

8352

Diag'd. on diag. ch. No. 78-3

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Topographic
Quadrangle

~~Field No.~~ Litwalton Office No. T-8352

LOCALITY

State Virginia

General locality Richmond County

Locality Litwalton

194 5

CHIEF OF PARTY

K. T. Adams and R. W. Knox

LIBRARY & ARCHIVES

DATE Sept 22 - 1947

B-1870-1 (1)

8352

STATEMENT TO ACCOMPANY DESCRIPTIVE REPORT T-8352

7/47

1. This summary of survey methods used and the method of handling T-8352 and adjoining quadrangles is provided for the convenience of those processing and using the map in the future.

2. The several mapping operations were:

- (a) Single-lens aerial photography and laboratory processing.
- (b) Field surveys for identification of shoreline, clarification of photographic details, and establishment and identification of horizontal control.
- (c) Compilation of planimetry and contours ^{by multiplier} on 1:10,000 scale sheets later processed to a 1:20,000 scale manuscript on metal-mounted paper. Some contouring in flat areas done by planetable.
- (d) Preliminary office review of the compiled manuscript.
- (e) Field edit and accuracy tests.
- (f) Final office review of the manuscript to insure completeness and conformance with specifications. This included correction of the manuscript in accordance with the field edit survey.
- (g) Drafting, reproduction, and publication. See paragraph 3.
- (h) Registry in archives. See paragraph 4.

3. T-8352 and the adjoining quadrangles will be smooth drafted, published, and distributed by the Geological Survey in accordance with the agreement of March 25, 1947.

4. The following data for T-8352 may be needed from time to time either in the U. S. Geological Survey or the Coast and Geodetic Survey. They are filed and may be obtained as follows:

- (a) The 1:20,000 scale manuscript corrected after field edit. - The manuscript is being forwarded to the Geological Survey at this time for smooth drafting. It

will be eventually returned to the Coast and Geodetic Survey and will be filed in the Division of Photogrammetry. Meanwhile, it may be obtained from the Geological Survey if needed for nautical chart correction or other purposes.

- (b) Field edit sheet. - The field edit sheet is filed in the Division of Photogrammetry. It will be loaned to the Geological Survey or other divisions of the Coast Survey upon request.
- (c) Descriptive report. - The descriptive report together with a 1:20,000 scale photographic print of the manuscript (a above) is being registered in the Coast and Geodetic Survey archives at this time. When T-8352 is published, a cloth-backed colored print will also be registered. The descriptive report will be withdrawn from the archives and loaned to the Geological Survey upon request.

B. G. Jones

B. G. Jones
Technical Assistant to the
Chief, Div. of Photogrammetry

DATA RECORD

T-8352

Quadrangle (II): Litwalton, Va.

Project No. (II): 289-X-1

Field Office:

Chief of Party:

Compilation Office:

Chief of Party:

Washington Photogrammetric Office

Comdr. K. T. Adams

Instructions dated (II III):

Copy filed in Descriptive
Report No. T- (VI)

Completed survey received in office: ✓ 4/20/44

Reported to Nautical Chart Section: ✓ -

Reviewed: March 1946

Applied to chart No. 535

Date: 2/1/46

Redrafting Completed: ✓

Registered: 7/47

Published:

Compilation Scale: 1:10,000

Published Scale:

Scale Factor (III): 1.000

Geographic Datum (III): N.A. 1927

Datum Plane (III): Mean Sea Level

Reference Station (III): Washington-Norfolk Airway Beacon No. 6, 1942 (d)

Lat.: 37°45'15.116"

Long.: 76°34'20.030"

Adjusted
~~Unadjusted~~

State Plane Coordinates (VI): Va. So.

X = 2,557,319.50 ft.

Y = 523,011.43 ft.

Military Grid Zone (VI)

PHOTOGRAPHS (III)

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Scale</u>	<u>Stage of Tide</u>
C-44-436 to 442	1/7/44	12:06	1:24,000	M.L.W.
451 to 459	"	12:09	"	"
466 to 474	"	12:09	"	"
485 to 493	"	12:09	"	"
721 to 724	2/8/44	13:15	"	"
731 to 732	"	13:35	"	"

Tide from (III): Tide Tables, Atlantic Ocean, 1944. Reference Station Hampton Rds., Va. with corrections to Orchard Pt., Va.

Mean Range: 1.4 ft. Spring Range: 1.7 ft.

Camera: (Kind or source) U.S.C. & G.S. Camera "C" - 6" Metrogon wide angle lens. All negatives on file in Washington Office.

Field Inspection by: R.E. Houtrouw (Schuppe) date: Mar.-Apr. 1944

Field Edit by: A. LaFave & H.R. Cravat date: ~~Jan. 1946~~
Nov 19 - Dec 31, 1945

Date of Mean High-Water Line Location (III):

Photographs taken January 7, 1944 and February 8, 1944, supplemented by field data obtained in March-April 1944 which is on 9-lens 1:20,000 photographs.

Projection and Grids ruled by (III) J.T., B.R.C. & S. Rose date: Sept.-Oct. 1944

" " " checked by: S. W. Trow date: Oct. 1944

Control plotted by: Henningsen & LaFave date: Oct. 1944

Control checked by: K. Maki, C. Hanavich, & S. W. Trow date: Oct. 1944

Radial Plot by: Steel Templates (G. Willey's Section) date: Nov. 1944

Detailed by: Multiplex by S. W. Trow & J. P. Webb date: Sept. 1944 to July 1945

Reviewed in compilation office by: H.R. Brooks date: Nov. 1945

Elevations on Field Edit Sheet checked by: M. G. Misulia

date: March 1946

STATISTICS (III)

Land Area (Sq. Statute Miles): 54.3

Shoreline (More than 200 meters to opposite shore): 9.8 miles

~~Shoreline (Less than 200 meters to opposite shore):~~

Number of Recoverable Topographic Stations established: None

Number of Temporary Hydrographic Stations located by radial plot: None 6

Leveling (to control contours) - miles: 81 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:

Field Inspection Report

T-8352

The field inspection report for this quadrangle is included in the descriptive report for T-8353.

Compilation Report

T-8352

This 7½-minute quadrangle was mapped by means of the multiplex equipment in conjunction with a radial line plot used for control purposes. The work was performed along with quadrangles T-8343, T-8344, T-8353, and parts of T-8342 and T-8345. A detailed discussion of the methods and procedures is contained in the descriptive report for T-8353, to which the reader is referred.

For field inspection report, see descriptive report T-8353.

26. Control.

The following horizontal control stations lie within the limits of the quadrangle:

1. Third-order traverse stations 7F, 7G, and 7H of Emmerton, 1942, to Downings, 1942, traverse run in 1944.
2. Downings, 1942.
3. Second-order triangulation Washington-Norfolk Airway Beacon No. 6, 1942.

Other horizontal control in adjacent areas was also utilized and held as described in the report for T-8353.

Vertical control was run by means of fly levels to determine the elevations of stations designated by this compilation office to facilitate the multiplex work. There were about 81 statute miles of levels run in this quadrangle. All the vertical control was utilized to advantage.

27. Radial Plot.

The radial plot was made at the scale of 1:15,840 and the pass points were transferred by projector onto the multiplex sheets at 1:10,000 scale. The plot is more fully described in the descriptive report for T-8353.

The horizontal control distribution was somewhat weak in this particular quadrangle, but it is felt that it was good enough so as to have no serious effect upon the map accuracy. The control was scattered around the sides of the quadrangle but there was little in the south-western portion. The results of the radial plot and the agreement of the separate multiplex sheets appeared to have overcome the difficulty. The control identification was very good.

The distribution and identification of vertical control was adequate in every respect.

The photography was adequate but not ideal. See the remarks in T-8353.

No difficulty was encountered in the closure and adjustment of the radial plot or the multiplex work.

There were no areas in which the accuracy is questionable.

28. Detailing.

Detailing was done entirely with multiplex. In addition, all areas were inspected after the completion of multiplex work by means of a mirror stereoscope which exaggerated the effect of relief for the purpose of detecting discrepancies, especially with respect to the omission or errors in drainages. The field inspection photographs (1:10,000 scale along shore) were placed under the multiplex manuscript (1:10,000 scale) for the comparison of detail and the addition of field inspection data. The field inspection photographs were adequate.

29. No Supplemental Data were employed.

30. Mean High Water Line.

The mean high water line was shown with a heavy solid line in the position indicated by the field inspection.

31. Shoal Line.

The outer limit of shallow water or shoal line was indicated by a dashed line offshore where the bottom appeared to be of sufficient depth to be visible on the photographs, usually 20 to 30 feet.

32. Offshore Details.

No offshore details appear which require mentioning.

33. Wharves and Shoreline Structures.

Wharves and shoreline structures were delineated where the field inspection or the photographs indicated.

34. Landmarks and Aids to Navigation.

Only one landmark appeared, namely, the triangulation station Washington-Norfolk Airway Beacon No. 6, 1942. There were no aids to navigation which appear in this quadrangle.

35. Hydrographic Stations.

Six hydrographic stations were identified during the field inspection and their positions were determined by means of the multiplex and radial intersection, namely:

Stack, 1943
Chy. E. Gable, 1943
N. W. Gable, 1943
S. Gable, 1943
E. Chy., 1943
Chy. S. Gable, 1943

*There are on the
manuscript but will
not be shown on the
published map. egg*

Form 524 has been submitted for each of these stations.

36. Landing Fields.

One emergency landing field appears near the south border adjacent to the triangulation station Washington-Norfolk Airway Beacon No. 6, 1942.

44. Comparison with Existing Topographic Quadrangles.

Comparison with the existing U. S. G. S. topographic quadrangle Morattico, 1:62,500, 1918, showed a swamp near Lat. $37^{\circ}50'$, Long. $76^{\circ}37'$ which the compilation office is unable to verify. The area is shown as it appears, namely, the usual broken drainage system. The remainder of the area shows no discrepancies which may not be due to the scale difference or the difference in date.

45. Comparison with Nautical Charts

Comparison with nautical chart No. 535, 1:40,000, 1932, showed no discrepancies.

Submitted by:

A handwritten signature in cursive script, appearing to read "G. C. Tewinkel".

G. C. Tewinkel
November 6, 1945

FIELD EDIT REPORT

T-8352, Litwalton Quadrangle (3745.0/7630/7.5)

Project CS 289-X

Harland R. Cravat, Chief of Party

The field edit survey was made by Mr. Azriel LaFave, Photogrammetric Engineer, from November 19, to December 31, 1945. During this time vertical accuracy tests were also made (see item 48).

46. Methods.

Roads, buildings, contours, drainage, and woodland cover were checked by riding over every passable road or traversing woods roads on foot. Elevations were checked by hand level or plane table methods. Geographic names were checked with posted signs or by consulting local residents. Road numbers were checked with sign posts and county maps prepared by the Virginia State Highway. Political boundaries were checked with local residents in the immediate vicinity of the county lines.

All results of the field edit are shown on the field edit sheet with the exception of some contouring along the northern boundary of the quadrangle.

Information obtained during the field edit survey and supplementing the 1944 Field Inspection Report for Project CS 289-X follows.

5. Vertical Control.

The U.S.G.S. Bench Mark 126, 1316, was reset November 30, 1945 to a new position on the north side of highway #608. It is shown by a prick point and labeled on the back of photo 439, 1/24,000. Further description of this bench mark has been submitted to the Director on form 638.

6. Contours and Drainage. (See also Accuracy Tests, Test #3)

All contours visible from the roads and in all cleared areas were examined. Whenever a discrepancy appeared between a contour and the existing land forms or elevations, the contours were checked by hand level or plane table. In general, the contours were not checked in wooded areas not traversed by woods roads.

Two 120' contours were deleted; however, the elevation of the ground within the contours was mostly above 115 feet and with the tall weed growth, it could have appeared above 120 feet in a stereoscopic instrument.

An area of about 1½ square miles along the north boundary of the quadrangle was contoured in the field. The area was covered mostly with heavy woods and a dense undergrowth. The work appears partially on the field edit sheet and the remainder on photo #451, 1/10,000 scale.

In the vicinity of Lat. 37 49½' and Long. 76 36½', a contour was indicated as being indefinite in position. The portion of the contour visible from the road was checked. The portion extending into the woods was not checked as the field edit party was refused admittance to this property.

9. Wharves and Shoreline Structures.

A small building in poor condition was added on the eastern shore of Lancaster Creek in the vicinity of Lat. 37 48½' and Long. 76 36½'. This building could be added as a landmark on the nautical chart, but should not be shown on the quadrangle.

11. Landmarks and Aids to Navigation.

The Washington to Norfolk Airway Beacon #6 is about 60' high rather than 75' as reported on the form #567 in the 1944 Field Inspection Report.

13. Landing Fields and Aeronautical Aids.

There is an emergency landing field at the Washington to Norfolk Airway Beacon #6. This field has a North-South and an East-West Runway. The field is about three miles southwest of the village of Lively and is on the east bank of the Rappahannock River.

14. Road Classification.

A few roads were changed from "4" to "3" in order to comply with the general instructions dated June 30, 1945. A few roads were deleted, which did not come up to the lowest road classification contained in the above mentioned instructions. A few roads, somewhat under the minimum specifications, were left on solely because they provided the only means of entry into isolated cultivated fields.

15. Bridges.

Bridges have been indicated either by word or symbol over sizable streams.

16. Buildings and Structures.

In regard to buildings, the field inspection was very carefully done and good judgement was exercised in designating which buildings were to be added or deleted. Several buildings were left off during the compilation. The general area where they should be has been encircled on the field edit sheet and the photograph number added, showing on which photograph they appear.

17. Boundary Monuments and Lines.

In the vicinity of lat. $37^{\circ} 50\frac{1}{2}'$ and Long. $76^{\circ} 30\frac{1}{2}'$, the county line between Richmond and Lancaster Counties is in the most southerly of two draws near the road and comes out to the road at a very prominent pine tree.

There are no discrepancies in political boundaries in this quadrangle.

18. Geographic Names.

In reference to the Morattico Quadrangle of the U.S.G.S. on which the geographic names are listed, the field edit party would recommend the deletion of "Edge Hill". It was originally the name of an old colonial home but the building is now partially in ruins and is used as a barn.

Many old homes, both well kept and abandoned, have descriptive or family names and to add one name and not others would be inconsistent practice. A reason for leaving it on would be that for a few years, it will mean a locality to the neighboring residents.

47. Adequacy of the Compilation.

The compilation seemed to be very satisfactory and except for a few buildings omitted, was complete in every detail. In the vicinity of Blakemore Pond where some drainage was changed, it was apparent to the field edit party that on the photograph, the pond outlet was not conspicuous.

48. Accuracy Tests (Vertical)

Three vertical accuracy checks were made on the quadrangle by planetable traverse methods. A brief discussion of each follows:

TEST #1

It is located in the vicinity of lat. $37^{\circ} 48\frac{1}{2}'$ and Long. $76^{\circ} 32'$. The test began at "A" and ended at "B", a total length of 1.02 miles. One-third of the points tested were in open country, the remainder being in a wooded area.

24 points tested
21 points in error less than 10 feet
1 point in error from 10 to 20 feet
2 points in error over 20 feet.
88% of points tested in error less than $\frac{1}{2}$ contour interval.

TEST #2

It is located in the vicinity of Lat. 37 35 $\frac{1}{2}$ ' and Long. 76 32'. The test began at "C" and ended at "D", a total length of 1.98 miles. Nearly all points tested are along a road or in open fields.

25 points tested
23 points in error less than 10 feet
1 point in error from 10 to 20 feet
1 point in error over 20 feet
92% of points tested in error less than $\frac{1}{2}$ contour interval.

Horizontal Closure 0.25mm; Vertical Closure 0.6'

TEST #3

It is located in the vicinity of Lat. 37 50 $\frac{1}{2}$ ' and Long. 76 36 $\frac{1}{2}$ '. The test began at "E" and ended at "F", a total length of 0.74 miles. All points used in this test were in the open fields.

10 points tested
All points in error less than 10 feet.

Horizontal Closure 0.30mm; Vertical Closure 1.1'

It was originally intended to go on to "G" with the accuracy test but the field edit party did not make a horizontal closure there sufficiently accurate to be considered as a test but was accurate enough to correct the contours. It will be noticed that a large draw was omitted. It would appear to the field edit party that the reason was because of the heavy growth of pine trees in this draw. The tops of the trees in the draw were as high as those on the adjacent ridges.

RESULTS OF THE THREE VERTICAL ACCURACY TESTS

59 points tested
54 points in error less than 10 feet.
2 points in error from 10 to 20 feet.
3 points in error over 20 feet.
91% of points tested in error less than $\frac{1}{2}$ contour interval.

In arriving at the above results, the apparent vertical error has not been decreased by assuming a horizontal displacement within the permissible horizontal error for map scale. Had this been done, there would be no points in error over a full contour interval.

Horizontal Accuracy Tests.

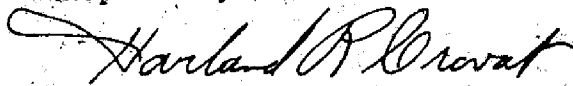
There were no horizontal accuracy tests in this quadrangle.

49. Review of First Proof.

Mr. John G. Pollard Jr. of Somers, Va. has consented to review one of the first proofs of this quadrangle.

Mr. Pollard is a son of the former Governor Follard of Virginia. He appears to be well informed in cartography and familiar with this quadrangle.

Respectfully Submitted Jan. 14, 1946



Harland R. Cravat
Photogrammetric Engineer

Division of Photogrammetry

Review Report of

Topographic Survey T-8352

26. Control.

Horizontal

The horizontal control on manuscript T-8352 consists of U. S. Coast and Geodetic Survey triangulation stations and third-order traverse stations. Unmarked traverse points shown by a triangulation symbol on the manuscript served only as substitute stations and are not to be shown on the final drawing.

The following horizontal control stations were plotted during the office inspection and review of the manuscript.

3 traverse stations

7F, 1944

7G, 1944

7H, 1944

Adjusted positions and descriptions for the USC&GS, 1944, third order traverse was not available when T8352 was prepared for publication. Positions and Descriptions are now available in the Div. of Geodesy Jan. 3, 1949

1 triangulation station

Downings, 1942

Vertical

The U. S. G. S. Bench Mark 126, 1916 was reset 30 November 1945 to a new position on the north side of State Hwy. No. 608. The new position has been plotted on the manuscript from field edit data.

28. Detailing.

All planimetric and topographic details shown on manuscript T-8352 were corrected where necessary in accordance with the nine and single lens U.S.C. & G.S. photographs, taken November 1942 and February 1944 respectively, the field inspection data of 1943 and 1944, and the field edit of 1945.

The assembled quadrangle is a sepia print, on metal mounted paper. The reviewer's corrections were made in black ink on this print.

44. Comparison with Existing Topographic Surveys.

In general, common features were found to be in fair agreement with the following topographic surveys:

No.	Scale	Date
520	1:10,000	1855
602	1:10,000	1856
3003	1:10,000	1909-10

The manuscript supersedes the above-mentioned surveys and was applied to chart 535 in January 1946, prior to verification and review.

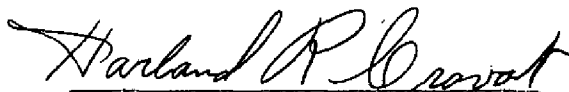
Junctions.

The U.S.C. & G.S. quadrangles Morattico and Lottsbury, published in 1944 junction satisfactorily with the map manuscript T-8352 except for recent changes in cultural features and a few contour discrepancies. It is felt that the new map manuscript supersedes the quadrangles published in 1944.

Accuracy.

This map complies with the National Map Accuracy Requirements.

Reviewed by:



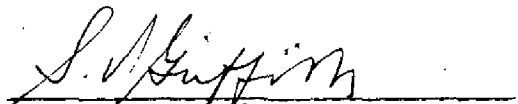
Harland R. Cravat
Photogrammetrist

and



Michael G. Misulia
Photogrammetrist

Reviewed under direction of:


S. V. Griffith
Chief, Review Section

APPROVED BY:

B.G. Jones 7/47.
Technical Assistant to the
Chief, Div. of Photogrammetry

J E Pettibone
Chief, Nautical Chart Br.
Division of Charts

E.S. Jones 11 Sept 47
Acting Chief, Div. of Photogrammetry

C.K. Green
Chief, Div. of Coastal Surveys

GEOGRAPHIC NAMES

Survey No. T-8352

Litwalton quadrangle

1 Name on Survey

	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List	
A	B	C	D	E	F	G	H	K	
<u>Virginia</u>									1
<u>Rappahannock River</u>									2
<u>Richmond County</u>									3
<u>Warrham District</u>									4
<u>Langcaster County</u>									5
<u>Mentue District</u>									6
<u>White Chapel District</u>									7
<u>Northumberland County</u>									8
<u>Heathsville District</u>									9
<u>State Nos. 3, 201, 354</u>									10
									11
									12
<u>Griffins Landing</u>									13
<u>Little Branch</u>									14
<u>Bethel Church</u>									15
<u>Blakemore Mill</u>									16
<u>Lively</u>									17
<u>Lively School</u>									18
<u>Baulah Church</u>									19
<u>Nuttsville</u>									20
<u>Nuttsville School</u>									21
<u>Pierces Corner</u>									22
<u>Somers</u>									23
<u>Deep Creek</u>									24
<u>Boer</u>									25
<u>Boer Road</u>									26
<u>Belle Isle</u>									27
<u>Mulberry Creek</u>									(not Mud Creek: is a 1940 USBCN decision)
<u>Colbert Point</u>									27

GEOGRAPHIC NAMES

Survey No. T-8352

2	Name on Survey	A	B	C	D	E	F	G	H	K	
	<u>Morattico</u>										1
	<u>Morattico Road</u>										2
	<u>Norwood Church</u> <u>Lancaster Creek</u>										3
	<u>Litwalton</u>										4
	<u>Balls Millpond</u>										5
	<u>Balls Branch</u>										6
	<u>Alfonso</u>										7
	<u>Chinns Pond</u>										8
	<u>Back Road</u>										9
	<u>Fairplay</u>										10
	<u>Simonson Road</u>)								11
	<u>Brewer Oakley Road</u>)								12
	<u>Downings</u>										13
	<u>Downings School</u> ?										14
	<u>Mt. Zion Baptist Church and Cemetery</u>										15
	<u>Farnham Baptist Church and Cemetery</u>										16
	<u>Union Mill Swamp</u>										17
	<u>Leton Swamp</u>										18
	<u>Farnham Creek</u>										19
	<u>Robley</u>										20
	<u>Maon Corner</u>										21
	<u>Howell Church and Cemetery</u>										22
	<u>Lera</u>										23
	<u>Washington-Norfolk Airway Beacon No. 6</u>										24
											25
											26
											27

Names underlined in red approved
by L. Heck on 5/15/97

M 234

Names underlined in red approved
by L. Heck on 5/15/47

NAUTICAL CHARTS BRANCH

SURVEY NO. T-8352

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.

Department of Commerce
U. S. Coast and Geodetic Survey

Refer to No. 73

LETTER TRANSMITTING RECORDS

Washington, D. C.
24 July 1947

TO: The Director
U. S. Geological Survey
Washington, D. C.

Attention: Mr. R. L. Moravetz
Chief, Cartography and Editing Section

Records of topographic mapping as listed below were forwarded to you by messenger on 24 July 1947 for reproduction. Please receipt the original and return it to the Chief, Division of Photogrammetry of this Bureau, and retain the duplicate for your files. The items marked * should be eventually returned to this Bureau for our permanent files.

78352
Littletton, Va. 7^{1/2}-minute quadrangle for smooth drafting and publication.

*1 manuscript (1:20,000 scale photographic print on metal-mounted paper processed from 1:10,000 scale multiplex sheets)

1 overlay

1 glass negative

→ 1 sheet showing projection measurements on manuscript

*7 original multiplex sheets, Nos. 12 to 15 & 17

Note: The descriptive report for this drawing will be forwarded on request. See the attached memorandum.

Received the above:

Date

Chief, Division of Photogrammetry

Number

9

U. S. Geological Survey