

T-12007

T-12007

Form 504	
U. S. DEPARTMENT OF COMMERCE	
COAST AND GEODETIC SURVEY	
DESCRIPTIVE REPORT	
Class III Map	
Type of Survey	SHORELINE (PHOTOGRAMMETRIC)
Field No.	PH-6013
Office No.	T-12007
LOCALITY	
State	ALASKA
General locality	KNIK ARM
Locality	CAIRN POINT
1961	
CHIEF OF PARTY	
P. A. STARK, ^{Portland} PHOTOGRAMMETRIC OFFICE	
LIBRARY & ARCHIVES	
DATE	

USCOMM-DC 5087

A SECOND EDITION OF THIS MAP IS REGISTERED

DESCRIPTIVE REPORT - DATA RECORD

T - 12007

PROJECT NO. (II): PH-6013		
FIELD OFFICE (II):		CHIEF OF PARTY
PHOTOGRAMMETRIC OFFICE (III): PORTLAND, OREGON		OFFICER-IN-CHARGE P. A. STARK
INSTRUCTIONS DATED (II) (III): JANUARY 17, 1963 SUPPLEMENT No. 1 APRIL 1, 1964 SUPPLEMENT No. 2 APRIL 17, 1964 AMENDMENT 1, SUPPLEMENT 2 SEE LETTER DATED APRIL 14, 1964 6320		
METHOD OF COMPILATION (III): KELSH INSTRUMENT		
MANUSCRIPT SCALE (III): 1:10,000		STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III): 1: ⁸ 000 PANTOGRAPH SCALE 1:10,000
DATE RECEIVED IN WASHINGTON OFFICE (IV): Jan. 25, 1980		DATE REPORTED TO NAUTICAL CHART BRANCH (IV): Feb. 1980
APPLIED TO CHART NO.	DATE:	DATE REGISTERED (IV): JUNE 1980
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): LOW, 1941		
LAT.: 61° 15' 33.101"	LONG.: 149° 52' 38.659"	<input checked="" type="checkbox"/> ADJUSTED <input type="checkbox"/> UNADJUSTED
PLANE COORDINATES (IV): Y = 2,652,219.41 X = 521,583.85		STATE ALASKA ZONE 4
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

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FIELD INSPECTION BY (II): None		DATE:
MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION): By KELSH INSTRUMENT (8/12/61 Date of photography) No MLLW line has been compiled on this map.		
PROJECTION AND GRIDS RULED BY (IV): A. E. Roundtree		DATE 4-17-64
PROJECTION AND GRIDS CHECKED BY (IV): C. R. JOHNSON		DATE 4-17-64
CONTROL PLOTTED BY (III): L. L. GRAVES		DATE 5-8-64
CONTROL CHECKED BY (III): J. L. HARRIS		DATE 5-8-64
RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III): J. D. PERROW, JR.		DATE NO DATE Feb. 1964
STEREOSCOPIC INSTRUMENT COMPILATION (III):	PLANIMETRY D. N. WILLIAMS	DATE 5-9-64
	CONTOURS None	DATE
MANUSCRIPT DELINEATED BY (III): DRAFTED FOR HYDRO SUPPORT: C. C. HARRIS		DATE 5-12-64
SCRIBING BY (III): None		DATE
PHOTOGRAMMETRIC OFFICE REVIEW BY (III): C. C. HARRIS		DATE 5-12-64
REMARKS: 1		

DESCRIPTIVE REPORT - DATA RECORD

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CAMERA (KIND OR SOURCE) (III):

C&GS SINGLE LENS "M"

PHOTOGRAPHS (III)

NUMBER	DATE	TIME	SCALE	STAGE OF TIDE
61 M 1377 61 M 1379 THRU 1381	8-12-61	11:40	1:40,000	4' ABOVE M.L.L.W. PREDICTED TIDE TABLES

TIDE (III)

	RATIO OF RANGES	MEAN RANGE	D TIDAL -SPRING- RANGE
REFERENCE STATION: ANCHORAGE		26.7	29.6
SUBORDINATE STATION:			
SUBORDINATE STATION:			

WASHINGTON OFFICE ^{INSPECTION} REVIEW BY (IV): E.L. Rolle DATE: Feb. 1980

PROOF EDIT BY (IV): E.L. Rolle DATE: Feb. 1980

NUMBER OF TRIANGULATION STATIONS SEARCHED FOR (II): RECOVERED: 2 IDENTIFIED: 1

NUMBER OF BM(S) SEARCHED FOR (II): NONE RECOVERED: IDENTIFIED

NUMBER OF RECOVERABLE PHOTO STATIONS ESTABLISHED (III): NONE

NUMBER OF TEMPORARY PHOTO HYDRO STATIONS ESTABLISHED (III): NONE

REMARKS:

SUMMARY TO ACCOMPANY

DESCRIPTIVE REPORTS

T 12003 Thru T 12008, T 12015 and T 12016

This portion of Project Ph 6013 covers the ~~knik-arm~~ ^{Knik Arm} portion of Cook Inlet, near Anchorage, Alaska from Point Woronzof Northeasterly to Goose Creek including Eagle Bay.

Eight maps T12003-T12008, T12015, T12016 were included in this portion of project Ph 6013 all are at 1:10,000 scale. The purpose of these maps were to provide contemporary Shoreline support of hydrographic operations and to aid in chart revision.

Field work prior to compilation in the 1961 field season consisted of establishing Horizontal Control.

This area was flown in August 1960 with the "W" camera in black and white and in August 1961 with the "M" Camera in black and white at 1:40,000 scale.

Bridging was performed in the Washington Office; T12015, T12016 in January 1963, and T12003-T12008 in February 1964.

The maps were compiled at the Portland office from February 1963 to May 1964.

Field edit was performed for sheets T 12015, T 12016 in August 1963 and applied in October 1963. Limited field edit was performed for T-12004, T12005, and T 12008 in July 1965 but was never applied. Manuscripts T-12003, T12006, T12007 never had any field edit performed. The field edit was considered "cancelled" because of the earthquake on March 27, 1964 affecting all of this Knit-Arm area. This area has been re-mapped as project CM-7310 KNIK-ARM, Anchorage, Alaska.

Final Review was performed at AMC in January, 1979. T 12015 and T12016 were forwarded to the Washington Science Center for final Registration. T12003-T12008 were forwarded to the Washington Science Center to be registered as CLASS III manuscripts. All pertinent data (Archive Material) will remain with Ph 6013 and the completion report will be submitted upon completion of the entire project. See letter dated March 8, 1977 in the back of this Descriptive Report.

FIELD INSPECTION REPORT

MAP MANUSCRIPT T-12007

PROJECT ~~21035~~ PH-6013

REFER TO THE FIELD INSPECTION REPORT BY ROBERT E. WILLIAMS
FOR PROJECT SP-1-61, 1961, INCLUDED WITH THE DESCRIPTIVE REPORT
FOR T-12507.

FIELD INSPECTION REPORT

COOK INLET, ALASKA

PROJECT SP-1-61 1961

USC&GS Ship PATHFINDER

Arthur L. Wardwell, CAPT., Comdg.

MANUSCRIPTS:-

12049, 12046, 12045, 12040, 12031, 12032, 12026, 12027, 12028,
12020, 12021, 12022, ~~12017~~, 12015, 12016, 12014, 12013, 12008, 12007,
12006, 12003, 12004, 12005, 12002, 12001, 12000, 12012, 11999, 12011,
11998, 12010, 12009, 12019, 12018, 12023, 12025, 12024, 12029, 12030, 12035,
12034, 12033, 12037, 12036

AERIAL FIELD INSPECTION:-

Areas inspected were as follows: Manuscripts No. 12049, 12046, 12045, 12040, Kenai to Boulder Point, all shoreline and alongshore features. Balance of above listed manuscripts were used only for horizontal control identification.

The area is primarily moderately timbered with spruce, fir, alder and bear claw above the mean high water line. Shoreline varies from fine black silt at the mouth of the Kenai River mouth to large fragmented boulders at Boulder Point. Most of the beachline is sand and shingle interspersed with boulders of varying sizes. Numerous underground springs and some small creeks discharge small quantities of silt and water and are subject to constant change.

The area was inspected by cruising alongshore by launch and by walking the beach and bluff line. Foul areas now indicated on Chart No. 8553 are adequate. Two primary foul areas were noted as follows:

Kenai River Mouth

East Foreland to Moose Point

Quality of photographs was excellent. Areas of shadow were limited to the shoreline east of East Foreland and upper Knik Arm. No attempt was made to sketch in the mean high water line. Enough open areas in shadowed areas are available to adequately delineate mean high water line.

HORIZONTAL CONTROL:-

Four additional second-order triangulation stations were established between Kenai and East Foreland to supplement existing control in the area of hydrography. They were identified as follows:

AUDRY 1961	Manuscript No. 12049	Photo No. 1397
LOUISE 1961	" " 12049	" " 1402
BOO 1961	" " 12045	" " 1420
HELEN 1961	Traverse from East Foreland Light 1960.	

* Map CT-12017 cancelled - Memo 3/8/77

Additional horizontal control recovery was made in upper Cook Inlet in accordance with project instructions. All stations were searched for and approximately 75 percent were recovered. Most of the stations not recovered are considered lost. It is recommended that the next vessel assigned to this project be given a Tellurometer. Simple traverse between recovered triangulation stations would adequately control presently un-controlled flight lines.

In many cases the listed triangulation station was not recovered and a U.S. Engineers' triangulation station was used as a substitute. It appears that the U.S. Engineers could not recover listed C&GS control and substituted their own stations.

Great assistance was rendered by the 5040 Air Transport Squadron at Elmendorf AFB in furnishing helicopter service. Three days of flying enabled personnel to cover shoreline control stations over the greater part of upper Cook Inlet.

If additional control is required in the vicinity of Elmendorf AFB, use can be made of triangulation now being observed by a C&GS geodetic party. Triangulation station DORF 1961 (in the vicinity of LOOP 2) is to be set in the roof of a building on the base. By use of the description written by the observing party, an accurate office identification can be made.

Triangulation not plotted on the Photo Index was identified where it was on photographs. This control was established by G.W.M. in 1959 and H.G.C. in 1960.

VERTICAL CONTROL:-

None recovered or established.

CONTOURS AND DRAINAGE:-

No contouring was attempted.

Primary drainage features are the Kenai, Matanuska, Little Susitna, Susitna, Beluga, Kustitan, and Drift Rivers. Tidal sweep keeps some of the rivers from building up deltaic features. An extremely flat foreshore on the Matanuska, Little Susitna, Susitna and Beluga rivers give rise to wide deltas that change seasonally. Many small streams discharge around Cook Inlet but have no apparent seasonal change.

WOODLAND COVER:-

The major portion of the area is wooded and interspersed with muskeg and open grassy areas. These are easily identifiable on the photographs. In areas of increasing cultural activity, the woodland cover is being removed. No attempt was made to indicate these areas.

SHORELINE AND ALONGSHORE FEATURES:-

The mean high water line is adequately delineated on manuscripts 12049, 12046, 12045, 12040. In the area of photo hydro signals IVY and EGG, east of East Foreland, the mean high water line is as follows:

IVY 30 meters inside MHW
EGG on piles at MHW

Most of the shoreline signals are located at MHW along the beach. Many of the fishing huts set on piles at the base of the bluff were used as signals.

No attempt was made to delineate the low water line. Hydrography in the area should be satisfactory.

The foreshore area is primarily sand, small stones and boulders. The normal gradation from stones at MHW to sand at MLW exists in all areas, except south of the Kenai River. In this area a heavy layer of silt is found in the tide zone.

OFFSHORE FEATURES:-

All offshore features are located by the hydrographer.

LANDMARKS AND AIDS:-

There are two fixed aids to navigation within the limits of the hydrographic project:

EAST FORELAND LIGHT

KENAI RIVER ENTRANCE RANGE

Both are located on Chart No. 8553.

One floating aid is also located on Chart No. 8553. Another can buoy is maintained by the oil company and is located just north of the pier.

One landmark for charts is recommended in the Descriptive Report for SP-1-61. This landmark is identified as follows:

KENAI TANK 1959, located by G.W.M. and identified on Photo No. 60W1400.

BOUNDARIES, MONUMENTS AND LINES:-

None shown.

OTHER CONTROL:-

Photo hydro signals were located in accordance with standard instructions. Signal IVY was found in error and relocated photogrammetrically, then verified by hydrographic cuts. Final location is shown on manuscript 12045.

Final location of photo hydro signals will remain in their relative position with the shoreline. Final compilation will cause a datum shift which will move both hydrography and signals the same relative amount.

DATUM DIFFERENCES:-

Radial plotting of photo identified control stations was made in the field. The following discrepancies were noted between plot positions and geographic positions.

EAST FORELAND LIGHT 1960	Lat. -13.8 meters
	Long. -75.4 meters
Boulder (USE)	Lat. -37.0 meters
	Long. -45.2 meters
KENAI CHURCH STEEPLE 1909	Lat. -15.3 meters
	Long. -23.6 meters

CULTURAL FEATURES:-

Numerous fishing shacks are located along high water line in the area of hydrography. These huts are subject to damage by winter storms and are in a constant state of transition. No attempt was made to locate current huts.

The Nikiski Oil Pier was under construction at the time of photography. The completed dimensions are available from a blueprint of the structure submitted with descriptive report for Project SP-1-61.

Respectfully submitted,

Robert E. Williams,
Lieut. Comdr., C&GS

Gerald C. Saladin
Gerald C. Saladin
LTJG, C&GS

Arthur L. Wardwell
Arthur L. Wardwell,
Captain, C&GS
Comdg., Ship PATHFINDER

Cook Inlet, Alaska
~~21035~~ PH-6013
Photogrammetric Plot Report

21. Area Covered

This report covers the area to the west and north of Anchorage, Alaska, and includes T-Sheets 12,000 thru 12,008, plus 12,015 and 12,016.

22. Method

Strips #1 and #2 were bridged on the stereoplanigraph and Strip #3 was bridged on the Mann Comparator. All three strips were adjusted by IBM methods. Pass points were drilled on plates by Pug method.

Strip #1 was adjusted on two triangulation stations plus points taken from a previous bridge in the area. Triangulation station Birch (USE) 1941 and its sub-station could not be held in the adjustment. No reason could be determined as to why it could not be held and it was dropped from the bridge. Despite errors of 8 to 9 feet in control the bridge is acceptable.

Strip #2 was adjusted on three triangulation stations with tie points from Strip #3 being used on the eastern end. In no instance could any 3 or more of the stations be held with each other and the results do not meet National Map Accuracy Standards for 1:10,000 scale charting since error of up to 14' in "Y" exist in the final bridge solution.

Strip #3 was adjusted using four control points, plus two pass points from Strip #1. Accuracy of this bridge is good. Tie points between Strips #1, #2 and #3 were meaned.

23. Adequacy of Control

The control recovered, complied with instructions. However, in practically every case the quality of the sub-stations left much to be desired. It is felt that these poor quality images were the cause of many problems during the bridging operations. In the cases of In 8 (BLM) and L-1A (BLM), sub-stations were identified but no azimuth or exact distance was given between the home station and its sub-station. Station Misery 3, SS-1 and SS-2 were very poor image points and could not be positively identified during the bridging. Station Low could be identified on Strip #3 but could not be seen on Strip #1. Station Whitney's sub points were very poor and no positive identification could be made during bridging operations.

24. Supplemental Data

In the cases of Strip #1 and Strip #2 old bridging data was used to help control the adjustments.

25. Photography

Photography in Strips #1, #2 and #3 was adequate in coverage overlap, definition and quality.

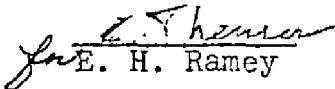
26. Recommendations

If smooth sheets are required for T-Sheets 12,000, 12,001, 12,002 and 12,006, re-identification of control should be performed and new C&GS control should be provided where doubtful control exists.

Submitted by:


John D. Perrow, Jr.

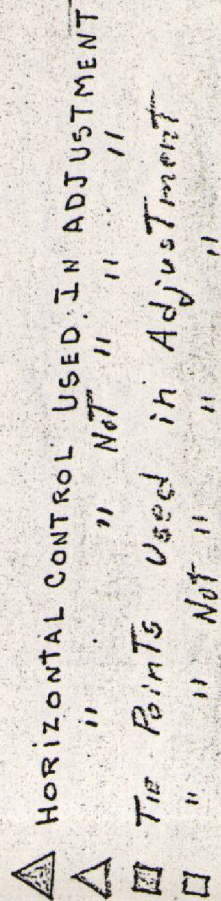
Approved by:


E. H. Ramey

Cook Inlet, ALASKA (P4)
PROJECT ~~21035~~ (6013)

Feb, 1964

PH-6013



MAP T- 12007

PROJECT NO.:

~~21035~~ PH-6013

SCALE OF MAP 1:10,000

SCALE FACTOR

[illegible]

COMPILATION REPORT

MAP MANUSCRIPT T-12007

PROJECT ~~21035~~ PH-6013ITEMS 31 THRU 38:

REFER TO THE COMPILATION REPORT FOR T-12507, *bound with this Descriptive Report.*

39. JUNCTIONS:

SATISFACTORY JUNCTIONS WERE MADE WITH T-12016 TO THE SOUTH, WITH T-12006 TO THE WEST, WITH T-12003 TO THE NORTH AND WITH T-12008 TO THE EAST.

40. HORIZONTAL ~~AND VERTICAL~~ ACCURACY:

Horizontal control was adequate in both density and identification. Refer to Compilation Report T-12507 bound with this Descriptive Report.

46. COMPARISON WITH EXISTING MAPS:

COMPARISON WAS MADE WITH THE U.S.G.S. ANCHORAGE (B-8) ALASKA QUADRANGLE, SCALE 1:63,360, EDITION 1953.

47. COMPARISON WITH NAUTICAL CHARTS:

COMPARISON WAS MADE WITH NAUTICAL CHART 8553, SCALE 1:194,154 AT LAT. 61° 00', 5TH EDITION, APRIL 30, 1962.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY:

NONE.

ITEMS TO BE CARRIED FORWARD:

NONE.

APPROVED:

P. A. Stark

P. A. STARK, CDR, C&GS
PORTLAND DISTRICT OFFICER

SUBMITTED:

James L. Harris

JAMES L. HARRIS
CARTOGRAPHER

COMPILATION REPORT
Map Manuscript T-12507
Project PH-6013

31. DELINEATION:

The Kelsh stereoscopic Instrument was used for compilation without the benefit of Field Inspection.

32. Control:

Horizontal Control was adequate in both density and Identification.

33. SUPPLEMENTAL DATA:

No supplemental data was furnished for this project.

34. CONTOURS AND DRAINAGE:

Contours are inapplicable. The drainage was compiled without benefit of Field Inspection but with reference to existing nautical charts.

35. SHORELINE AND ALONGSHORE DETAILS:

Shoreline and Alongshore details were compiled without the benefit of field inspection.

36. OFFSHORE DETAILS:

Rocks offshore were office identified stereoscopically.

37. LANDMARKS AND AIDS:

None.

38. CONTROL FOR FUTURE SURVEYS:

None.

48. GEOGRAPHIC NAME LIST:

NO GEOGRAPHIC NAMES SHEET WAS FURNISHED FOR THIS AREA. THE ONLY NAMES SHOWN ON THIS MANUSCRIPT WERE OBTAINED FROM THE U.S.G.S. QUADRANGLE.

CAIRN POINT
KNIK ARM

49. NOTES FOR THE HYDROGRAPHER:

NONE.

C&GS FORM 1002
(11-13-61)U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

PHOTOGRAMMETRIC OFFICE REVIEW

T-40363 12007

1. PROJECTION AND GRIDS ✓	2. TITLE ✓	3. MANUSCRIPT NUMBERS ✓	4. MANUSCRIPT SIZE ✓
CONTROL STATIONS			
5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY ✓	6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations) None		7. PHOTO HYDRO STATIONS None
8. BENCH MARKS None	9. PLOTTING OF SEXTANT FIXES None	10. PHOTOGRAMMETRIC PLOT REPORT ✓	11. DETAIL POINTS None
ALONGSHORE AREAS (Nautical Chart Data)			
12. SHORELINE ✓	13. LOW-WATER LINE None	14. ROCKS, SHOALS, ETC. None	15. BRIDGES None
16. AIDS TO NAVIGATION None	17. LANDMARKS None	18. OTHER ALONGSHORE PHYSICAL FEATURES ✓	19. OTHER ALONGSHORE CULTURAL FEATURES ✓
PHYSICAL FEATURES			
20. WATER FEATURES ✓	21. NATURAL GROUND COVER ✓		22. PLANETABLE CONTOURS Not Applicable
23. STEREOSCOPIC INSTRUMENT CONTOURS Not Applicable	24. CONTOURS IN GENERAL None	25. SPOT ELEVATIONS None	26. OTHER PHYSICAL FEATURES ✓
CULTURAL FEATURES			
27. ROADS ✓	28. BUILDINGS None	29. RAILROADS None	30. OTHER CULTURAL FEATURES ✓
BOUNDARIES			
31. BOUNDARY LINES None		32. PUBLIC LAND LINES None	
MISCELLANEOUS			
33. GEOGRAPHIC NAMES ✓	34. JUNCTIONS ✓		35. LEGIBILITY OF THE MANUSCRIPT ✓
36. DISCREPANCY OVERLAY ✓	37. DESCRIPTIVE REPORT ✓	38. FIELD INSPECTION PHOTOGRAPHS ✓	39. FORMS ✓
40. REVIEWER C.C. Harris		SUPERVISOR, REVIEW SECTION OR UNIT L.F. Beugnet	
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		SUPERVISOR	
43. REMARKS			

REVIEW REPORT T - 12 007

SHORELINE

January 10, 1979

61. GENERAL STATEMENT:

See Summary, which is page ⁵6 of the 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:

A comparison was made with verified copy of H-9440 (1974). As expected, there is a conflict with the MHWL position since this manuscript was compiled prior to the March 1964 earthquake.

65. COMPARISON WITH NAUTICAL CHARTS:

A comparison was made with Chart 16660 scale 1:194,154 19th Ed. September 10/77 and Chart 16664 scale 1:40,000 16th Ed. May 28/77. As expected the position of the MHWL differs since this map was compiled prior to the earthquake of March 1964.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS:

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

Submitted by:

Jim Byrd

Final Reviewer

Approved for forwarding:

Bill H. Barn
Chief Photogrammetric Branch, AMC

Approved:

John D. Pervan Jr.
Chief Photogrammetric Branch

Walter S. Smith
Chief, ~~Coastal Mapping~~ Division
Photogrammetry



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

C3421/W

March 8, 1977

TO: Chief, Photogrammetric Branch, C342
Rockville, Maryland
Chief, Photogrammetric Branch, CAM52
Norfolk, Virginia

FROM: James Collins *James Collins*
Chief, Coastal Mapping Division

SUBJECT: Job PH-6013

Cancel map T-12017. No record of original compilation, if compiled, can be found. Reassign this map to CM-7310 as a first edition.

Cancel map T-12049(2) as this area is covered by larger scale maps.

Complete the final review of maps T-12003, T-12004, T-12005, T-12006, T-12007, T-12008, T-12015, and T-12016 and forward for registration. No chart maintenance prints required.

Retain all Archive material with remainder of the job. Job completion report to be submitted only upon completion of entire project.

cc:
C344
C3442
CAM521

