

10423

Diag. Cht. No. 6157 Inset.

Form 504

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Shoreline (Photogrammetric)

Field No. Ph-63 Office No. T-10423

LOCALITY

State Washington

General locality Columbia River

Locality Two Rivers

1954-57

CHIEF OF PARTY

V.R. Sobieralski, Chief of Party
R.B. Malby, Portland Photo. Office.

LIBRARY & ARCHIVES

DATE May 1, 1962

USCOM-DC 5087

10423

DESCRIPTIVE REPORT - DATA RECORD

T - 10423

Project No. (II): Ph-63 Quadrangle Name (IV):

Field Office (II): Pasco, Washington

Chief of Party: V. Ralph Sobieralski

Photogrammetric Office (III): Portland, Oregon

Unit Chief: R. B. Melby

Officer-in-Charge: V. Ralph Sobieralski

Instructions dated (II) (III): 20 March 1956
(Field and Office)

Copy filed in Division of
Photogrammetry (IV)

Method of Compilation (III): Graphic

Manuscript Scale (III): 1:15,000

Stereoscopic Plotting Instrument Scale (III):

Scale Factor (III): None

Date received in Washington Office (IV):

Date reported to Nautical Chart Branch (IV):

Applied to Chart No.

Date:

Date registered (IV): 25 June 1959

Publication Scale (IV):

Publication date (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 (2) refer to sounding datum
low, mean low water or mean lower low water

For the McNary Dam Reservoir the
elevations refer to Normal Pool
Level of 340 ft. above M.S.L.

Reference Station (III): TWO RIVERS(USE)1942(WASH)

Lat.: 46° 08' 10.494"
324.0m (1528.5m)

Long.: 118° 56' 30.106"
646.2m (641.7m)

Adjusted X
Unadjusted

Plane Coordinates (IV):

State:

Zone:

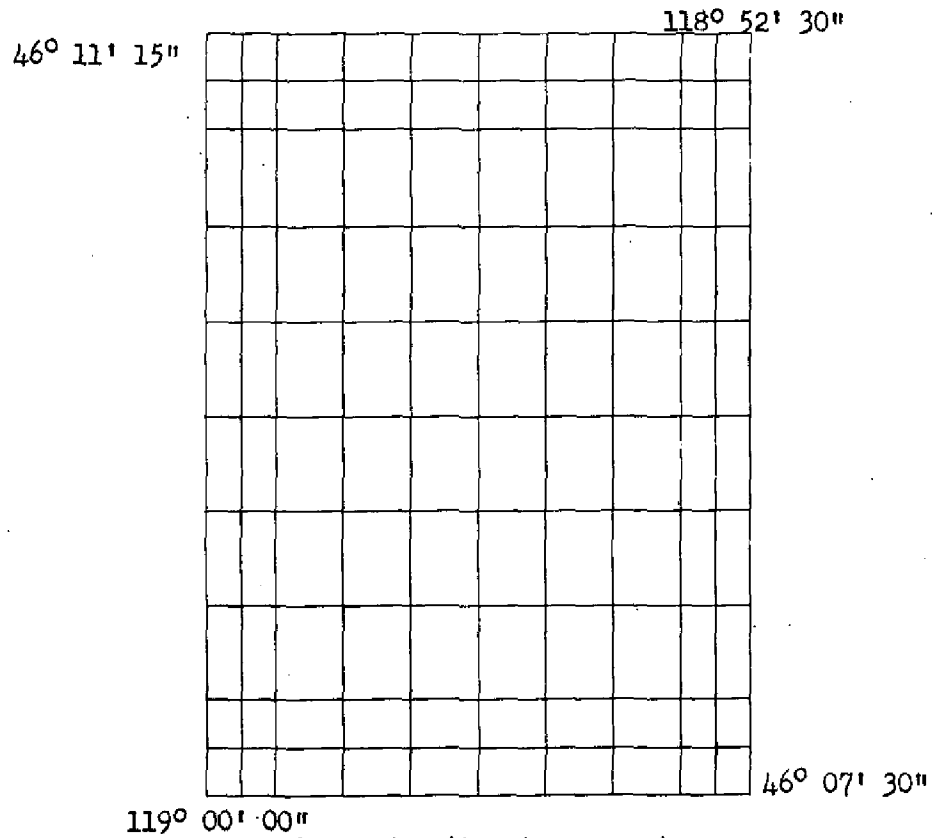
Y=

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



Areas contoured by various personnel
(Show name within area)
(II) (III)

DESCRIPTIVE REPORT - DATA RECORD

Field Inspection by (II): R. B. Melby

Date: Summer 1957

Planetable contouring by (II):

Date:

Completion Surveys by (II):

Date:

Mean High Water Location (III) (State date and method of location): Spot locations at intricate places were made in the field. For the most part the shoreline at normal pool level of 340 ft. above M.S.L. was delineated in the office from photographs taken on 9-26-54 when the pool was at that level.

Projection and Grids ruled by (IV): J. Phillips

Date: 3-12-57

Projection and Grids checked by (IV):

Date:

Control plotted by (III): J. E. Deal

Date: 4-18-57

Control checked by (III): J. L. Harris

Date: 4-18-57

Radial Plot or Stereoscopic
Control extension by (III): J. L. Harris

Date: 4-30-57

Planimetry
Stereoscopic Instrument compilation (III):
Contours

Date:

Date:

Manuscript delineated by (III): L. L. Graves (rough draft)
L. L. Graves (scribing)
C. C. Harris (stick-up)

Date: 7-16-57

7-30-57

9-23-57

Photogrammetric Office Review by (III): J. E. Deal

Date: 9-16-58

Elevations on Manuscript
checked by (II) (III):

Date:

DESCRIPTIVE REPORT - DATA RECORD

Camera (kind or source) (III): C&GS - 9-lens - focal length 8.25 inches

Number	Date	PHOTOGRAPHS (III)		Scale	Water level of pool Stage of tide
		Time			
46189	9-26-54	13:49		1:15,000	340 ft. above M.S.L.
46195 & 46196	"	14:11		"	

Tide (III)

Reference Station: Not applicable

Subordinate Station:

Subordinate Station:

Washington Office Review by (IV):

Final Drafting by (IV):

Drafting verified for reproduction by (IV):

Proof Edit by (IV):

Ratio of Ranges	Mean Range	Spring Range

Date:

Date:

Date:

Date:

Land Area (Sq. Statute Miles) (III): 23

Shoreline (More than 200 meters to opposite shore) (III): 5

Shoreline (Less than 200 meters to opposite shore) (III): 2

Control Leveling-- Miles (II):

Number of Triangulation Stations searched for (II): 6

Recovered: 2

Identified: 1

Number of BMs searched for (II):

Recovered:

Identified:

Number of Recoverable Photo Stations established (III): 4

Number of Temporary Photo Hydro Stations established (III): 5*

Remarks:

* These stations have topo names and are of topo station accuracy.
Forms 524 were not submitted in accordance with letter clarifying instructions.

Summary
to accompany shoreline manuscript T-10423

T-10423 is a shoreline survey of Project PH-63 (27020). The project is located in the states of Oregon and Washington and covers a part of the Columbia River with adjacent land area from McNary Dam northward to Kennewick and Pasco. Subject survey is of the east bank of the Columbia River in the neighborhood of the former village of Two Rivers.

The project, consisting of 18 shoreline surveys, was assigned to the Portland Photogrammetric Office with instructions of March 1956. Recovery and establishment of control and field inspection was accomplished during summer of 1957; the radial plot and compilation from nine-lens photography of Sept. 1954 and June 1956 during 1957. The final compilation manuscript to be used for the reproduction of file copy is the result of an adequately scribed sheet, which required only minor changes and improvements during Washington Office Review.

With the exception of an outdated topographic quadrangle (Wallula, Wash. 1:125000, U. S. Geological Survey) there are no other maps or surveys available for comparison.

A cronar film positive at the compilation scale of 1:15000 and the Descriptive Report will be registered and filed in the Bureau Archives.

June 1959

FIELD INSPECTION REPORT

(1957 Season)

Map Manuscripts T-10386, T-10421 thru T-10424

and T-11317

Project Ph-63

2. Areal Field Inspection:

The field inspection of this portion of the project was inspected on nine-lens photographs furnished by the Coast and Geodetic Survey. While some of the prints lack the desired amount of contrast, the photographs were of sufficient clarity to interpret and denote the images of the physical features. The inspection of the photographs was conducted from a motor vehicle when possible and by small boat or on foot where vehicular travel was unfeasible.

The area can be considered semi-arid. Near the northern limits of the project area, some of the land is under cultivation, watered by an extensive irrigation system.

The Columbia River flows southward through the area. Near the town of Umatilla, Oregon, is McNary Dam that impounds the Columbia river to form a reservoir. This reservoir will be referred to as McNary Pool, as an official name has not been designated for this feature. The area is served by a heavy duty two lane highway (U.S. 395/410) that extends north-south paralleling the Columbia River along its east shore. Three railroads, the Union Pacific Railroad, the Spokane, Portland and Seattle Railway and the northern Pacific Railway operate through the area.

Tug and barge traffic as well as pleasure craft ply the waters of McNary Pool. Portions of the pool serve as State Game Range and Wildlife Management Areas.

Sacajawea State Park, situated on the east shore of McNary Pool at the mouth of the Snake River, near the town of Pasco is the only state park in the area. City parks in Pasco and Kennewick have been denoted on field photographs.

3. Horizontal Control:

Five new supplemental, horizontal control stations were established by triangulation methods, stations DRIFT 1957, TARGET 1957 and WALLULA DEPOT, U.P.R.R. ELEVATED TANK 1957. These stations were necessary to fulfill photogrammetric requirements.

Stations PASCO, STATION KORO, RADIO MAST 1957 and PASCO, STATION KALE, RADIO MAST, CENTER ONE OF THREE 1957 were also located as they are of landmark value. A systematic search was made for all listed horizontal control stations in the project area.

4. Vertical Control:

Vertical control for use by stereoscopic instruments was not required.

One bench mark, established by the Coast and Geodetic Survey was recovered and photo-identified to serve as a topographic station.

5. Contours and Drainage:

Contours not applicable. The drainage was indicated on field photographs. The drainage pattern is generally visible due to the lack of woodland cover. In some of the large canyons, the images of the dry, intermittent stream beds appear on the photographs. Except for the Columbia River, Snake River and the Walla Walla River the drainage in this area is mostly intermittent. The main trunk system of the irrigation canals, ditches and pipelines has been indicated on the field photographs.

6. Woodland Cover:

The area is almost devoid of woodland cover, with the exception of willow, locust and similar deciduous trees that flourish in clumps along the rivers and irrigation canals. The rest of the uncultivated terrain is generally covered with sage brush and wild grasses adapted to this type of country.

7. Shoreline and Alongshore Features:

A water surface elevation of 340 feet above mean sea level was established by the Corps of Engineers and is maintained at the face of McNary Dam as the normal pool level. This is the level of the pool that appears on the nine-lens photography and is the accepted mean high-water line.

The low water line was not verified in the field. Due to the level of McNary Pool at the time of field inspection, this feature was flooded. The Project instructions require this feature to be delineated from Corps of Engineers photography taken when the pool was at a lower surface level. Small bodies of water that connect to McNary Pool and whose water surface elevations are controlled by the McNary Pool have been termed pools, other small bodies of

water not normally influenced by McNary Pool are denoted as ponds.

From the mouth of the Walla Walla River northward, the area east of the Columbia River (McNary Pool) is gentle, rolling, uncultivated lands, except near the community of Burbank Heights, where an irrigation project makes mixed farming possible. On the west side of McNary Pool, opposite the mouth of the Walla Walla River, the precipitous bluffs meet the Pool; proceeding northward the bluffs slowly recede from the Pool's edge and give way to gentle, rolling lands, that northward from the vicinity of Hovey are cultivated. Water necessary for cultivation is supplied by an irrigation system.

There are few piers, wharves or landings along the Pool. At Wallula Depot, there is a basin with wharves; at East Pasco on the Snake River upstream from the mouth are small wharves serving the petroleum and aqua ammonia storage tank sites. There are two chemical plants on the west side of the Pool south of Kennewick. Grain elevators are located at Pasco and Kennewick with facilities to load or unload river barges or railroad cars.

There are five railroad bridges, three highway bridges and two power line crossings in the area. Clearances of the features will be described under Item 12, Other Interior Features.

8. Offshore Features:

Except for a few small islands and rocks, the area appears relatively free of offshore features.

9. Landmarks and Aids:

Significant land marks for nautical charts will be described on form 567.

A system of lighted fixed aids, floating aids and daybeacons have been erected and are being maintained along the Columbia River (McNary Pool). The fixed aids were located by either photogrammetric, triangulation or traverse methods.

10. Boundaries, Monuments and Lines:

Only one state, Washington, is involved in this area.

The boundaries of Sacajawea State Park were not determined as the limits of the park was not marked by recoverable monuments. The three involved counties, Benton, Franklin and Walla Walla, share common boundaries formed by the Columbia and Snake Rivers.

11. Other Control:

Twenty one marked, recoverable topographic stations and twenty three un-monumented, recoverable photo-topo stations were established. All of the above stations are along the shores of the Columbia or Snake Rivers. One Corps of Engineers triangulation station and eleven Corps of Engineers Sedimentation Range stations were recovered to serve for control of hydrographic surveys in the delta of the Walla Walla River.

The following are the marked, recoverable topographic stations established.

T-10386 - None

T-10421 - BM X 2 RESET, OVER, SACAJAWEA LIGHT, SPAN, APEX, REAR RADIO STATION MAST, CROW

T-10422 - DAYBEACON, JUNCTION LIGHT

T-10423 - BARS, ITEM, WORK, RANGE 1 FRONT LIGHT, RANGE 1 REAR LIGHT

T-10424 - RANGE 2 FRONT LIGHT, RANGE 2 REAR LIGHT, TEAL, B 336-2, CARP, HOVER LIGHT, GRIP

T-11317 - None

The names of the un-monumented photo-topo stations will be listed under Notes to the Hydrographer.

12. Other Interior Features:

Highway and roads were classified on field photographs as described under section 5411, Topographic Manual. Railroads were denoted on the field photographs.

Clearances for bridges and power line crossings are listed below;

Snake River Railroad Bridge, swing bridge

Horizontal clearance, 152 feet
Vertical clearance - open 67.5 feet
closed 13.5 feet

Snake River Highway Bridge, fixed span

Horizontal clearance, 426 feet
Vertical clearance, 62 feet

Old Pasco-Kennewick Highway Bridge, fixed span

Horizontal clearance, 421 feet
Vertical clearance, 52 feet

Northern Pacific Railway Bridge, over Columbia River,
lift span

Horizontal clearance, 293 feet
Vertical clearance - open, 66 feet
closed, 15.8 feet

Union Pacific Railroad Bridge, over Columbia River,
swing bridge

Horizontal clearance, 122 feet
Vertical clearance - open, 68 feet
closed, 11 feet

Railroad Bridge, near south end of Frank Slough,
fixed span

Horizontal clearance, 33 feet
Vertical clearance 10.8 feet

Highway bridge, near south end of Frank Slough,
fixed span

Horizontal clearance, 11.8 feet
Vertical clearance, 12 feet

Railroad Bridge, near Garagar Junction, over Walla Walla
River, fixed span

Horizontal clearance, 92 feet
Vertical clearance, 49 feet

Power Line Crossing, over Columbia River near Sacajawea
State Park

Vertical clearance, 103 feet

Power Line Crossing over Columbia River at Clover Island

Vertical clearance, 52 feet

Approved:

Respectfully submitted

V. Ralph Sobieralski
Lieut. 1903
Officer-in-Charge

Robert B. Holby
Lieut. Survey Aid
Unit Chief

PHOTOGRAMMETRIC PLOT REPORT

Radial Plot "C"

Map Manuscripts T-9120,

T-10420 thru T-10423 and T-11316

21. Area Covered:

This radial plot covers the shorelines of the Columbia River to an interior depth of about 3 miles from Attalia, Washington upstream to Batsan Island and the shorelines of the Snake River to an interior depth of 3 miles from the Columbia River upstream to the Ice Harbor Dam. It comprises manuscripts T-9120, T-10420 thru T-10423 and T-11316.

22. Method:

The control extension was accomplished by the hand template radial line plot method using acetate templates made from nine-line photographs taken in 1955 and 1956. Photographs were prepared by the usual methods and master calibration templates No. 43497 and No. 48340 were used respectively for the 1955 and 1956 photography when correcting for transforming errors and paper distortion. Refer to letter, Frankl, dated 9 August 1956, Subject: "Compilation - Projects 27260, Charleston, S. C. and 27020, Upper Columbia River, Oregon", relative to the use of calibration template No. 48340 (1955) for 1956 photography.

Five 2' x 3' sheets of Mylar material, on each of which was ruled a polyconic projection of its area comprising 3 minutes - 45 seconds of latitude and 7 minutes - 30 seconds of longitude at a scale of 1:15,000 were furnished for work sheets. The Lambert State grids of Washington were also ruled on these sheets. The horizontal control sections falling on each of the respective manuscripts were plotted and verified. The five sheets were joined with clear cellulose tape. The templates were oriented to the identified control directly on the joined work sheets and fastened with masking tape. After all templates were satisfactorily oriented and fastened the entire radial plot was turned face down and the locations of pass points and principal points were pricked and indicated by circles on the reverse sides of the work sheets using Graftint No. 111 red plastic ink. The plot was then turned face up and the templates were dismantled. The photogrammetric points falling in the margin at the junctions of adjoining sheets were transferred and then the joined work sheets were dismantled.

There were more than an adequate number of identified horizontal control stations available and all were satisfactorily held in this radial plot. The results were excellent and well within the limits of horizontal accuracy requirements.

23. Adequacy of Control:

The identification of horizontal control stations was satisfactory and more than an adequate number were available.

24. Supplemental Data:

There were topographic maps, compiled by the Corps of Engineers, U. S. Army, Walla Walla District, available which covered the area of this radial plot. These were not needed to supplement the identified horizontal control stations, but they were used during the compilation of planimetric details for verification of certain features for which state coordinate positions of the U. S. Engineers were available.

25. Photography:

The photography was adequate. The P.M.A. ratio prints were not needed to supplement the nine-lens photography.

Approved:

Respectfully submitted:

V. Ralph Sobieralski
LCER, C&GS
Officer-in-Charge

J. Edward Deal
Cartographer
C&GS

SCALE FACTOR

FT. = 3048006 METER		
COMM-DC-57843		

COMPILATION REPORT

Map Manuscript T-10423

Project Ph-63

31. Delineation:

The compilation and drafting were accomplished as follows:

- (a) Graphic compilation in ink on work sheets having projections ruled in Washington.
- (b) Office review.
- (c) Transfer of compiled planimetry and projections to yellow coated scribe sheet by "Watercote" method.
- (d) Scribing in negative of compiled details and projections.
- (e) Reproduction of scribed features on Cronarflex material positive.
- (f) Stick-up of symbols and type.
- (g) Final office review and inspection by Officer-in-Charge.

32. Control:

Refer to Items 22 and 23 of the Photogrammetric Plot Report which is included in this Descriptive Report.

33. Supplemental Data:

Prints of maps and plans used to supplement the photographs and field inspection data are as follows:

- (a) General Highway Map, Walla Walla County
Scale 1 In. = 1 Mi.
- (b) Walla Walla District, Corps of Engineers, Nov. 1, 1954,
Scale 1" = 333.3' "Relocations & Section
Corner Ties"

MDR-1-12/28	Sheet No. 29
MDR-1-12/29	Sheet No. 30
MDR-1-12/30	Sheet No. 31
MDR-1-12/31	Sheet No. 32

Numerous points of planimetry that appear on T-10423 were located by triangulation ties during the survey listed under (b). Lambert Coordinates were furnished by the Corps of Engineers for these points and they were plotted on the manuscript. It was found that the graphically compiled planimetry is in excellent agreement with all planimetric detail located by triangulation ties by the Corps of Engineers.

34. Contours & Drainage:

Contours are not applicable. Drainage was delineated by field inspection and refined by office examination of the photographs supplemented by reference to the U. S. Geological Survey quadrangles of the area.

35. Shoreline & Alongshore Details:

The shoreline of the nine-lens photographs taken on 9-26-54 when the pool level was 340 feet above mean sea level has been shown. Except where clarification was needed no field inspection was made of the shoreline.

The approximate low-water line was compiled from Corps of Engineers, U. S. Army photographs taken on 13 October 1953 when the water level of the pool was about 324 feet above mean sea level.

36. Offshore Details:

None.

37. Landmarks and Aids:

There are no landmarks or fixed aids.

Floating aids to navigation have been located in accordance with "Instructions, Shoreline Mapping - Project Ph-63, McNary Pool, Oregon - Washington, Field and Office", Supplement 2 dated 24 April 1958. These were plotted from sextant angles furnished by the field unit.

38. Control for Future Surveys:

Four Forms 524 are submitted for recoverable topographic stations.

Five photo-hydro stations of recoverable topographic station accuracy were located.

Refer to Item 49, "Notes to the Hydrographer" for the list of names of the recoverable topographic stations and for descriptions of the photo-hydro stations.

39. Junctions:

Satisfactory junctions have been made with T-11316, T-10422 and T-10424.

40. Horizontal and Vertical Accuracy:

There are no areas believed to be of sub-normal horizontal accuracy. Vertical accuracy is not applicable.

46. Comparison with Existing Maps:

The U. S. Geological Survey quadrangle maps of the area are obsolete for comparison with this shoreline manuscript because they were made previous to the flooding of the McNary Pool.

47. Comparison with Nautical Charts:

There are no nautical charts of the area. Recent hydrographic surveys by the Corps of Engineers were not available for comparison purposes.

Approved:

V. Ralph Sobieralski
V. Ralph Sobieralski
LCDR, C&GS
Officer-in-Charge

Respectfully submitted:

J. Edward Deal
J. Edward Deal
Cartographer
C&GS

48. Geographic Names:

The geographic names shown on this manuscript are not final. Refer to the Geographic Names Report, Project Ph-63, dated 6 June 1958.

The verified and recommended names are:

Burbank Slough
Casey Pond
Columbia River
Curlew Pond
Foundation Island
J-Line Pond
McNary National Wildlife Management Area
Northern Pacific
Quarry Pond
Spokane, Portland & Seattle
Two Rivers
Union Pacific
Villard Junction
Villard Pond

Large Wallula (Decision of 1958)

Names approved 5-14-59
L. Heck

49. Notes to the Hydrographer:

The shoreline on this manuscript shown with a full line is at a water level of 340 feet above M.S.L. or normal pool level.

The approximate low-water pool level at 325 feet above M.S.L. is shown with a dotted line and was compiled from single lens and photographs taken in 1953 by Corps of Engineers when the pool level was 324¹/₂ feet.

Forms 524 are submitted for recoverable topographic stations namely:

BARB 1957, WORK 1957, ITEM 1957
and GRIP 1957

Photo-hydro stations located with recoverable topographic station accuracy and for which Forms 524 were not required are:

<u>Name</u>	<u>Photo. No.</u>	<u>Description</u>
Topo No. 16	46196	Center of a 2' x 6' x 6' high white switch house.
Topo No. 17	46196	Northwest corner of a railroad bridge.
Topo No. 18	46196	Center of a white 5 ft. square by 12 ft. high hollow concrete irrigation diversion box.
Topo No. 19	46196	Center of a 6' x 10' x 8' high white switch box.
Topo No. 20	46197	Center of a 6' x 10' x 8' high silver colored switch house.

Review Report of
Shoreline Manuscript T-10423
June 1959

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS:

There are no registered topographic surveys of subject area.

63. COMPARISON WITH MAPS OF OTHER AGENCIES:

WALLULA, WASH., 1:125000, Edition of 1918,
U. S. Geological Survey

This is a topographic quadrangle from surveys of 1915. More than forty years and the flooding of the McNary Pool has made this map obsolete.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:

None!

65. COMPARISON WITH NAUTICAL CHARTS:

None!

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS:

Subject manuscript is accurate and adequate for this type of survey in it's usefulness for nautical chart construction.

Reviewed by:

Joseph J. Streifler
Joseph J. Streifler

L. C. Lande
Chief, Review & Drafting Section
Photogrammetry Division

Marvin T. Paulson
Chief, Nautical Chart ~~Branch~~
~~Charts~~ Division

J. E. Vaughn 7/11/62
Chief, Photogrammetry Division

W. S. K. Little
Chief, Coastal Surveys Division
Operations

NAUTICAL CHARTS BRANCH

SURVEY NO. T-10423

Record of Application to Charts

[illegible]

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.