

TP-00731 ORIGINAL

TP-00731

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-00731...
Classification No. Final	Edition No. .... 1 .....
Field Edited Map	
LOCALITY	
State ..... Washington	
General Locality ..... Tacoma Harbor	
Locality ..... Old Tacoma	
.....	
<hr/> 1973 TO 1974 <hr/>	
REGISTRY IN ARCHIVES	
DATE .....	

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

RCS 18 453 - 9-30-81 RL  
RCS 18 445 - SC - 9-30-81 - RL  
RCS 18 448 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, VA OFFICER-IN-CHARGE Jeffrey G. Carlen, Cdr., NOAA		SURVEY TP. <u>00731</u> MAP EDITION NO. <u>(1)</u> MAP CLASS <u>Final</u> JOB <u>RM CM-7311</u> LAST PRECEDING MAP EDITION TYPE OF SURVEY <input type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED JOB <u>PH-</u> MAP CLASS <u></u> SURVEY DATES: 19 <u></u> TO 19 <u></u>	
<b>I. INSTRUCTIONS DATED</b>			
1. OFFICE		2. FIELD	
Aerotriangulation Aug 30, 1973 Compilation Jan 22, 1974		May 17, 1978	
<b>II. DATUMS</b>			
1. HORIZONTAL: <input checked="" type="checkbox"/> 1927 NORTH AMERICAN  2. VERTICAL: <input checked="" type="checkbox"/> MEAN HIGH-WATER <input type="checkbox"/> MEAN LOW-WATER <input checked="" type="checkbox"/> MEAN LOWER LOW-WATER <input type="checkbox"/> MEAN SEA LEVEL		OTHER (Specify)  OTHER (Specify)	
3. MAP PROJECTION  Polyconic		4. GRID(S) STATE <u>Washington</u> ZONE <u>South</u> STATE <u></u> ZONE <u></u>	
5. SCALE 1:5,000			
<b>III. HISTORY OF OFFICE OPERATIONS</b>			
OPERATIONS		NAME	DATE
1. AEROTRIANGULATION BY METHOD: <u>Analytic</u> LANDMARKS AND AIDS BY		<u>I. O. Raborn</u>	<u>1/74</u>
2. CONTROL AND BRIDGE POINTS PLOTTED BY METHOD: <u>Calcomp</u> CHECKED BY		<u>R. Robertson</u>	<u>1/74</u>
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY COMPILATION CHECKED BY INSTRUMENT: <u>Wild B-8</u> CONTOURS BY SCALE: <u>1:7,500</u> CHECKED BY		<u>R. R. White</u> <u>L. O. Neterer</u> <u>NA</u> <u>NA</u>	<u>2/74</u> <u>2/74</u>  
4. MANUSCRIPT DELINEATION PLANIMETRY BY CHECKED BY METHOD: <u>Smooth Draft</u> CONTOURS BY CHECKED BY SCALE: <u>1:5,000</u> HYDRO SUPPORT DATA BY CHECKED BY		<u>G. R. Vanderhaven</u> <u>R. R. White</u> <u>NA</u> <u>NA</u> <u>G. R. Vanderhaven</u> <u>R. R. White</u>	<u>2/74</u> <u>2/74</u>   <u>2/74</u> <u>2/74</u>
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY		<u>R. R. White</u>	<u>2/74</u>
6. APPLICATION OF FIELD EDIT DATA BY CHECKED BY		<u>J. R. Minton</u> <u>A. L. Shands</u>	<u>4/75</u> <u>5/75</u>
7. COMPILATION SECTION REVIEW BY		<u>A. C. Rauck, Jr.</u>	<u>5/77</u>
8. FINAL REVIEW BY		<u>A. L. Shands</u>	<u>Jan. 1978</u>
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY		<u>A. L. Shands</u>	<u>Mar. 1978</u>
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY		<u>J. B. Phillips</u>	<u>March 1978</u>
11. MAP REGISTERED - COASTAL SURVEY SECTION BY		<u>R. T. Cater</u>	<u>May 1978</u>

NOAA FORM 76-36B  
(3-72)U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEYTP-00731  
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	
<input checked="" type="checkbox"/> PREDICTED TIDES				Pacific	
<input type="checkbox"/> REFERENCE STATION RECORDS				MERIDIAN	
<input type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY				120th	
NUMBER AND TYPE		DATE	TIME	SCALE	STAGE OF TIDE
73E(C) 9127 and 9128		6/22/73	10:33	1:15,000	7.1 ft. above MLLW
73E(C) 9101 thru 9103		6/22/73	09:55	1:15,000	7.7 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.

## 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
No Survey	TP-00732	No Survey	TP-00730

REMARKS

TP-00731  
HISTORY OF FIELD OPERATIONSI. ☒ FIELD INSPECTION OPERATION ☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	R. B. Melby	6/73
2. HORIZONTAL CONTROL RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	R. B. Melby	6/73
	None	
	R. B. Melby	6/73
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

2. VERTICAL CONTROL IDENTIFIED

NA

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
73E(C)9127	PUG, 1919		

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 Form 152

TP-00731  
HISTORY OF FIELD OPERATIONSI. ☐ 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 BY	
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☒ NONE

6. 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 Field Edit Ozalid and Field Edit Report

TP-00731

## HISTORY OF FIELD OPERATIONS

I. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	M. Fleming	12/74
2. HORIZONTAL CONTROL RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	L. Riggers - D. Eilers None None	12/74
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 L. Riggers - D. Eilers None	12/74
5. GEOGRAPHIC NAMES INVESTIGATION TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY <input checked="" type="checkbox"/> NO INVESTIGATION		
6. PHOTO INSPECTION CLARIFICATION OF DETAILS BY	D. Eilers	12/74
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)

73E(C)9102

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 Form 76-40

1 Original Field Edit Ozalid  
Addenda Field Edit Report

TP-00731  
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.	4/21/74	Class I Manuscript	5/77	
Final Review	Jan. 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	Nautical mile markers.

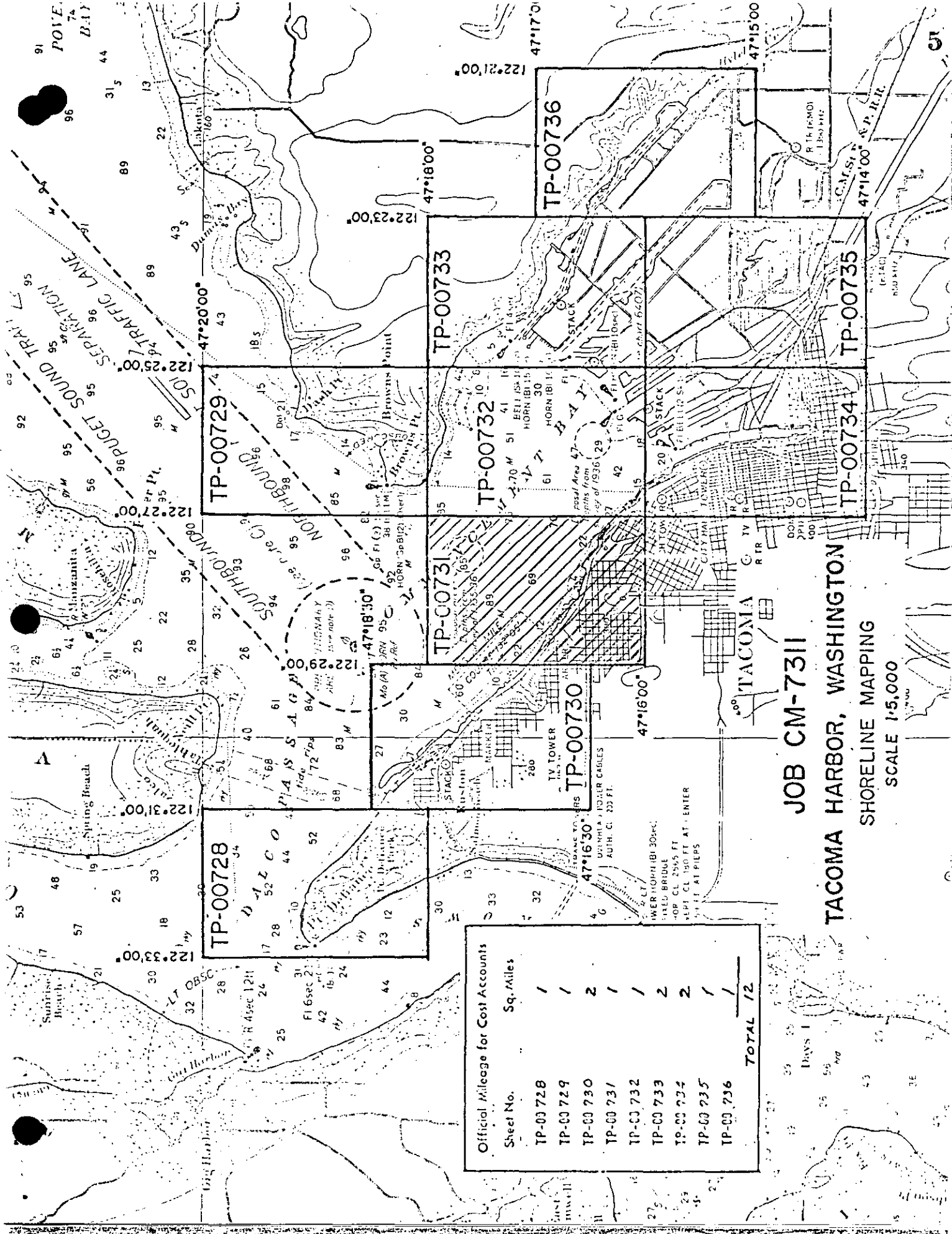
2. ☐ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: June 16, 1977  
3. ☐ REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: \_\_\_\_\_

## III. FEDERAL RECORDS CENTER DATA

1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.  
2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☒ FORM NOS. ~~557~~ 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-00728	1	
TP-00729	1	
TP-00730	2	
TP-00731	1	
TP-00732	1	
TP-00733	2	
TP-00734	2	
TP-00735	1	
TP-00736	1	
		<b>TOTAL 12</b>

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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-00731

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

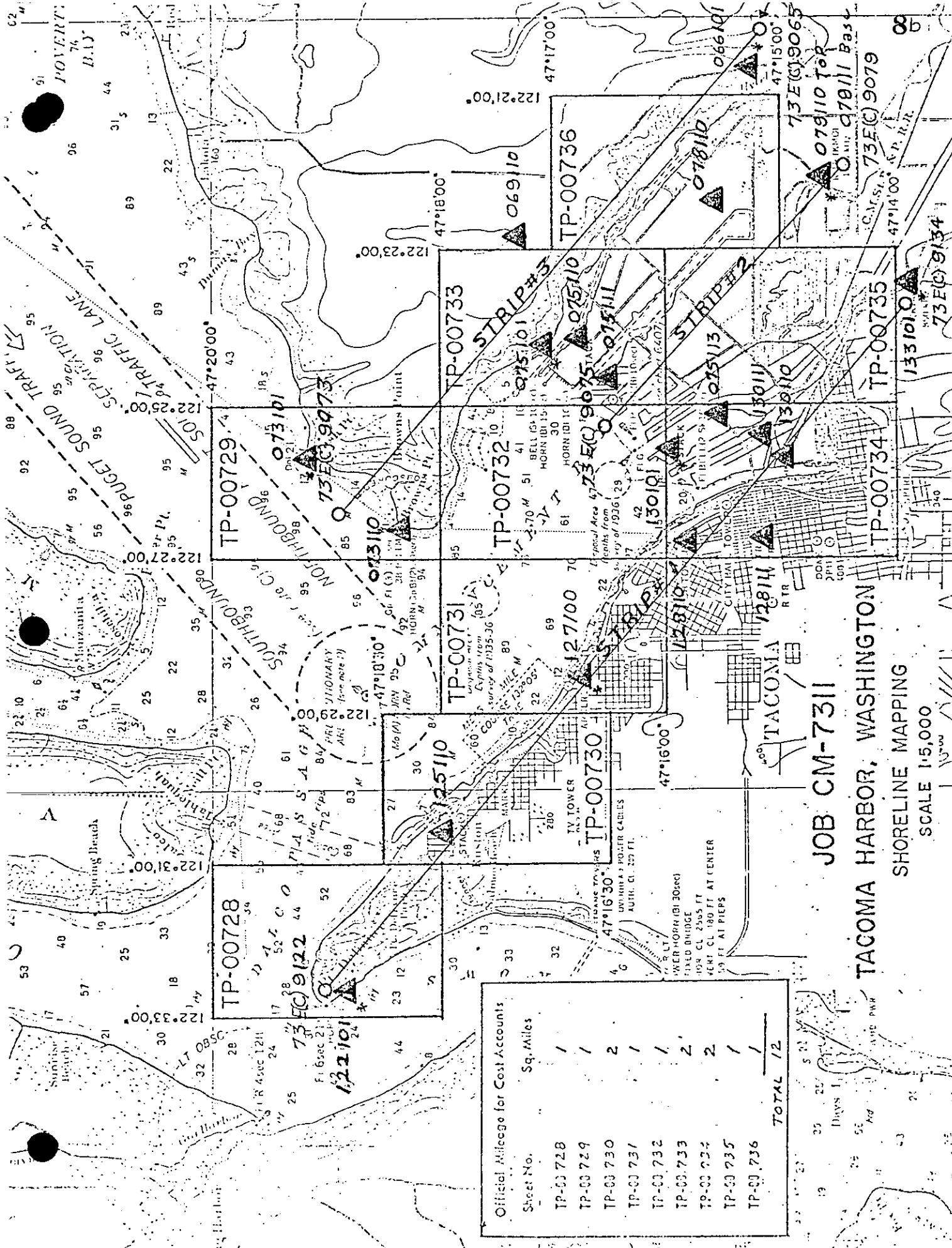
The photography was adequate.

Respectfully submitted,

*Ivey O. Raborn*  
Ivey O. Raborn

Approved and Forwarded:

*John D. Perrow, Jr.*  
John D. Perrow, Jr.  
Chief, Aerotriangulation Section



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
<b>TOTAL</b>	<b>12</b>

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## DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.	STATION NAME	JOB NO.	CM-7311	GEODETTIC DATUM		COORDINATES IN FEET	GEOGRAPHIC POSITION		ORIGINATING ACTIVITY	
				NA	1927		STATE	ZONE	$\phi$ LATITUDE	$\lambda$ LONGITUDE
TP-00731	HUSTON R.M. NO. 1, 1952	G.P. Vol I P. 1397				X=	$\phi$	47 16 52.059	1607.7	(245.2)
PUG, 1919		G.P. Vol I P. 87				X=	$\phi$	47 16 44.620	1378.0	(474.9)
						X=	$\phi$			
						Y=	$\lambda$			
						X=	$\phi$			
						Y=	$\lambda$			
						X=	$\phi$			
						Y=	$\lambda$			
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						X=	$\phi$			
						Y=	$\lambda$			
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-00731

31. DELINEATION:

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

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 using 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 Quadrangle: TACOMA NORTH, WASHINGTON, scale 1:24,000, dated 1959, photorevised 1968.

47. COMPARISON WITH NAUTICAL CHARTS:

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

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY:

None.

ITEMS TO BE CARRIED FORWARD:

None.

Submitted by:

*Albert C. Rauck Jr. FOR*  
Gary R. Vanderhaven  
Cartographer  
February 26, 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-00731

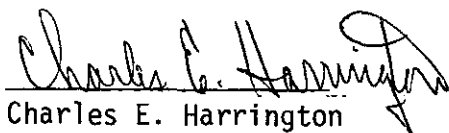
Burlington Northern (RR)

Commencement Bay

Old Tacoma

Union Pacific (RR)

Approved by:

Charles E. Harrington  
Staff Geographer - C51x2

NOAA FORM 75-74  
(7-75)U.S. DEPARTMENT OF COMMERCE  
NOAA  
NATIONAL OCEAN SURVEY

## PHOTOGRAMMETRIC OFFICE REVIEW

TP - 00731

1. PROJECTION AND GRIDS RRW	2. TITLE RRW	3. MANUSCRIPT NUMBERS RRW	4. MANUSCRIPT SIZE RRW
<b>CONTROL STATIONS</b>			
5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY RRW	6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations) NA		7. PHOTO HYDRO STATIONS NA
8. BENCH MARKS RRW	9. PLOTTING OF SEXTANT FIXES ALS	10. PHOTOGRAMMETRIC PLOT REPORT RRW	11. DETAIL POINTS RRW
<b>ALONGSHORE AREAS (Nautical Chart Data)</b>			
12. SHORELINE RRW	13. LOW-WATER LINE RRW	14. ROCKS, SHOALS, ETC. RRW	15. BRIDGES RRW
16. AIDS TO NAVIGATION RRW	17. LANDMARKS ALS	18. OTHER ALONGSHORE PHYSICAL FEATURES RRW	19. OTHER ALONGSHORE CULTURAL FEATURES RRW
<b>PHYSICAL FEATURES</b>			
20. WATER FEATURES RRW	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 RRW
<b>CULTURAL FEATURES</b>			
27. ROADS RRW	28. BUILDINGS RRW	29. RAILROADS RRW	30. OTHER CULTURAL FEATURES RRW
<b>BOUNDARIES</b>			
31. BOUNDARY LINES NA		32. PUBLIC LAND LINES NA	
<b>MISCELLANEOUS</b>			
33. GEOGRAPHIC NAMES RRW		34. JUNCTIONS ALS	35. LEGIBILITY OF THE MANUSCRIPT RRW
36. DISCREPANCY OVERLAY RRW	37. DESCRIPTIVE REPORT RRW	38. FIELD INSPECTION PHOTOGRAPHS NA	39. FORMS RRW
40. REVIEWER <i>Richard R. White</i> Richard R. White		SUPERVISOR, REVIEW SECTION OR UNIT <i>Albert C. Rauck, Jr.</i> 2/74, Albert C. Rauck, Jr.	
41. REMARKS (See attached sheet)			
FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT			
42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted under item 43.			
COMPILER <i>J. R. Minton</i> J. R. Minton		SUPERVISOR <i>Albert C. Rauck, Jr.</i> 4/75, Albert C. Rauck, Jr.	
Reviewer A. L. Shands		5/75, Albert C. Rauck, Jr.	
43. REMARKS  Refer to Form 76-360's, Item 8.			

## FIELD EDIT REPORT

COMMENCEMENT BAY

TACOMA, WASHINGTON

OPR-412

MARCH - APRIL 1974

INTRODUCTION

Field edit reports are attached for the following maps: TP-00728, TP-00729, TP-00730, TP-00731, TP-00732, TP-00733, TP-00734, TP-00735, and TP-00736. Copies of the Field Edit Ozalids and extra ozalids were compared in the field with actual shore features. The field edit was done before signals were built in many areas, so positions of many items were estimated relative to nearby features. In many instances these positions fell on one or more natural ranges. Some sextant fixes were possible and were recorded for future reference. Height data for all features were noted as referenced to MLLW or MHW or simply by time and date. Unless followed by a "Z" for GMT, all times are in Zone +7 (105° meridian).

All notes have been made in violet ink on the Field Edit Ozalids with the exception of TP-00733 for which another sheet was used and labeled "Smooth Ozalid." All deletions are noted or underlined with green ink.

During our work in the survey area, a great deal of new construction was observed. Shoreline construction sites were noted - as fully as possible - on the ozalids. It is suggested that any questions about new piers, etc. under construction be directed to the Property Manager, Port of Tacoma (address below).

Hugh Wild  
Property Manager  
Port of Tacoma  
P.O. Box 1837  
Tacoma, WA 98401

Compilation of the maps agreed well with actual shore features; any discrepancies are noted on the ozalids. Field edit of these manuscripts is not complete, especially for the inland. It is felt that all shore features of importance to the mariner have been adequately covered and noted.

Submitted by,

*R. W. Mercer*

R.W. Mercer  
ENS, NOAA

Approved by,

*Michael H. Fleming*

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

## FIELD EDIT REPORT

MAP TP-00731

TACOMA, WASHINGTON

MARCH-APRIL, 1974

Field edit of map TP-00731 was done by Ens. Joseph J. Kapler and Ens. Roger W. Mercer. Inspection was done from small boats and on foot when required.

METHOD

A copy of the Field Edit Ozalid was examined in the field and compared with actual geographic features. Mean High Water Line verification was done by visual comparison with the Ozalid. Several dolphins were located by visual orientation with nearby features; considering the close proximity of reference features, these locations should all be good within  $\pm 2$  meters. No positions for the measured mile markers were obtained by field methods; these positions should be available from the Port of Tacoma Property Manager (address appended). Some floats on the manuscript were discovered missing; these will probably be replaced during the summer boating season. Positions of piles were noted where floats were found missing. All times are based upon the 105° W meridian (Zone +7).

ADEQUACY OF COMPILATION

Compilation of this map seems good. Photogrammetrically located objects on manuscript agree well with location by triangulation methods.

RECOMMENDATIONS

It is recommended that this map be revised as per field edit notes and then be accepted as an advanced manuscript.

Submitted by,

*Roger W. Mercer*

Roger W Mercer  
ENS, NOAA

## 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.

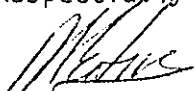
Fourteen landmarks were located. Twelve were triangulation and were recovered. Two were located photogrammetrically on photograph 73E9104.

TP-00736

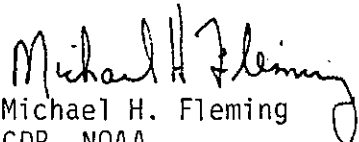
Re-field edited 12/12/74. The new boat<sup>ramp</sup> was located on photograph 73E9090 by planetable methods. It is a private boat ramp and not maintained by the port authorities. The two stacks considered of landmark value by this field edit were located photogrammetrically on photograph 73E9089 and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



NOAA FORM 76-40  
(8-74)

Replaces C&amp;GS Form 567.

## NONFLOATING AIDS TO NAVIGATION 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  
WashingtonLOCALITY  
Tacoma HarborDATE  
4/18/75The following objects HAVE ☒ BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS.

OPR PROJECT NO.

OPR-412

JOB NUMBER

CM-7311

SURVEY NUMBER

TP-00731

DATUM

NA

1927

POSITION

CHARTING  
NAME

DESCRIPTION

(Record reason for deletion of landmark or aid to navigation.  
Show triangulation station names, where applicable, in parentheses)

MARKER

Commencement Bay, Measured Nautical  
Mile Southeast Range, Rear Marker

MARKER

Commencement Bay, Measured Nautical  
Mile Southeast Range, Front MarkerMETHOD AND DATE OF LOCATION  
(See instructions on reverse side)

OFFICE

FIELD

CHARTS  
AFFECTED6401  
6407, 6460  
185-SC6401  
6407, 6460  
185-SC

15

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. R. Manton, Cartographic Technician, AMC
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>1. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field                      P - Photogrammetric L - Located                  Vis - Visually V - Verified 1 - Triangulation            5 - Field identified 2 - Traverse                6 - Theodolite 3 - Intersection            7 - Planetable 4 - Resection                8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	<b>11. TRIANGULATION STATION RECOVERED</b> When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75 <b>111. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75 <b>**PHOTOGRAMMETRIC FIELD POSITIONS</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.	

## REVIEW REPORT

TP-00731

## SHORELINE

January 17, 1978

61. GENERAL STATEMENT:

See Summary, page 6 of this descriptive report.

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 discrepancies.

65. COMPARISON WITH NAUTICAL CHARTS:

Comparison was made with Chart 18453, 1:15,000 scale, 14th edition, dated May 29, 1976. There are several piles shown on the chart that are not visible on the photographs and were not located by the field editor or hydrographer. A marine railway charted at lat.  $47^{\circ} 16.7$ , long.  $122^{\circ} 28.0$  is also not visible on the photographs and was not located by the field editor.

The word "Boom" appears on the chart at lat.  $47^{\circ} 16.7$ , long.  $122^{\circ} 28.8$ . However, no boom is symbolized at that location. The three small buildings southeast of there do not appear on the photographs. Other buildings shown on the chart are visible on the photographs and are adequately represented on the chart.

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.

Approved for forwarding

*Albert C. Rauch, Jr. For*  
Jeffrey G. Carlen, CDR  
Chief, Coastal Mapping Division, AMC

Submitted by

*A.L. Shands*  
A.L. Shands  
Final Reviewer

Approved by

*John D. Perraw Jr.*  
Chief, Photogrammetric Branch

*James Calk*  
Chief, Coastal Mapping Division

