

10472

Diag. Cht. No. 1210-2 Insert.

FORM C&GS-504

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

DESCRIPTIVE REPORT

Type of Survey Planimetric

Field No. Ph-163 Office No. T-10472

LOCALITY

State Rhode Island

General locality Narragansett Bay

Locality Providence (North)

1956

CHIEF OF PARTY

I.R. Rubottom, Chief of Party

W.F. Deane, Balto. District Officer

LIBRARY & ARCHIVES

DATE February 11, 1968

USCOMM-DC 37022-P66

10472

DESCRIPTIVE REPORT - DATA RECORD

- 2 -

T-10472

Ph-163

Project No. (II): 25120

Quadrangle Name (IV):

Field Office (II): East Providence, R. I.

Chief of Party: Ira R. Rubottom

Photogrammetric Office (III): Baltimore, Md.

Officer-in-Charge: William F. Deane

Instructions dated (II) (III):
(II) 9 April 1956
15 March 1957

Copy filed in Division of
Photogrammetry (IV)

Method of Compilation (III): Kelsh Plotter

Manuscript Scale (III): 1:10,000

Stereoscopic Plotting Instrument Scale (III): 1:6,000
(Pantograph ratio 3/5)

Scale Factor (III): 1.000

Date received in Washington Office (IV):

MAR 11 1950

Date reported to Nautical Chart Branch (IV):

Applied to Chart No.

Date:

Date registered (IV):

Publication Scale (IV):

Publication date (IV):

Geographic Datum (III): N.A. 1927

Vertical Datum (III): MHW

~~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): FORT HILL, 1956

Lat.: 41° 48' 52.576" (1622.1 m) Long.: 71° 23' 18.670" (430.9 m)

Adjusted

~~Uncorrected~~

Plane Coordinates (IV):

State: Rhode Island Zone: ---

Y=

X=

Roman numerals indicate whether the item is to be entered by (II) Field Party, (III) Photogrammetric Office,
or (IV) Washington Office.

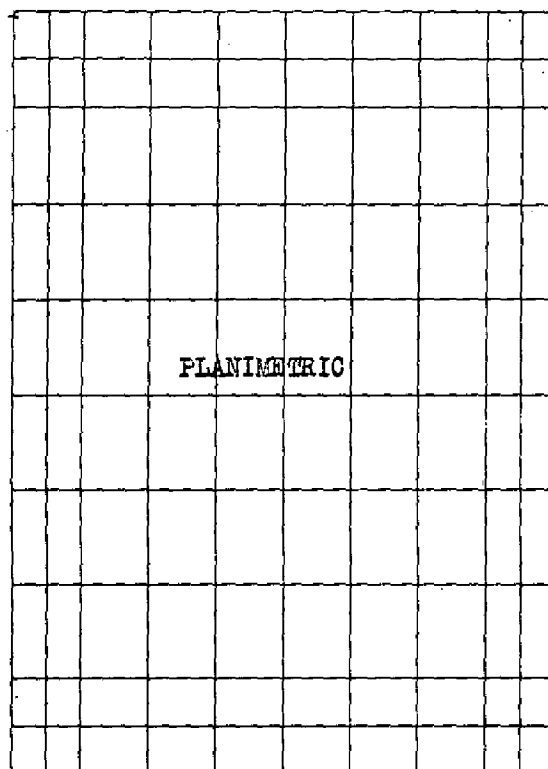
When entering names of personnel on this record give the surname and initials, not initials only.

FORM 181a
(4-23-54)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT - DATA RECORD

71° 26.25'



41° 52.5'

41° 48.75'

71° 22.5'

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

DESCRIPTIVE REPORT - DATA RECORD

- 4 -

Field Inspection by (II): **John S. Winter**
Leo F. Beugnet

Date: **May-October, 1956**

Planetable contouring by (II):

Date:

Completion Surveys by (II):

Date:

Mean High Water Location (III) (State date and method of location):
1956 (Photogrammetric (Kelsh))

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

Date: **8/2/57**

Projection and Grids checked by (IV): **J. B. Phillips**

Date: **8/2/57**

Control plotted by (III): **B. Kurs**

Date: **9/4/57**

Control checked by (III): **J. C. Cregan**

Date: **9/6/57**

Radial Plot or Stereoscopic **E. L. Rolle**
Control extension by (III):

Date: **10/9/57**

Stereoscopic Instrument compilation (III):
Planimetry **J. C. Cregan**
J. D. McEvoy
~~Contours~~

Date: **7/24/58**
2/16/59

Date:

Manuscript delineated by (III):

Date:

Photogrammetric Office Review by (III): **J. W. Vonasek**

Date: **8/17/59**

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

Date:

FIELD EDIT -

LIMITED FIELD EDIT BY HYDROGRAPHIC
SURVEY PARTY H-8316

DATE: 1956

NOTE: NO DISCREPANCY PRINT SUBMITTED.

COMM-DC-57842

DESCRIPTIVE REPORT - DATA RECORD

Camera (kind or source) (III): C&GS Type "W", 6" focal length.

Number	Date	Time (EST)	Scale	Stage of Tide
56-W-170	5/1/56	0834	1:30,000	1.5' above MLW
56-W-171 thru 172	"	0836	"	No tidal waters
56-W-177 thru 179	"	0843	"	1.9' above MLW

Tide (III)
(from predicted tables)Reference Station: Newport, R. I.
Subordinate Station: Providence
Subordinate Station:

Ratio of Ranges	Mean Range	Spring Range
-	3.5'	4.4'
1.3	4.6'	5.7'

Washington Office Review by (IV): S. G. BLANKENBAKER

Date: NOV. 1966

Final Drafting by (IV):

Date:

Drafting verified for reproduction by (IV):

Date:

Proof Edit by (IV):

Date:

Land Area (Sq. Statute Miles) (III): 12

Shoreline (More than 200 meters to opposite shore) (III): 6 mi.

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

Control Leveling - Miles (II):

Number of Triangulation Stations searched for (II): 20 Recovered: 15 Identified: 7

Number of BMs searched for (II): 8 Recovered: 6 Identified:

Number of Recoverable Photo Stations established (III): 5

Number of Temporary Photo Hydro Stations established (III): Refer to item No. 38

Remarks:

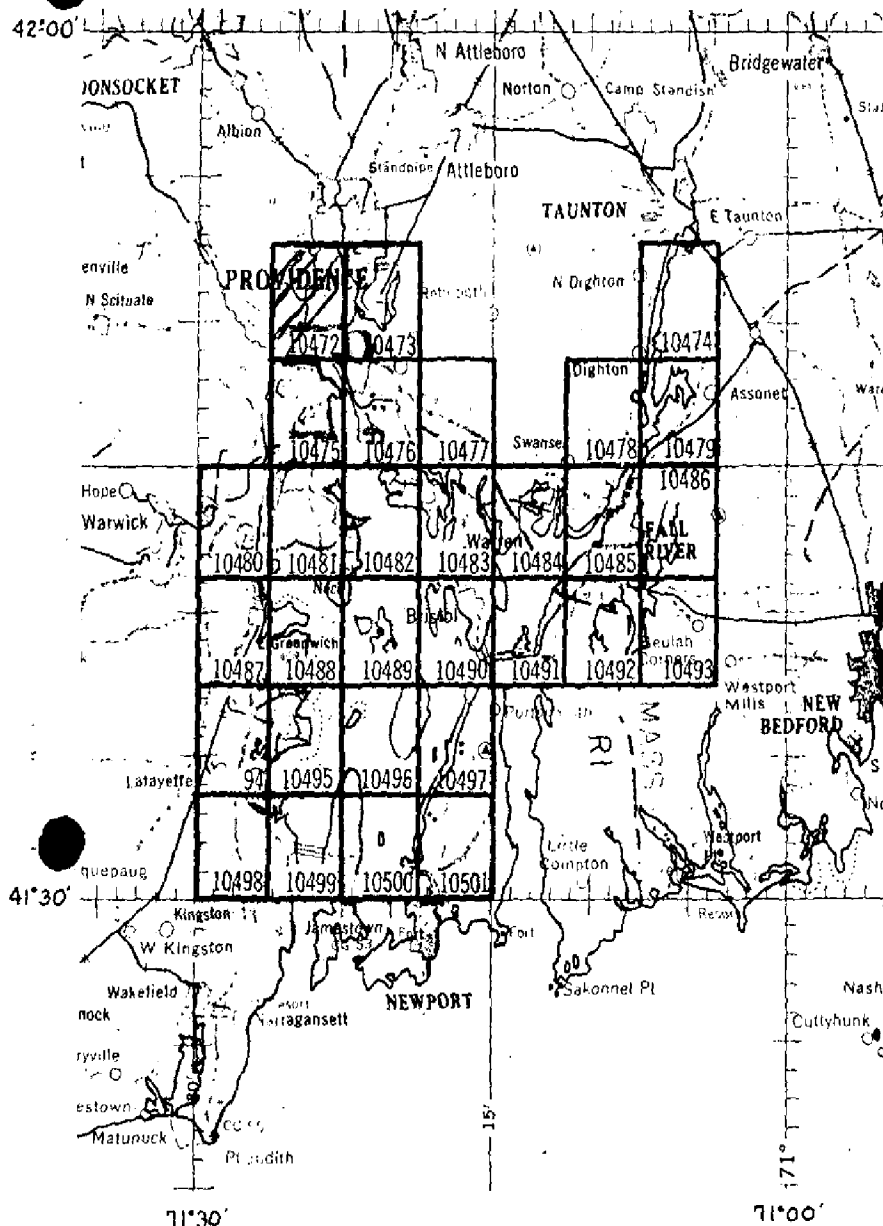
Fifteen (15) third- order triangulation stations established.

PLANIMETRIC MAPPING PROJECT

PH - 105

Narragansett Bay, Mass. - Rhode Island

6



OFFICIAL MILEAGE FOR COST A

SHEET NO.	Lin. Mi. SHORELINE	SC
10472	10	
10473	7	
10474	- 0 -	
10475	8	
10476	6	
10477	2	
10478	1	
10479	7	
10480	2	
10481	4	
10482	8	
10483	6	
10484	8	
10485	8	
10486	7	
10487	3	
10488	6	
10489	7	
10490	8	
10491	4	
10492	3	
10493	2	
10494	5	
10495	5	
10496	5	
10497	- 0 -	
10498	10	
10499	6	
10500	2	
10501		

TOTALS 158

⑦

SUMMARY TO ACCOMPANY DESCRIPTIVE REPORTS
T-10472, T-10473, T-10475 and T-10476
Job PH-163

Job PH-163 is comprised of thirty planimetric surveys and covers the Narragansett Bay, Rhode Island-Massachusetts area.

A complete field inspection preceded compilation. Limited field edit was accomplished in conjunction with contemporary hydrographic surveys H-8314 and H-8316. The project was bridged by multiplex and compiled by Kelsh plotter.

Difficulties encountered by the hydrographic survey verifier in adjusting hydrographic information based on plane table and photogrammetric control are discussed in the individual review reports and in the Addendum to this Summary.

Cronaflex copies of the maps will be registered.

(8)

ADDENDUM TO SUMMARIES TO ACCOMPANY
JOB PH-163 MAPS T-10472 through T-10501
(ACCURACY AND FUTURE SURVEYS)

Most of the project maps were used in contemporary hydrographic survey operations. Four hydrographic surveys accomplished in the period of time between 1943 and 1955 cover the project area outside the areas of contemporary surveys.

The contemporary hydrographic surveys have been registered. With one exception they are classified "basic". Survey H-8367 is classified as "basic for charting only".

Considerable difficulty was experienced during smooth plotting and verification of some hydrographic surveys in using signals located by plane table methods. Many of the objects were identified on field photographs by the plane table party. Field identification of these objects was re-examined in the Baltimore Office, Compilation Unit. Some of the objects were relocated photogrammetrically and this revised information was furnished for use in smooth plotting.

The Norfolk Processing Office Addendum to Accompany Survey H-8316 mentions difficulties experienced when plotting sextant angles locating piles, piers, shoreline changes, etc. -- they were seldom in agreement with photogrammetric manuscript positions. The Washington office verifier was unable to adjust the subject information using the available hydrographic data. To assist in resolving the discrepancies, the Photogrammetry Division (Washington Office Review Group) rechecked signal locations on Maps T-10472, T-10473, T-10475 and T-10476. Fifty-seven signal locations and random portions of shoreline were revised by graphic methods using available field photographs that included field identified primary control and signals. This additional work is subject to error due to the condition of the photographs and the more limited use of project control; many discrepancies between the surveys, however, were resolved by using the revised information. No requests for similar rechecks were made by verifiers of other hydrographic surveys.

In part, the problems encountered in survey H-8316 (and H-8394) during hydrography and by verifiers can be attributed to the enlargement of these photogrammetric maps from 1:10,000 to 1:5,000 scale for use in hydro support. Similar problems on

other hydrographic surveys were attributed, in part, to incorrect transfer of signals, substandard plotting and use of weak sextant fixes.

Control for project bridging (multiplex) was classified "over abundant" (150 stations). While 25% of the stations were "difficult to see", only two stations were not held. Pass points between strips were averaged-adjustment less than 0.5 mm.

In addition to the previously mentioned supplemental work (relocation of signals and shoreline), two stereoplanigraph models were set to test horizontal map accuracy. The models covered parts of maps T-10472 and T-10473. A datum difference was found to exist between Bureau control and MGS and USGS control. Adjustment of these difference produced no appreciable shift in map details.

Rock information mapped on some of the photogrammetric surveys was incomplete as the result of poor photography inadequately supplemented by field inspection. The hydrographer located many rocks missed on the photogrammetric survey; and, in addition, the hydrographic survey reviewers found it necessary to bring forward considerable rock information without the benefit of verification by either the photogrammetric surveys or the contemporary hydrographic surveys.

These surveys have been used, in part, for nautical charting through both direct application of details and indirectly through contemporary hydrographic surveys. As previously mentioned, all but one of the contemporary hydrographic surveys have been registered as "basic surveys". Registration of these maps is recommended. Future use of the maps for hydro support purposes is not recommended due to the previously discussed problems that were encountered. Re-bridging by analytic aerotriangulation and new mapping with new color and infrared photography is recommended.

S. G. Blankenbaker
S. G. Blankenbaker

NOTE: POLITICAL BOUNDARIES - With the exception of the Mass. - Rhode Island State Line, none of the numerous mapped political boundaries are shown on modern charts. In consideration of the loss of some field photographs, and requests by photogrammetric office reviewers for field verification of boundaries, it is recommended that the project maps not be considered sources for political boundaries (with the exception of the state line). See

FIELD INSPECTION REPORT

T-10472, T-10473, T-10475, T-10476, and T-10477

2. AREAL FIELD INSPECTION

This area is that covering the upper reaches of Providence River and the lower reaches of the Seekonk River, in each case, to the head of navigation and including Providence and Pawtucket Harbors. The former is of much greater importance because of its controlling depth and pier facilities.

The entire area is rather densely populated and is predominantly industrial although there is a small lobster and fishing industry as well as some truck and dairy farming.

The terrain is rolling and in all respects typical to similar glaciated topography.

Facilities are excellent for water, rail, surface and air transport.

Field inspection was accomplished using 1956 single lens photographs with little difficulty. Horizontal control identification was slightly troublesome in a few areas due to the loss of definition of images of small bushes and boulders. However, this was not serious. Field inspection notes appear on 1:10,000 scale ratio prints of single lens photographs:

T-10472 (JSW)

56W170, 171, 172, 177, 178, 179

54W1031, 1039, 1040, 1093, 1094, 1096

T-10473 (MAS)

56W177, 178, 179, 212, 213, 214, 216

54W1093, 1094

T-10475 (MAS)

56W133, 134, 167, 168, 169, 180, 181, 182

54W1041, 1096, 1097, 1098, 1099A

T-10476 (JSW)

56W180, 181, 182, 209, 210, 211, 212, 221

54W1084, 1085, 1096, 1098, 1099A

T-10477

56W218, 219, 220, 249

NOTE: PHOTOGRAPHS
CIRCLED IN RED
COULD NOT BE
FOUND AT TIME
OF FINAL
REVIEW

NOTE: THE NOS. OF PHOTOS USED FOR
PROJECT URBAN AREA LIMITS INSPEC-
TION ARE LISTED IN THE PROJECT
COMPLETION RE-
PORT.

3. HORIZONTAL CONTROL

Third-order triangulation methods used to locate landmarks and fixed aids to navigation in the Providence Harbor resulted in the establishment of several new stations of which none were required for photogrammetric control. The new stations are:

T-10472:

Fort Hill
Providence E (USGS)
Providence, Rhode Island Supreme Court Building, Spire
Providence, Brown University Stack
Providence, Hope Street High School Cupola
Providence, WRIB Radio Tower
Providence, Narragansett Electric Co. Gray Stack
Providence, Narragansett Electric Co. Black Stack
Providence, Narragansett Electric Co. Brick Stack
Providence River West Transmission Tower
Providence River East Transmission Tower
East Providence Standpipe
East Providence Bold Point Radio Tower
East Providence Seekonk River North Transmission Tower
East Providence Seekonk River South Transmission Tower

T-10473

Rehoboth, WJAR-TV Tower

T-10475

Hospital
Wilkes
Powtuxet 2
Johnston, WPRO-TV Tower
Fuller Rocks Light
Providence Sewage Disposal Plant, Stack
Providence, Providence Gas Co. Stack

T-10476

Providence River Light 17A
East Providence, Squantum Club Stack

Stations reported lost are as follows: T-10472.

Providence, High Street Church, 1863
Pawtucket Water Works, Pole on Gate House, 1884
Prospect Hill, 1843
82 USGS
131 USGS

T-10473

Verification South Base, 1836
242 USGS
463 USGS
M44D MGS
71F MGS
71K MGS
71AA MGS
71AC MGS

T-10475

Pawtuxet Beacon, 1912
Sassafras Point Lighthouse, 1897
Fuller Rocks Lighthouse, 1897
Pawtuxet, 1863
Auxiliary, 1897
Ft. Independence 2, 1863

T-10476

Cranberry, 1897
Sabin Pt. 2, 1897
Bayview Hotel Flag, 1912
Sable Point, 1863
Cherry, 1890

T-10477

Marsh, 1890
Kings Rock, 1835
M6BP

No control of any agency not plotted on the project index was used or obtained. The control plotted consists of U. S. Geological Survey traverse and Massachusetts Geodetic Survey traverse and triangulation. No information as to the accuracy of this control was furnished the field party.

4. VERTICAL CONTROL

This phase was limited to recovery of existing tidal bench marks.

5. CONTOURS AND DRAINAGE

Contours inapplicable.

Drainage is entirely perennial streams, swamp and tidal marsh. Marsh and swamp limits were indicated except for

some small isolated swamp areas which were merely labeled or left unlabeled for office classification by analogy from nearby swamp which had been labeled.

On the whole, perennial streams are self-evident even to the unaided eye. All drainage was examined stereoscopically and clarified where necessary to aid compilation.

6. WOODLAND COVER

Adequately covered by field inspection notes on the photographs.

7. SHORELINE AND ALONGSHORE FEATURES

The mean high water line is self-evident along rocky stretches and along rock outcrops, because of the line created by marine vegetation on the foreshore and the resulting difference in photographic tones along sand beaches this line was inspected visually and verified to be as photographed 17 May 1956 by the "W" camera.

An approximate low water line was indicated where practicable.

The foreshore is adequately covered by field inspection notes.

Bluffs along the Providence River have been indicated where they are of landmark value. There are not many of them.

All other shoreline features and structures are adequately covered by field inspection notes.

8. OFFSHORE FEATURES

All rocks were not visited during field inspection. The elevation above water was determined for all rocks which were visible at the time the shoreline inspection party was in the area. Shoreline inspection of the southern part of the area was completed after hydrography by the East Coast Field Party while the Seekonk River was completed prior to hydrography. As hydrography of the entire area was either complete or in progress, field inspection of rocks was not as detailed as would have been the case if hydrography has been scheduled for another season.

9. LANDMARKS AND AIDS

All land marks in the area of Chart No. 352, Providence Harbor were located by third-order triangulation as well as all fixed aids to navigation of permanent-type construction, namely, Fuller Rocks Light and Providence River Light 17 A. Four fixed aids in the Skeekonk River were identified for location photogrammetrically as they are all dolphin structures of a semi-permanent nature. A third-order triangulation position and the height above MSL were determined of two television station antennas; one in Johnston, just west of Providence and the other in Rehoboth, Mass., east of Providence and both outside the project area.

All of these landmarks were not identified as required by project instructions. The images of those not identified were surrounded by the 25 mm triangle and the station name and landmark data placed nearby. The image was not marked. This was done on authority of verbal approval by the Chief, Photogrammetry Division.

10. BOUNDARIES, MONUMENTS AND LINES

Boundaries effecting these maps are as follows:

1. Massachusetts-Rhode Island State Boundary, Maps T-10473, T-10476 and T-10477.
2. Bristol County, Massachusetts maps T-10473, T-10476 and T-10477.
3. Providence County, Rhode Island, Maps T-10475 and T-10476,
4. Kent County, Rhode Island, Maps T-10475 and T-10476.
5. Bristol County, Rhode Island, Map T-10476
6. City of Cranston, Rhode Island, T-10475
7. City of Providence, Rhode Island, T-10472, T-10473 and T-10475.
8. City of North Providence Rhode Island, T-10472
9. City of Pawtucket, Rhode Island, T-10472 and T-10473.
10. Town of East Providence, Rhode Island, T-10472, T-10473, T-10475 and T-10476.

All boundaries listed above were found to be as shown on current topographic quadrangle maps, published by the U. S. Geological Survey with the exception of the Town of East Providence.

Local Officials with authority over the boundary under investigation were consulted, except the Massachusetts-Rhode Island State Boundary. All monuments reported to be in existence by these officials were searched for and identified, if recovered. The boundaries were inked on the field photographs in the entirety except in a few instances where there were numerous closely spaced monuments. Only short sections of the boundaries were inked in those instances. The Massachusetts-Rhode Island State Boundary was not inked on the photographs at any place. All monuments on this boundary were searched for and identified if recovered. Ten monuments on this boundary were recovered and identified: 7 in T-10473 and 3 in T-10476.

11. OTHER CONTROL

Hydrographic control was furnished to the East Coast Field Party for the entire area. This control was located by photogrammetric methods and graphically by planetable methods. The following is a list of sheets covering the area and method used for each sheet.

- Ph-1-A-56- Photogrammetric
- Ph-1-B-56- Graphic
- Ph-1-C-56- Graphic
- Ph-1-D-N/2-56- Photogrammetric

Field photographs and necessary horizontal control data were forwarded to Washington in June for preparation of a photogrammetric manuscript of sheet Ph-1-A-56. This manuscript furnished photograph center locations and shoreline from office interpretation. The manuscript was returned to the field and used for photogrammetric location of hydrographic control by the field party.

A small radial plot was laid by the field party for photogrammetric location of hydrographic control in the Barrington and Warren Rivers above the bridge at Warren in sheet Ph-1-D N/2-56. The area was originally planned to be part of Sheet Ph-1-D-56 but due to lack of horizontal control planetable methods were not practicable.

The following six stations established by the Corps of Engineers were recovered and identified for location as recoverable topographic stations and also for use in transfer of soundings of the Seekonk River Channel made by the Corp of Engineers, using these stations as control for hydrography but on an independent plane rectangular coordinate system:

Circle Swan
State Pier (North)
State Pier (South)
Washburn
Butlers'
No. 11 Stony Point

No other control was established.

12. OTHER INTERIOR FEATURES

Bridges and overhead cables clearances are as tabulated below. There are no other interior features of note:

Overhead Cable Clearances

<u>Waterway</u>	<u>Lat.</u>	<u>Long.</u>	<u>Clearance</u>	<u>Map No.</u>
Providence River			152	T-10472
Skeekonk Rv.*			143	T-10472
" "			146	T-10472
" "			140	T-10472
" "			41	T-10472
Warren Rv			46	T-10477

* Cable nearest mouth of River first and then proceeding upstream.

(For Bridge Clearances, see next page)

BRIDGE CLEARANCES

<u>Waterway</u>	<u>Bridge name or location</u>	<u>Measured Horiz. Vert.</u>	<u>Bridge Book Horiz. Vert.</u>	<u>Map No.</u>
Providence River	Point Street	99.5 99.8	101 9.0	T-10472
Seekonk River	NYNH&H RR	83.2 84.5	83 84.8 4.9	T-10472
Seekonk River	Washington Bridge	100 40.1	100 40.7	T-10472
Seekonk River	Providence Termi- nal Co. RR Bridge	92.5 16.1	92.4 17.2	T-10472
Seekonk River	Red Bridge	69.5 68.9	50 50 13.0	T-10472
Seekonk River	Division Street Pawtucket	50 39.0	50 30	T-10472
Barrington River	Highway	34.5 5.8	34.5 6.4	T-10476
Warren River	Highway	26.8 5.3 *	27.5 3.4	T-10477
Warren River	Highway(US 6)	28.5 8.7 *	25.3 6.0	T-10477

* This difference is probably due to tide reduction data. Subordinate station Warren was used. The tide at the bridges probably differ greatly in time and range.

-17-

(17)

13. GEOGRAPHIC NAMES

A complete investigation^{of}/geographic names was not made. Prepared name sheets were furnished the field party on which discrepancies were noted. Questions concerning names arising from these discrepancies were answered on the prepared sheets. No formal report was prepared.

14. SPECIAL REPORTS AND SUPPLEMENTAL DATA

Triangulation Data, Project 25120, original copies, forwarded to Washington 30 Nov. 1956, Pkg. No. 57-019

Triangulation Data, Project 25120, duplicate copies, forwarded to Washington 30 Nov. 1956, Pkg. No. 57-020

Graphic Control Sheets, Project 13870 (& 25120) forwarded to Washington 3 Dec. 1956, Pkg. No. 57-023

Photo-Hydro Control Data, Project 13870 (& 25120) forwarded to Washington 3 Dec. 1956, Pkg. No. 57-024

Forms 567, Fixed Aids to Navigation and Landmarks for charts to be forwarded at a later date.

Forms 567, Aeronautical Aids and Landmarks for Aeronautical Charts to be forwarded at a later date.

One Map, City of Pawtucket, R. I.

One Map, Town of East Providence, R. I.

One Map, City of Providence, R. I.

One Map, City of Cranston, R. I.

One Map, Bristol County, R. I.

Submitted by:

Isaiah Y. Fitzgerald
Isaiah Y. Fitzgerald
Photogrammetric Engr.

Approved and Forwarded:

Ira R. Rubottom
Ira R. Rubottom
Chief of Party

PHOTOGRAMMETRIC PLOT REPORT
Project Ph-163

21. AREA COVERED

T-10472 through T-10501.

22. METHOD

The entire area was bridged by multiplex at a scale of 1:10,000 using the 1:30,000 scale photography. In order to obtain this scale, which was not the optimum, the multiplex was used at the maximum projection distance.

Wherever practical, the mylar projections furnished were used directly for the bridging. It was feasible to use vinylite work sheets where the bridged strips spanned several sheets. Pass points were established to control the models for subsequent delineation by Kelsh Plotter. These points were averaged between adjacent strips. Adjustment was less than 0.5 mm.

23. ADEQUACY OF CONTROL

Horizontal control complied with project instructions and was adequate. In certain areas it appears that control was over-abundant. Nevertheless, it must be realized that many points were not well-defined in the models. Points such as small towers and stacks, spires and chimneys were not always sharp enough to be pin-pointed. Of over 150 horizontal points used in the bridging, 38 or 25% were reported as "difficult to see" when the bridges were run.

Only two horizontal points were reported not held. See letter to Chief, Photogrammetry Division and sketch of control, attached.

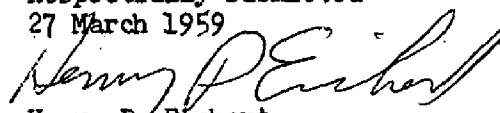
24. SUPPLEMENTAL DATA

None.

25. PHOTOGRAPHY

Quality of photography was good. Coverage and overlap were adequate.

Respectfully submitted
27 March 1959


Henry P. Eichert
Super. Carto. (Photo.)

NARRAGANSETT BAY

PH-163

VERIFICATION OF HORIZONTAL DATUM

of T-10472 and T-10473

October 1958

* Graphic Control
(Pleasant)

Maps T-10472 and T-10473 were tested on the stereo-planigraph by setting models 56W-177-178 and 56W-178-179. Differences in position of a number of hydro stations occur between the original stereo-instrument survey used in the field (Field No. PH 1-A N/S) and the final photogrammetric surveys. There is a datum shift between Coast and Geodetic Survey control on T-10472 and a combination of Massachusetts Geodetic Survey and the U. S. Geological Survey control on T-10472 and T-10473. From an adjustment of these differences it was determined that the photogrammetric positions of hydro signals and shoreline on T-10472 and T-10473 could not be shifted any appreciable amount. Until such time as additional C&GS horizontal control is established in the area no further adjustments are recommended. The maps are acceptable and are within the horizontal accuracy standards.

Submitted:

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

Approved:

Morton Keller
Morton Keller

(21)

William F. Bishop, Captain
The Coast and Geodetic Survey
Washington 25, D. C.

10 March 1959

Chief, Photogrammetry Division
Coast and Geodetic Survey
Washington 25, D. C.

Subject: Project 11-462 - Hawaiian Islands

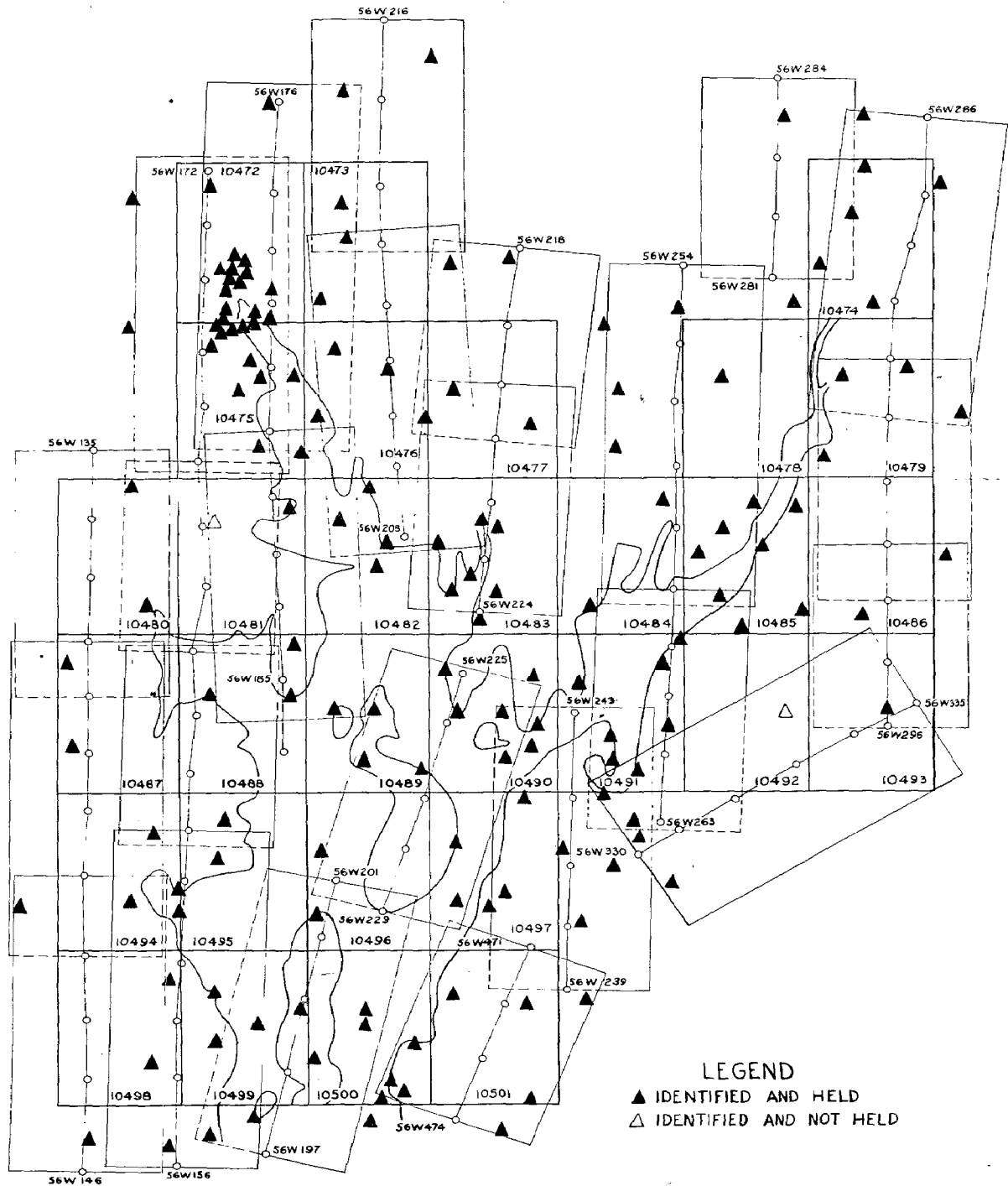
Re: Aerial photographs of the Hawaiian Islands taken by the Coast and Geodetic Survey and showing the points of the islands.

Reference: 11-462, 11-463, 11-464

The following information was obtained from the Coast and Geodetic Survey (CGS) for the Hawaiian Islands project and is being furnished to you for the CGS, Navy, and the Department of the Interior. The information is being furnished to you for the CGS, Navy, and the Department of the Interior. The information is being furnished to you for the CGS, Navy, and the Department of the Interior.

6

SKETCH OF CONTROL
PROJECT Ph-163
NARRAGANSETT BAY, MASS.-R.I.
MULTIPLEX BRIDGING



LEGEND

- ▲ IDENTIFIED AND HELD
- △ IDENTIFIED AND NOT HELD

MAP T-10472

PROJECT NO. Ph-163

SCALE OF MAP..... 1:10,000

SCALE FACTOR
1.000[illegible]

1 FT. = 3048006 METER

COMPUTED BY: J. C. Cregan

DATE 9 August 1957

CHECKED BY: Henry P. Eichert

DATE 9 August 1957

COMM-DC-57843

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
DESCRIPTIVE REPORT
CONTROL RECORD

MAP T. 10472

PROJECT NO. Ph-163

SCALE OF MAP 1:10,000

SCALE FACTOR 1.000

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR LONGITUDE OR X-COORDINATE	DISTANCE FROM GRID IN FEET. OR PROJECTION LINE IN METERS	DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM G.A.O. OR PROJECTION LINE IN METERS	FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS
				FORWARD (BACK)		FORWARD (BACK)	FORWARD (BACK)
FORT HILL, 1956	G. P. p. 168	N.A. 1927	41 18 52.576	1622.1	229.0		
			71 23 18.670	430.9	954.0		
PROVIDENCE E (WBC) 1956	"	"	41 49 07.361	227.1	1624.0		
			71 23 10.577	244.1	1140.7		
EAST PROVIDENCE BOLD POINT RADIO TOWER, 1956	p. 171	"	41 48 55.848	1723.0	128.1		
			71 23 31.474	726.5	658.3		
EAST PROVIDENCE STANDPIPE, 1956	"	"	41 48 59.509	1836.0	15.0		
			71 23 07.505	173.2	1211.6		
PROVIDENCE RADIO STATION WRIB TOWER 1956	"	"	41 49 15.485	477.7	1373.4		
			71 23 07.031	162.3	1222.4		
PROVIDENCE NARRAGANSETT ELECTRIC COMPANY BRICK STACK, 1956	p. 170	"	41 48 57.639	1778.3	72.8		
			71 24 18.242	421.0	963.8		
PROVIDENCE RHODE ISLAND SUPREME COURT BLDG. SPIRE, 1956	"	"	41 49 31.566	973.9	877.2		
			71 24 26.968	622.4	762.2		
PROVIDENCE RIVER EAST TRANSMISSION TOWER, 1956	"	"	41 48 56.543	1744.5	106.6		
			71 24 03.463	79.9	1304.9		
PROVIDENCE RIVER WEST TRANSMISSION TOWER, 1956	"	"	41 48 56.667	1747.7	103.4		
			71 24 15.091	348.3	1036.5		
E. PROVIDENCE SEEKONK RIVER S. TRANSMISSION TOWER, 1956	p. 171	"	41 48 56.433	1741.1	110.0		
			71 23 21.457	495.3	889.5		
E. PROVIDENCE SEEKONK RIVER N. TRANSMISSION TOWER, 1956	"	"	41 48 59.940	1849.3	1.8		
			71 23 23.192	535.3	849.5		
PROVIDENCE HOPE STREET, HIGH SCHOOL CUPOLA, 1956	p. 170	"	41 50 06.152	189.8	1661.3		
			71 24 09.456	218.2	1166.3		

1 FT. = 3048006 METER

COMPUTED BY: J. C. Richter

DATE 24 July 1957

CHECKED BY: J. C. Cregan

DATE 8 August 1957

CONV. DC-57843

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
DESCRIPTIVE REPORT
CONTROL RECORD

MAP T. 10472

PROJECT NO. Ph-163

SCALE OF MAP 1:10,000

SCALE FACTOR 1.000

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR ψ -COORDINATE LONGITUDE OR λ -COORDINATE		DISTANCE FROM GRID IN FEET. OR PROJECTION LINE IN METERS		DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS		FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS	
			FORWARD	(BACK)	FORWARD	(BACK)		FORWARD	(BACK)	FORWARD	(BACK)
PROVIDENCE QUAKER COLLEGE, 1843	G-6285 p. 114	N.A. 1927	41 50	00.03	0.9	1850.2					
PROVIDENCE STATE CAPITAL DOME, 1912	G-3849 p. 37	"	71 23	56.45	1302.6	81.9					
PROVIDENCE INDUSTRIAL TRUST BLDG. TOWER, 1932	G-3849 p. 37	"	41 49	50.853	1568.9	282.2					
PROVIDENCE UNIT-ARIAN CHURCH, 1863	G-6285 p. 114	"	71 24	55.632	1283.8	100.8					
29 (U.S.G.S.) 1934	No. 307 p. 6 of 17	"	41 49	27.749	856.1	995.0					
81 (U.S.G.S.) 1934	No. 263 p. 5 of 17	"	71 24	41.911	967.2	417.5					
359 (U.S.G.S.) 1934			41 49	27.35	843.8	1007.3					
			71 24	20.19	465.9	918.7					
			41 52	05.65	174.3	1676.9					
			71 25	31.93	736.4	617.4					
			41 51	40.50	1249.5	601.6					
			71 27	49.35	1138.3	245.6					
CENTRAL FALLS HIGH SCHOOL CUPOLA, 1889	G-6522 p. 133	N.A. 1927	41 53	13.991	431.7	1419.5					
CENTRAL FALLS BAPTIST CHURCH SPIRE, 1889	"	"	71 23	16.753	386.3	997.1					
PROVIDENCE FIRST CHURCH OF CHRIST SCIENTIST DOME, 1912	"	"	41 53	09.082	280.2	1570.9					
PROVIDENCE BAPTIST CHURCH, 1843	G-3849 p. 37	"	71 23	14.706	1339.1	1014.2					
			41 49	44.520	1373.5	477.6					
			71 24	18.938	437.0	947.6					
			41 49	38.39	1184.4	666.7					
			71 24	32.23	743.8	640.8					
PROVIDENCE CONGRESSIONAL CHURCH, 1843	G-6285 p. 114	"	41 49	12.37	381.6	1469.5					
			71 24	50.89	1174.5	210.2					

1 FT. = 3048008 METER

COMPUTED BY: J. C. Richter

DATE 24 July 1957

CHECKED BY: J. C. Grogan

DATE 8/8/57

CONV. DC-57843

COMPILATION REPORT
Project Fh-163
T-10472

- 28 - (26)

31. DELINEATION

The Kelsh Plotter was used for delineation.

32. CONTROL

Horizontal control was adequate. Refer to the attached report, "Verification of Horizontal Datum". Vertical control is inapplicable.

33. SUPPLEMENTAL DATA

Final name standard dated 5 March 1957.
Map of City of Providence, edition of 1955.
Map of the City of Pawtucket, 1950.
Map of the town of East Providence, 1954.
Copy of Boat Sheet H-8316 for comparison.

34. CONTOURS AND DRAINAGE

Drainage is complete. Contours are inapplicable.

35. SHORELINE AND ALONGSHORE DETAILS

All shoreline details are from field inspection which ^{was} ~~were~~ thorough.

No low water or shoal lines shown on the manuscript.

36. OFFSHORE DETAILS

No comment.

37. LANDMARKS AND AIDS

Form 567 was submitted for 22 landmarks and 4 aids.

38. CONTROL FOR FUTURE SURVEYS

Forms 524 are submitted herewith for five (5) recoverable topographic stations. Positions were established during delineation by Kelsh plotter from identification and measurements furnished by the field inspection party. These are among those listed under item 11 of the Field Inspection Report.

Refer to the attached notes regarding the photo-hydro stations in the area of the survey and to the Descriptive Report to accompany Graphic Control Survey Sheets Ph-1-A-56 through Ph-1-N-56 submitted for this project.

Refer, also, to the attached report: "Verification of Horizontal Datum" regarding positions of photo-hydro signals in this area.

39. JUNCTIONS

To the east with T-10473.

To the south with T-10475.

There are no contemporary surveys to the north and west.

40. HORIZONTAL AND VERTICAL ACCURACY

No comment.

41. BOUNDARIES

The Providence-East Providence boundary was delineated from the map of the City of Providence in the vertical projector.

The limits of several parks and cemeteries were office delineated using the city maps as a guide.

42 - 45. Inapplicable.

46. COMPARISON WITH EXISTING MAPS

U.S.G.S. 7½ minute quadrangle Providence, R. I., scale 1:24,000, edition of 1957 reprinted 1959.

47. COMPARISON WITH NAUTICAL CHARTS

Chart No. 352, scale 1:10,000, edition of 1/9/45. Revised 6/6/55.

Chart No. 278, scale 1:20,000, 10th edition 11/11/46. Revised 8/25/58.

Items to be applied to nautical charts immediately: None.

Items to be carried forward: None.

Approved and forwarded

William F. Deane
William F. Deane,
CDR, C&GS
Baltimore District Officer

Respectfully submitted

3 April 1959

Joseph D. McEvoy

Joseph D. McEvoy
Carto. (Photo.)

28

PHOTOGRAMMETRIC OFFICE REVIEW

T. 10472

1. Projection and grids ☒ 2. Title ☒ 3. Manuscript numbers ☒ 4. Manuscript size ☒

CONTROL STATIONS

4a. Classification label ☒

5. Horizontal control stations of third-order or higher accuracy ☒ 6. Recoverable horizontal stations of less than third-order accuracy (topographic stations) ☒ 7. Photo hydro stations ☒ 8. Bench marks ☒
9. Plotting of sextant fixes ☒ 10. Photogrammetric plot report ☒ 11. Detail points ☒

ALONGSHORE AREAS

(Nautical Chart Data)

12. Shoreline ☒ 13. Low-water line ☒ 14. Rocks, shoals, etc. ☒ 15. Bridges ☒ 16. Aids to navigation ☒ 17. Landmarks ☒ 18. Other alongshore physical features ☒ 19. Other along-shore cultural features ☒

PHYSICAL FEATURES

20. Water features ☒ 21. Natural ground cover ☒ 22. Planetable contours ☒ 23. Stereoscopic instrument contours ☒ 24. Contours in general ☒ 25. Spot elevations ☒ 26. Other physical features ☒

CULTURAL FEATURES

27. Roads ☒ 28. Buildings ☒ 29. Railroads ☒ 30. Other cultural features ☒

BOUNDARIES

31. Boundary lines ☒ 32. Public land lines ☒

MISCELLANEOUS

33. Geographic names ☒ 34. Junctions ☒ 35. Legibility of the manuscript ☒ 36. Discrepancy overlay ☒ 37. Descriptive Report ☒ 38. Field inspection photographs ☒ 39. Forms ☒

40. Joseph W. Voracek Henry P. Smith
Reviewer Supervisor, Review Section or Unit

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.

S. G. Blankenbaker W. O. N. O. V. 1966
Compiler Supervisor

43. Remarks:

REVIEW REPORT
Planimetric Maps
T-10472, T-10473, T-10475 and T-10476
November 1966

61. General Statement

Field edit, accomplished by hydrographic survey parties during contemporary surveys H-8314 and H-8316, consisted of a check of landmarks, MHW line and topographic features seaward from the shoreline. Hydrographic survey changes in photogrammetric details were applied to the photogrammetric surveys during the subject final review.

Hydrographic survey verification and review preceded this review. The verifier (H-8316) encountered considerable difficulty in adjusting hydrographic information. These difficulties were never entirely eliminated. Since the difficulties were related, in part, to photogrammetric survey information, the Washington Office Review Group checked hydrographic signal location (previously located by plane table methods and identified on photographs) and the location of shoreline and alongshore features by graphic methods using field photographs containing primary control identified for bridging and the identified signals. New positions were obtained for 57 signals and shoreline changes were made in several areas. Most of the problems in adjusting hydrographic information and the related discrepancies between the surveys were resolved through application of the subject revisions. The combined Addendum to Summaries included in each Descriptive Report contains a discussion of the subject revision work and other problems encountered that relate to overall project accuracy and future surveys.

62 through 65. Comparisons

All prior Bureau topographic information (topographic and hydrographic surveys and the subject maps) located in the alongshore area were evaluated by contemporary hydrographic survey parties and/or verifiers. Prior Bureau surveys were not compared with the new maps during the subject review.

Refer to side heading 61 concerning comparison with contemporary hydrographic surveys. Comparison with nautical charts and maps of other agencies were made by photogrammetric compilers.

A number of discrepancies -- involving features (school names, boundaries, etc.) not applicable to either hydrographic surveys or nautical charts -- between these surveys and USGS quads were noted on discrepancy prints. The discrepancies were not resolved during field edit (hydro party); they cannot be resolved in the office.

66. Adequacy of Results and Future Surveys

Refer to the "Addendum to Summaries" included in this Descriptive Report.

Reviewed by:

S. G. Blankenbaker
S. G. Blankenbaker

Approved by:

Charles Turner
Chief, Photogrammetric Branch

J. Ralph Sobieralski
Chief, Photogrammetry Division
JAN 30 1968

John A. Boyer 2/13/68
Chief, Marine Chart Division

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEYTO BE CHARTED
~~TO BE DELETED~~

STRIKE OUT ONE

MONUMENTS/AIDS/OR LANDMARKS FOR CHARTS

Baltimore, Maryland 13 March, 1959

I recommend that the following objects which have ~~(Noted/Not)~~ been inspected from seaward to determine their value as landmarks be charted on ~~(Sufficiently)~~ the charts indicated.

The positions given have been checked after listing by Joseph W. Vonasek

RHODE ISLAND										POSITION					METHOD OF LOCATION AND SURVEY NO.	DATE OF LOCATION	HARBOR CHART	OFFSHORE CHART	CHARTS AFFECTED
STATE	CHARTING NAME	DESCRIPTION	SIGNAL NAME	LATITUDE #		LONGITUDE #		DATUM											
				°	'	D. M. METERS	"	°	'	D. P. METERS	"								
STACK		Steel ht=320(323) (A Providence Narragansett Electric Co., Black Stack, 1956)	ZAG	41	49	04.735	"	71	24	25.714	"	N.A. T-10472	10/56	X			278, 352, 353		
STACK		concrete, ht=330(333) (A Providence Narragansett Electric Co., Grey Stack, 1956)	ZIG	41	49	09.686	"	71	24	23.804	"		10/56	X			278, 352, 353		
TOWER		ht=113(128) (A Providence Industrial Trust Building Tower, 1932)	DUS	41	49	27.749	"	71	24	41.911	"		6/14/56	X			278, 352, 353		
SPIRE		ht=187(267) (A Providence, Unitarian Church, 1863)	VID	41	49	27.35	"	71	24	465.9	"			X			278, 352, 353		
SPIRE		ht=252(266) (A Providence Rhode Island Supreme Court Bldg., Spire, 1956)		41	49	31.566	"	71	24	26.968	"		10/56	X			278, 352		
DOME		ht=237(311) (A Providence State Capitol Dome, 1912)		41	49	50.853	"	71	24	55.632	"		6/14/56	X			278		
STACK		brick, ht=150(258) (A Providence Brown University Stack, 1956)		41	49	35.675	"	71	24	09.603	"		10/56	X			278, 352		
CUPOLA		ht=149(297) (A Providence Hope Street High School Cupola, 1956)		41	50	06.152	"	71	24	09.456	"			X			"		
DOME		green, ht=112(312) (A Providence First Church of Christ Scientist, Dome 1912)		41	49	44.520	"	71	24	18.938	"			X			278		

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and *nonfloating* aids to navigation, if redetermined, shall be reported on this form. 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

COM-DC 28356

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

Baltimore, Maryland
13 March 1959

The positions given have been checked after listing by Harry P. Elchert

William F. Deane
Chief of Party.

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and *nonfloating aids* to navigation, if redetermined, shall be reported on this form. 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

GEOGRAPHIC NAMES

FINAL NAME SHEET

PH-163 (Rhode Island)

T-10472

✓Bass Rock
 ✓Bensley Point
 ✓Bishop Point
 ✓Blackstone Park
 ✓Bold Point
 ✓Cold Spring Point
 ✓Corliss Park
 ✓Crook Point
 ✓Davis Park
 ✓East Providence
 ✓Fairlawn
 ✓Fort Hill
 ✓Fox Point
 ✓Gingerbread Island
 ✓Goose Point
 ✓Hopkins Park
 ✓India Point Bridge
 ✓Lippitt Memorial Park
 ✓Marievillle
 ✓Moshassuck River
 ✓North Providence
 ✓Pancake Island

Oak Hill Park
Metcalf Park

Oak Hill Park
Metcalf Park
India Point
Point Street Bridge
Aldrich Field
Brown Field
West River Reservation
Dexter Street Playground
Tockwotton Park
Tunnel Bridge
- Jd?

✓Pawtucket
 ✓Prospect Terrace Park
 ✓Providence
 ✓Providence River
 ✓Regatta Point
 ✓Seekonk River
 ✓Seekonk River Park
 ✓Stony Point
 ✓Swan Point
 ✓Twin Islands
 ✓Upper Canada Pond
 ✓Veterans Memorial Park
 ✓Wanskuck
 ✓Wanskuck Pond
 ✓Washington Bridge
 ✓West River
 ✓Windmill Hill
 ✓Witherby Park
 ✓Woodlawn
 ✓Woonasquatucket River
 ✓York Pond

Approved by:

A. Joseph Wraight

A. Joseph Wraight
 Chief Geographer

Prepared by:

Frank W. Pickett

Frank W. Pickett
 Cartographic Technician

NOTE TO REVIEWER
T-10472

The tidal bench mark at Red Bridge was identified in the office.

The new Providence quadrangle shows the completion of a new bridge north of the Point Street Bridge, and the interchange just to the east. In the northwest corner of this survey the new quadrangle indicates completion of a new highway (Louisquissett Pike) as far as Wanskuck.

Refer to Note to Reviewer, T-10475 - regarding boundaries in Providence River.

(36)

REPORT TO ACCOMPANY CRONAFLEX PRINT
OF SURVEY T-10472, PROJECT PH-163

The map manuscript was compared with copies of graphic control sheets Nos. PH-1-A-N/2 - 56, PH-1-A-S/2 - 56 and Ph-1-B-56, Projects Nos. 13870, 25120 and 6163, scale 1:10,000. The following is a list of photo-hydro stations, indicating how far and in what direction the photogrammetric position falls from the common point on the graphic control sheet.

Also listed are those photo-hydro stations that could not be identified. All other photo-hydro stations within the limits of this survey were verified within 0.5 mm and are not shown on the print of the map manuscript.

Station Name	Photogrammetric Position
ZIP	1.0 mm NNW
ROP (Description states SW corner of building.)	1.0 mm W
(Photogrammetric position is point given on)	
(field photograph, NW corner of building.)	
MAX	0.9 mm NW
LOG	0.6 mm NW
KEY	1.2 mm NNW
JOG	1.1 mm NNW
IRK	1.1 mm NW
STATE PIER NORTH (USE)(Rec. Topo.)	1.2 mm WNW
HOD	0.6 mm N
GAS	1.0 mm NW
STATE PIER SOUTH (USE)(Rec. Topo.)	1.2 mm NW
FOX	1.1 mm NNW
EGG	0.8 mm NNW
TIB	1.1 mm NNW
CUT	0.9 mm NNW
GIZ	0.7 mm SSW
GAD	0.6 mm NNW
BUTLER'S (USE)(Rec. Topo.)	0.6 mm WSW
NAT	1.2 mm SE
MAN	0.6 mm SE
FAD	0.7 mm NNE
GAF	1.4 mm SSE
FAT	0.8 mm SSE
EAR	1.3 mm N
SKY	0.8 mm SE
NIG	0.7 mm NE
DIM	0.6 mm ENE
SSX (This photo-hydro station is believed to be)	4.8 mm SW
(misidentified on the field photographs. It)	
(may be advisable to use the position as given)	
(on the graphic control sheet with caution.)	

Station not identified: PET
OWL
ADA
NUT

It is recommended that the photo-hydro stations plotted on the map manuscript be used in making the smooth sheets.

Respectfully submitted
17 September 1958

Leroy A. Senasack
Carto. Photo. Aid

Approved and forwarded

William F. Deane,
CDR C&GS
Baltimore District Officer

