

TP-00734 ORIGINAL

TP-00734

NOAA FORM 76-35

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

## DESCRIPTIVE REPORT

Type of Survey ..... Shoreline  
Job No. .... CM-7311 ..... Map No. TP-00734  
Classification No. Final ..... Edition No. 1  
Field Edited Map

### LOCALITY

State ..... Washington  
General Locality ..... Tacoma Harbor  
Locality ..... City Waterway

1973 TO 1974

### REGISTRY IN ARCHIVES

DATE .....

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974-762-901

RES 18453-9-30-81 RL  
RES 18445-50-9-30-81-RL  
RES 18448 - 9-30-81 RL

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 Division Atlantic Marine Center, Norfolk, Virginia OFFICER-IN-CHARGE Jeffrey G. Carlen, Cdr., NOAA		SURVEY TP. <u>00734</u> MAP EDITION NO. <u>(1)</u> MAP CLASS <u>Final</u> JOB <u>REC CM-7311</u>	
PHOTOGRAMMETRIC OFFICE Coastal Mapping Division Atlantic Marine Center, Norfolk, Virginia OFFICER-IN-CHARGE Jeffrey G. Carlen, Cdr., NOAA		LAST PRECEDING MAP EDITION TYPE OF SURVEY <input type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED JOB PH. _____ MAP CLASS _____ SURVEY DATES: 19__ TO 19__	
<b>I. INSTRUCTIONS DATED</b>			
1. OFFICE		2. FIELD	
Aerotriangulation Compilation Aug 30, 1973 Jan 22, 1974		May 17, 1973	
<b>II. DATUMS</b>			
1. HORIZONTAL: <input checked="" type="checkbox"/> 1927 NORTH AMERICAN		OTHER (Specify)	
2. VERTICAL: <input checked="" type="checkbox"/> MEAN HIGH-WATER <input checked="" type="checkbox"/> MEAN LOW-WATER <input checked="" type="checkbox"/> MEAN LOWER LOW-WATER <input type="checkbox"/> MEAN SEA LEVEL		OTHER (Specify)	
3. MAP PROJECTION Polyconic		4. GRID(S) STATE Washington ZONE South	
5. SCALE 1:5,000		STATE ZONE	
<b>III. HISTORY OF OFFICE OPERATIONS</b>			
OPERATIONS		NAME	
DATE			
1. AEROTRIANGULATION METHOD: <u>Analytic</u> LANDMARKS AND AIDS BY		I. O. Raborn	
2. CONTROL AND BRIDGE POINTS METHOD: <u>Calcomp</u> PLOTTED BY CHECKED BY		R. Robertson	
3. STEREOSCOPIC INSTRUMENT COMPILATION INSTRUMENT: <u>Wild B-8</u> SCALE: <u>1:7,500</u> PLANIMETRY BY CHECKED BY CONTOURS BY CHECKED BY		R. R. White L. O. Neterer NA NA	
4. MANUSCRIPT DELINEATION METHOD: <u>Smooth Drafted</u> SCALE: <u>1:5,000</u> PLANIMETRY BY CHECKED BY CONTOURS BY CHECKED BY HYDRO SUPPORT DATA BY CHECKED BY		Charles Parker A. L. Shands NA NA Charles Parker A. L. Shands	
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY		A. L. Shands	
6. APPLICATION OF FIELD EDIT DATA CHECKED BY		J. Desch A. L. Shands	
7. COMPILATION SECTION REVIEW BY		A. C. Rauck, Jr.	
8. FINAL REVIEW BY		A. L. Shands	
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY		A. L. Shands	
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY		J. B. Phillips	
11. MAP REGISTERED - COASTAL SURVEY SECTION BY		R. T. Catter	

NOAA FORM 76-36B  
(3-72)U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEYTP-00734  
COMPILATION SOURCES

## 1. COMPILATION PHOTOGRAPHY

CAMERA(S) Wild RC-8 "E"		TYPES OF PHOTOGRAPHY LEGEND		TIME REFERENCE	
TIDE STAGE REFERENCE		(C) COLOR (P) PANCHROMATIC (I) INFRARED		ZONE Pacific	
<input checked="" type="checkbox"/> PREDICTED TIDES <input type="checkbox"/> REFERENCE STATION RECORDS <input type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY				<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> DAYLIGHT	
				MERIDIAN 120th	
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
73E(C) 9129 thru 9131	6/22/73	10:33	1:15,000	7.1 ft. above MLLW	
73E(C) 9104 thru 9106	6/22/73	09:55	1:15,000	7.7 ft. above MLLW	
73E(C) 9112	6/22/73	10:18	1:15,000	7.4 ft. above MLLW	

REMARKS

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

The mean high water line was delineated from the above listed photography.

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

~~None compiled, but a MLLW line in middle waterway was added by the field editor.~~  
A.L.S.

Field identified by field editor

## 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

## 5. FINAL JUNCTIONS

NORTH	EAST	SOUTH	WEST
TP-00732	TP-00735	No Survey	No Survey

REMARKS

TP-00734

## HISTORY OF FIELD OPERATIONS

I. ☒ FIELD INSPECTION OPERATION☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	R. B. Melby	6/73
2. HORIZONTAL CONTROL	RECOVERED BY R. B. Melby	6/73
	ESTABLISHED BY None	
	PRE-MARKED OR IDENTIFIED BY None	
3. VERTICAL CONTROL	RECOVERED BY NA	
	ESTABLISHED BY NA	
	PRE-MARKED OR IDENTIFIED BY NA	
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 BY	
	<input type="checkbox"/> SPECIFIC NAMES ONLY	
	<input checked="" type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY None	
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY NA	

## II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

None

2. VERTICAL CONTROL IDENTIFIED

NA

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: ☐ 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)

None

TP-00734

## HISTORY OF FIELD OPERATIONS

I. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	M. Fleming	3/74 - 4/74
2. HORIZONTAL CONTROL	RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	None None None
3. VERTICAL CONTROL	RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	NA NA NA
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY LOCATED (Field Methods) BY IDENTIFIED BY	None None None
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY <input checked="" type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY	None
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY	NA

## II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

None

2. VERTICAL CONTROL IDENTIFIED

NA

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: ☐ REPORT ☒ NONE6. BOUNDARY AND LIMITS: ☐ REPORT ☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

None

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

1 Original Field Edit Ozalid and Field Edit Report

RP-00734  
HISTORY OF FIELD OPERATIONSI. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	M. Fleming	12/74 - 1/75
2. HORIZONTAL CONTROL	RECOVERED BY L. Riggers - D. Eilers	12/74
	ESTABLISHED BY None	
	PRE-MARKED OR IDENTIFIED BY None	
3. VERTICAL CONTROL	RECOVERED BY NA	
	ESTABLISHED BY NA	
	PRE-MARKED OR IDENTIFIED BY NA	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY D. Eilers	12/74
	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 <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

NA

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: ☐ REPORT ☒ NONE6. BOUNDARY AND LIMITS: ☐ REPORT ☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

1 Site Plan - Bulk Export Terminal

1 Set Plans - Grain Export Facility

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

1 Original Field Edit Ozalid

1 Addenda Field Edit Report

4 Form 76-40's

TP-00734  
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.	2/74	Class III Manuscript Superseded	3/74	3/74
Field edit applied. Compilation complete.	4/75	Class I Manuscript	5/77	
Final Review	Feb. 1978	Final	Feb. 1978	

## II. LANDMARKS AND AIDS TO NAVIGATION

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

NUMBER	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
1		6/16/77	Landmark to be deleted.
1		6/16/77	Aid
2		6/16/77	Landmarks

2. ☐ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: June 16, 1977  
3. ☐ REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: \_\_\_\_\_

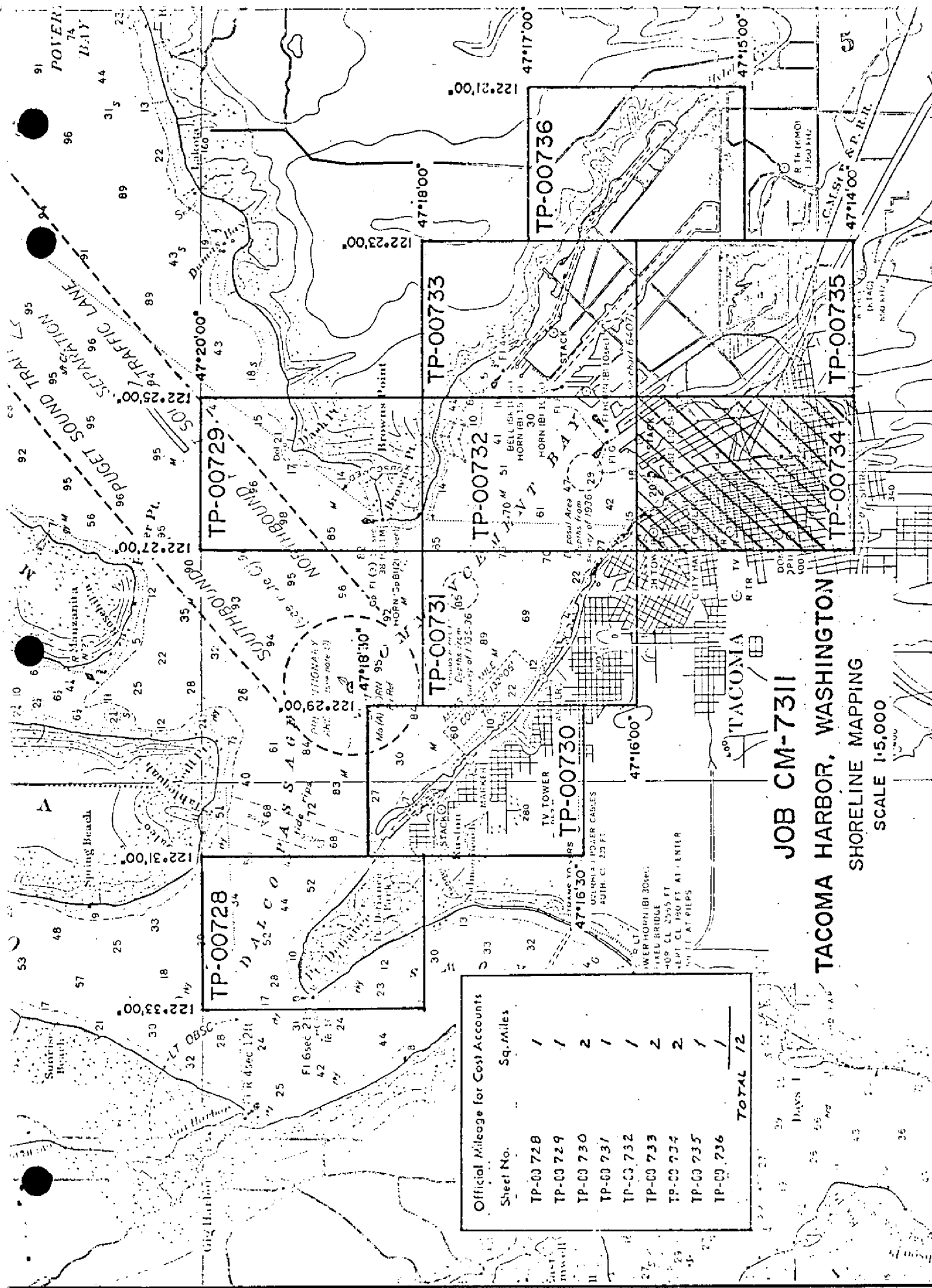
## III. FEDERAL RECORDS CENTER DATA

1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.  
2. ☐ CONTROL STATION IDENTIFICATION CARDS; ☒ FORM NOS 26-44 SUBMITTED BY FIELD PARTIES.  
3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.  
ACCOUNT FOR EXCEPTIONS:

4. ☐ DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED: \_\_\_\_\_

## 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	



**JOB CM-7311**  
**TACOMA HARBOR, WASHINGTON**  
 SHORELINE MAPPING  
 SCALE 1:5,000

Official Mileage for Cost Accounts		
Sheet No.	Sq. Miles	
TP-00 728	1	
TP-00 729	1	
TP-00 730	2	
TP-00 731	1	
TP-00 732	1	
TP-00 733	2	
TP-00 734	2	
TP-00 735	1	
TP-00 736	1	
TOTAL		12

29 30 31 32 33 34 35 36  
 DAYS  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

## SUMMARY TO ACCOMPANY

## DESCRIPTIVE REPORTS TP-00728 thru TP-00736

The maps covered in this summary comprise all of Project CM-7311. They are all standard shoreline maps covering Commencement Bay and including the Hylebos, Blair, Sitcum, Milwaukee, Puyallup, St. Paul, Middle and City Waterways. The purpose of the project is to provide up-to-date shoreline and alongshore delineation in support of contemporary hydrographic surveys and for nautical chart construction. All maps are 1: 5,000 scale.

Photography of the area was flown at 1:15,000 scale in June, 1973. Both onshore and offshore flights were flown. Ratios of the offshore flights were processed by the compilation office for photo-hydro support.

Field work prior to compilation was limited to the recovery and identification of horizontal control used in bridging. There was no clarification of details.

Bridging was done at the Washington Science Center in January, 1974, using the onshore flights. Analytic triangulation methods were used. Points common to the offshore flights were established to determine ratio scales.

The maps were compiled at the Atlantic Marine Center during February and March, 1974, by Wild B-8 instrument method.

Many buildings currently charted are not shown on the maps. In most cases, buildings are shown on the chart as they appear on the photographs. However, in a few instances buildings shown on the chart are not visible on the photographs. Where this is so, that fact is stated in the review report of the affected map.

Field edit was partially done in April, 1974 and completed in December, 1974. It was applied to the maps at the Atlantic Marine Center in May, 1975.

Final review was performed at the Atlantic Marine Center in January, 1978. The original base maps and all pertinent data was forwarded to the Washington Science Center for final registration.

## FIELD INSPECTION

TP-00734

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

## PHOTOGRAMMETRIC PLOT REPORT

Tacoma Harbor  
Washington  
Job CM-7311  
January 1974

21. Area Covered

The area covered by this report pertains to the shoreline of Commencement Bay, Tacoma, Washington. This area is covered by nine 1:5,000 scale sheets, TP-00728 thru TP-00736.

22. Method

Three strips of 1:15,000 scale color photography were bridged by analytic aerotriangulation methods. Strip No. 1 was measured on the David W. Mann Company mono comparator Model 422 and strips 2 and 3 were measured on the Wild stereo comparator. Sketch number 1 shows the flight lines of the photography and the placement of the control used in the adjustment. The three strips were controlled by field identified control paneled in 1973. Old control, which was office identified, was floated for checks. Ties were made between all bridging strips. Common points were located between the bridging photography and the offshore flights to determine the ratio scale. One cronapaque and one matte each were ordered of the offshore flights. Sketch number 2 shows the flight lines of the offshore photography. Data for ruling projections were furnished to the Coradomat to be plotted on the Washington South Plane Coordinate System.

23. Adequacy of Control

The control was adequate.

24. Supplemental Data

USGS quadrangles were used to provide vertical control for the adjustment.

25. Photography

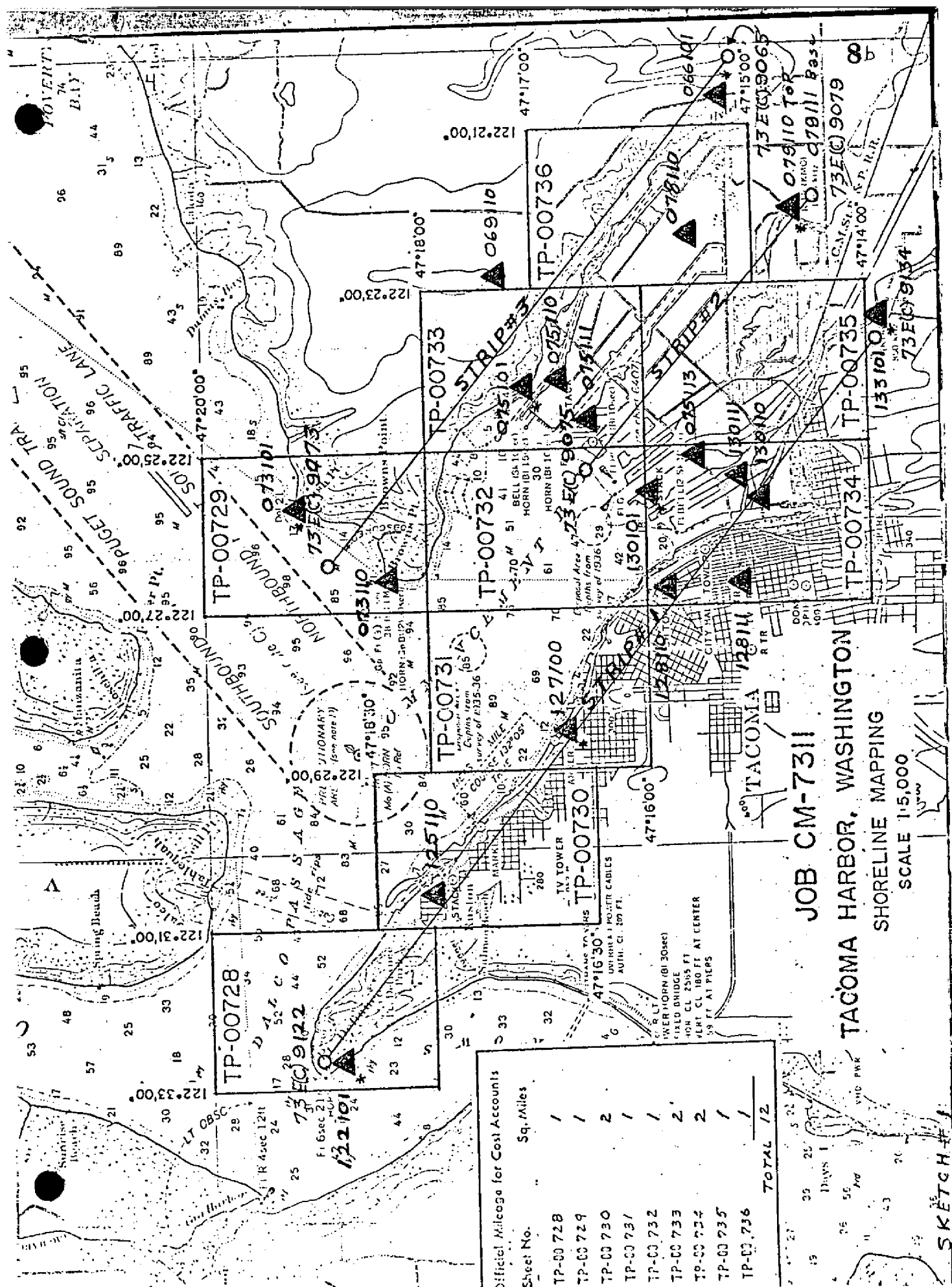
The photography was adequate.

Respectfully submitted,

*Ivey O. Raborn*  
Ivey O. Raborn

Approved and Forwarded:

*[Signature]*  
John D. Perrow, Jr.  
Chief, Aerotriangulation Section

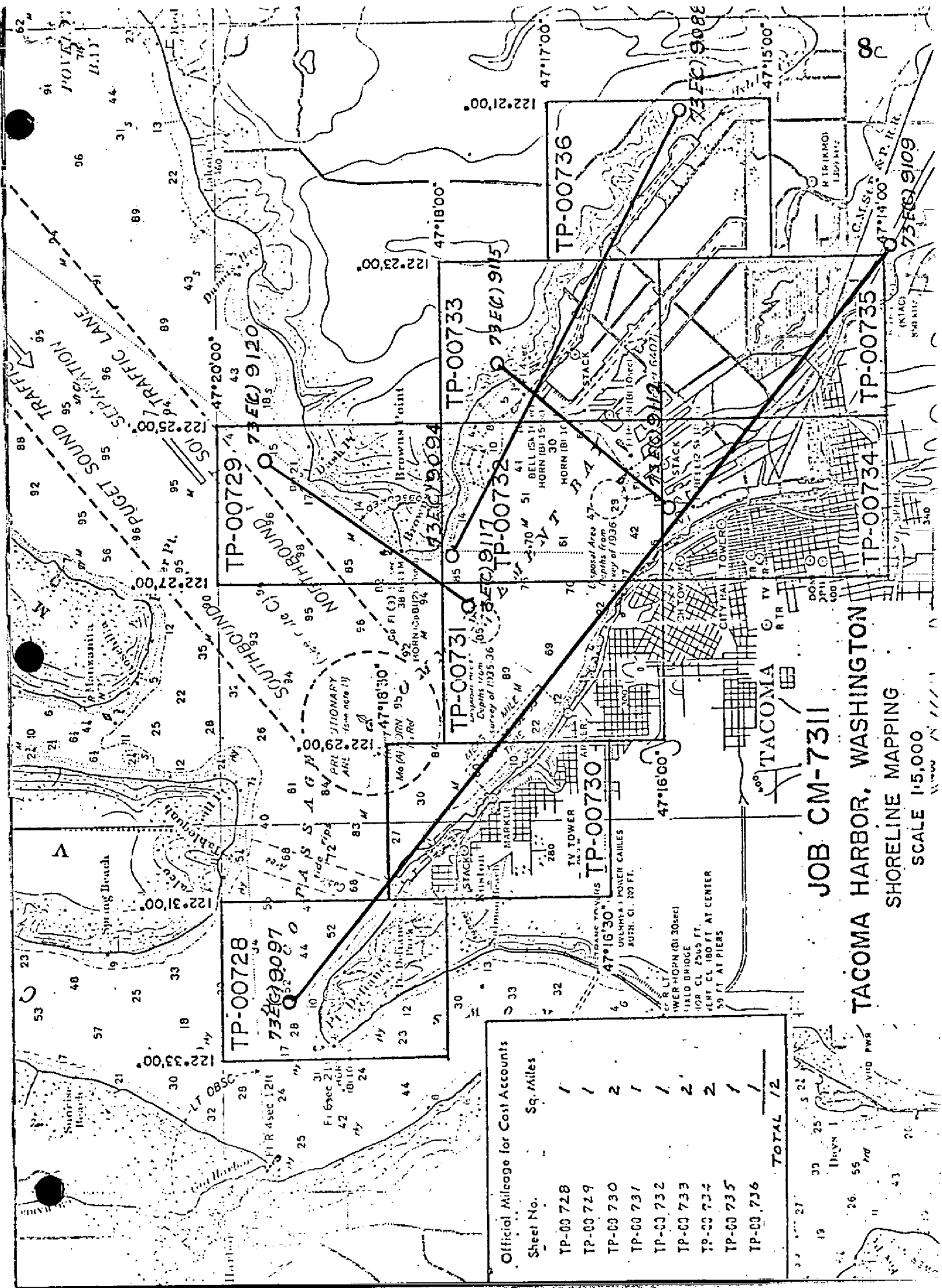


JOB CM-7311  
 TACOMA HARBOR, WASHINGTON  
 SHORELINE MAPPING  
 SCALE 1:5,000  
 SKETCH #1

Official Mileage for Cost Accounts		
Sheet No.	Sq. Miles	
TP-00 728	1	
TP-00 729	1	
TP-00 730	2	
TP-00 731	1	
TP-00 732	1	
TP-00 733	2	
TP-00 734	2	
TP-00 735	1	
TP-00 736	1	
TOTAL		12

Official Mileage for Cost Accounts		
Sheet No.	Sq. Miles	
TP-00 728	1	
TP-00 729	1	
TP-00 730	2	
TP-00 731	1	
TP-00 732	1	
TP-00 733	2	
TP-00 734	2	
TP-00 735	1	
TP-00 736	1	
TOTAL		12

**JOB CM-7311**  
**TACOMA HARBOR, WASHINGTON**  
**SHORELINE MAPPING**  
**SCALE 1:5,000**



## DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.		JOB NO.		GEODETIC DATUM		ORIGINATING ACTIVITY		REMARKS	
TP-00734		CM-7311		NA 1927		Division, AMC, Norfolk, Virginia		Coastal Mapping	
STATION NAME	SOURCE OF INFORMATION (Index)	AEROTRI-ANGULATION POINT NUMBER	COORDINATES IN FEET STATE Washington ZONE South	φ LATITUDE	λ LONGITUDE	φ LATITUDE	λ LONGITUDE	FORWARD	BACK
MOOR, 1935	P.C. Vol 1 P. 37		X= 708,845.70 Y= 1,518,160.24	φ	λ	φ	λ	845.70 (1154.30)	160.24 (1839.76)
TACOMA, PUYALLUP WATERWAY, CONCRETE STACK, 1935	G.P. Vol 1 P. 246		X= Y=	φ	λ	φ	λ	1834.5 (18.4)	683.6 (577.7)
COMA, 1935	G.P. Vol 1 P. 243		X= Y=	φ	λ	φ	λ	1413.7 (439.2)	553.0 (708.8)
TACOMA HARBOR, PUYALLUP WATERWAY BRIDGE, CONTROL HOUSE, 1935	G.P. Vol 1 P. 245		X= Y=	φ	λ	φ	λ	1141.9 (711.0)	65.9 (1195.5)
TACOMA, HIGHEST OF THREE CONCRETE STACKS, 1935	G.P. Vol 1 P. 245		X= Y=	φ	λ	φ	λ	526.2 (1326.7)	333.7 (927.9)
SHALLOW, 1927	P.C. Vol 1 P. 37		X= 705,798.52 Y= 1,523,185.24	φ	λ	φ	λ	1798.52 (201.48)	1185.24 (814.76)
TACOMA, WOCO, RED TANK, 1935	G.P. Vol 1 P. 244		X= Y=	φ	λ	φ	λ	340.1 (1512.8)	673.2 (588.4)
TACOMA CITY HALL, 1905	G.P. Vol 1 P. 21		X= Y=	φ	λ	φ	λ	845.5 (1007.4)	398.8 (862.7)
TACOMA, RADIO STATION KTOY FM, MAST, 1954	G.P. Vol 1 P. 1568		X= Y=	φ	λ	φ	λ	263.7 (1589.2)	944.3 (317.3)
DISTRICT HEATING COMPANY, NORTH STACK, 1927	G.P. Vol 1 P. 90		X= Y=	φ	λ	φ	λ	232.7 (1620.2)	10.7 (1250.9)
COMPUTED BY	A. C. Rauck, Jr.	DATE	COMPUTATION CHECKED BY	F. R. Gustafson	DATE	2/01/74			
LISTED BY		DATE	LISTING CHECKED BY		DATE				
HAND PLOTTING BY		DATE	HAND PLOTTING CHECKED BY		DATE				

## DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.	STATION NAME	JOB NO.	CM-7311	GEODETIC DATUM		AEROTRI- ANGULATION POINT NUMBER	COORDINATES IN FEET		GEOGRAPHIC POSITION		ORIGINATING ACTIVITY		REMARKS	
				NA	1927		STATE ZONE	X=	Y=	φ	λ	Division, AMC, Norfolk, Virginia	Coastal Mapping	FORWARD
TP-00734	DISTRICT HEATING COMPANY, SOUTH STACK, 1927	G.P. Vol 1 P. 90					X=		φ	47 15 06.877			212.4	(1640.5)
							Y=		λ	122 25 59.882			1259.2	(2.5)
	FIRST PRESBYTERIAN CHURCH SPIRE, 1927	G.P. Vol 1 P. 88					X=		φ	47 15 49.413			1526.0	(326.9)
							Y=		λ	122 26 45.562			957.8	(303.6)
	TACOMA, ST. JOSEPH HOSPITAL DOME, 1927	G.P. Vol 1 P. 1568					X=		φ	47 14 40.984			1265.7	(587.2)
							Y=		λ	122 26 46.647			981.0	(280.8)
	TACOMA, J STREET STANDPIPE, 1919-1921	G.P. Vol 1 P. 85					X=		φ	47 14 35.952			1110.3	(742.6)
							Y=		λ	122 26 47.585			1000.8	(261.1)
	TACOMA, PUGET SOUND PLYWOOD BLACK STACK, 1973	Field Edit Position					X=		φ	47 15 43.637			1347.6	(505.3)
							Y=		λ	122 25 59.294			1246.6	(14.9)
	TACOMA HARBOR, CITY WATERWAY LIGHT, 1973	Field Edit Position					X=		φ	47 15 42.610			1315.9	(537.0)
							Y=		λ	122 26 06.913			145.3	(1116.2)
	CLIFF, 1919	G.P. Vol 1 P. 85					X=		φ	47 15 54.268			1675.9	(177.0)
							Y=		λ	122 26 40.616			853.9	(407.5)
	TACOMA, HOLY ROSARY CHURCH, SPIRE, 1955	G.P. Vol 1 P. 1569					X=		φ	47 14 00.710			21.9	(1831.0)
							Y=		λ	122 26 19.793			416.3	(845.8)
							X=		φ					
							Y=		λ					
							X=		φ					
							Y=		λ					
							X=		φ					
							Y=		λ					
COMPUTED BY	A. C. Rauck, Jr.					DATE	2/01/74	COMPUTATION CHECKED BY	F. R. Gustafson			DATE	2/01/74	
LISTED BY						DATE		LISTING CHECKED BY				DATE		
HAND PLOTTING BY						DATE		HAND PLOTTING CHECKED BY				DATE		

## COMPILATION REPORT

TP-00734

31. DELINEATION:

Delineation was by the Wild B-8 stereoplotter, using 1:15,000 scale color photography.

The southern part of City Waterway was extremely difficult to interpret because of the presence of numerous floating logs and debris in the area.

32. CONTROL:

See the attached Photogrammetric Plot Report dated January 1974.

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.

The mean high water line was delineated from the photographs.

36. OFFSHORE DETAILS:

None.

37. LANDMARKS AND AIDS:

Compilation office prepared work copies of Forms 76-40 were forwarded to the field editor for verification, location and/or deletion.

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:

No statement.

46. COMPARISON WITH EXISTING MAPS:

A comparison has been made with the following USGS Quadrangles: TACOMA NORTH, WASHINGTON, AND TACOMA SOUTH, WASHINGTON, each scaled 1:24,000, dated 1961 revised 1968.

47. COMPARISON WITH NAUTICAL CHARTS:

A comparison has been made with the following USC&GS Chart: No. 6407, 12th edition, dated January 27, 1973, scaled 1:15,000.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY:

None.

ITEMS TO BE CARRIED FORWARD:

None.

Submitted by:

*Albert C. Rauck, Jr. For*  
Charles Parker  
Cartographic Aid  
February 14, 1974

Approved for forwarding:

*Albert C. Rauck, Jr.*  
Albert C. Rauck, Jr.  
Chief, Coastal Mapping Section, AMC

January 11, 1978

## GEOGRAPHIC NAMES

## FINAL NAME SHEET

CM-7311 (Tacoma Harbor, Washington)

TP-00734

Burlington Northern (RR)

Chicago Milwaukee St. Paul &amp; Pacific (RR)

City Waterway

Commencement Bay

Middle Waterway

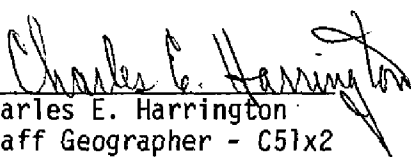
Milwaukee Waterway

Puyallup Waterway

St. Paul Waterway

Tacoma

Approved by:

  
Charles E. Harrington  
Staff Geographer - C51x2

NOAA FORM 75-74  
(7-75)U.S. DEPARTMENT OF COMMERCE  
NOAA  
NATIONAL OCEAN SURVEYPHOTOGRAMMETRIC OFFICE REVIEW  
TP - 00734

1. PROJECTION AND GRIDS ALS	2. TITLE ALS	3. MANUSCRIPT NUMBERS ALS	4. MANUSCRIPT SIZE ALS
CONTROL STATIONS			
5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY ALS	6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations) NA		7. PHOTO HYDRO STATIONS NA
8. BENCH MARKS ALS	9. PLOTTING OF SEXTANT FIXES ALS	10. PHOTOGRAMMETRIC PLOT REPORT ALS	11. DETAIL POINTS ALS
ALONGSHORE AREAS (Nautical Chart Data)			
12. SHORELINE ALS	13. LOW-WATER LINE ALS	14. ROCKS, SHOALS, ETC. ALS	15. BRIDGES ALS
16. AIDS TO NAVIGATION ALS	17. LANDMARKS ALS	18. OTHER ALONGSHORE PHYSICAL FEATURES ALS	19. OTHER ALONGSHORE CULTURAL FEATURES ALS
PHYSICAL FEATURES			
20. WATER FEATURES ALS		21. NATURAL GROUND COVER NA	22. PLANETABLE CONTOURS NA
23. STEREOSCOPIC INSTRUMENT CONTOURS NA	24. CONTOURS IN GENERAL NA	25. SPOT ELEVATIONS NA	26. OTHER PHYSICAL FEATURES ALS
CULTURAL FEATURES			
27. ROADS ALS	28. BUILDINGS ALS	29. RAILROADS ALS	30. OTHER CULTURAL FEATURES ALS
BOUNDARIES			
31. BOUNDARY LINES NA		32. PUBLIC LAND LINES NA	
MISCELLANEOUS			
33. GEOGRAPHIC NAMES ALS		34. JUNCTIONS ALS	35. LEGIBILITY OF THE MANUSCRIPT ALS
36. DISCREPANCY OVERLAY ALS	37. DESCRIPTIVE REPORT ALS	38. FIELD INSPECTION PHOTOGRAPHS ALS	39. FORMS ALS
40. REVIEWER A. L. Shands 2/25/74		SUPERVISOR, REVIEW SECTION OR UNIT Albert C. Rauck, Jr.	
41. REMARKS (See attached sheet)			
FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT			
42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted under item 43.			
COMPILER J. Desch Reviewer A. L. Shands		SUPERVISOR Albert C. Rauck, Jr.	
43. REMARKS  See Form 76-360g., Items 7 and 8.			

## FIELD EDIT REPORT

MAP TP-00734

TACOMA, WASHINGTON

MARCH-APRIL, 1974

Field edit of map TP-00734 was done by Ens. John L. Oswald and Ens. Roger W. Mercer during the months of March and April, 1974. Inspection was done from a launch and skiff with some shore inspection on foot where required.

METHOD

A copy of the Field Edit Ozalid was examined in the field and compared with actual shore features. Sextant fixes were taken on many dolphins, piles and moored floats; but, unfortunately, records of these fixes weren't kept. By the time it was learned that fix data were required, the Field Edit was almost completed. Fixes were plotted as taken and plotted location was visually compared with nearby features.

A search was made for Tacoma City Waterway West Entrance Green Light, 1935, but no structure of any kind existed in that immediate vicinity. This light has apparently been completely removed. A Recovery Note (Form 526) has been submitted for this station.

No geodetic positions were obtained using field methods for two towers southwest of City Waterway. Discrepancies on Puyallup Waterway could not be investigated from a skiff due to very shallow water there. These portions of the Puyallup River are too shallow for navigation by even the shallowest draft skiffs and, consequently, of no interest to commercial shipping.

ADEQUACY OF COMPILATION

Compilation of this map is adequate. Photogrammetric locations of features agree well with sextant locations based on established triangulation stations.

RECOMMENDATIONS

It is recommended that this manuscript be revised as per Field Edit Notes on the Discrepancy Ozalid and, except for the un-investigated features in Puyallup Waterway and the southeast portion of Middle Waterway, then be accepted as an advanced manuscript.

Submitted by,

*Roger W. Mercer*

Roger W Mercer  
ENS, NOAA

Approved by,

*Michael H. Fleming*

M.H. Fleming  
CDR, NOAA  
Commanding Officer  
NOAA SHIP DAVIDSON

## ADDENDA FIELD EDIT REPORT

Commencement Bay, Washington  
Dec 1974 - Jan 1975  
OPR-412  
Project CM-7311

This report is a follow-up and completion of the original field edit accomplished in this area in March and April of 1974. Certain deficiencies were noted in the original field edit; and this report is being submitted to correct, clarify, or alleviate any errors or misconceptions that may have been conveyed in the original report.

Although this report was not intended to be a complete re-field edit of the area, certain items from the previous report were checked to verify positions and resolve suspect features. It is suspected the original field editors did not use the photographs to their full advantage as the majority of items in question could be located by photogrammetric methods.

The majority of the landmarks were verified by computing the inverse for intersection stations and occupying marked triangulation stations and observing theodolite cuts.

The field edit copies of the manuscripts were used for the field corrections (in blue and dated) and the photographs were cross-referenced to the field edit copies.

Adequacy: The extent and accuracy of this field edit with amended items of the original field edit and completed forms 76-40 now appears complete.

Pertinent information for each individual discrepancy sheet is listed under that specific sheet.

TP-00728

Re-field edited 12/11/74. Agreed with the original field edit except the bluff in question is considered of landmark value. It is of significant height, and distinct boundaries are clear as plotted.

For verification of Pt. Defiance Light see attached NOAA Form 76-40.

TP-00729

Re-field edited 12/11/74. Original field edit complete. Brown Point Lighthouse recovered. See attached form 76-40.

## TP-00730

Re-field edited on 12/12/74, 12/13/74, and 1/10/75. All landmarks were recovered. Lighted aids to navigation were located by photogrammetric methods on photograph 73E9100. The triangulation station TARGET, 1952, in question was reported destroyed in 1965 by H.J.S. (page 41 of book 392) and no attempt was made to recover it.

The position of the Commencement Bay Measured Nautical Mile northwest range front marker was determined by an angle distance from reference mark of the triangulation station TARGET. The position of the northwest range rear marker was determined by an angle and distance from the reference mark of triangulation station BLUFF, 1935. Both positions are less than third order. See the enclosed computations and form 76-40.

## TP-00731

Re-field edited on 12/12/74. The positions of the Commencement Bay Measured Nautical Mile southeast markers, both front and rear, were determined by an angle and distance from RUSTON, RM N02. Both positions are less than third order. See the enclosed computations and form 76-40.

## TP-00732

Re-field edited on 12/10/74. Nonfloating aids to navigation were triangulation stations that were recovered. The new stack considered of landmark value was located photogrammetrically.

The Grain Export Facility under construction in April, 1974, is nearing completion. The pier faces are complete with work on the tower continuing. Port authorities expect to have the facility in operation in June, 1975. The plans for this facility were obtained and are enclosed.

## TP-00733

This sheet was re-field edited on 12/10/74, 1/6/75, and 1/10/75. Two charted tanks are gone and should be deleted from the charts. See enclosed form 76-40.

Three landmarks (triangulation stations) were recovered and recovery notes submitted. The twin chimneys were located photogrammetrically on photograph 73E9091. The charted stack mentioned in the April, 1974, field edit as being of no landmark value is considered of landmark value in this report. Although poorly visible from Commencement Bay, it is quite distinguishable in the Hylebos Waterway. See photograph 73E9091.

Two large dome-shaped storage elevators depicted on the charts, but not compiled on the ozalid, should be left on the charts, as they are salient features and visible from offshore in Commencement Bay. See photograph

73E9113. Two navigation lights were recovered, and the fog signals were located photogrammetrically on photograph 73E9114.

TP-00734

The three items not previously investigated were field edited 12/12/74 and noted on the ozalid. One nonfloating aid to navigation was recovered. One tank, as noted on form 76-40, should be deleted from the chart, as it no longer exists.

Fourteen landmarks were located. Twelve were triangulation and were recovered. Two were located photogrammetrically on photograph 73E9104.

TP-00736

*ramp A.L.I.*

Re-field edited 12/12/74. The new boat was located on photograph 73E9090 by planetable methods. It is a private boat ramp and not maintained by the port authorities. The two stacks considered of landmark value by this field edit were located photogrammetrically on photograph 73E9089 and 73E9088.

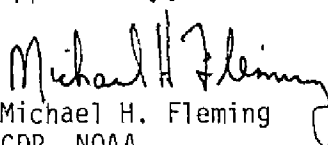
There is new construction of a barge-loading facility in the Blair Waterway turning basin. The plans for this facility were obtained from the Port authorities and are enclosed.

Respectfully submitted,



D.S. Eilers  
LTJG, NOAA

Approved by,



Michael H. Fleming  
CDR, NOAA  
Commanding Officer

Replaces C&amp;GS Form 567.

☒ TO BE CHARTED  
☐ TO BE REVISED  
☐ TO BE DELETEDREPORTING UNIT  
(If *field party, ship or office*)  
Coastal Mapping Div.  
AMC, Norfolk, VASTATE  
WashingtonLOCALITY  
Tacoma HarborDATE  
4/21/75U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
**NON-ENGINEERING CHARTS OR LANDMARKS FOR CHARTS**

## ORIGINATING ACTIVITY

☐ HYDROGRAPHIC PARTY  
☐ GEODETIC PARTY  
☐ PHOTO FIELD PARTY  
☒ COMPILATION ACTIVITY  
☐ FINAL REVIEWER  
☐ QUALITY CONTROL & REVIEW GRP.  
☐ COAST PILOT BRANCH  
(See reverse for responsible personnel)The following objects HAVE ☒ BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.

OPR PROJECT NO. 412	JOB NUMBER CM-7311	SURVEY NUMBER TP-00734	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	DATUM		NA 1927		POSITION				METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED
				LATITUDE		LONGITUDE		OFFICE	FIELD					
				° /	''	° /	''							
CHARTING NAME														
CHURCH TOWER	(FIRST PRESBYTERIAN CHURCH SPIRE, 1927)	47	15	49.413 1526.0	122 26	45.562 957.8	73E(C)9105 6/22/73	Triang. Rec. 12/10/74	6460 6401, 6407 185-SC					
CITY HALL TOWER	(TACOMA CITY HALL, 1905)	47	15	27.377 845.5	122 26	18.968 398.8	73E(C)9105 6/22/73	Triang. Rec. 12/10/74	6460 6401, 6407 185-SC					
RADIO TOWER	(TACOMA, RADIO STATION KTOY FM MAST, 1954)	47	15	08.538 263.7	122 26	44.905 944.3	73E(C)9105 6/22/73	Triang. Rec. 12/10/74	6460 6401, 6407 185-SC					
DOME	(TACOMA, ST. JOSEPH HOSPITAL DOME, 1927)	47	14	40.984 1265.7	122 26	46.647 981.0	73E(C)9105 6/22/73	Triang. Rec. 12/10/74	6460 6401, 6407 185-SC					
STANDPIPE	(TACOMA, J STREET STANDPIPE, 1919-1921)	47	14	35.952 1110.3	122 26	47.585 1000.8	73E(C)9105 6/22/73	Triang. Rec. 12/10/74	6460 6401, 6407 185-SC					
TWIN STACKS	(DISTRICT HEATING COMPANY NORTH STACK, 1927)	47	15	07.536 232.7	122 26	00.508 10.7	73E(C)9105 6/22/73	Triang. Rec. 12/10/74	6460 6401, 6407 185-SC					
TWIN STACKS	(DISTRICT HEATING COMPANY SOUTH STACK, 1927)	47	15	06.877 212.4	122 25	59.882 1259.2	73E(C)9105 6/22/73	Triang. Rec. 12/10/74	6460 6401, 6407 185-SC					
TANK	(TACOMA, WOCO, RED TANK, 1935)	47	15	11.012 340.1	122 25	32.015 673.2	73E(C)9105 6/22/73	Triang. Rec. 12/10/74	6460 6401, 6407 185-SC					
TANK	(SHALLOW, 1927)	47	15	10.187 314.6	122 25	12.408 260.9	73E(C)9105 6/22/73	Triang. Rec. 12/10/74	6460 6401, 6407 185-SC					
STACK	(TACOMA, HIGHEST OF THREE CONCRETE STACKS, 1935)	47	15	17.038 526.2	122 25	15.871 333.7	73E(C)9105 6/22/73	Triang. Rec. 12/10/74	6460 6401, 6407 185-SC					

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	L. L. Rigger, PMC; D. S. Eilers, Lt. (jg), NOAA J. Desch
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'	
<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*</b> require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982
<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</b> 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.	

NOAA FORM 76-40  
(8-74)

Replaces C&GS Form 567.

# **NON-LOCAL LANDMARKS OR LANDMARKS FOR CHARTS**

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

## **ORIGINATING ACTIVITY**

- ☐ HYDROGRAPHIC PARTY
  - ☐ GEODETIC PARTY
  - ☐ PHOTO FIELD PARTY
  - ☐ COMPILATION ACTIVITY
  - ☒ FINAL REVIEWER
  - ☐ QUALITY CONTROL & REVIEW GRP.
  - ☐ COAST PILOT BRANCH
- (See reverse for responsible personnel)

REPORTING UNIT (If field party, ship or office) Coastal Mapping Div. AMC, Norfolk, VA	STATE Washington	LOCALITY Tacoma Harbor	DATE 4/21/75
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The following objects HAVE ☒ BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.

OPR PROJECT NO. 412

JOB NUMBER CM-7311

SURVEY NUMBER TP-00734

DATUM NA 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)

### **POSITION**

LATITUDE LONGITUDE  
D.M. Meters D.P. Meters

OFFICE

FIELD

STACK  
(TACOMA, PUYALLUP WATERWAY CONCRETE  
STACK, 1935)

47 15 59.402 122 25 32.520  
1834.5 683.6

73E(C)9105 6/22/73

Triang. Rec.  
12/10/74

6460  
6401, 6407  
185-SC

TOWER  
50' MAST TOP OF COUNTY CITY BUILDING

47 15 13.86 122 26 39.48  
428 830

73E(C)9105 6/22/73

P-5-V  
12/11/74  
73E(C)9104

6460  
6401, 6407  
185-SC

THIN  
STACK  
(TACOMA, PUGET SOUND PLYWOOD BLACK  
STACK, 1973) Ht. = 108 (125)

47 15 43.637 122 25 59.294  
1347.6 1246.6

73E(C)9105 6/22/73

Triang. Rec.  
12/10/74

6460  
6401, 6407  
185-SC

SQUARE  
TOWER

47 15 22.34 122 26 40.10  
690 843

73E(C)9105 6/22/73

P-5-V  
12/11/74  
73E(C)9104

6460  
6401, 6407  
185-SC

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	L. L. Riggers, PMC; D. S. Eilers, Lt. (jg), NOAA
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	J. Desch
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>B. 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>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 <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.



RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	L. L. Riggers, PMC; D. S. Eilers, Lt. (jg), NOAA J. Desch
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
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>B. Photogrammetric field positions*</b> require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982
<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>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75 <b>**PHOTOGRAMMETRIC FIELD POSITIONS</b> 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.	

Replaces C&amp;GS Form 567.

**U.S. DEPARTMENT OF COMMERCE**  
**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**  
**MONITORING CHANGES OR LANDMARKS FOR CHARTS**

[illegible]

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	
POSITIONS DETERMINED AND/OR VERIFIED	L. L. Riggers, PMC; D. S. Eilers, Lt. (jg), NOAA J. Desch
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	<input type="checkbox"/> PHOTO FIELD PARTY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
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>**FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</b> <b>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</b>	

REVIEW REPORT  
TP-00734

SHORELINE

February 1, 1978

61. GENERAL STATEMENT:

See Summary, page 6 of this Descriptive Report.

Many water features, dolphins, piles, floats, etc. are labeled "(PA)" for position approximate. These features are not visible on the photographs. Their positions were approximated on the Paper Field Edit Ozalid by the field editor and transferred to the map.

The field editor indicated on the Field Edit Ozalid the existence of a drydock on the southeast shore of Middle Waterway. His leader points to the southside of a building shown on the map. There is no photogrammetric evidence that a drydock exist at that location. Evidence suggest that the drydock is located immediately south of the position indicated. The facility is mapped at the position identified on the photographs.

A new grain elevator and pier complex located at latitude  $47^{\circ}15.8'$ , long  $122^{\circ}26.5'$  was delineated using engineering drawings supplied by the field editor. These drawings are not tied to the N.A. 1927 datum. The position of the facility therefore, is considered approximate.

Two dolphins located at the mouth of Middle Waterway, marking the ends of a "barge morage", were spotted on the field edit ozalid by the editor. It was determined during final review that these features are visible on the photography in slightly different positions than indicated on the field edit ozalid. The positions were changed during final review to agree with the photography.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS:

Not applicable.

63. COMPARISON WITH MAPS OF OTHER AGENCIES:

Not applicable.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:

Comparison was made with a copy of Final Verified Smoothsheet H-9412 (DA-5-3-74). There are no significant differences.

65. COMPARISON WITH NAUTICAL CHARTS:

Comparison was made with Chart 18453, 1:15,000 scale, 14th edition dated May 29, 1976. Many minor differences were noticed in the shoreline and alongshore details. These were indicated on the chart maintenance print.

Two buildings charted at latitude  $47^{\circ}14.7'$ , longitude  $122^{\circ}25.8'$ ; six buildings charted at the southwest tip of Middle Waterway and the floating drydock shown near the mouth of Middle Waterway are not visible on the photographs. The landmark tank charted at latitude  $47^{\circ}15.8'$ , longitude  $122^{\circ}25.5'$  was reported destroyed by the field editor.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS:

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

Submitted by:

*A. L. Shands*

A. L. Shands  
Final Reviewer

Approved for forwarding:

*Albert C. Rauch, Jr. FOR*

Jeffrey G. Carlen  
Chief, Coastal Mapping Division, AMC

Approved:

*John D. Perrow Jr.*

Chief, Photogrammetric Branch

*Jan Allen*

Chief, Coastal Mapping Division

