

12519

Diag. Cht. Nos. 6450-2 & 6460-2.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Chart Compilation

Field No. 21411 Office No. T-12519

LOCALITY

State Washington

General locality Seattle

Locality Elliott Bay - Duwamish Water-
way

19.63-64

CHIEF OF PARTY

F. Natella, Portland Photo. Office
J. E. Waugh, Div. of Photo. Wash., D.C.

LIBRARY & ARCHIVES

DATE December 1967

USCOMM-DC 87022-P66

12519

DESCRIPTIVE REPORT - DATA RECORD

T- 12519

PROJECT NO. (II):

21411

FIELD OFFICE (II):

PORTLAND

CHIEF OF PARTY

F. NATELLA

PHOTOGRAMMETRIC OFFICE (III):

WASHINGTON, D.C.

OFFICER-IN-CHARGE

J. E. WAUGH

INSTRUCTIONS DATED (II) (III):

SEPTEMBER 1963

METHOD OF COMPILATION (III):

B-8 stereoplotter with color glass plates

MANUSCRIPT SCALE (III):

1:10,000

STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III):

1:25,000

DATE RECEIVED IN WASHINGTON OFFICE (IV):

DATE REPORTED TO NAUTICAL CHART BRANCH (IV):

APPLIED TO CHART NO.

6442 (new chart)

DATE:

DATE REGISTERED (IV):

GEOGRAPHIC DATUM (III):

N.A. 1927

VERTICAL DATUM (III):

MEAN SEA LEVEL EXCEPT AS FOLLOWS:

Elevations shown as (25) refer to mean high water

Elevations shown as (5) refer to sounding datum

i.e., mean low water or mean lower low water

REFERENCE STATION (III):

LAT.:

LONG.:

☐ ADJUSTED☐ UNADJUSTED

PLANE COORDINATES (IV):

STATE

ZONE

Y =

X =

ROMAN NUMERALS INDICATE WHETHER THE ITEM IS TO BE ENTERED BY (II) FIELD PARTY, (III) PHOTOGRAMMETRIC OFFICE,
OR (IV) WASHINGTON OFFICE.

WHEN ENTERING NAMES OF PERSONNEL ON THIS RECORD GIVE THE SURNAME AND INITIALS, NOT INITIALS ONLY.

DESCRIPTIVE REPORT - DATA RECORD

FIELD INSPECTION BY (II): R. B. Melby		DATE: Aug.-Oct. 1963
MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION): Field -- Aug.-Oct. 1963 <i>Field Edit Sept. 1964 by R. B. Melby</i>		
PROJECTION AND GRIDS RULED BY (IV): H. V. Howard		DATE October 10 1963
PROJECTION AND GRIDS CHECKED BY (IV): C. F. Kupiec R. K. DeLawder		DATE Oct. 10-15 1963
CONTROL PLOTTED BY (III): R. A. Carter		DATE Dec. 26 1963
CONTROL CHECKED BY (III): I. Raborn		DATE Dec. 27 1963
RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III): John Gerlach		DATE Dec. 16 1963
STEREOSCOPIC INSTRUMENT COMPILATION (III): R.A.C. F.W. J.B.P. J.P.B.		PLANIMETRY DATE 12/63--3/64
		CONTOURS DATE
MANUSCRIPT DELINEATED BY (III): J.P.B. R.A.C.		DATE 1/63--3/64
SCRIBING BY (III):		DATE
PHOTOGRAMMETRIC OFFICE REVIEW BY (III): J.P.B.		DATE
REMARKS:		

DESCRIPTIVE REPORT - DATA RECORD

CAMERA (KIND OR SOURCE) (III):

Wild Avigon RC 5 (color film)

PHOTOGRAPHS (III)

NUMBER	DATE	TIME	SCALE	STAGE OF TIDE
63 WC 6357-6361	6/10/63	1608-1611	1:25,000	4.7 to 6.7 above MLLW
63 WC 6369-6380	" " "	1636-1640	"	
63 WC 6382-6387	" " "	1646-1649	"	
63 WC 6391-6401	6/10/63	1703-1705	1:10,000	7.0 to 7.7 above MLLW
63 WC 6403-6408	"	1709-1711	"	
63 WC 6411-6420	"	1715-1718	"	
63 WC 6421-6439	"	1723-1726	"	

TIDE (III)

	RATIO OF RANGES	MEAN RANGE	SPRING RANGE
REFERENCE STATION: Seattle, Washington	11.3		
SUBORDINATE STATION:			
SUBORDINATE STATION:			

WASHINGTON OFFICE REVIEW BY (IV):

DATE:

PROOF EDIT BY (IV):

DATE:

NUMBER OF TRIANGULATION STATIONS SEARCHED FOR (II):

RECOVERED:

IDENTIFIED:

NUMBER OF BM(S) SEARCHED FOR (II):

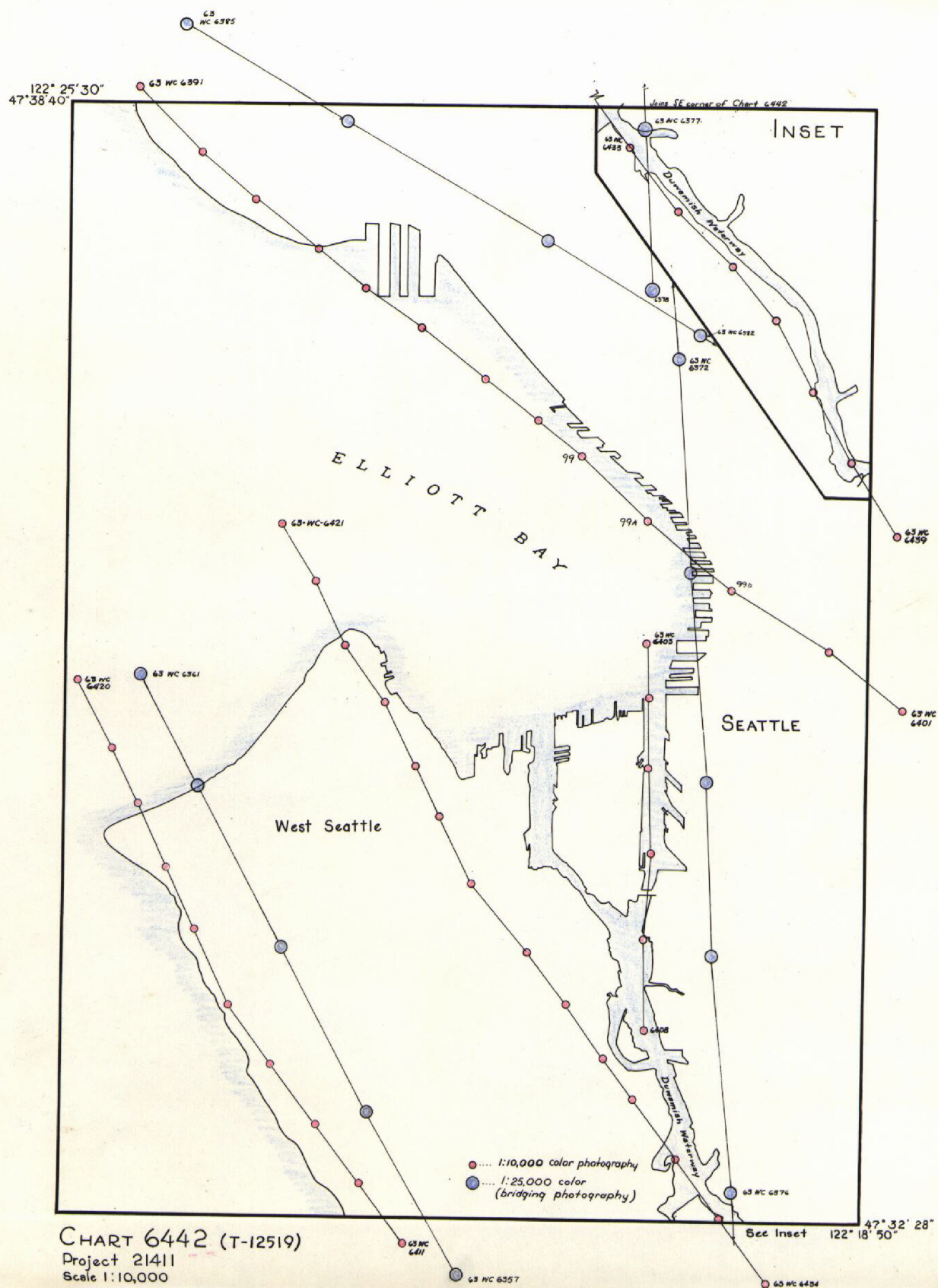
RECOVERED:

IDENTIFIED

NUMBER OF RECOVERABLE PHOTO STATIONS ESTABLISHED (III):

NUMBER OF TEMPORARY PHOTO HYDRO STATIONS ESTABLISHED (III):

REMARKS:



SUMMARY TO ACCOMPANY DESCRIPTIVE REPORT T-12519
SEPTEMBER 1964

T-12519 is a Chart Compilation Manuscript, compiled for, and comprising new Chart 6442 in its entirety. The manuscript was compiled on the B-8 stereoplotter at a scale of 1:10,000. Chart 6442 will be published at 1:10,000 scale with an inset at the same scale.

The B-8 compilation was achieved with 1:25,000 color glass plates. These plates were also used on the C-8 stereoplanigraph to bridge the area. Color prints at a scale of 1:10,000, containing field inspection data, were available to supplement the bridging photography.

Compilation involved extensive shoreline facilities and all features pertinent to a nautical chart. Field edit additions and/or corrections were minor due to the thorough compilation afforded by the color photography. All features were compiled using the Separate Provisional Photogrammetry Instructions for compiling nautical chart topography.

The Chart Compilation Manuscript was submitted to the Nautical Chart Division. A copy of this manuscript will be registered in the Bureau Archives under T-12519.

Submitted by:

J. P. Battley, Jr.

J. P. Battley, Jr.

FIELD INSPECTION REPORT
PROJECT 21111
August-October 1963

2. Areal Field Inspection

The area contained in this report is common to Elliott Bay and the dredged channel portion of the Duwamish River Waterway and the Seattle harbor area.

The project is within the limits of the city of Seattle, Washington with its extensive shipping and industrial facilities.

The area is served by various steamships, railway and airway lines. U.S. Highway 99 and numerous secondary highways and streets serve the city.

The quality of the photography furnished the field was considered adequate for field inspection, shoreline inspection and for the identification of horizontal control. All photography was color prints.

3. Horizontal Control

(a) The following triangulation stations were established for control of aerotriangulation where previously established station were found to be lost or destroyed.

BRONSON, 1963 ILLINOIS, 1963 SEATTLE, BEVERLY PARK, ELEVATED WATER TANK, 1963

The following triangulation intersection stations were established for location of aids to navigation or landmarks, either not visible on the photography or of a permanent nature.

BLAKELY ROCK LIGHT, 1963 FOURMILE ROCK LIGHT, 1963 TODD DOCK LIGHT, 1963
WEST WATERWAY LIGHT, 1963 SEATTLE, RADIO STATION KNBX, TOWER, 1963
SEATTLE, BOEING FIELD, ROTATING AERO BEACON, 1963

(b) No datum adjustments were made by the field party.

(c) Only control established by the Coast and Geodetic Survey and required for horizontal control, aids to navigation or landmarks were searched for or recovered.

(d) All horizontal control stations required by the project instructions for stereoplanigraph bridging were positively identified.

(e) A complete recovery of horizontal control stations was not required by the project instructions.

(f) The quality of identification for each station is stated on the control station identification cards. None of the identification was considered sub-standard.

4. Vertical Control

All tidal bench marks were searched for and the disposition of each mark has been denoted on its respective form 685A "Recovery Note, Bench Mark". A few other bench marks were recovered to permit the determination of heights of landmarks.

5. Contour and Drainage

Contours not applicable.

Drainage has been indicated on the field photographs.

6. Woodland Cover

Woodland cover is apparent on the color photography.

7. Shoreline and Alongshore Features

The entire shoreline was inspected by field personnel utilizing a small skiff or by walking the beach.

It was necessary to denote a portion of the shoreline inspection on one 1:25,000 scale color photograph (63-WC#6374) because the 1:10,000 scale color photographs failed to give this particular area coverage.

(a) The mean highwater line was determined on the field photographs by its relative position to identifiable photo images and by color tones.

(b) The low water line was not delineated.

(c) The character of the foreshore has been indicated on the field photographs.

(d) Bluffs are evident in the northern portion of the project.

(e) Docks, wharves, piers, ferry slips, barge slips, marine railways, and floating dry docks have been indicated on the field photography.

Two new piers under construction have been indicated on the field photographs. The plans of these features, as furnished by the Port of Seattle Commission are also submitted.

(f) The shoreends of submarine cables and submarine pipelines have also been indicated on the field photos.

(g) Small boat launching ramps were indicated on the field photographs.

8. Offshore Features

Offshore features in the form of piles and dolphins were indicated on the field photography.

Near the West Waterway a new radio tower (KNBX) has been erected. It rests on a piling supported understructure with guy cables, anchors to three dolphins and surrounded guard piles. The radio mast was located by triangulation intersection methods and a plan of the positions of these positions features is also submitted.

Offshore rocks were located. One rock not visible on the photography was located by a theodolite fix. Another rock not visible on the photographs was located by angle and stadia distance from a triangulation intersection station.

9. Landmarks and Aids

(a) All charted landmarks were investigated. Landmarks recommended for charting purposes are listed in three categories. 1. Previously charted landmarks to be retained. 2. Previously charted landmarks to be revised and retained. 3. New landmarks to be charted.

All landmarks are listed on form 567 (Landmarks for Charts).

(b) No interior landmarks were selected.

(c) Two aeronautical aids were located or confirmed. These have been listed on form 567.

(d) All fixed aids to navigation were located and have been listed on form 567.

The West Waterway Control Lights have been listed on form 567, but it is recommended that the feature be retained as a landmark "W. TOWER" (Δ Spokane Bridge, Red Light on High West Power Tower, 1934) with the notation that the lights share the same structure, as found on chart 6449.

(e) Floating aids are not applicable.

10. Boundaries, Monuments and Lines

Boundaries, monuments and lines are not applicable.

11. Other Control

No other control was established by the field unit. The establishment of topographic or hydrographic stations were not required by the project instructions.

12. Other Interior Features

The location of interior features other than landmark buildings was not required.

On field photograph 63-WC-6437 the new air traffic control tower of Boeing Field (King County Airport) has been indicated. This feature may be of interest to the Airport Survey Section.

The navigable waters in the project are Elliott Bay and the dredged channel of the Duwamish River Waterway.

13. Geographic Names

A systematic geographic names investigation was not required. No name discrepancies or conflicts were discovered during field inspection.

14. Special Report and Supplemental Data

(1) Plan of Per 46, King St. Terminal Development

(2) Plan of Pier 21, Unit No. 1, Development

(3) Map of Port of Seattle

(4) Plan of Radio Station KNBX, tower

(a) As color photography was used entirely for field operations, the use of the usual Higgins drawing ink for making field annotations on the photographs proved unsatisfactory as the Higgins drawing ink was lacking in both adhering and contrasting properties. By experimentation a suitable substitute was found in the form of Alpha color Dry Tempera, made by Weber Costello Co. It is available in dry powder form in various colors and can be readily mixed in the field as it is water soluble. This ink adheres well to the gloss finish of the color photographs and has good contrast qualities. In use it must be shakenⁿ frequently as the pigmentⁿ tends to precipitate readily. Its removal from the photographs can be accomplished with a damp cloth in case erasure is desired. The use of a rubber eraser to "rough up" the finish of the photographs to aid the adhering of the ink is not necessary. Also the erasing obliterates some of the coloring and detail and was found to be undesirable.

15 thru 20. Additional Items

None

Approved:

Fred Natella, Capt. C. & G.S.

Portland District Officer

Respectfully Submitted

Robt. B. Melby
Robert B. Melby

Surveying Technician C. & G.S.

Photogrammetric Plot Report

Seattle, Washington

PH-21411

Dec. 1963

T-12519

21) Area Covered - Seattle Harbor and Lake Washington, Seattle, Washington. The area is covered on C&GS Chart #6449.

22) Method - The three flights were bridged on the C-8 stereoplanigraph. Tie points were located between connective flights. Adjustment was made by the IBM 650 method using field identified horizontal control. The adjustment was checked by numerous office identified control points (see sketch). Plotting values were found from Mercator projection.

23) Adequacy of Control - Field control was adequate for the adjustment. More than enough control points could be office identified as check points. In general, the office identified check points held within ± 3 feet except for a few isolated points with poor photo images or inherent Y parallax in the model. Maximum error for field identified control was 6 feet; for office identified control, 8 feet, both on Strip #2. All points meet National Map Accuracy Standards for 1:10,000 scale.

25) Photography - Photographs were adequate as to coverage, overlap and definition. The color positive plates had Y parallax in spots, especially on Strip #3 and one model (63W6359-60) on Strip #2. However, this did not seem to affect the overall quality of the bridges.

Approved by:

John D. Perrow Jr.
John D. Perrow, Jr.

Submitted by:

John Gerlach
John Gerlach

Compilation Report
T-12519 (Chart 21411)
Seattle, Washington
April 1964

31. Delineation

The chart manuscript was delineated on the B-8 stereoplotter utilizing 1:25,000 scale color glass plates. These plates were also used in bridging the area. Field inspection on 1:10,000 scale color prints was available and the inspected details applied. The color photography was very good in definition. This afforded an excellent interpretation of shoreline and planimetric details. Color film, 1:10,000 scale, was supplied to use on the B-8 for areas where minute details (number of RR tracks, etc.) were difficult to interpret on the bridge plates.

32. Control

There is an abundance of triangulation stations in the area of this map. Control used in the bridge held well. In addition, there were 32 landmarks, identified during field inspection, that were triangulation stations. These positions held well with the bridge points on the B-8 stereoplotter. The elevations read on the B-8 agreed with the field determined elevations supplied by the field for the landmarks and aids.

33. Supplemental Data

Port of Seattle plans of new construction approved for Pier 46 and Pier 21 were sent in from the field inspector. The additions planned and noted in progress on the photography were detailed as "under construction." These plans are to be forwarded to the Nautical Chart Branch on completion of the project.

34. Contours and drainage

Inapplicable

35. Shoreline and alongshore details

Small shoreline structures on the western shore of the Duwamish Waterway at approximately 47°33'05" were difficult to interpret because of shadows. Field inspection was not available in this area. With the exception of the above mentioned area, shoreline inspection was considered adequate. The shoreline bordering Elliott Bay has a concentration of docks, drydocks, wharves, piers and their accompanying

industrial buildings. The color photography proved invaluable in compiling these details.

36. Offshore details

No unusual problems were encountered during compilation. The location of piling and dolphins by the field inspector was very complete.

37. Landmarks and Aids

All landmarks and aids have been listed by the field on 567 forms. Those located photogrammetrically were scaled and entered on the 567 forms. A few larger buildings in the interior of the chart were compiled for consideration by the chart branch as landmark features.

38. Control for future surveys

None

39. Junctions

Inapplicable

40. Horizontal and vertical accuracy

(See Item 32) The manuscript complies with the Nautical Standards of Accuracy and project instructions.

41. thru 45.

Inapplicable

46. Comparison with existing maps

A comparison was made with the latest basic hydrographic surveys. These were HS 5844, 5845, 5846 and 5724, dated Feb. 1935. A comparison print is being prepared that records in detail differences of importance to hydrographic and chart reviewers.

47. Comparison with nautical charts

A comparison was made with nautical chart 6446 dated June 8, 1946, revised May 26, 1962; scale 1:25,000.

Items to be applied to nautical charts immediately:

None

Approved by *K.N.M.*
K. N. Maki
Chief, Compilation Section

Submitted by *J.P.B.*
J. P. Battley, Jr.
Cartographer

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

CGCS FORM 567
(11-51)

Prominently located

TO BE REVISITED
TO BE REVISITED

STRIKE OUT TWO

MONITORING LANDMARKS FOR CHARTS

Seattle, Washington October 11, 1963

I recommend that the following objects which have ~~been~~ been inspected from seaward to determine their value as landmarks be charted on ~~the~~ the charts indicated.

The positions given have been checked after listing by Robert B. Volby

Fred Natella, Capt. C. & G.S.

Chief of Party

STATE Washington				SIGNAL NAME	DESCRIPTION	POSITION				METHOD OF LOCATION AND SURVEY NO.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
CHARTING NAME	LATITUDE *	LONGITUDE *				DATUM									
		D.M. METERS	D.P. METERS												
1 * TANK (ELEVATED)	47 37	11.827	33.722	N.A.	12/4/49	Poultry Tank, 1929 Ht. = 104 (107)	X			9/27/63			6449, 6442		
2 * TANK (ELEVATED)	47 36	365.3	704.2	1927	(13/49)	American Can Co., (Cenco) Tank	X						6446, 6450		
TANK (ELEVATED)	47 36	52.874	07.327	"		1929 Ht. = 126 (130)	X			9/23/63			6449, 6442		
TANK (ELEVATED)	47 36	1633.0	153.0	"		Bell Street Dock, Tank, 1929	X						6446, 6450		
TANK (ELEVATED)	47 36	41.336	52.632	"	(13/49)	Ht. = 111 (119)	X			9/20/63			6449, 6442		
TWIN CHURCH SPIRES	47 36	28.183	1099.2	"		St. James Catholic Church, North Spire, 1933 Ht. = 175 (476)	X						6446, 6450		
	47 36	870.4	629.5	"		St. James Catholic Church, South Spire, 1933 Ht. = 175 (476)	X			9/23/63			6449, 6442		
	47 36	27.400	29.426	"		Golden Creosote Works, Center Stack, 1933 Ht. = 75 (79)	X						6446, 6450		
STACK TANK (ELEVATED)	47 35	101.8	1215.5	"		Fisher's Mill, Fall Tank, 1917 Ht. = 220 (232)	X			10/14/63			6449, 6442		
(ELEVATED)	47 34	31.626	20.023	"	(13/51)	KESC Radio Tower, 1940 Ht. = 222 (236)	X			9/20/63			6450, 6446		
R. TR.	47 34	976.7	418.5	"		Albers Tank, 1934 Ht. = 163 (166)	X			9/24/63			6449, 6442		
TANK (ELEVATED)	47 34	35.717	42.930	"	13/51	Seattle, Radio Station, KJR, Tower, 1936 Ht. = 570 (573)	X						6449, 6450		
(ELEVATED)	47 35	17.900	897.2	"		Ht. = 413 (420)	X			9/27/63			6449, 6450		
R. TR.	47 35	552.8	41.827	"		KOL Radio Tower, 1934 Ht. = 134 (135)	X						6449, 6450		
(ELEVATED)	47 34	35.981	874.1	"		Fortress Life Tower, Center (Center 1 Flagpole, 1922 Ht. = 320 (423) of 3)	X			9/20/63			6449, 6450		
R. TR.	47 35	1728.9	874.1	"			X			9/23/63			6449, 6450		
(ELEVATED)	47 35	08.302	55.862	"			X						6449, 6450		
R. TR.	47 36	256.4	1167.2	"			X						6449, 6450		
FLAGSTAFF (Center 1 Flagpole, 1922 Ht. = 320 (423) of 3)	47 36	28.241	03.318	"	13/49		X						6449, 6450		
		872.2	69.3	"			X						6449, 6450		
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U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

C&G'S FORM 567
(11-61)

NOV 1963

TO BE CHARTED
NON-FLOATING AID TO NAVIGATION
TO BE CHARTED

STRIKE OUT TWO

NON-FLOATING AID TO NAVIGATION LANDMARKS FOR CHARTS

Seattle, Washington October 11, 1963

I recommend that the following objects which have ~~been~~ been inspected from seaward to determine their value as landmarks be charted on ~~the~~ the charts indicated.

The positions given have been checked after listing by Robert B. Melby

Fred Natella, Capt. U.S. Coast & Geodetic Survey
Chief of Party

STATE	CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION							METHOD OF LOCATION AND SURVEY No.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
				LATITUDE #		LONGITUDE #			DATUM							
				°	'	°	'	"								
										D.M. METERS						
STACK (KIBX) R. TR. (KTB)	Seattle, Elliott Bay Lumber Co. Stack, 1955 Hts 203 (208)	13151		47 34	19.90	122 20	34.81	N.A.	1927	Triang	9/27/63	X			6449, 6442	
	Seattle, Radio Station, KIBX, 1963 skeleton steel Ht. = 266 (273)	13151		47 34	36.329	122 21	53.400	"	"	"	10/9/63	X			6449, 6442	
	skeleton steel Ht. = 212 (435)			47 34	1122.0	122 21	1116.0	"	"	Photo	9/26/63	X			6449, 6442	
	Ford Stack, 1934 tall steel Ht. = 153 (158)	13152		47 33.8	48.974	122 21.5	35.089	"	"	"	10/7/63	X			6449, 6442	
	Ford Tank, 1934 Ht. = 155 (160)	13152		47 33	27.216	122 20	20.008	"	"	Triang	10/7/63	X			6449, 6442	
TANK (ELEVATED)	Tank steel, elevated Ht. = 110 (114)	13152		47 33	24.955	122 20	17.673	"	"	"	"	X			6449, 6442	
	Tank steel, elevated on Bldg. Ht. = 126 (134)	13152		47 33	32.204	122 20	369.5	"	"	Photo	9/20/63	X			6449, 6442	
	Seattle, Kenworth Truck Corp. Water Tank, 1955 Ht. = 144 (150)	13153		47 32.5	994.6	122 20.3	409.3	"	"	"	10/8/63	X			6449, 6442	
				47 32.3	19.023	122 19.4	539.0	"	"	Triang	10/4/63	X			6449, 6442	
TANK (ELEVATED)				47 32.1	587.5	122 19.4	539.0	"	"							
				47 31	22.303	122 18	185.3	"	"							
					688.8											

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-55, 2-39, 6-36, 7-18 to 22 inclusive, and Fig. 79. Positions of charted landmarks and non-floating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

* TABULATE SECONDS AND METERS

USCGM-DC 10234-P 61

Previously located

TO BE CHARTED
TO BE DELETED
TO BE DELETED

STRIKE OUT TWO

NOTIFICATION OF CHANGES IN LANDMARKS FOR CHARTS

Seattle Washington

October 11, 1963

I recommend that the following objects which have ~~been~~ been inspected from seaward to determine their value as landmarks be charted on ~~the~~ the charts indicated.

The positions given have been checked after listing by Robert B. Melby

Fred Matella, Capt. C. & G.S.
Chief of Party

STATE	CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION				METHOD OF LOCATION AND SURVEY No.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
				LATITUDE*		LONGITUDE*							
				°	'	°	'						
				D. M. METERS	"	D. P. METERS	"	DATUM					
20	FLAGPOLE	Flagpole Near Δ Alder High, 1934 Ht. = 71 (234) 13148		47 37	55.290	122 23	31.203	N.A.	Triang	9/23/63	X		6449 6442
21	TV TOWER	Seattle, TV Station KIRO, Tower, 1953 Ht. = 534 (992) 13149		47 37	1707.6	122 23	651.5	1927	"	10/9/63	X		6446 6450
22	TV TOWER	Seattle, TV Station KOMO, Tower, 1953 Ht. = 500 (1005) 13149		47 37	59.468	122 21	19.229	"	"	"	X		6449 6442
23	TV TOWER	Seattle, TV Station KING, Tower, 1953 Ht. = 500 (1006) 13149		47 37	7835.6	122 21	401.4	"	"	"	X		6450 6446
24	STACK TOWER (SPACE NEEDLE)	Tall, steel stack Ht. = 81 (84) 13149 Seattle, Worlds Fair, Space Needle, 1962 Ht. = 607 (737) 13149		47 37	56.373	122 21	09.813	"	"	"	X		6449 6442
				47 37	1741.0	122 20	204.9	"	Photo	9/27/63	X		6446 6450
				47 37	55.210	122 20	59.323	"	Triang.	10/9/63	X		6449 6442
				47 37	31.732	122 20	1238.5	"					6446 6450
				47 37	1741.0	122 20	1106.2	"					6449 6442
				47 37	1446.1	122 20	1106.2	"					6446 6450
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This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-55, 2-39, 6-36, 7-18 to 22 inclusive, and Fig. 79. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

* TABULATE SECONDS AND METERS

TO BE CHARTED

STRIKE OUT TWO

HOW TO WRITE THE BOOK LANDMARKS FOR CHARTS

Seattle, Washington

October 11, 1963

I recommend that the following objects which have *(have not)* been inspected from seaward to determine their value as landmarks be charted on *(deleted from)* the charts indicated.

The positions given have been checked after listing by Robert B. Melby

Fred Natella, Capt. C. & G.S.

Chief of Party.

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-35, 2-39, 6-36, 7-18 to 22 inclusive, and Fig. 79. Positions of charted landmarks and *nonfloating aids* to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not for individual field survey sheets. Information under each column heading should be given.

TABULATE SECONDS AND METERS

NONFLOATING AIDS OR ~~NON~~ MARKS FOR CHARTS

TO BE CHARTED
TO BE REVISOR
TO BE DELETED

STRIKE OUT TWO

Seattle, Washington October 10, 1963

I recommend that the following objects which have been inspected from seaward to determine their value as landmarks be charted on ~~the~~ the charts indicated.

The positions given have been checked after listing by Robert B. Melby

Fred Natella, Capt. C.A.G.S.

Chief of Party.

STATE	CHARTING NAME	DESCRIPTION	Light List No.	POSITION				METHOD OF LOCATION AND SURVEY No.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
				LATITUDE	LONGITUDE	DATUM							
				D. M. METERS	D. P. METERS								
				° ' "	° ' "								
37	LIGHT	Alki Point Light, 1934	1795	47 34	122 25	N.A.	1927	Triang.	9/11/63	X			6449, 6450
38	LIGHT	Dunsmuir Head Light, 1962	1794	47 35	122 23	"	"	"	10/7/63	X			6446, 6450
39	AERO BN	Northwestern Mutual Insurance Building-Aero Light (Seattle)	1787	47 36	122 20	"	"	"	"	X			6449, 6450
		Northwestern Insurance Co., 13149 Beacon, 1955)								X			6446, 6450
40	LIGHT	Todd Dock Light, 1963	1791	47 35	122 21	"	"	"	9/24/63	X			6449, 6450
41	LIGHT	East Waterway Light	1789	47 35.4	122 20.7	"	"	Photo	10/7/63	X			6446, 6450
42	LIGHT	West Waterway Light, 1963	1792	47 35	122 21	"	"	Triang.	9/24/63	X			6449, 6450
43	LIGHT	West Water Control Lights (Spokane Bridge, Red Light On High West Power Tower, 1934)	1793	47 34	122 21	"	"	"	9/20/63	X			6446, 6450
44	LIGHT	Blakely Rock Light, 1963	1784	47 35	122 28	"	"	"	9/17/63	X			6446, 6450
45	LIGHT	Fourmile Rock Light, 1963	1781	47 38	122 24	"	"	"	"	X			6449, 6450
46	LIGHT	Colman Ferry Terminal Fog Signal	1783	47 36.2	122 20.3	"	"	Photo	10/9/63	X			6449, 6450
47	AERO BN	Seattle, Boeing Field, Rotating Aero Beacon, 1963		47 32	122 18	"	"	Triang	"	X			6449, 6450

* Also this should be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-55, 2-39, 6-36, 7-18 to 22 inclusive, and Fig. 79. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

* TABULATE SECONDS AND METERS

STRIKE OUT TWO

LANDMARKS FOR CHARTS

Seattle, Washington

October 10, 1961

I recommend that the following objects which have ~~been~~ been inspected from seaward to determine their value as landmarks be ~~marked~~ *marked* (deleted from) the charts indicated.

The positions given have been checked after listing by Robert B. Malby

Fred Natella, Capt. C. & G.S.

Chief of Party.

[illegible]

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-55, 2-39, 6-36, 7-18 to 22 inclusive, and Fig. 79. Positions of charted landmarks and *nonfloating aids* to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

TABULATE SECONDS AND METERS

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TO BE CHARTERED
 2008-09-01
 2008-09-01

STRIKE OUT TWO

NONFLOATING AIDS CHECKBOOKS FOR CHARTS

PORTLAND, OREGON

8 SEPT. 1984

I recommend that the following objects which have, ~~been~~ ^{been} inspected from seaward to determine their value as landmarks be charted on ~~(the charts)~~ the charts indicated.

The positions given have been checked after listing by

R. B. Meloy

P. A. STARK *Chief of Party.*

P. A. STARK

[illegible]

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-55, 2-39, 6-36, 7-18 to 22 inclusive, and Fig. 79. Positions of charted landmarks and *nonfloating aids* to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

* TABULATE SECONDS AND METERS

USCOMM-DC 10234-P61

CHART G-412

HISTORY OF CARTOGRAPHIC WORK NAUTICAL CHART DIVISION FILES

REMARKS (Cont.)

NC REC CORR FUTURE

TO REPRODUCTION

LITH Rec'd

DRAWING (7-12519)

NC

NE NP RP TO

LITH Ver

SHEET 1

PROJECT 21411

DATE

PRINT DATE

APPLIED Part Full	SOURCE OF INFORMATION			Type of Information	LOCALITY	INFORMATION APPLIED		
	File No	Date	Authority					
✓ 1	Photo Nos: 63 WC 6357 thru 6360 63 WC 6372 thru 6378 63 WC 6382 thru 6385	6-10-63	C+GS	Topography	Seattle, Wash. Elliott Bay	Complete chart compilation from 1:25,000 color photography utilizing the Wild B-8 stereoplotter, inking compiled work sheets to chart drawing		
✓ 2	Photo Nos: 63 WC 6391 thru 6401 63 WC 6403 thru 6409 63 WC 6412 thru 6418 63 WC 6422 thru 6438	6-10-63	C+GS	Topography	"	Field inspection data of Sept. Oct. 1963 from 1:10,000 color photography		
✓ 3	Field originated 567 Forms	10-11-63	C+GS	Landmark & Aid	"	Plotting landmarks and aids (Chart Division Manuscript Copy); scaling landmarks and recording on forms		
✓ 4	Pier 21 & 46 Development Plans	7-12-63 4-2-6-62	Port of Seattle Seattle Commiss ion	Planimetric Shoreline	"	Plans of piers under construction		
1 thru 8 and 10	JPB, JBP, RAC, FW	1-2-64		Completed	Time (hrs)	Verified by	Started	Completed
9	JPB, RAC	4-6-64		3-27-64	776	JPB	3-23-64	4-15-64
				48				80

FIELD EDIT REPORT

PROJECT 21411

CHART 6442, SEATTLE, WASHINGTON

51. METHODS:

THE SHORELINE AND ALONGSHORE FEATURES WERE EXAMINED FROM A SKIFF. DISCREPANCIES, OMISSIONS OR ADDITIONS WERE DENOTED ON AN OZALID COPY OF CHART 6442 IN PURPLE INK. CORRECTIONS NOTED ON THE COLOR PHOTOGRAPHY HAVE BEEN REFERENCED ON THE OZALID PRINTS AS TO PHOTOGRAPH NUMBER. ONE CHART DRAWING 6442 AND FOUR COLOR PHOTOGRAPHS WERE USED IN THE FIELD EDITING.

52 - 55. NOT APPLICABLE.

56. ADDITIONAL ITEMS:

TWO RADIO MASTS (KXA) WERE IDENTIFIED ON COLOR PHOTOGRAPH 63 WC 6399A. OTHER RADIO TOWERS WITH CALL LETTERS WERE PREVIOUSLY LISTED ON FORM 567, DATED OCTOBER 1963. TWO NEW DOLPHINS IN THE VICINITY OF PIER 88 WERE LOCATED BY PLANETABLE METHODS. A NEW FERRY SLIP HAS BEEN CONSTRUCTED BETWEEN PIERS 29 AND 30. A PLAN OF THE SLIP WAS OBTAINED FROM THE SEATTLE PORT COMMISSION. PIER 21 IS COMPLETED AS FAR AS CHARTING PURPOSES ARE CONCERNED. A NEW PIER IS UNDER CONSTRUCTION WHICH WILL JOIN PIER 21 ON ITS SOUTH END AND APPEAR AS A SOUTHERN EXTENSION OF IT.

THE LANDMARKS AND AIDS TO NAVIGATION WERE INSPECTED FROM SEAWARD. NO CHANGES ARE RECOMMENDED EXCEPT THE RELOCATION OF THE EAST WATERWAY LIGHT (LIGHT LIST NO. 1789). THE LIGHT IS NOW LOCATED ON THE OUTER END OF PIER 18 INSTEAD OF ON THE DOLPHIN AS PREVIOUSLY IDENTIFIED. ← A FORM 152, CONTROL STATION IDENTIFICATION CARD AND A FORM 567, LANDMARKS FOR CHARTS ARE SUBMITTED FOR THE NEW LOCATION OF THE LIGHT. IT SHOULD BE NOTED THAT THE NEW POSITION OF THE LIGHT IS DESCRIBED AS TEMPORARY IN PUBLICATION NOTICE TO MARINERS, PART II, NO. 22, DATED MAY 30, 1964, PARAGRAPH (2765).

THE OVERHEAD POWER CABLE AT LATITUDE 47° 34' 16", LONGITUDE 122° 20' 40" WAS IDENTIFIED ON COLOR PHOTOGRAPH 63 WC 6406 AND ITS VERTICAL CLEARANCE WAS DETERMINED. THE ADJACENT, FIXED SPAN, RAILROAD BRIDGE IS THE CONTROLLING FACTOR OF THE VERTICAL CLEARANCE AT THIS LOCATION.

THE TWO RADIO TOWERS SHOWN ON CHART 6449 AT LATITUDE $47^{\circ} 33' 45''$,
LONGITUDE $122^{\circ} 21' 20''$ HAVE BEEN DISMANTLED. THEY WERE RECOMMENDED
TO BE DELETED ON FORM 567 DATED OCTOBER 10, 1963.

CORRECTIONS TO THE SHORELINE ALONG THE WEST SHORE OF THE DUWAMISH
WATERWAY HAVE BEEN INDICATED ON COLOR PHOTOGRAPH 63 WC 6430.

APPROVED:

for Leo F. Bugnet
P. A. STARK, CDR, C&GS
PORTLAND FIELD OFFICER

SUBMITTED:

Robert B. Melby
ROBERT B. MELBY
SURVEYING TECHNICIAN

REVIEW REPORT T-12569 (Chart 6442)
CHART COMPILATION
September 1964

61. General Statement

(See summary enclosed)

62. Comparison with Registered Topographic Surveys

Upon assignment of this project to Photogrammetry, the Nautical Chart Division had recommended that a comparison need only be made with the Hydrographic Surveys in the area. The latest shoreline topography available at that time had been incorporated on the hydrographic sheets.

63. Comparison with Maps of Other Agencies

A comparison was made with 1:24,000 scale Geological Survey Quadrangles: Seattle North, Seattle South, Des Moines and Shilshole Bay, Washington, dated 1949.

64. Comparison with Hydrographic Surveys

Comparisons were made and discrepancies resolved between the chart compilation and Hydrographic Surveys No. 5844, 5845 and 5846, all at a scale of 1:5000. Comparison was also made with Hydrographic Survey No. 5724, scale 1:10,000.

Discrepancies between the surveys were minor and were resolved during field edit.

65. Comparison with Nautical Charts

During compilation and prior to field edit a comparison was made with nautical charts 6446, scale 1:25,000 and 6449, scale 1:25,000. Discrepancies with the nautical chart were noted on the Discrepancy Print and resolved during field edit.

All corrections, deletions and additions noted by the field editor were applied to the Chart Manuscript in red ink. Copies of the revised manuscript were made and will be sent to the Nautical Chart Division along with the original manuscript showing revisions in red.

66. Adequacy of Results and Future Surveys

The map complies with project instructions including the new methods devised for chart compilation.

See Item 32 (Control) in the Compilation Report for a report on the accuracy results for this project.

This map complies with the National Standards of Accuracy.

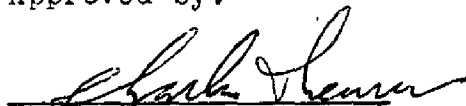
67. Additional Items

The field editor identified and obtained the call letters of two radio towers not previously shown. These towers were shown on the edited manuscript with a red circle along with their call letters. They are not of landmark value, but are for information to small-craft operators who use loop-antenna directional finders. These masts were not listed on a Form 567.


The recently completed construction and additions to Pier 46 were compiled from Port of Seattle Commission Plans which were verified by the field editor. The new ferry slips between Piers 29 and 30 were compiled from plans also obtained from the Port of Seattle Commission.

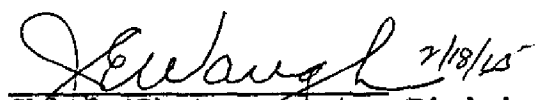
Pier 88 was in a state of redevelopment during compilation and field edit. The delineation as shown is correct to the time of field edit and is noted as "under development". All plans furnished by the Port of Seattle Commission will be submitted to the Nautical Chart Division.

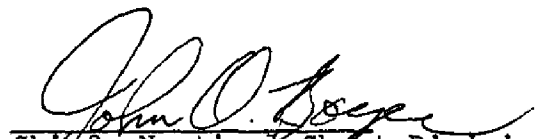
Approved by:


Chief, Photogrammetric Branch
Reh

Reviewed by:


J. P. Battley, Jr.


Chief, Photogrammetry Division
7/8/45


Chief, Nautical Chart Division

Part appnd (no con) to chit 6450 6-26-65 RKD