

8097

8097

Diag'd. on Diag. Ch. No. - 78-3

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Planimetric Air Photographic
(Shoreline)

Field No. CS-283 Office No. T-8097

LOCALITY

State Virginia

General locality James River

Locality Goode Creek - Falling Creek

1941-44

CHIEF OF PARTY

F. L. Peacock

LIBRARY & ARCHIVES

DATE March 17, 1949

B-1870-1 (1)

DATA RECORD

T-8097

Quadrangle (II): DREWRY'S BLUFF, VA. $7\frac{1}{2}$ Min. Project No. (II): CS-283
(U.S.G.S.)

Field Office: Chief of Party: Fred. L. Peacock
Air Photographic Party No. 2

Compilation Office: Chief of Party: Fred. L. Peacock
Baltimore Photogrammetric Office

Instructions dated (II III): Copy filed in ~~Descriptive~~ Division of
March 26, 1942 - July 15, 1942 Report No. T (VI)
Sept. 30, 1942 - Nov. 14, 1942 - Nov. 24, 1942 Photogrammetry

Completed survey received in office: Office Files.
19 December 1944

Reported to Nautical Chart Section:

Reviewed: 5 Oct., 1948 Applied to chart No. Date:

Redrafting Completed:

Registered: 8 March, 1949 Published: Vault copy only

Compilation Scale: 1:10,000 Published Scale: 1:10,000

Scale Factor (III): None

Geographic Datum (III): N. A. 1927 Datum Plane (III): M.H.W.

Reference Station (III): NELSON, 1943

Lat.: $37^{\circ} 27' 11.27''$ (347.4 m.) Long.: $77^{\circ} 24' 40.65''$ (999.1 m) Adjusted
~~Unadjusted~~

State Plane Coordinates (VI):

X = Y =

Military Grid Zone (VI)

PHOTOGRAPHS (III)

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Scale</u>	<u>Stage of Tide</u>
7593-7594	11-25-41	12:27 P.M.	1:10,000	2.2' above M.L.W.
7595-7596	11-25-41	12:32 P.M.	1:10,000	2.1' above M.L.W.
7587-7588	11-25-41	12:22 P.M.	1:10,000	2.3' above M.L.W.
7589-7591, Incl.	11-25-41	12:27 P.M.	1:10,000	2.2' above M.L.W.

Tide from (III): Predicted Tables, Reference Station, Washington, D. C.,
with corrections for Falling Creek Entrance, Va.

Mean Range: 3.6 feet Spring Range: 4.1 Feet

Camera: (Kind or source) U.S.C. & G.S. Nine lens Camera (Focal
length 8 $\frac{1}{4}$ "). All negatives are on file at the Washington Office.

Field Inspection by: Lieut. Comdr. Henry O. Fortin date: Winter 1942-
1943

Field Edit by: date:

Date of Mean High-Water Line Location (III): Date of photographs
supplemented by field inspection data obtained in 1942-1943, Season's
Field Inspection Reports previously submitted.

Projection and Grids ruled by (III) B.R.C. - J.T.B. date: 9-30-44

" " " checked by: B.R.C. date: 9-30-44

Control plotted by: Ruth E. Rudolph date: 10-6-44 &
10-7-44

Control checked by: Mildred M. Trautman date: 10-8-44

Radial Plot by: J. E. Deal, Jr. & H. R. Brooks date: 11/3/44 - 11/4/44

Detailed by: John M. Reinoldi date: 11/7/44 to
12/15/44

Reviewed in compilation office by: Raymond Glaser date: 12-13-44
12-14-44

Elevations on Field Edit Sheet
checked by: Not applicable date:

STATISTICS (III)

Land Area (Sq. Statute Miles): This Map Drawing includes shoreline and adjacent planimetric detail only.

Shoreline (More than 200 meters to opposite shore): 8.6 statute miles.

Shoreline (Less than 200 meters to opposite shore): 1.5 statute miles

Number of Recoverable Topographic Stations established: 7

Number of Temporary Hydrographic Stations located by radial plot: 23

Leveling (to control contours) - miles:

Roman numerals indicate whether the item is to be entered by, (II) Field Party, (III) Compilation Party, or (VI) the

Washington Office.

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

Remarks:

MAP T. T-8097 PROJECT NO. C. S. 283

SCALE OF MAP **SCALE FACTOR**

SCALE OF MAP

MAP T-8097

PROJECT NO. C. S. 283

SCALE OF MAP

SCALE FACTOR

26 CONTROL:

This Map Drawing includes that portion of the shoreline and adjacent planimetry of the James River and its tributaries falling between Goode Creek and Falling Creek.

The following horizontal control stations fall within the limits of this Map Drawing. *See the attached form M-2388-12*

United States Coast and Geodetic Survey First Order Triangulation Stations:

- ✓ VARINA, 1932, r. 1933, r. 1941, r. 1942

United States Coast and Geodetic Survey Second Order Triangulation Stations:

- ✓ LARGEST DIAM. RED BRICK STACK AT DUPONT, 1943

- ✓ TALL WHITE STACK AT DUPONT PLANT, 1943
- ✓ S.E. ELEV. SILVER WATER TANK, 1943
- ✓ N.W. ELEV. SILVER WATER TANK, 1943
- NELSON, 1943

United States Coast and Geodetic Survey Triangulation Intersection Stations:

- ✓ DUPONT RAYON CO., BRICK STACK, near two aluminum tanks, 1932, r. 1943
- ✓ AIRWAY BEACON No. 46, Red and white lights, pointing on white, 1932, r. 1943

Corps of United States Engineers Stations:

- ✓ W (U.S.E.D.) r. 1943
- ✓ RHA (U.S.E.D.) r. 1943
- ✓ RHA (U.S.E.D.) r. 1943

United States Geological Survey Monumented Traverse Stations:

- ✓ 396 AA (TT67, 1937) U.S.G.S., r. 1943 (*outside manuscript limits*)
- ✓ 423 (U.S.G.S.) RICHMOND CITY B.M. 514, 1937, r. 1943

United States Geological Survey Temporary Traverse Stations:
(All established in 1931 and recovered in 1943)

396A	412+
✓ 402A	417+
✓ 405+	434+
✓ 407A	✓ 426+
✓ 411	

These unmarked T.T. Stations removed from map manuscript

26 CONTROL: (Continued)

The following horizontal control stations fall just outside the limits of this Map Drawing:

✓ United States Coast and Geodetic Survey First Order Triangulation Station:

RED BRICK STACK, AT ABANDONED BRICK YARD, 1932, r. 1943

✓ United States Coast and Geodetic Survey Second Order Triangulation Stations:

MARION (City of Richmond), 1923, r. 1943
OAK GROVE (City of Richmond), 1923, r. 1943

✓ United States Coast and Geodetic Survey Intersection Station:

WESTERLY OF TWO RED TWIN SILOS, 1943

✓ United States Geological Survey Temporary Traverse Stations:
(All established in 1931 and recovered in 1943)

392A	437A
473+	470+
471A	

The above listed horizontal control stations, both inside and outside the limits of the Map Drawing, were used to establish photograph centers, secondary control points, and detail points.

27 RADIAL PLOT:

The radial plot for this Map Drawing is part of the combined radial plot for Surveys Nos. T-8097 and T-8098 which includes an area of the James River and its tributaries falling between Grindall Creek and Richmond, Virginia.

Twenty-six nine lens unmounted 1:10,000 photographs covered the area of this combined radial plot and are listed in flights as follows:

Nos. 7563
7583 to 7590, Inclusive
7593 to 7600, Inclusive
7608 to 7611, Inclusive
7612 to 7616, Inclusive
7619

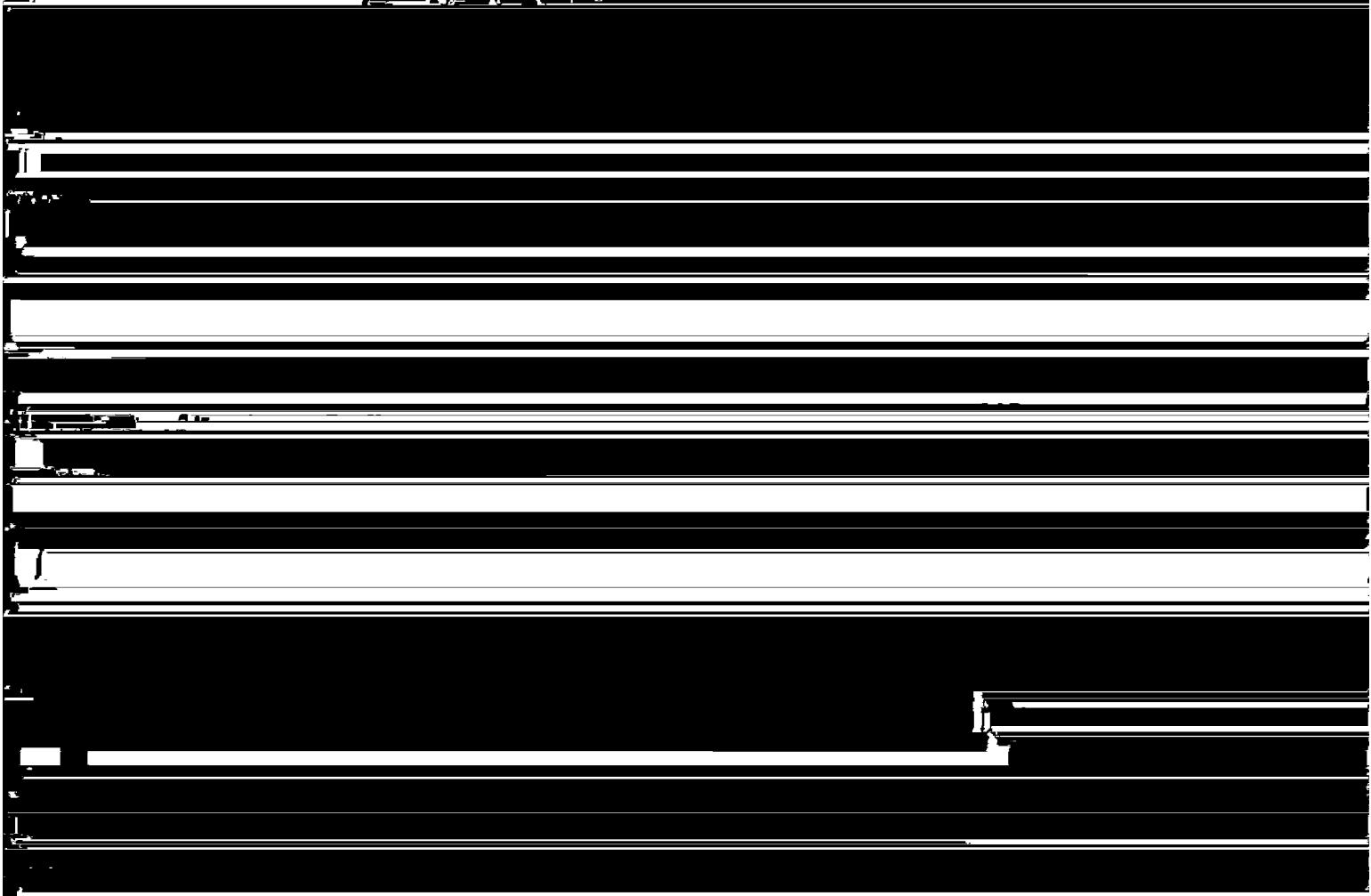
The above photographs were prepared for radial plot purposes in the same manner as for those described in the Descriptive Report for the combined radial plot of Surveys Nos. T-8089, T-8080, T-8091, T-8094,

27 RADIAL PLOT: (Continued)

T-8095, and T-8096, which was submitted to the Washington Office on August 31, 1944.

Sixty-eight horizontal control stations were recovered and identified on the nine lens field photographs by the Field Inspection Unit. These had been established as follows:

~~1. First Order, United States Coast and Geodetic Survey~~



10 - Second Order, United States Coast and Geodetic Survey
Triangulation Stations, by I. E. Rittenburg, in 1943.

5 - Intersection, United States Coast and Geodetic Survey
Triangulation Stations, by G. W. Lovesee, in 1941.

20 - City of Richmond, (Also Second Order, United States
Coast and Geodetic Survey Triangulation Stations), in
1923, by Department of Public Works, Richmond, Va.

4 - Corps of United States Engineer Stations, date of
establishment unknown.

27 RADIAL PLOT: (Continued)

All horizontal control stations recovered by the Field Inspection unit and all of the Field Inspection Stations established by the Field Inspection Unit were plotted and checked on the Map Drawing Projections.

The secondary control points previously mentioned and which were located along the north border of Survey No. T-8096 were transferred to the southern border of Survey No. T-8097 after matching the common meridians and parallels of the two Surveys.

The Map Drawing Projections for Surveys nos. T-8097 and T-8098 were then matched along their common meridians and parallels and joined together with transparent cellulose tape.

From examination of the horizontal control stations available, it was evident that all of the photographs were very strongly controlled. The horizontal control stations were very easy to identify on most of the photographs on which they appeared. This condition made it unnecessary to make acetate templets as, due to the rigid orientation possible with the photographs, it was only really necessary to establish photograph centers. However, it was decided to establish the secondary control points, which had been pricked on the photographs, at the same time the photograph centers were established. This was accomplished in the following manner:

Photograph No. 7588, which was excellently controlled, was oriented first under the joined Map Drawing Projections holding to its respective horizontal control. The center was then pricked and radial lines were drawn directly on the Map Drawing Projections through all of the secondary control points falling within its area. Each successive photograph was then in turn oriented in the same manner, its center established and radial lines were drawn through the secondary control points falling within its area. During this operation it was at times necessary to examine, on some of the photographs, stations which were believed to be incorrectly pricked. In all cases, after these stations had been corrected, they could be held to very well. It was possible to hold strongly to all of the horizontal control stations, which had been recovered and identified by the Field Inspection Unit, within the area of the radial plot.

After all of the radials, through the secondary control points, had been drawn, the intersections obtained were pricked and the points which had been established were double circled, in blue waterproof ink, on the reverse side of the Map Drawing Projections.

Provided they are retained, enough secondary control points were established on both Map Drawings so that at any future time the entire area of each Map Drawing may be detailed without any additional radial plot. Map Drawing for Survey No. T-8098 includes most of the area of Richmond, Virginia.

28 DETAILING:

The shoreline and immediate adjacent planimetric detail of the part of the James River shown on this Map Drawing have been detailed in accordance with the original instructions, dated March 26, 1942, and the Director's letters, dated July 15, 1942, and September 30, 1942, pertaining to Project No. CS-283.

Positions of minor detail points, temporary hydrographic stations and Recoverable Topographic Stations were determined by the usual radial line method.

The shoreline data furnished the Compilation Office by the Field Inspection Unit were transferred to the office photographs. These data were then detailed on the Map Drawing.

Portions of the Mean High-Water Line which could not be definitely identified by the Field Inspection Unit were shown on the field inspection photographs by dashed red lines. In all cases, these undetermined sections of Mean High-Water Line were delineated, with the aid of the stereoscope, from the nine lens office photographs. The Mean High-Water Line in these areas has been shown with the conventional full heavy-weight line. It is believed that the position of the Mean High-Water Line in these areas, as shown on the Map Drawing, has been accurately determined by the compiler.

In the area along Falling Creek, where there was no field inspection, the stereoscope was used to delineate the position of the Mean High-Water Line. The conventional full heavy-weight acid ink line was used to show the accurately determined Mean High-Water Line, and the dashed heavy-weight acid ink line was used to show the approximate position of the Mean High-Water Line where overhanging foliage obscured it from view.

All drainage falling within the area of this Map Drawing, which flows into the James River and its tributaries, has been detailed. Drainage not identified by the Field Inspection unit and which could not be definitely determined by stereoscopic examination has been shown with a light-weight dashed acid ink line.

Roads were not classified by the Field Inspection unit. They have been classified according to the compiler's interpretation from the nine lens photographs, after comparison was made with available charts and topographic quadrangles.

Tree areas, not classified by the Field Inspection unit, were interpreted by the compiler and have been shown with the conventional symbols.

All buildings immediately adjacent to the shoreline have been detailed.

28 DETAILING: (Continued)

The number of nine lens photographs covering the area of this Survey was sufficient to adequately compile the Map Drawing. Their average scale was in good agreement with the scale of the Map Drawing Projection. The spacing of the photographs provided good center chamber coverage for the area detailed on the Map Drawing.

A list of abbreviations, used on this Map Drawing, accompanied by explanatory notes, has been shown in the right hand margin.

29 SUPPLEMENTAL DATA:

No supplemental data were furnished the Compilation Office for use in detailing this Map Drawing.

30 MEAN HIGH-WATER LINE:

According to a letter from Lieutenant Commander Henry O. Mortin, dated February 11, 1943, the indefinite shoreline mentioned previously in paragraph 28, could not be interpreted by the Field Inspector due to shadows, overhang of trees, bluffs, or poor photographs, and sometimes a combination of all four. These indefinite sections of shoreline were carefully examined under the stereoscope by the compiler and the resulting interpretation, supplemented by the field inspector's interpretation, was then detailed on the Map Drawing with a full, heavy-weight line.

There are no marsh areas bordering the shoreline in the area of this Map Drawing.

31 LOW-WATER AND SHOAL LINES:

No Mean Low-Water Line has been shown on this Map Drawing and none was indicated by the field inspection data, or was visible on the nine lens photographs.

The Field Inspection Unit identified, by a dotted green ink line, on the field photographs, several mud shoals. The limits of these areas were shown on the Map Drawing by a dashed light-weight, black acid ink line.

32 DETAILS OFFSHORE FROM THE HIGH-WATER LINE:

Several piling areas, dolphins, and a rock pile, identified by the Field Inspection unit, have been shown on the Map Drawing accompanied by appropriate notes. The extent to which these offshore details bare or...

32 DETAILS OFFSHORE FROM THE HIGH-WATER LINE: (Continued)

cover at Mean High-Water was not furnished the Compilation Office.

33 WHARVES AND SHORELINE STRUCTURES:

Numerous jetties, piers, and catwalks were identified by the Field Inspection Unit on the field photographs. These are detailed on the Map Drawing, accompanied by appropriate notations. No other shoreline structures were visible on the office photographs.

34 LANDMARKS AND FIXED AIDS TO NAVIGATION:

Two objects recommended for charting as landmarks lie within the detail limits of this Map Drawing. They are:

POWER LINE TOWER, W. side of river
POWER LINE TOWER, E. side of river

There are also three fixed aids to navigation which fall within the limits of this Map Drawing. Two of these are:

WARWICK BAR LIGHT FL. W. 5 SEC.
GOODES ROCK LIGHT FL. W. 5 SEC.

No longer listed in most recent Light List (1947) Retained as a Rec. Topo. Station

The other fixed aid to navigation is Albro Creek (Goode Creek) Light FL. W. 5 sec. This light was not visible on the photographs. The Field Inspection unit furnished the Compilation Office Form No. 524 for this light. The description contained on this card showed the light to be located 16 feet S.E. of the end of a jetty. The light is identified on field inspection photograph No. 7587, 15 meters south east of end of jetty. The location as shown on this field inspection photograph was used.

Form No. 567 is being submitted for the radially plotted position of the two landmarks and the three fixed aids to navigation.

Now triangulation. (1943).

35 HYDROGRAPHIC CONTROL:

The Compilation Office was furnished the identification of seven (7) Recoverable Topographic Stations and twenty-three (23) Temporary Hydrographic Stations. These were identified on the 1:10,000 scale field photographs by numbers, and their descriptions listed in a Field Sketch Book (Form No. 274) by corresponding numbers. These stations were transferred to the office photographs, and radially plotted on the Map Drawing. The numbers and descriptions of these stations have been noted near the station to which they refer, directly on the Map Drawing.

Not shown as lights

35 HYDROGRAPHIC CONTROL: (Continued)

Three (3) of the seven (7) Recoverable Topographic Stations shown on this Map Drawing are the Fixed Aids to Navigation listed first under Section 34, "Landmarks and Aids to Navigation". Two (2) of the seven (7) are the Landmarks also listed in Section 34. The remaining two stations are: ~~524 cards discarded. Landmarks are now triangulation.~~

N. Gable of Amphill Pumping Station
N. Gable Low Gray Building

Form No. 524 is being submitted for these seven (7) Recoverable Topographic Stations.

36 LANDING FIELDS AND AERONAUTICAL AIDS:

The Compilation Office has not been furnished any data for Landing Fields or Aeronautical Aids within the limits of this Map Drawing and none were visible on the nine lens photographs.

37 JUNCTIONS:

To the north, a satisfactory junction has been made with Map Drawing for Survey No. T-8098.

To the south, a satisfactory junction has been made with Map Drawing for Survey No. T-8096.

To the east, no contemporary survey.

To the west, no contemporary survey.

38 GEOGRAPHIC NAMES:

As instructed, no Geographic Names Investigation was furnished the Compilation Office by the Field Inspection Unit. The Geographic Names shown on the Map Drawing were taken from the United States Coast And Geodetic Survey Chart No. 531, dated March 6, 1944, and United States Geological Survey Drewrys Bluff, Va., $7\frac{1}{2}$ minute Quadrangle, surveyed in 1938.

A list of undisputed Geographic names and a list of disputed Geographic Names are attached to this Descriptive Report.

39 HORIZONTAL ACCURACY:

The probable error in the position of detail points, the Mean High-Water Line, and well-defined objects, is believed to be within the limits of satisfactory accuracy.

40 RECOMMENDATIONS FOR FUTURE SURVEYS:

This rough draft, shoreline survey for the Map Drawing, Survey No. T-8097, is believed to be complete in all details for charting and no other Surveys are deemed necessary.

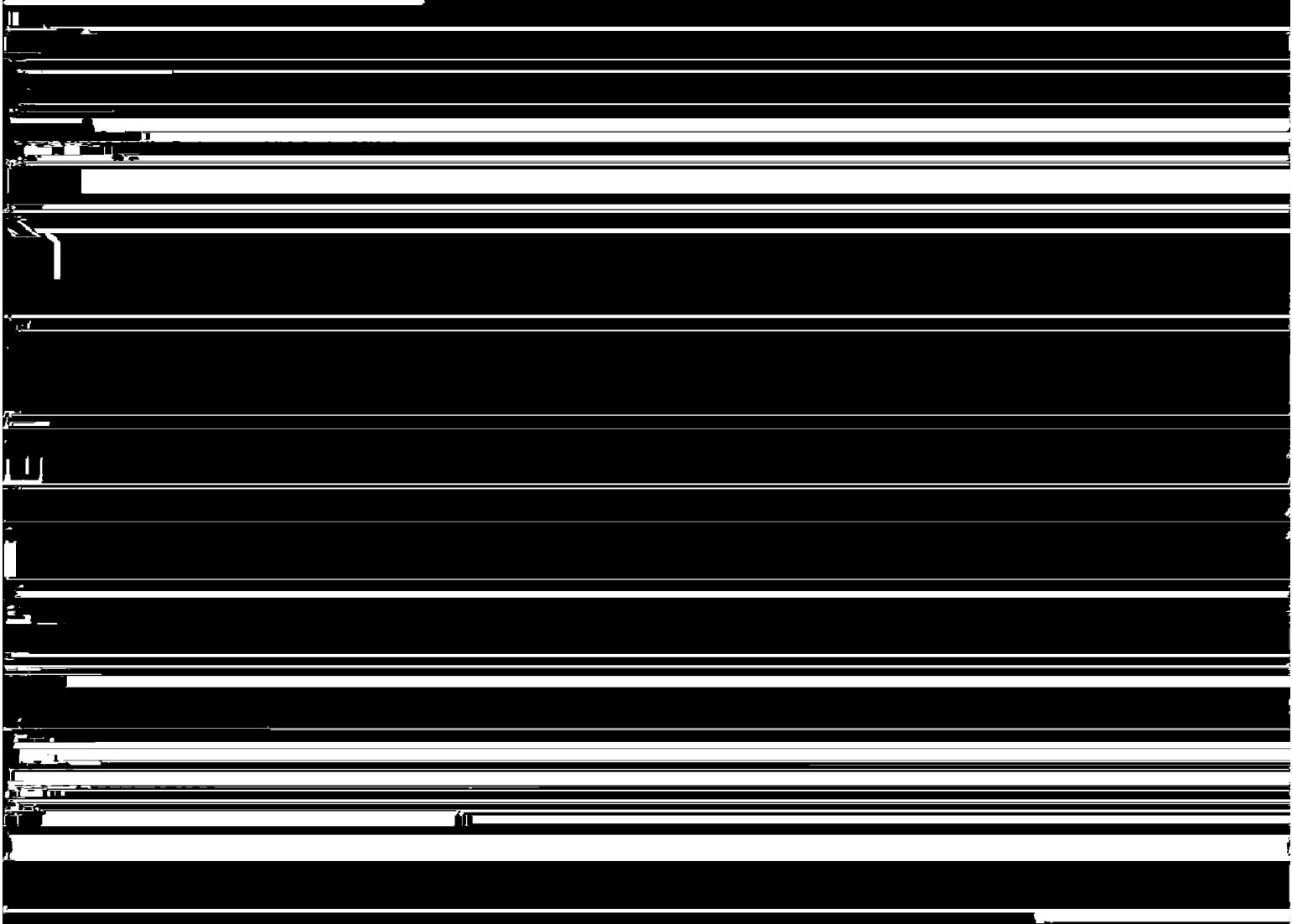
44 COMPARISON WITH EXISTING TOPOGRAPHIC QUADRANGLES:

Comparison was made with the United States Geological Survey, Drewrys Bluff, Va., $7\frac{1}{2}$ minute Quadrangle, scale 1:24,000, surveyed in 1938, advance unedited edition. *1:31,680 = edition of 1943*

In general, all shoreline detail and immediate adjacent planimetry are in good agreement, with the following exceptions:

Several minor roads which appear on the quadrangle do not appear on the Map Drawing. They could not be seen on the photographs.

Several marsh areas which appear on the quadrangle



45 COMPARISON WITH NAUTICAL CHARTS: (Continued)

Several marsh areas shown on the chart adjacent to the shoreline of James River are not visible on the office photographs and, therefore, are not shown on the Map Drawing.

A railroad running west of James River, with sidings at the Richmond Deepwater Terminal, which appears on the Map Drawing does not appear on the nautical chart.

Respectfully Submitted:
December 11, 1944

John M. Reinoldi
John M. Reinoldi
Sr. Photogrammetric Aid

Compilation and Descriptive
Report, Reviewed by:

Raymond Glaser
Raymond Glaser
Sr. Engineering Draftsman

Compilation of Map Drawing
Supervised By:

J. Edward Deal Jr.
J. Edward Deal, Jr.,
Asst. Photogrammetric Engineer

Approved and Forwarded:
December 19, 1944

Fred. L. Peacock
Fred. L. Peacock
Chief of Party, C. & G. Survey
Officer-in-Charge,
Baltimore Photogrammetric Office

Descriptions of
Recoverable Topographic Stations
and Temporary Hydrographic Stations
Map Manuscript T-8097

<u>No.</u>	<u>Description</u>
✓ 17.	End of first cribbing South of prominent point approximately 50 meters to North.
✓ 18.	Tall piling on Southeast corner of pier on West side of river.
✓ 19.	East end of stone jetty where it meets South end of stone jetty.
20.	Outer end of cribbing, 4th South of power line tower. Outer end covered at H.W.
21.	Outer end of cribbing, No. 3 below signal No. 20.
22.	Outer end of cribbing, first one South of a prominent bight (150 meters), also a bight south of crib.
23.	Edge of brush on outer end of cribbing.
24.	"N. Gable of Amphill Pumping Station." N. gable of

- ✓ 58. Outer center end jetty, fifth ^N of No. 57.
- ✓ 59. Outer center end jetty, second S. of No. 60.
- ✓ 60. "Warwick Bar Light." Warwick Bar Light is on top of a red iron piling on E. side of river. (Recoverable Topographic Station) ^{no more LT.} ^{IRON PILING 1943(d)}
- 61. S.W. corner of catwalk.
- 62. Center outer end jetty with prominent bight just S. of signal.
- 63. Center outer end jetty, second from small jetty to S.
- 64. Center outer end jetty, fifth N. of No. 63.
- 65. Center outer end jetty, sixth N. of No. 64.
- 66. "Goodes Rock Light." Goodes Rock Light is on a red box on the top of a black pole 10' S. of centerline of tip of jetty. (Recoverable Topographic Station)
- 67. Center outer end jetty, third N. of No. 66.
- 68. Center outer end jetty, eighth N. of No. 67.
- 819. "Albro Creek (Goode Creek) Light." Albro Creek (Goode Creek) Light is on top of a black wood piling at mouth of Goode Creek (Goode Creek on Chart 531; Albro Creek in Light List). Light is 16' S.E. of end of jetty. (Recoverable Topographic Station) ^{Piling 1943(d)} ^{15 Meters (see 524 card)}
- 823. "Power Line Tower, on W. Side of River." Power line tower on W. side of James River. Alternating red and white steel structure 300' tall. Recommended landmark. (Recoverable Topographic Station) ^{It is now triangulation station:} ^{WEST TRANSMISSION TOWER, 4 MILES SOUTH OF RICHMOND,} ¹⁹⁴³
- 824. "Power Line Tower, E. Side of River." Power line tower 350 meters E. of E. side of James River. Alternating red and white structure 300' tall. Recommended Landmark. (Recoverable Topographic Station) ^{It is now triangulation station:} ^{EAST TRANSMISSION TOWER, 4 MILES SOUTH OF RICHMOND,} ¹⁹⁴³

GEOGRAPHIC NAMES

(Undisputed)

- ✓ • Falling Creek
- James River
- Mill Creek
- Richmond Deepwater Terminal
- Warwick
- ✓ • Wilton
- Virginia* (for title)

* = Decis. of BGN

• = Approved name.

10-5-48.

a. f. w.

GEOGRAPHIC NAMES

(Disputed)

~~Goode Creek~~

~~(Nautical Chart)~~

~~Goodes Creek~~

~~(Topographic Quadrangle)~~

* = Decis. of BGN

● = Approved name.

10 - 5 - 48.

A. J. W.

Division of Photogrammetry

Review Report of

Shoreline Map Manuscript T-8097

Subject numbers not used in this report have been adequately covered in other parts of the descriptive report.

26. Control

The names of the horizontal control stations located within the limits of the map manuscript have been listed on the attached form M-2388-12. Stations added to the map manuscript have been underlined in red on this form.

All temporary, unmarked U.S.G.S. traverse stations were removed from the map manuscript.

28. Delineating

triangulation

The ~~relocations~~ of the east and west transmission towers ~~of~~ moved the power line crossing the James River ~~about~~ approximately 0.4 millimeters north-east of ~~its~~ original ~~combined~~ positions.

35. Hydrographic Control

A list of the hydrographic stations on T-8097 was added to the descriptive report and, with the exception of the station numbers, the descriptions were deleted from the map manuscript.

The descriptions of two recoverable topographic stations were deleted from the map manuscript. They were the East and West transmission towers which are now triangulation stations. The form 524 cards for these two towers have been removed from the files.

43. Comparison with Previous Surveys

T-391	1:5,000	1853
T-392	1:5,000	1853
T-428	1:10,000	1853
T-1493 b	1:10,000	1879
H-3241	1:10,000	1911) Topographic combined
H-3241 a	1:10,000	1911) with Hydrographic

Common features in common areas on these surveys are superseded by the map manuscript.

44. Comparison with Existing Topographic Quadrangles

Drewrys Bluff, Va., U.S.G.S., 1:31,680, 1938

Drewrys Bluff, Va., U.S.E., 1:25,000, 1938 (copy of U.S.G.S. quadrangle)

45. Comparison with Nautical Charts

Chart No. 531, 1:20,000, 10/27/47

51. Application to Nautical Charts

This map-manuscript has been partially applied to chart 531X
prior to review.

Reviewed by:

K. N. Maki

K. N. Maki
5 October 1948

Under direction of:

S. V. Griffin

Chief, Review Section

Approved by:

B. G. Jones 3/49

Technical Assistant to Chief
Div. of Photogrammetry

H. C. Edmonston

Chief, Nautical Chart Branch
Division of Charts

K. T. Adams

Chief, Div. of Photogrammetry

C. K. Green

Chief, Div. of Coastal Surveys