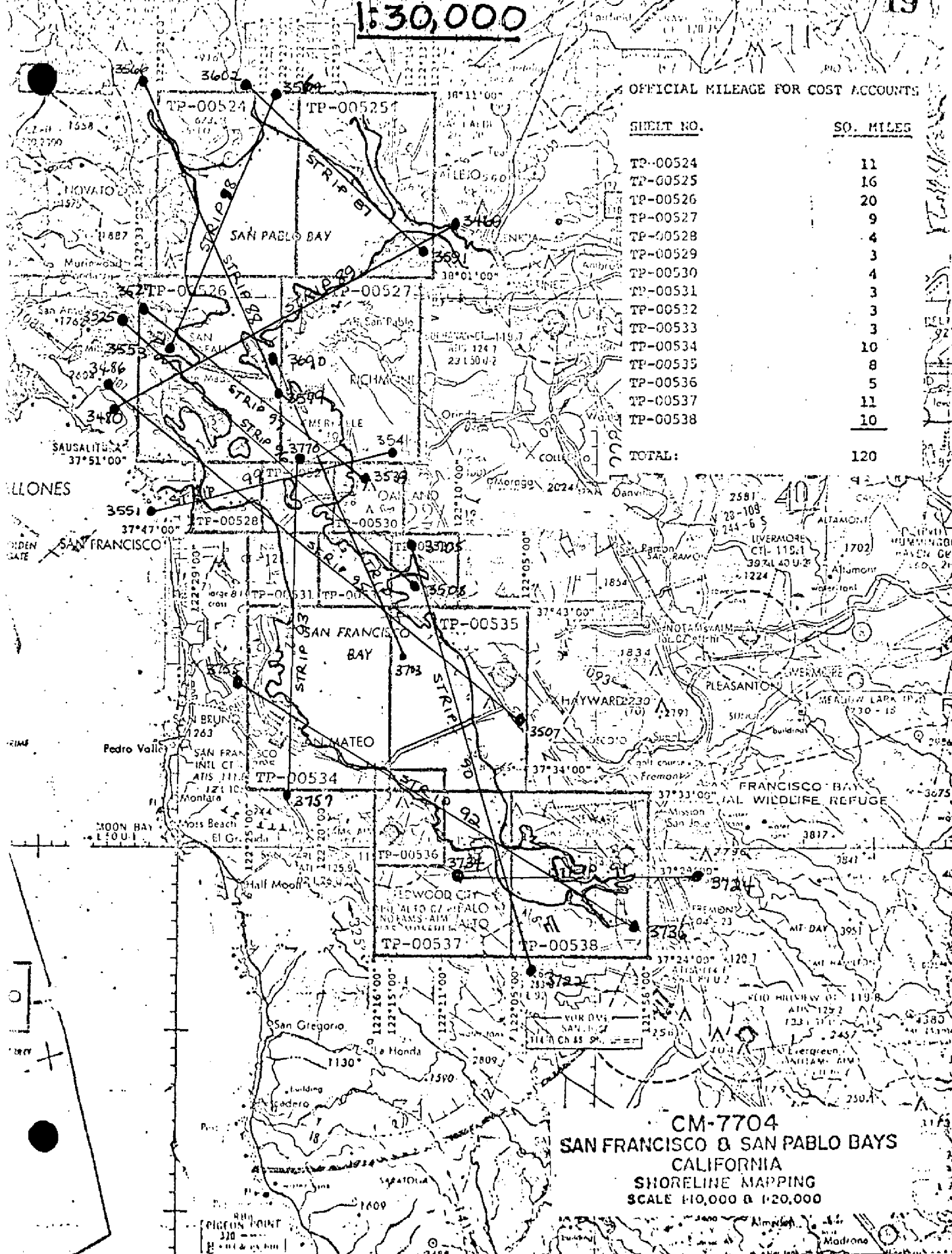
SO. MILES

TP-00524  
TP-00525  
TP-00526  
TP-00527  
TP-00528  
TP-00529  
TP-00530  
TP-00531  
TP-00532  
TP-00533  
TP-00534  
TP-00535  
TP-00536  
TP-00537  
TP-00538

11  
16  
20  
9  
4  
3  
4  
3  
3  
3  
10  
8  
5  
11  
10

TOTAL:

120



# COMPILATION PHOTOGRAPHY

20

1:30,000

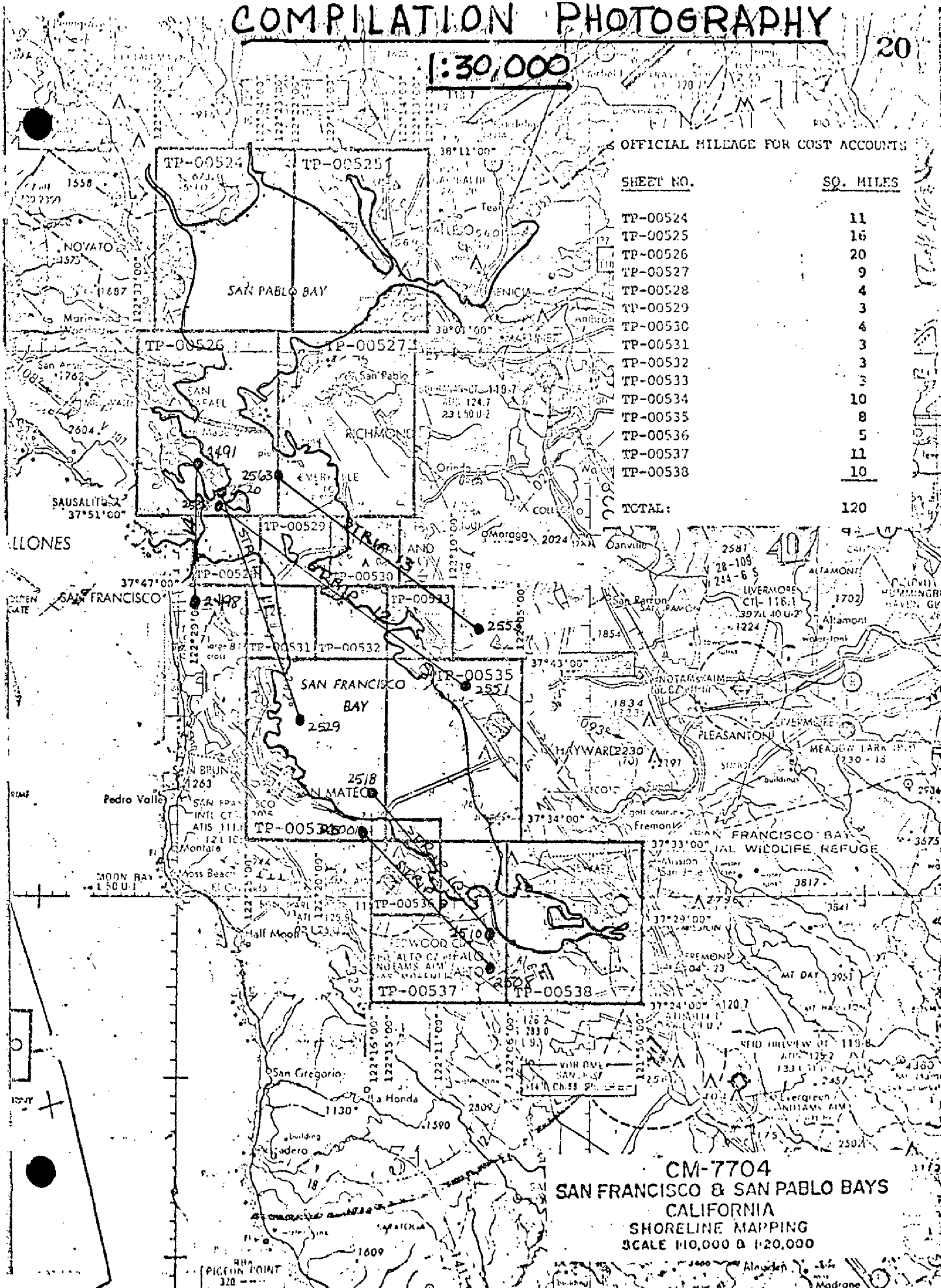
OFFICIAL MILEAGE FOR COST ACCOUNTS

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

## DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.	JOB NO.	STATION NAME	SOURCE OF INFORMATION (Index)	AEROTRI- ANGULATION POINT NUMBER	GEODEIC DATUM		ORIGINATING ACTIVITY			
					N. A. 1927		Photogrammetric Branch P.M.C.			
					COORDINATES IN FEET		GEOGRAPHIC POSITION		Departures REMARKS	
					STATE	ZONE	$\phi$ LATITUDE	$\lambda$ LONGITUDE	Front	(Back)
TP-0533	CM-7704	OAKLAND P.G. AND E. 50TH AVE. GAS HOLDER, 1947	371221	427	California	3	$\phi$ 37 45 54.676	$\lambda$ 122 12 50.885	1685.7 1245.5	( 164.1) ( 223.1)
		OAKLAND SAFETWAY TOWER STEEPLE, 1947	"				$\phi$ 37 45 56.511	$\lambda$ 122 12 00.425	1743.2 10.4	( 106.6) (1458.2)
		SAN LEANDRO NORTH- WEST BASE, 1947	"	426			$\phi$ 37 45 48.643	$\lambda$ 122 12 34.580	1499.7 846.4	( 350.1) ( 622.2)
		TABLE, 1935	"	372			$\phi$ 37 43 22.131	$\lambda$ 122 12 13.791	682.3 337.8	(1167.5) (1131.6)
		WALL, 1947	"	373			$\phi$ 37 43 39.049	$\lambda$ 122 13 38.721	1203.9 948.2	( 645.9) ( 521.1)
		FARM 2, 1932	"	214			$\phi$ 37 44 06.572	$\lambda$ 122 14 58.117	202.6 1430.4	(1647.2) ( 38.8)
		OAKLAND MUNICIPAL AIRPORT VORTAC, 1977	Field Position				$\phi$ 37 43 33.551	$\lambda$ 122 13 21.025	1034.4 514.9	( 815.4) ( 954.5)
							$\phi$	$\lambda$		
							$\phi$	$\lambda$		
							$\phi$	$\lambda$		
							$\phi$	$\lambda$		
							$\phi$	$\lambda$		
COMPUTED BY	W. Richter	COMPUTATION CHECKED BY				J. Massey		DATE 01/81		
LISTED BY	W. Richter	LISTING CHECKED BY				J. Massey		DATE 01/81		
HAND PLOTTING BY	W. Richter	HAND PLOTTING CHECKED BY				J. Massey		DATE 01/81		

## COMPILATION REPORT

TP-00533

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 1 page 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 East, Calif., 1959, photorevised 1968 and 1973.

San Leandro, Calif., 1959, photorevised 1968 and 1973

47. COMPARISON WITH NAUTICAL CHARTS

A comparison was made with the following National Ocean Survey charts: No. 18649, scale 1:40,000, 44th ed. Jan. 29, 1977.

No. 18652, scale 1:20,000/1:80,000, 16th ed. Mar. 26, 1977

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None

ITEMS TO BE CARRIED FORWARD

None

Submitted by:

*David P. Butler*

David P. Butler

Cartographic Technician

Date: July 21, 1978

Approved:

*Albert C. Rauck, Jr.*

Albert C. Rauck, Jr.

Chief, Coastal Mapping Section



## Addendum to the Compilation Report

## Field Edit

TP - 00533

The field edit for this manuscript was applied in the Photogrammetric Branch of the Pacific Marine Center. The original compilation was accomplished in the Compilation Branch at the Atlantic Marine Center. The field edit was applied from the source data itemized in Part II 76-36C, (Field Edit). The heights of obstructions in the water were determined from tide corrected listings based on the approved hourly heights provided by the Rockville Datums and Information Branch.

Noted in the Field Edit Report, part III (Geographic Names) portion of the waterway between Alameda and Oakland are addressed; though no changes were made on the manuscript, the references made to "Tidal Canal" and "High Street Bridge Reach" are informative and appropriate.

The subm pile in fix #841 is not located where the fix plots. Such that the pile was occupied, and the observers were close to known cultural features, the field location shown southwestward of the fix location, is the proper location of the subm pile.

The manuscript is now of Class I quality.

Submitted by,

*William Richter*

William Richter

Cartographer

Nov. 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.

Although the field editor did not clearly indicate if the pipelines and cable crossings were submerged, they were compiled as submerged.

The extensive redevelopment of the marina at Lat.  $37^{\circ}46.9'$ , Long.  $122^{\circ}14.6'$  was delineated from engineer photo-plans submitted by the field editor.

J. L. Hancock

*J. L. Hancock*

Final Reviewer

February 1982

NOAA FORM 75-74  
(2-74)U.S. DEPARTMENT OF COMMERCE  
NOAA  
NATIONAL OCEAN SURVEY

## PHOTOGRAMMETRIC OFFICE REVIEW

TP-00533

1. PROJECTION AND GRIDS  JR	2. TITLE  JR	3. MANUSCRIPT NUMBERS  JR	4. MANUSCRIPT SIZE  JR
CONTROL STATIONS			
5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY  JR		6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations)	
7. PHOTO HYDRO STATIONS			
8. BENCH MARKS  NA	9. PLOTTING OF SEXTANT FIXES  None	10. PHOTOGRAMMETRIC PLOT REPORT  JR	11. DETAIL POINTS  JR
ALONGSHORE AREAS (Nautical Chart Data)			
12. SHORELINE  JR	13. LOW-WATER LINE  JR	14. ROCKS, SHOALS, ETC.  JR	15. BRIDGES  JR
16. AIDS TO NAVIGATION  JR	17. LANDMARKS  JR	18. OTHER ALONGSHORE PHYSICAL FEATURES  JR	19. OTHER ALONGSHORE CULTURAL FEATURES  JR
PHYSICAL FEATURES			
20. WATER FEATURES  JR		21. NATURAL GROUND COVER  NA	
22. PLANETABLE CONTOURS  NA			
23. STEREOSCOPIC INSTRUMENT CONTOURS  N.A.	24. CONTOURS IN GENERAL  NA	25. SPOT ELEVATIONS  N.A.	26. OTHER PHYSICAL FEATURES  JR
CULTURAL FEATURES			
27. ROADS  JR	28. BUILDINGS  JR	29. RAILROADS  JR	30. OTHER CULTURAL FEATURES  JR
BOUNDARIES			
31. BOUNDARY LINES  NA		32. PUBLIC LAND LINES  NA	
MISCELLANEOUS			
33. GEOGRAPHIC NAMES  JR		34. JUNCTIONS  JR	
35. LEGIBILITY OF THE MANUSCRIPT  JR			
36. DISCREPANCY OVERLAY  JR	37. DESCRIPTIVE REPORT  JR	38. FIELD INSPECTION PHOTOGRAPHS  None	39. FORMS  JR
40. REVIEWER  Joanne Roderick July 26, 1978		SUPERVISOR, REVIEW SECTION OR UNIT  A. 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  William A. Richter, Nov. 1980		SUPERVISOR  James W. Massey	
Reviewer: James W. Massey, Nov. 1980			
43. REMARKS  JR			

## PHOTOGRAMMETRIC OFFICE PRE-HYDRO AND FIELD EDIT REVIEW

TP-00533

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 NA	COMPARISON WITH EXISTING MAPS JR	FIELD PRINTS AND OTHER COPIES JR
REVIEWER Joanne Roderick	DATE July 20, 1978	SUPERVISOR A. C. Rauck	DATE July 1978

REMARKS

## PHOTOGRAMMETRIC OFFICE POST-HYDRO AND FIELD EDIT REVIEW

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

J. L. Hancock *JLH*  
Final Reviewer  
Feb. 1982

FIELD EDIT REPORTTP-00533I. METHODS

Field edit for TP-00533 was conducted in accordance with Chapter 11 of the "Manual of Coastal Mapping Procedures," by James Massey and Rick Richter (OA/CPM33) and personnel of the Pacific Hydrographic Party. Shoreline inspection was accomplished by visual observation from a 17' Boston Whaler (NOAA 594), a hydrographic launch (NOAA 1016), and along the shore by foot. Field edit was accomplished on Julian Days 246, 248, 251, 253, 254, 256, 269, and 303.

Compilation of the sheet was verified by direct inspection of the various photos during field edit. Features not visible on photos were located by ground survey methods or depicted on engineering drawings accompanying this report. Detailed drawings of construction involving changes to shoreline features and topography were verified by the field editor, eliminating the need for further ground surveys.

Changes, additions, and deletions to the sheet were noted on the field edit sheet, chronapaque photos NOS 18 Mar 77B 3707, 3706, 3705, and 3508 - all of which are ratio prints at a scale of 1:10,000, or by detailed information on sketches included with this report. Fixed aids were verified visually from photo positions. Landmarks were inspected from seaward and verified or revised as necessary on Form 76-40. All heights were recorded in feet at Greenwich Mean Time on this survey. Copies of horizontal control station recovery notes and descriptions for the area covered by this survey are included with the data package. The originals will be submitted with the 1980 Horizontal Control Report for OPR-L123-PHP-80.

II. ADEQUACY AND COMPLETENESS

Compilation of TP-00533 was generally 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 except for the following:

1) The "Areo"-Oakland Municipal Airport rotating beacon had a historical geodetic position, but due to modernization and expansion of the airport facilities, this beacon has been moved. The beacon now sits atop of Hangar Five (5). A radial plot was not done, as only two (2) photos were available. The geodetic station has been submitted as destroyed, but this areo beacon is of landmark value.

2) Concerning the compiler's question at Latitude 37°43'15"N, Longitude 122°13'30"W about the nature of marshland or landfill. This may be resolved as follows: The area in question is marshland that has been cut off from tidal action by a system of levees and dikes. As such, the vegetation is becoming more fresh water oriented and will probably continue to develop into a fresh water swamp. No landfill is underway or planned for the immediate future.

This land is held in reserve until such time as a need arises. The levees were constructed prior to airport expansion and this piece of land was simply included. It should be labeled, "Undeveloped-Reclaimed Marshland."

3) Concerning the question about two (2) submerged pipelines across the San Leandro Bay Channel (37°46'N, 122°13'30"W) between Fruitvale Avenue Bridge and the High Street Bridge, there is presently no evidence of these submarine pipelines. After extensive investigation with the City of Alameda, the various applicable public utilities, and the Army Corps of Engineers, there is no evidence of anyone operating any pipeline as shown on Chart 18652. If a pipeline does exist, it is unmarked and out of commission. All utility crossings are at or near either the Fruitvale, High Street or Park Street Bridges.

### III. GEOGRAPHIC NAMES

In answer to the question relating to "Oakland/San Antonio" for the SW portion of the City of Oakland, San Antonio is not currently used and all local reference is to Oakland. San Antonio may have been a historical name prior to incorporation of these areas into the City of Oakland. This area (37°45'33"N, 122°11'50"W) should be labeled, "Oakland."

It is recommended that the geographic name, "Tidal Canal," on Chart 18652, at approximately 37°45'45"N, 122°13'20"W be changed to "San Leandro Bay Channel." The reasoning is that Volume III of the 1980 Coast Guard Light List (pg. 51) identifies the aids to navigation in this area with the above name.

It is suggested that the area between the Fruitvale Avenue Bridge and the High Street Bridge be named "High Street Bridge Reach," as this more uniformly reflects the naming system applied along the canal. Also, it should be noted that many of the locals, including the Bridge Authority, routinely refer to this section of the canal as "High Street Bridge Reach." Latitude 37°46'N, Longitude 122°13'30"W, Charts 18650 and 18652 are affected.

### IV. MANUSCRIPT ACCURACY

Correlation between photo located features and geodetically located features, inspected shoreline, and agreement of redundant three-point fixes using both geodetic and photo signals, verified the horizontal accuracy of the manuscript.

### V. RECOMMENDATIONS

It is strongly recommended that any references to specific items on charts be properly identified. A copy of the chart in question should be forwarded, similar to the procedure of identifying "PSR" (Pre-Survey Review) items. In congested areas, it would eliminate all uncertainties and save valuable time.

Oakland P.G. & E., 50th Ave Gasholder, 1947 (Latitude 37°45'54.676"N, Longitude 122°12'50.885"W) is charted as "Gas Tank" with the standard size circle symbol. This tank is so prominent from seaward (335' high x 218' diameter, as per station description by P.A. Weber, 1964) that it would serve the public interest to use a larger symbol. An example of a "larger" symbol would be the one used to identify the "Gas Holder" at Potrero Pt. (Latitude 37°45'28"N, Longitude 122°23'05"W). Charts 18650 and 18652 are affected.

# VI. UNCHARTED DANGERS AND OBSTRUCTIONS

The following is a list of uncharted obstructions located in San Leandro Bay:

<u>Fix #</u>	<u>Object</u>	<u>Approximate Position</u>	
Fix - See Sketch #8	Groin Pile	37°45'24"N 37°45'24"N	122°13'26"W 122°13'26"W
Fix #814	Obstruction	37°45'15"N	122°13'37"W
Sketch #8	Stake	37°45'11"N	122°13'41"W
Sketch #8	Stake	37°45'08"N	122°13'44"W
Fix #813	Stake	37°45'02"N	122°13'47"W
Fix #819	Pile	37°44'58"N	122°13'30"W
Fix #817	Pile	37°44'55"N	122°13'26"W
Fix #827	Pile	37°44'53"N	122°13'20"W
Fix #828 #829	Ruins	37°44'47"N	122°13'17"W
Fix #830 thru #834 and #844	Pile Line	37°44'38"N	122°13'00"W
Fix #822 #823	Foul Area	37°44'10"N	122°12'40"W
Fix #820 "	Pipe Submerged Pipe	37°44'33"N 10' N of Fix #820	122°12'49"W
Fix #8005 #8006	Pipes	37°45'29"N	122°12'59"W
See Photo 3706	Wreck	37°45'30"N	122°13'05"W

Along the San Leandro Channel, the following are uncharted obstructions:

Fix #841	Submerged Pile	37°44'56"N	122°14'08"W
Fix #840	Rock	37°45'02"N	122°14'22"W
Fix #837	Outfall	37°44'54"N	122°14'22"W
Fix #838	Stakes	37°44'57"N	122°14'36"W
Fix #845	Outfall	37°44'53"N	122°14'46"W

Along the San Leandro Bay Channel (Tidal Canal) from Government Island to San Leandro Bay Channel Daybeacon #1, the following are uncharted obstructions:

See Photo	4 Dolphins	37°46'33"N	122°14'38"W
See F.E. for Limits	Foul Area	37°46'40"N	122°14'30"W
See F.E. for Limits	Dolphin	37°46'32"N	122°14'24"W
Sketch #6	Foul Area	37°46'14"N	122°14'08"W
Photo 3705	Dolphins	37°46'12"N	122°13'50"W
See Sketch #7 & "A" and Photo 3705	Center of Span Bridge Fender and Dolphins	37°46'10"N	122°13'45"W
See Sketch #7	Dolphins	37°46'00"N	122°13'30"W
Photo 3705	Dolphin	37°45'50"N	122°13'23"W

Information for the above lists may be obtained from the various sketches (included with this report) and fix data in the field edit notebook. Most will be readily understood; however, some may require the further explanations contained in the sketches or notebook.

LIST OF ADDITIONAL SHEETS  
TO ACCOMPANY FIELD EDIT REPORT

TP-00533

ENGINEERING DRAWINGS  
SUBMITTED BY EAST BAY  
REGIONAL PARKS

1. Drawings Labeled:

"Phase 3C - San Leandro Bay Regional Shoreline - Oakland, CA"  
(cover sheet)

2. Sheets 1 thru 3 labeled:

"Grading and Paving" San Leandro Regional Shoreline  
Phase 2A

3. Sheets 1 thru 3 labeled:

"Landscaping and Paving" San Leandro Regional Shoreline  
Phase 3A-2

All above drawings verified for accuracy by Field Editor.



Submitted by:

*Dirk R Taylor*

for Bruce H. Lund  
Pacific Hydrographic Party

Approved and forwarded by:

*Dirk R Taylor*

Dirk R. Taylor  
LCDR, NOAA  
Chief, Pacific Hydrographic Party

## REVIEW REPORT TP-00533

## 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 East, Calif., 1959, photorevised 1968 and 1973  
San Leandro, Calif., 1959, photorevised 1968 and 1973

No significant differences were noted.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:

Geographic portions of this final shoreline map correspond with hydrographic survey H-9927 (1981). No comparison was made as the hydrographic survey has not been processed. Prior to final review, a Class I map was forwarded to the Hydrographic Verification Branch at PMC. However, due to reoccurring discrepancies with preceding Class I maps, processing of survey H-9927 has been deferred pending receipt of this final map.

During final review, several offshore obstruction heights were applied to the map from approved tide data that was not previously available. Consequently, a copy of this final map indicating the height data and all revisions to the previous Class I map will be forwarded to the Hydrographic Surveys Division.

65. COMPARISON WITH NAUTICAL CHARTS:

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

TP-00533

No. 18650, 36th edition, 1:20,000 scale, dated June 7, 1980  
No. 18649, 48th edition, 1:40,000 scale, dated February 14, 1981  
No. 18652, 20th edition, 1:20,000/1:80,000 scale, dated May 16, 1981

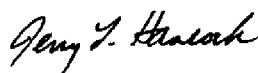
An abundance of cultural development has occurred in the waterway between Government Island and San Leandro Bay since the 1977 compilation photography. Current information was furnished by the 1980 field editor by means of numerous field sketches. However, portrayal of this information and the previous compilation was restricted due to the 1:10,000 map scale.

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.

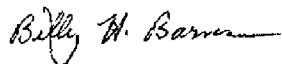
This map complies with the Project Instructions, and meets the requirements for National Standards of Map Accuracy.

Submitted by:



Jerry L. Hancock  
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-00533

Airport Channel

Oakland Inner Harbor

Alameda

San Francisco Bay

Bay Farm Island

San Leandro Bay

Government Island

San Leandro Channel

Lion Creek

San Leandro Creek

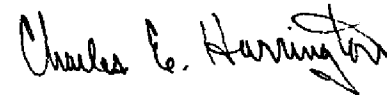
Metropolitan Oakland International Airport

Southern Pacific (RR)

Oakland

Tidal Canal

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 567.										U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION									
NONFLOATING AIDS <del>ON LAND</del> FOR CHARTS										ORIGINATING ACTIVITY									
<input checked="" type="checkbox"/> TO BE CHARTED <input type="checkbox"/> TO BE REVISED <input type="checkbox"/> TO BE DELETED										<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									
REPORTING UNIT (Field Party, Ship or Office) Photogrammetric Branch P.M.C. Seattle, WA										DATE Nov. 1980									
STATE California										LOCALITY San Francisco and San Pablo Bays									
The following objects HAVE <input checked="" type="checkbox"/> BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.																			
OPR PROJECT NO. 411										DATUM N.A. 1927									
JOB NUMBER CM - 7704										SURVEY NUMBER TP - 00533									
CHARTING NAME DAY-BEACON										METHOD AND DATE OF LOCATION (See instructions on reverse side)									
DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)										CHARTS AFFECTED									
(Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)										OFFICE									
(Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)										FIELD									
(Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)										CHARTS AFFECTED									
DAY-BEACON	Brooklyn Basin, North Channel Dybn 1/2 (less than 3rd order position)	37	46	57.64	122	14	140.24	984	77B(P) 3705	Mar. 18, 1977	F36L	April 15, 1979	18649 18650 18652						
DAY-BEACON	San Leandro Bay Channel Daybeacon 1	37	45	31.95	122	13	21.00	514	77B(P) 2546	Mar. 4, 1977	V-Vis. 9-4-80	18649 18652 18650							
DAY-BEACON	San Leandro Bay Channel Daybeacon 3	37	44	56.28	122	13	19.69	482	77B(P) 3707	Mar. 18, 1977	V-Vis. 9-5-80	" "							
DAY-BEACON	San Leandro Bay Channel Daybeacon 4	37	44	55.56	122	13	20.75	508	77B(P) 3707	Mar. 18, 1977	V-Vis. 9-5-80	" "							
DAY-BEACON	San Leandro Bay Channel Daybeacon 5	37	44	26.82	122	12	44.52	1090	77B(P) 3707	Mar. 18, 1977	V-Vis. 9-5-80	" "							
DAY-BEACON	San Leandro Bay Channel Daybeacon 6	37	44	28.25	122	12	48.60	1190	77B(P) 3707	Mar. 18, 1977	V-Vis. 9-5-80	" "							

RESPONSIBLE PERSONNEL		ORIGINATOR	
TYPE OF ACTION	NAME		
OBJECTS INSPECTED FROM SEAWARD	D. Taylor	<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	D. Taylor	FIELD ACTIVITY REPRESENTATIVE	
	W. Richter	OFFICE ACTIVITY REPRESENTATIVE	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	J. Hancock, Final Review, Feb. 1982	<input checked="" 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 (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 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>	
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.			

NOAA FORM 76-40 (8-74)										U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION									
Replaces C&GS Form 567.										LANDMARKS FOR CHARTS									
REPORTING UNIT (Field Party, Ship or Office)		STATE		LOCALITY		DATE		ORIGINATING ACTIVITY											
TO BE CHARTED <input checked="" type="checkbox"/> TO BE REVISED <input type="checkbox"/> TO BE DELETED		Photogrammetric Branch P.M.C. Seattle, WA		California		Nov. 1980		<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.		JOB NUMBER		SURVEY NUMBER		DATUM		METHOD AND DATE OF LOCATION (See instructions on reverse side)											
4111		CM - 7704		TP - 00533		N.A. 1927		OFFICE											
CHARTING NAME		DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)		LATITUDE		LONGITUDE		FIELD											
				° / ' " D.M. Meters		° / ' " D.P. Meters													
STACK (NW of 5)				37 46	09.83	122 13	38.49	77B(P) 3706 Mar. 18, 1977	18650 18649 18652										
TANK				37 46	08.04	122 13	36.04	77B(P) 3706 Mar. 18, 1977	" "										
TANK				37 46	07.49	122 13	34.89	77B(P) 3706 Mar. 18, 1977	" "										
TOWER	North 1 of 2 towers on railroad bridge new ldmk. tower recommended for charts			37 46	09.83	122 13	45.03	P-5-L 77B(P) 3705 9-15-80	" "										
TOWER	South 1 of 2 towers on railroad bridge new ldmk. tower recommended for charts			37 46	07.95	122 13	46.54	P-5-L 77B(P) 3705 9-15-80	" "										
ELEVATOR	Elevator (conveyor) replaces currently charted elevator, see pg. 3, deletion page.			37 46	27.60	122 14	20.39	P-5-L 77B(P) 3706 9-15-80	18649 18650 18652										
GAS TANK	(Oakland P.G. And E. 50th. Ave. Gas Holder, 1947)			37 45	54.676	122 12	50.885	Triang. Rec. V-Vis. 9-4-80	18650 18649 18652										
RADIO TOWER				37 44	36.33	122 13	09.07	V-Vis. 9-4-80	" "										
TANK				37 46	09.50	122 13	20.91	V-Vis. 9-4-80	" "										
AERO	Rotating G and W; New position, beacon now located on Bldg. (hangar)			37 43	49.89	122 12	36.63	P-5-L 77B(P) 3707 9-5-80	" "										



RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	D. Taylor
POSITIONS DETERMINED AND/OR VERIFIED	D. Taylor
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	W. Richter
J. Hancock, Final Review, Feb. 1982	
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 of 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>	



TYPE OF ACTION		RESPONSIBLE PERSONNEL		ORIGINATOR	
		NAME			
OBJECTS INSPECTED FROM SEAWARD		D. Taylor		<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		D. Taylor		FIELD ACTIVITY REPRESENTATIVE	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		W. Richter		OFFICE ACTIVITY REPRESENTATIVE	
		J. Hancock, Final Review, Feb. 1982		<input checked="" 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.)					
OFFICE			FIELD (Cont'd)		
<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>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>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.					