

TP-001273

TP-001273

NOAA FORM 76-35
(6-80)U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

This map edition will not be field edited.

Map No. TP-01273	Edition No. 1
Job No. CM-8314	
Map Classification III	
Type of Survey Shoreline	
LOCALITY	
State Alaska	
General Locality Eastern Behm Canal	
Locality Eastern Rudyerd Bay	
1984 TO 19	
REGISTERED IN ARCHIVES	
DATE	

DESCRIPTIVE REPORT

TP-01273

TABLE OF CONTENTS

NOAA Form 76-36A, DESCRIPTIVE REPORT - DATA RECORD	1
NOAA Form 76-36B, COMPILATION SOURCES	2
NOAA Form 76-36C, HISTORY OF FIELD OPERATIONS	3
NOAA Form 76-36D, RECORD OF SURVEY USE	4
PROJECT DIAGRAM	5
SUMMARY	6
HORIZONTAL CONTROL REPORT (FIELD OPERATIONS REPORT)	7
PHOTOGRAMMETRIC PLOT REPORT (AEROTRIANGULATION REPORT)	18
NOAA Form 76-41, DESCRIPTIVE REPORT CONTROL RECORD	22
COMPILATION REPORT	23
REVIEW REPORT	25
GEOGRAPHIC NAMES, FINAL NAMES SHEET	26
DISSEMINATION OF PROJECT MATERIAL	27
FORM C&GS-8352, RECORD OF APPLICATION TO CHARTS	28

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.	
DESCRIPTIVE REPORT - DATA RECORD		TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED	
PHOTOGRAMMETRIC OFFICE Photogrammetry Branch, Rockville, MD OFFICER-IN-CHARGE Ronald K. Brewer, Acting Chief		SURVEY TP-01273 MAP EDITION NO. 1 MAP CLASS III JOB PHK CM-8314	
PHOTOGRAMMETRIC OFFICE Photogrammetry Branch, Rockville, MD OFFICER-IN-CHARGE Ronald K. Brewer, Acting Chief		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__			
I. INSTRUCTIONS DATED			
1. OFFICE		2. FIELD	
AEROTRIANGULATION Dec. 31, 1984 OFFICE Jan. 3, 1986		FIELD Dec. 12, 1983	
II. DATUMS			
1. HORIZONTAL: <input checked="" type="checkbox"/> 1927 NORTH AMERICAN		OTHER (Specify)	
2. VERTICAL: <input checked="" type="checkbox"/> MEAN HIGH-WATER <input type="checkbox"/> MEAN LOW-WATER <input type="checkbox"/> MEAN LOWER LOW-WATER <input type="checkbox"/> MEAN SEA LEVEL		OTHER (Specify)	
3. MAP PROJECTION Oblique Mercator Projection		4. GRID(S) STATE Alaska ZONE 1	
5. SCALE 1:20,000		STATE ZONE	
III. HISTORY OF OFFICE OPERATIONS			
OPERATIONS		NAME	
DATE			
1. AEROTRIANGULATION BY METHOD: Analytical LANDMARKS AND AIDS BY		J. Taylor Jan. 1985 N/A	
2. CONTROL AND BRIDGE POINTS PLOTTED BY METHOD: Calcomp Plotter CHECKED BY		J. Taylor Jan. 1985 N/A	
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY COMPILATION CHECKED BY		D. Graham Feb. 1986 E. Allen Feb. 1986	
INSTRUMENT: Wild B-8 SCALE: 1:20,000		CONTOURS BY N/A CHECKED BY N/A	
4. MANUSCRIPT DELINEATION PLANIMETRY BY CHECKED BY		D. Graham Feb. 1986 E. Allen Feb. 1986	
METHOD: Smooth Drafted SCALE: 1:20,000		CONTOURS BY N/A CHECKED BY N/A	
HYDRO SUPPORT DATA BY CHECKED BY		N/A N/A	
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY		N/A	
6. APPLICATION OF FIELD EDIT DATA BY CHECKED BY		N/A N/A	
7. COMPILATION SECTION REVIEW BY		E. Allen Mar. 1986	
8. FINAL REVIEW BY		R. Rodkey May, 1986	
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY		R. Rodkey June, 1986	
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY			
11. MAP REGISTERED - COASTAL SURVEY SECTION BY			

NOAA FORM 76-36B (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY			
COMPILATION SOURCES					TP-01273
I. COMPILATION PHOTOGRAPHY					
CAMERA(S) Wild RC-10(B) F/L 152.74mm		TYPES OF PHOTOGRAPHY LEGEND (C) <u>COLOR</u> (P) PANCHROMATIC (I) INFRARED		TIME REFERENCE	
TIDE STAGE REFERENCE <input checked="" type="checkbox"/> PREDICTED TIDES <input type="checkbox"/> REFERENCE STATION RECORDS <input type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY				ZONE Pacific	<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> DAYLIGHT
				MERIDIAN 120 th W	
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
84B(C) 9799-9803	5-11-84	9:50	1:50,000	1.1 ft below MHW *	
84B(C) 9805-9811	5-11-84	9:55	1:50,000	0.8 ft below MHW *	
REMARKS * Tidal stages based on predicted tides reference station Ketchikan, Alaska; Sub. Sta. at Rudyerd Bay(14.8 Ft. range of tide)					
2. SOURCE OF MEAN HIGH-WATER LINE: The mean high-water line was compiled from the above list of color photographs by stereo instrument methods.					
3. SOURCE OF MEAN LOW-WATER OR MEAN LOWER LOW-WATER LINE: Not 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 None	EAST None		SOUTH None		WEST TP-01272
REMARKS					

HISTORY OF FIELD OPERATIONS.

TP-01273

I. ☒ FIELD ~~INSPECTION~~ OPERATION☐ FIELD EDIT OPERATION.

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	J. M. Wintermyre	April 1984
2. HORIZONTAL CONTROL	RECOVERED BY J.M. Wintermyre	April 1984
	ESTABLISHED BY J. M. Wintermyre	April 1984
	PRE-MARKED XXXXXXXXXX BY J. M. Wintermyre	April 1984
3. VERTICAL CONTROL	RECOVERED BY N/A	
	ESTABLISHED BY N/A	
	PRE-MARKED OR IDENTIFIED BY N/A	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY N/A	
	LOCATED (Field Methods) BY N/A	
	IDENTIFIED BY N/A	
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY <input checked="" type="checkbox"/> NO INVESTIGATION	N/A
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY N/A	
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY N/A	

II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED
Premarked2. VERTICAL CONTROL IDENTIFIED
N/A

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
84B(C)9805	BEAVER 1984		
84B(C)9800	FEND 1931, Sub. Sta. A		
84B(C)9807	PUNK 1931, Sub. Sta. A		

3. PHOTO NUMBERS (Clarification of details)

N/A

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)

NOAA Forms 76-53(8), NOAA Forms 76-45(2), NOAA Forms 75-82A(34), NOAA Forms 76-86(6), NOAA Forms 86-135(7), EDM Observations (HP-3808A) (7), Preliminary Adjusted Field Positions listing(1), Horizontal Control Sketch for project.

RECORD OF SURVEY USE

TP-01273

I. MANUSCRIPT COPIES

COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Final Reviewed Class III Map		Chart Maintenance Print	6-27-86	
Final Reviewed Class III Map		Notes to Hydrographer Print		6-27-86

II. LANDMARKS AND AIDS TO NAVIGATION

1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

NUMBER	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
	N/A		

2. ☐ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: _____3. ☐ REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: _____

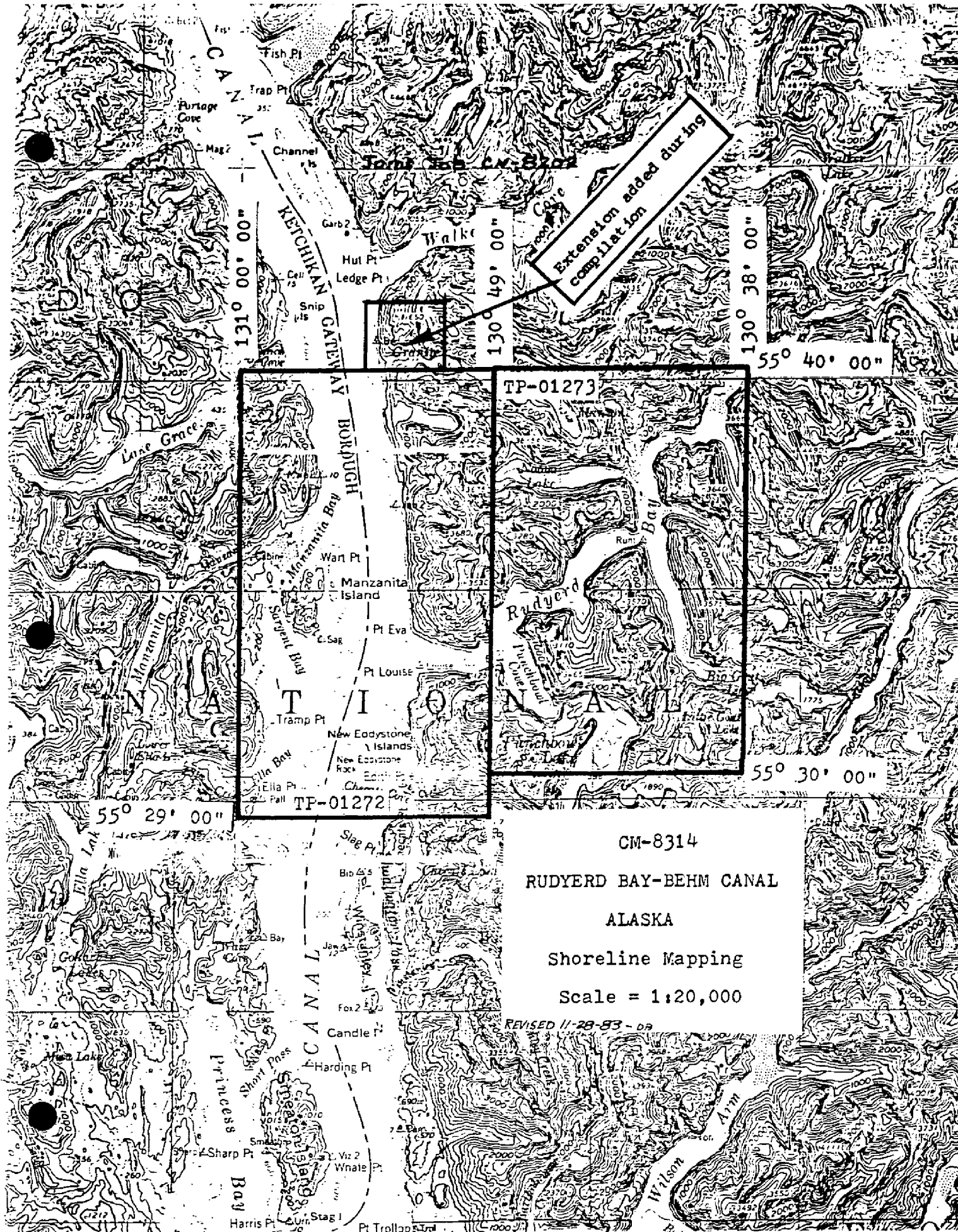
III. FEDERAL RECORDS CENTER DATA

1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.
2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☐ FORM NOS 567 SUBMITTED BY FIELD PARTIES.
3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.
X 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	



CM-8314
RUDYERD BAY-BEHM CANAL
ALASKA
Shoreline Mapping
Scale = 1:20,000

REVISED 11-28-83 - DR

SUMMARY

Project CM-8314 consists of two shoreline maps (TP-01272 and TP-01273) depicting the shoreline and other cartographic features of mapping interest located in a section of the eastern part of Behm Canal and all of Rudyerd Bay, Alaska. The maps were compiled at 1:20,000 scale.

The purpose of the project is to provide contemporary shoreline data for the maintenance of the nautical charting program and to supplement future hydrographic surveys.

Field operations in support of mapping consisted of aerial photography, and the recovery, establishment, and identification (premarking) of horizontal control necessary for aerotriangulation. There was no field inspection of the shoreline performed. Field operations for this project commenced in April and concluded in May 1984.

Natural color photographic coverage was acquired at scales of 1:30,000 and 1:50,000. The 1:50,000 scale photographs were used for aerotriangulation and compilation. The 1:30,000 scale photographs were made available to complement the interpretation of detail. All photographs were taken May 1984 with the Wild RC-10 camera.

Three strips of the 1:50,000 scale natural color photographs were bridged using analytical aerotriangulation methods. The geodetic control used was premarked. Tie points between strips were established to augment the datum tie. Elevations from U.S. Geological Survey quadrangles were used as vertical control. The amount of aerotriangulated control proved adequate and meets National Standards of Map Accuracy.

Compilation was performed in the Coastal Mapping Unit, Rockville office. Delineation was accomplished using a Wild B-8 stereoplotter through application of standard shoreline mapping techniques. Delineation was based on an office interpretation of the natural color bridged photographs. An extension of TP-01272 was compiled to allow a contemporary junction to TP-01161 (CM-8202). The area delineated in the extension was void on TP-01161. With the completion of the extension, there is now full contemporary shoreline coverage of Behm Canal eastern shoreline within the project limits of CM-8314 and CM-8202. All line work was smooth drafted.

Final review was performed in the Coastal Mapping Unit, Rockville office. This project and the maps thereof comply with project instructions and meet the requirements for the National Standards of Map Accuracy.

The Descriptive Report prepared for each map contains all the information pertinent to the completion of each map.

HORIZONTAL CONTROL REPORT

OPR-0177-DA-84

Rudyard Bay — Walker Cove, Alaska
April - May, 1984

Horizontal control operations were undertaken in Behm Canal, Rudyard Bay, and Walker Cove, Alaska as a part of project OPR-0177-DA-84, hydrographic survey of Walker Cove. This project included the establishment of control in Rudyard Bay and the placement of eight plastic photo panels in Behm Canal and Rudyard Bay for photogrammetric job CM-8314. Because of the different nature of the two portions of the field work, the Rudyard Bay and Walker Cove jobs will be addressed separately.

Behm Canal, Rudyard Bay (CM-8314)

The highest priority assigned to this project was the identification and location of sites for the placement and location of the photo panels. No reconnaissance plan was given to the ship, but a portion of Chart 17424 showing preferred panel locations was provided. Due to the steep fjord-like nature of the shoreline throughout the Behm Canal and Rudyard Bay area, seven of the eight panels were necessarily set as sub-stations from established horizontal control stations, one of those stations being nearly 5,000 meters from station FEND 1931 (panel #6). To locate panel #8 (see attached chart), eleven new stations were established in the north arm of Rudyard Bay by traverse methods from TUB 1931, SOT 1931, and PUNK 1931, with the eighth panel being set at the head of the north arm over station BEAVER. All computations were made using the latitude/ longitude co-ordinate system and are based on the North American Datum of 1927. No adjustment of data was performed in the field.

Five of the twelve new stations, PIP, EPO, VAN, ZEV, and ART were recovered hydrographic stations monumented with Coast and Geodetic Survey Hydrographic Station disks from the 1931 survey. The remaining seven stations were monumented with standard NOS disks cemented into drill holes. Reference marks were placed as practicable, as several stations were located on lone boulders or on narrow rock ledges.

Existing control throughout Rudyard Bay was recovered in good condition, except that the reference mark at station SOT 1931 was found loose and was recemented into the drill hole. The stations were all marked with C&GS Triangulation Station disks, most with one reference mark. Station RUNT 1931 (QSN 1060), an unoccupied station consisting of a 2x2 set vertically, was not found after a short search and should be considered lost, as shown in the

8

recovery note. Distances between station marks and reference marks were measured at all stations and agreed with published values within one centimeter except that the measured distance between AID 1891 and AID NO.2 was found to be 0.015m. less than the published value.

Third Order, Class I methods and specifications were adhered to throughout the locating of these stations; photo panel substitute points were located by direct computations from the station utilizing three horizontal positions and the fourth position to close the horizon (except at PUNK 1931, where no horizon closure was observed) as an additional check, exceeding the positioning requirements laid out in Photogrammetric Instruction No.22. Elevations were computed from station AID 1891 along Behm Canal by observing reciprocal double zenith distances at stations along the bay into the north arm.

All distances measured were the result of two separate observations, each the mean of five readings (except from VEX 2 1929 to VEX 2 Sub-Point, where only three readings were meaned) on the HP-3808A (S/N 00251) EDM unit. The January, 1984 calibration report for the HP-3808A is attached to this report. Wild T-2 theodolites (S/N 252594, 67872, and 26423) were used to observe all vertical and horizontal angles. 1.55 meter range poles served as observing targets in all instances, except that on lines of less than 500 meters length, Wild T-2 traverse targets were used, and on zenith distance observations from AID to SOT and TUB, tripod tops dressed in signal cloth were used.

Field work and computations were done by personnel of the NOAA Ship DAVIDSON. All field records and computations are complete and have been checked by DAVIDSON personnel. All station descriptions, recovery notes, and Control Station Identifications are complete and have been similarly checked for accuracy.

The published position of SOT 1931 was discovered to be illegible upon arrival in the working area. The seconds digit of the seconds of latitude was in question and was finally resolved with receipt of a confirming radio message on 20 April. A copy of the message is attached.

Satisfactory check angles at SOT (+2.5"), PUNK (+0.1"), and TUB (-2.3") were obtained, but a distance check between SOT and TUB yielded only a 1:9,500 check. Two traverses were then run to locate eleven stations in the north arm of Rudyerd Bay. Traverse No. 1, SOT 1931 - EPO - WALLY - VAN - JUNE - RUNT 2 - TUB 1931, with a starting back azimuth to TUB, resulted in a position closure of 1:128,900 and an azimuth closure on SOT of 8.0 seconds. A second traverse started and closed on WALLY and JUNE, respectively:

WALLY - ZEV - EDDIE - BEAVER - LUMPY - ART - TEMP - JUNE, starting with a back azimuth to EPO. This traverse closed to 1:97,500, with an azimuth closure on RUNT 2 of 3.4". Another station, PIP, was located by direct computations from EPO and RUNT 2, closing to 1:45,200.

Six triangles were observed during the course of the field work in Rudyerd Bay, with an average closure of 3.9 seconds. The maximum closure was 7.6 seconds, for the triangle EPO - PIP - RUNT 2; perhaps owing to poor geometry. These lines were not used in computing the traverse, but in the direct computations to locate PIP, which closed satisfactorily.

Reobservations of horizontal angles were made in the north arm of the bay to resolve what initially was a poor triangle closure (8.4 seconds). Several problems were identified on the triangle BEAVER - LUMPY - EDDIE and all three vertices were reobserved. At BEAVER, a reobservation was made after the tripod legs were reset on 2x2s driven into the ground. The station is located on a flat, grassy area that covers at spring tides and was consequently found unstable for horizontal control purposes until the legs were stabilized. At LUMPY, the line to EDDIE was poorly defined at best, and several attempts were made before an acceptable observation was made. An overhanging limb on line that the survey crew was unable to clear due to steep cliffs complicated matters here, but more so at EDDIE, when observing back to LUMPY. Since this line was used only to close two triangles and not as a part of the traverse, perhaps it should never have been observed.

Stations VAN and WALLY were reobserved from each other, using Wild traverse targets, rather than the range poles utilized originally, owing to the shortness of the line (about 430 meters). Since the variance between the observations was only about 1.5 seconds, the two observations were meaned.

Third Order, Class I observations were made in Rudyerd Bay as follows: Horizontal directions: 42; zenith distances: 62; and electronically measured distances: 16. Not included in the above tabulations are the observations required to locate the seven photo panel sub-stations.

Eight 1:50,000 scale aerotriangulation control panels were established as nearly as possible to the areas indicated on the supplied sketch (copy attached). As was noted before, seven of the panels were set as sub-stations from triangulation stations in sight. Owing to topographic constraints, the distances from the triangulation stations to the accompanying sub-stations were in all cases in excess of 900 meters, as follows:

STATION	DISTANCE TO SUB-STATION (meters)
PAD 2 1929	2,511.946
JEW 2 1929	3,686.670
BEE 2 1929	912.995
VEX 2 1929	1,362.446
POP 1891	2,417.777
FEND 1931	4,768.029
PUNK 1931	2,661.979
BEAVER	panelled direct

To ensure the positional accuracy of the sub-stations as much as possible, three positions (direct and reverse) were observed from the triangulation station to two other stations in the area (check angle) and the sub-station, exceeding the requirements set forth in Photogrammetric Instruction #22. In addition, at all stations except PUNK, a fourth position was observed to close the horizon. Satisfactory check angles and horizon closures were obtained in all cases. The distance from each station to its corresponding sub-station was measured to Third Order, Class I specifications, as previously noted. Geodetic distances were computed using a non-reciprocal double zenith distance observation and the published elevation of the station.

Control Station Identifications are complete except that the horizon closure observations are not included; they are found on the horizontal abstracts.

Photo-panel #5 (POP 1891) was initially panelled in orange signal cloth and three rays (Array #1) due to the poor contrast resulting from the white plastic over very light colored rock. The low-level panel photography was flown with this configuration. After finding out that this is not a satisfactory solution to the light background problem, black plastic was purchased in Ketchikan and the site was remarked on 08 May with a black/white square and 2 black rays, as shown in Array #3 of the instructions.

Walker Cove

Horizontal control operations were undertaken in Walker Cove to establish and locate additional control stations in support of combined operations under instructions for OPR-0177-DA-84. Eight stations in the eastern part of Walker Cove were established and located by traverse methods based on the latitude/longitude coordinate system; one temporary station in the western part was located by resection methods. Third Order, Class I methods and specifications were adhered to throughout this portion of the project. All computations are based on the North American Datum of 1927. No adjustment of the data was made in the field.

The new stations in eastern Walker Cove are monumented with standard NOS disks cemented into drill holes in the rock with reference marks similarly set as deemed practicable by the field party. Temporary resection station BUBBA was marked by a PK nail and washer driven into a crack in outcropping rock. The terrain of Walker Cove is similar to Rudyerd Bay; that is, fjord-like topography with steeply-sloping cliffs and overhanging trees in many areas, so suitable station sites were quite limited.

All existing control within Walker Cove and in Behm Canal in the vicinity of the survey area was recovered intact. These stations were monumented with C&GS Triangulation Station disks, most accompanied by one C&GS Reference Mark disk nearby, except that most stations in Behm Canal have two reference marks. Distances measured from recovered stations to reference marks agreed with published values within one centimeter as set forth in "Specifications to Support Classification, Standards of Accuracy, and General Specifications of Geodetic Control Surveys," except at the following, where greater distances were noted: BED (+0.015m), OFT 2 (+0.018m and -0.044m), LEDGE (-0.018m), ISLET (-0.012m), and STEP (-0.018m).

Wild T-2 one-second theodolites S/N 67872 and 26423 were used to observe all horizontal and vertical angles, except that S/N 252594 was used to locate the resection station in western Walker Cove. On 02 May, Theodolite S/N 67872 sustained a sharp blow as the bottom of the instrument case gave way while being transported to a station site. The level bubbles as well as horizontal and vertical collimation of the instrument were checked during the next inport period; the vertical collimation was found to be in need of adjustment and the procedures outlined in the Wild Instruction Manual were followed to bring the instrument back into satisfactory adjustment. Range poles were used as observing targets at all stations. Distances were measured with the H-P 3808A Medium Range EDM1 (S/N 00251) (calibration report attached).

All field work and computations were conducted by personnel of the NOAA Ship DAVIDSON. All field records, computations, recovery notes, and station descriptions have been checked for accuracy.

Elevations and geodetic distances for the eight new stations were derived from field elevations of stations FIN 1931 and LEE, 1982 from the preliminary data from Job CM-8202. Reciprocal zenith distance observations along the traverse route were made, closing at LEE. The error between the 2.255m preliminary adjusted elevation of LEE and the computed elevation of 2.568m (-0.313m) was divided equally

between the nine internal stations between FIN and LEE to distribute the error.

Eight new stations were located by traverse methods in the eastern third of Walker Cove. Initially, satisfactory check angles were obtained at FIN 1931 (-1.1" and +2.4") and LEE, 1982 (-0.6"). A distance check between FIN 1931 and END 1931 was computed, resulting in a difference between measured and computed lengths of 0.132m, or a 1:17,900 check. A second distance check was obtained between JOANNY, 1982 and LEE, 1982, where a 1:51,900 check resulted. After obtaining satisfactory checks, a traverse was run as follows: END 1931 - SCARP - BRO - BALD - BOLDAR - NOTCH - REPEL - SHADE - GOAT - LEE, 1982, with a starting back azimuth to FIN 1931. A 1:261,600 position closure on LEE, 1982 and a 5.7" azimuth closure on JOANNY, 1982 resulted.

Three closed triangles were observed during the course of the field work and are tabulated as an attachment to this report. A closure of 8.6" resulted for the triangle GOAT - LEE - SHADE, while a 5.2" error was found for the triangle SHADE - REPEL - GOAT. The lengths of five of the six sides of these two triangles are less than 1,000 meters and it is felt that the proximity of the stations led to the poor triangle closures. Satisfactory side checks were computed for these triangles, using the Angle-Angle-Angle-Side program. The mean triangle closure for all three triangles is 4.9 seconds.

A temporary station was located by resection techniques exceeding Third Order, Class 1 specifications in the western part of Walker Cove. Station BUBBA was resected from CHICK 1931, EL 1931, DUB 1931, and BOT 1931 with a resulting position closure of 1:39,900.

Third Order, Class 1 observations were made in Walker Cove as follows: Horizontal directions: 34; zenith distances: 29; electronically measured distances: 14. No reoccupations were necessary except that stations JOANNY and LEE were reoccupied to measure directions to reference marks.

Respectfully Submitted,



Mark P. Koehn, LT, NOAA
Horizontal Control Officer

Approved and Forwarded,



James M. Wintermyre, CDR, NOAA
Commanding Officer
NOAA Ship DAVIDSON

HORIZONTAL CONTROL REPORT
OPR-0177-DA-84

CHECK ANGLES

Behm Canal/ Rudyerd Bay, Alaska

<u>At Station</u>	<u>Angle</u>	<u>Computed</u>	<u>Observed</u>	<u>Diff.</u>
SOT 1931	PUNK to TUB	013-02-39.0	013-02-41.5	+2.5"
PAD 2 1929	HUT to BED	050-54-32.6	050-54-35.1	+2.5"
JEV 2 1929	AID to BEE 2	038-59-46.3	038-59-46.0	-0.3"
BEE 2 1929	AID to SAG	087-00-12.8	087-00-14.1	+1.3"
VEX 2 1929	POP to BIB	034-45-40.8	034-45-42.2	+1.4"
POP 1891	BIB to VEX 2	035-40-12.0	035-40-14.2	+2.2"
FEND 1931	PUNCH to ELSE	056-12-44.8	056-12-35.4	-9.4"
PUNK 1931	TUB to SOT	013-43-06.7	013-43-06.8	+0.1"
TUB 1931	SOT to PUNK	153-14-14.3	153-14-12.0	-2.3"

Walker Cove, Alaska

FIN 1931	END to JOANNY	008-44-17.3	008-44-18.4	+1.1"
FIN 1931	MOST to JOANNY	021-06-19.4	021-06-17.0	-2.4"
LEE, 1982	MOST to JOANNY	000-50-13.3	000-50-13.9	+0.6"

CHECK DISTANCES

Rudyerd Bay, Alaska

<u>Stations</u>	<u>Inverse Dist.</u>	<u>Measured Dist.</u>	<u>Diff.</u>	<u>Closure</u>
SOT to TUB	1032.448 m.	1032.340 m.	-.108	1:9,500

Walker Cove, Alaska

FIN to END	2365.791 m.	2365.657 m.	-.132	1:17,900
JOANNY to LEE	4879.901 m.	4879.807 m.	-.094	1:51,900

HORIZONTAL CONTROL REPORT
OPR-O177-DA-84

FIELD ELEVATIONS (in meters)

Rudyard Bay, Alaska

AID 1891	2.3*	OUCH 1931	2.463
LOUISE 1931	2.120	EPO	2.911
ELSE 1931	2.270	WALLY	2.364
BOWL 1931	1.268	ZEV	2.005
HACK 1931	-0.883	EDDIE	2.745
JANE 1931	2.029	BEAVER	3.324
KICK 1931	3.341	LUMPY	2.493
FEND 1931	1.783	ART	1.914
PUNCH 1931	3.408	TEMP	2.782
GUM 1931	2.208	JUNE	5.081
TUB 1931	3.582	RUNT 2	3.152
SOT 1931	2.324	VAN	2.755
PUNK 1931	2.366	PIP	2.179

* NGS published elevation; held fixed.

Walker Cove, Alaska

FIN 1931	3.344*	NOTCH	3.472
END 1931	2.677	REPEL	3.919
SCARP	4.321	SHADE	2.659
BRO	4.282	GOAT	1.798
BALD	4.352	LEE, 1982	2.255*
BOLDAR	3.657		

* from 1982 field work; preliminary adjusted elevation
(held fixed)

HORIZONTAL CONTROL REPORT
OPR-0177-DA-84

EXISTING HORIZONTAL CONTROL STATIONS

Behm Canal/Rudyerd Bay, Alaska

STATION	QUAD	OSN	STATION	QUAD	OSN
BIB 1891	551303	1009	ELSE 1931	551304	1022
VEX2 1929	"	1135	DISH 1931	"	1016
POP 1891	"	1096	FEND 1931	"	1025
PALL 1891	"	1081	BOWL 1931	"	1010
JAR 1931	551304	1038	PUNCH 1931	"	1055
SAG 1891	"	1061	RUD 1931	"	1059
LOUISE 1931	"	1044	YERD 1931	"	1066
AID 1891	"	1002	BAY 1931	"	1004
BEE2 1929	"	1003	GROG 1931	"	1031
EVA 1931	"	1024	IRIS 1931	"	1035
BELT 1931	"	1007	JANE 1931	"	1037
AMES 1931	"	1003	HACK 1931	"	1033
GUM 1931	"	1032	KICK 1931	"	1040
COLD 1931	"	1013	MASH 1931	"	1047
PUNK 1931	"	1056	LEAN 1931	"	1041
TUB 1931	"	1065	NUMB 1931	"	1051
RUNT 1931	"	1060*	OUCH 1931	"	1053
SOT 1931	"	1063	QUAN 1931	"	1057

* station searched for but not found.

Behm Canal/Walker Cove Alaska

OFT 2 1929	551304	1052	CULT 1931	551304	1014
PAD 2 1929	"	1054	MOST 1931	"	1048
CELL 1891	"	1011	END 1931	"	1023
MAG 2 1929	551311	1036	JOANNY, 1982	"	--
BED 1891	551304	1005	LEE, 1982	"	--
GARB 2 1929	"	1029	GOOD 1931	"	1030
HUT 1931	"	1034	FIN 1931	"	1026
ABE 1931	"	1001	DIX 1931	"	1017
ISLET 1931	"	1036	FIX 1931	"	1027
CHICK 1931	"	1012	DUB 1931	"	1018
EL 1931	"	1021	BOT 1931	"	1009
BLU 1931	"	1008	LEDGE 1931	"	1042
STEP 1931	"	1064			



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NOAA Ship DAVIDSON S331
1801 Fairview Ave. E.
Seattle, WA 98102-3767

16

22 February 1984

To : James M. Wintermyre, CDR, NOAA
Commanding Officer

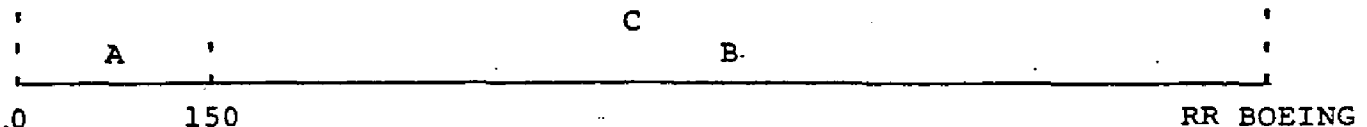
From : *Mark P. Koehn*
Mark P. Koehn, LT, NOAA

Subject: HP-3808A Calibration, 16 and 17 February 1984

The HP-3808A Medium Range EDM (S/N 00251) was calibrated at the NGS Calibration Baseline, King County Airport, Seattle, WA on 16 and 17 February 1984. This calibration followed servicing at the HP Repair Facility, Mountain View, CA in October, 1983. Discrepancies with published data were noted on the first day of calibration and a more complete observation was made on 17 February to determine the problem.

Results showed that the station RR BOEING 1971, located on the apron near the south end of the taxiway, has apparently moved slightly, making our observations from that station inconsistent with published values. This movement is most likely the result of recent paving of the apron area.

The determination that RR BOEING has moved is based on a series of observations taken as follows:



Reduced horizontal distances measured on both days, adopted geodetic distances, and differences are summarized below:

Date	Line	Adopted Geod. Dist.	Measured Distance	Correction	Mean Correction
16 Feb	0-150 (A)	150.0007m	149.9747m	+0.0260m	
			149.9727	+0.0280	
			149.9728	+0.0279	
17 Feb			149.9762	+0.0245	
			mean(149.9741)		+0.0266m
16 Feb	0-RR (C)	1494.4752m	1494.4214m	+0.0538m	
17 Feb			1494.4162	+0.0590	
			1494.4222	+0.0530	
			mean(1494.4199)		
17 Feb	150-RR (B)	1344.4746	1344.4236	+0.0510	

Measurements made over the two days on both the A and C lines show excellent repeatability of the instrument on the long and short lines, indicating a problem with the calibration range rather than the instrument.



Factory calibration strives to set the instrument correction at 0.028m (+5mm). Using data along line A (as RR BOEING data is unreliable) to determine the instrument correction, a mean correction of +0.0266m resulted, well within factory specifications.

As a final check, this correction was applied to lines B and C. The corrected lengths of all lines were compared to see if the sum of lengths A and B equalled length C. The result showed a difference of 4.4mm, within the tolerance of the instrument.

$$\begin{aligned}(149.9741 + 0.0266) + (1344.4236 + 0.0266) &= 1494.4199 + 0.0266 \\1494.4509 &= 1494.4465 \\ \Delta &= .0044\text{m}\end{aligned}$$

It appears, therefore, that RR BOEING 1971 has shifted by about 2.5 cm. From this calibration, I recommend that a correction of +0.027m be applied to all measurements taken with the HP-3808A during the upcoming field season.

PHOTOGRAMMETRIC PLOT REPORT

CM-8314

Rudyerd Bay-Behm Canal, Alaska

January 1985

21. Area Covered

The area covered by this project is Behm Canal from Granite Creek to Checats Cove and Rudyerd Bay. This area is covered by two 1:20,000 scale maps; TP-01272 and TP-01273.

22. Method

Three strips of 1:50,000 scale color photographs were bridged by Standard Analytic Aerotriangulation methods. Eight horizontal control stations were premarked. Tie points were needed to supplement control on strip three.

None of the photographs for this project were ratioed for enlargements. The manuscripts were plotted on the Calcomp 718 plotter using the Alaska State Plane Coordinate System Zone 1, and the oblique mercator projection.

23. Adequacy of Control

The control was adequate. This project meets the National Standards of May Accuracy.

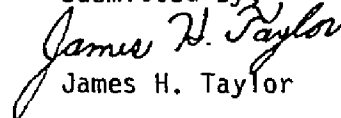
24. Supplemental Data

USGS quadrangles were used to provide vertical control for the strip adjustments. Nautical charts were used to investigate the project area for landmarks and aids. There were no landmarks and aids to be positioned for this project.

25. Photography

Due to the quality of the photographs for this project the original film was cut and measured. The coverage and overlap of the color bridging photographs were adequate. Some areas of the shoreline are obscured by trees.

Submitted by


James H. Taylor

Approved and Forwarded:



Don O. Norman
Chief, Aerotriangulation Unit

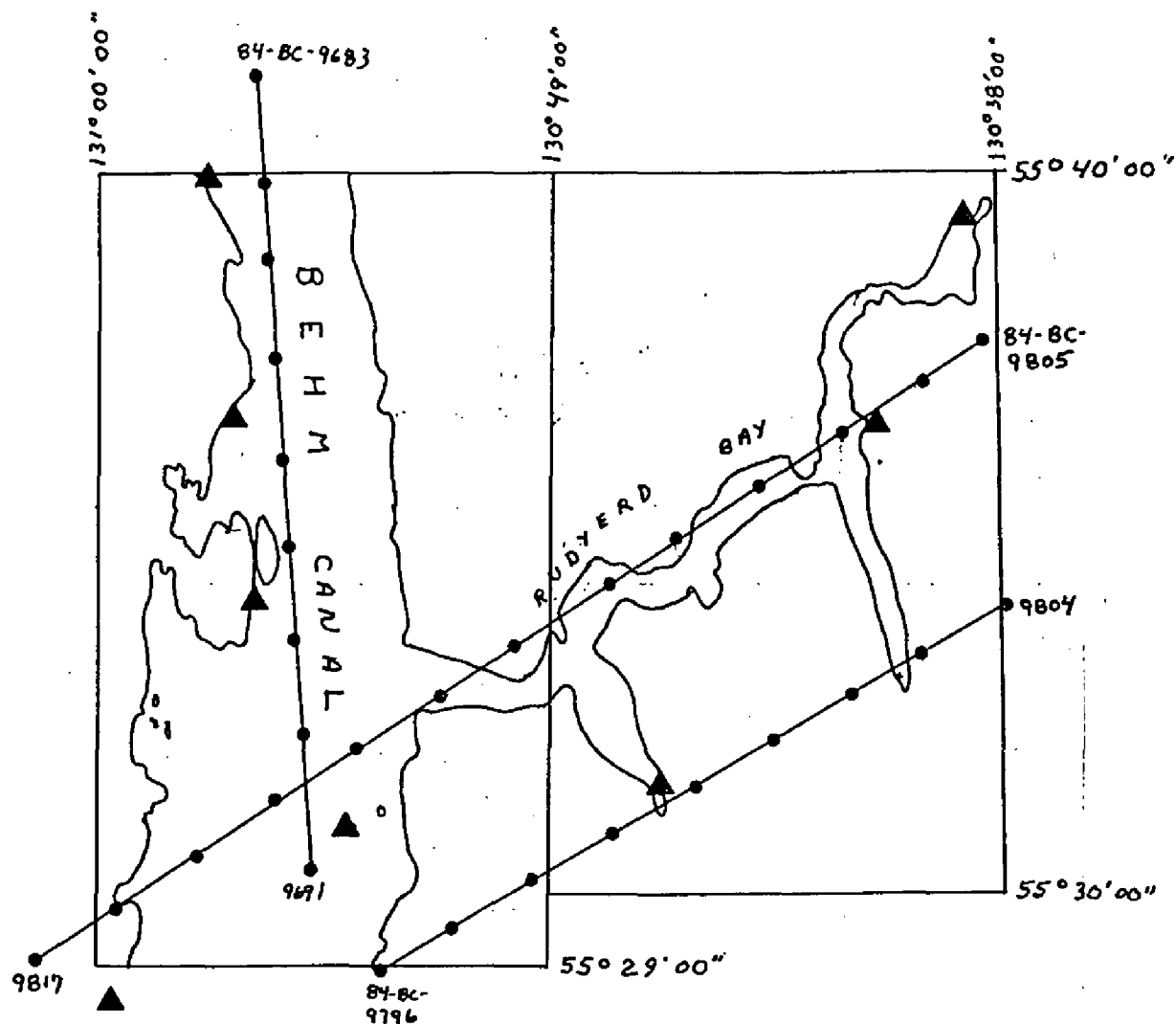
FIT TO CONTROL

<u>STATION NAME</u>	<u>POINTS</u>	<u>VALUES IN FEET</u>	
<u>STRIP 1</u>		<u>X</u>	<u>Y</u>
▲ PAD 2, 1929	784101	0.1	0.0
▲ JEW 2, 1929	786101	-0.3	0.0
▲ BEE 2, 1929	788101	0.3	0.0
▲ POP, 1929	791101	-0.1	0.0
STRIP 1 & 2 TIE	791801	-0.1	-2.3
STRIP 1 & 2 TIE	791802	-2.6	-1.4
STRIP 1 & 2 TIE	791803	-1.0	1.3
<u>STRIP 2</u>			
▲ BEAVER, 1984	805100	0.5	-0.9
▲ PUNK, 1931	807101	-0.8	1.7
▲ FEND, 1931	800101	0.6	-0.8
▲ POP, 1891	791101	-0.6	-0.5
▲ VEX 2, 1929	817101	0.3	0.5
STRIP 1 & 2 TIE	791801	-0.1	-2.3
STRIP 1 & 2 TIE	791802	-2.6	-1.4
STRIP 1 & 2 TIE	791803	-1.0	1.3
<u>STRIP 3</u>			
▲ POP, 1892	791101	1.4	-0.2
STRIP 2 & 3 TIE	796801	-2.3	-1.9
▲ STRIP 2 & 3 TIE	796802	-0.4	2.1
STRIP 2 & 3 TIE	796803	-2.5	-0.2
▲ STRIP 2 & 3 TIE	798801	0.0	-1.3
▲ STRIP 2 & 3 TIE	798802	-1.7	-0.6
STRIP 2 & 3 TIE	798803	-0.5	-3.3

▲ FEND, 1931	800101	0.3	-1.5
▲ STRIP 2 & 3 TIE	802802	1.9	1.7
STRIP 2 & 3 TIE	802803	1.5	3.5
▲ STRIP 2 & 3 TIE	804801	0.0	-0.5
▲ STRIP 2 & 3 TIE	804803	-1.4	0.2

▲ DESIGNATES STATIONS HELD IN THE BRIDGES

JOB CM-8314



RUDYERD BAY-BEHM CANAL
ALASKA
SHORELINE MAPPING
SCALE 1: 20,000

DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.		JOB NO.		GEODETTIC DATUM		N.A. 1927		ORIGINATING ACTIVITY		REMARKS
TP-01273		CM-8314		COORDINATES IN FEET		N.A. 1927		Coastal Mapping Unit, PPS Rockville, Md.		
STATION NAME	SOURCE OF INFORMATION (Index)	AEROTRIANGULATION POINT NUMBER	STATE	ZONE	ALASKA	φ LATITUDE	λ LONGITUDE			
BEAVER 1984	Preliminary Adj Field Positions 1984	805100		X=	3,308,490.38	φ 55 39	21.806	Established 4/19/84		
				Y=	1,409,921.065	λ 130 38	58.907			
FEND 1931	551304 Sta. 10255	800100		X=	3,275,788.25	φ 55 33	43.399	Recovered 4/20/84		
				Y=	1,374,166.49	λ 130 48	54.216			
PUNK 1931	551304 Sta. 1056	807100		X=	3,295,019.20	φ 55 35	37.912	Recovered 4/26/84		
				Y=	1,386,602.14	λ 130 43	10.856			
				X=		φ				
				Y=		λ				
				X=		φ				
				Y=		λ				
				X=		φ				
				Y=		λ				
				X=		φ				
				Y=		λ				
				X=		φ				
				Y=		λ				
				X=		φ				
				Y=		λ				
COMPUTED BY		DATE		COMPUTATION CHECKED BY				DATE		
LISTED BY	D. Graham	DATE	2/86	LISTING CHECKED BY E. Allen				DATE 3/86		
HAND PLOTTING BY		DATE		HAND PLOTTING CHECKED BY				DATE		

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

Compilation Report

TP-01273

31. Delineation

Delineation was accomplished using the Wild B-8 stereoplotter through application of standard shoreline mapping techniques. Delineation of the shoreline, alongshore, offshore, and the interior details was based on office interpretation of the 1:50,000 scale bridging/compilation color photographs.

32. Control

Horizontal control was provided by the Aerotriangulation Unit and was adequate in controlling the stereomodels. Refer to the Photogrammetric Plot Report dated January 1985.

33. Supplemental Data - None

34. Contours and Drainage

The compilation of contours was not a requirement of this project. Drainage was compiled based on an office interpretation of the color bridging/compilation photographs. Sections of continuous rapids in streams depicted as a single line were labeled "rapids" and ticked at the beginning and end.

35. Shoreline and Alongshore Detail

The MHWL and alongshore detail were compiled based on office interpretation of the 1:50,000 scale bridging/compilation color photographs as described in item 31.

36. Offshore Details

Offshore detail consisted of rocks awash and snags. Offshore detail was compiled by instrument methods.

37. Landmarks and Aids

There are no designated landmarks or aids to navigation within the limits of this map.

38. Control for Future Surveys

Refer to NOAA Form 76-41 bound with this Descriptive Report for information on recoverable control for future surveys.

39. Junctions

Refer to the Data Record Form 76-36B, item 5.

40. Horizontal and Vertical Accuracy

This map meets the National Standards of Map Accuracy. Refer to the Photogrammetric Plot Report dated January 1985.

41. Notes to the Reviewer

In response to the letter written to Cdr. Matsushige from Monument Ranger, Dave Barber, dated October 12, 1984, the Nooya Trail and the Nooya Shelter were not visible on the 1984 photographs. A section of the Punchbowl Trail was visible and compiled.

46. Comparison with Existing Maps

A comparison has been made with the following USGS quadrangles and results are noted:

KETCHIKAN(C-2), ALASKA, 1955 Edition, Minor Revision 1963, scale 1:63,360. The alongshore area is adequately depicted on the quadrangle.

KETCHIKAN(C-3), ALASKA, 1955 Edition, Minor Revisions 1962, scale 1:63,360. The alongshore area is adequately depicted on the quadrangle.

47. Comparison with Nautical Charts

A comparison has been made with the following National Ocean Service Charts:

17420, 23rd Edition, scale 1:229,376, dated March 16, 1985
17424, 5th Edition, scale 1:80,000, dated August 6, 1977; revised October 1, 1983

A Chart Maintenance Print indicating the result of the comparison was forwarded to the Marine Chart Branch, Rockville, Maryland.

Submitted by,

Douglas B. Graham
Douglas B. Graham
Cartographer

Approved and Forwarded:

Robert W. Rodkey, Jr.
Robert W. Rodkey, Jr.
Chief, Coastal Mapping Unit

Review Report

TP-01273

61. General Statement

Refer to the Summary bound with this Descriptive Report for an overview of the photogrammetric operations related to the production of this map and associated data.

62. Comparison with Registered Topographic Surveys

Comparison with registered topographic surveys was not a requirement for this project.

63. Comparison with Maps of Other Agencies

Refer to item 46 of the Compilation Report bound with this Descriptive Report for detailed information on this topic.

64. Comparison with Hydrographic Surveys

Comparison with hydrographic surveys was not a requirement for this project.

65. Comparison with Nautical Charts

Refer to item 47 of the Compilation Report bound with this Descriptive Report for information on this topic.

66. Adequacy of Results and Future Surveys


This map meets the National Standards of Map Accuracy and the requirements specified in the project instructions.

Submitted by,



Edward D. Allen

Office Reviewer



Robert W. Rodkey, Jr.

Final Reviewer

Approved by,



Acting Chief, Photogrammetric Production Section



Acting Chief, Photogrammetry Branch

26
FEB 25 1986

GEOGRAPHIC NAMES

FINAL NAME SHEET

CM 8314 (Rudyerd Bay, Alaska)

TP-01273

Nooya Lake

Punchbowl Cove

Punchbowl Lake

Rudyerd Bay

Approved:

Charles E. Harrington

Charles E. Harrington
Nautical Charting Division

DISSEMINATION OF PROJECT MATERIAL

CM-8314

Eastern Behm Canal and Rudyerd Bay, Alaska

NATIONAL ARCHIVES/FEDERAL RECORDS CENTER

Brown Jacket:

Three envelopes containing compilation photographs

One envelope containing NOAA Form 76-53(8), NOAA Form 76-45(2),
listing of Preliminary Adjusted Field Positions(1),
NOAA Form 75-82A(34), NOAA Form 76-86(6), NOAA Form 86-135(7),
EDMI Observations(HP-3808A)(7), Horizontal Control Sketch
for project(1).

One envelope containing Photogrammetric Plot Report(1 copy), Geodetic
and Aerotriangulated Control listing, 2 pages(1 copy), NOAA
Form 76-41, 2 pages(original), Project Diagram(1 copy).

Project Completion Report

AGENCY ARCHIVES

Registration Copy of Each Map
Descriptive Report of Each Map

REPRODUCTION BRANCH

8X Reduction Negative of Each Map

OFFICE OF STAFF GEOGRAPHER

Geographic Names Standard

