

# 8613

Original

Diag'd on Diag. Ch. 78-3

Form 804

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

## DESCRIPTIVE REPORT

Type of Survey Topographic

Field No. T-8613 Office No. \_\_\_\_\_

### LOCALITY

State Virginia

General locality Mattaponi River

Locality Aylett, Virginia

194 6

CHIEF OF PARTY

Commander K. T. Adams

LIBRARY & ARCHIVES

DATE

June 21 - 1948

B-1870-1 (1)

# 8613

## DATA RECORD

T- 8613

Quadrangle (II): Aylett

Project No. (II): 318

Field Office: Washington, D.C. Chief of Party: Comdr. K. T. Adams

Compilation Office: Wash., D.C. Chief of Party: Comdr. K. T. Adams

Instructions dated (II III):

10 Mar., 17 Apr., 2 June,  
13 Aug., 1945Copy filed in Descriptive  
Report No. T-----~~(VI)~~--  
Photogrammetric Files,  
Wash., D.C., CS-318  
"Instructions"

Completed survey received in office:

2 October 1946

Reported to Nautical Chart Section: Oct. 1946

Reviewed: April 1948 Applied to chart No.

Date:

Redrafting Completed:

Registered	Final	_____	Published:

Compilation Scale: 1:20,000

Published Scale: 1:24,000

Scale Factor (III): Unity

Geographic Datum (III): N.A. 1927

Datum Plane (III): MSL

Reference Station (III): St Stevens 1934

Lat.: 37° 48' 06.025

Long.: 77° 03' 19.476

Adjusted  
~~Unadjusted~~State Plane Coordinates (VI): VIRGINIA STATE COORDINATES  
NORTH ZONE.

X = 2,417,410.51

Y = 52,448.42

Military Grid Zone (VI)

PHOTOGRAPHS (III)

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Scale</u>	<u>Stage of Tide</u>
45-0				
1928-1946)		11:10		
1982-1999)	23 Mar.	to	1:20,000	(Negligible)
2032-2040)	1945	12:15		
AMS# 490	1/27/47		1:24 000	

Tide from (III): (Negligible)

Mean Range: ---- Spring Range: ----

Camera: (Kind or source) Camera "C", U. S. C. & G. S.

Field Inspection by: H. R. Cravat date: 7 Sept. 1945

Field Edit by: R. A. HORN date: Nov- Jan, 1946-7  
I. Y. FITZGERALD date: April- May, 1947

Date of Mean High-Water Line Location (III): 15 to 30 Aug., 1945

Projection and Grids ruled by (III) Stephen Rose date: April 1945

" " " checked by: ----- date:

Control plotted by: Staff date: May 1945

Control checked by: S. W. Trow date: May 1945  
(multiplex sheets)

Radial Plot by: G.B. Willey, S. W. Trow, date: May 1945  
K. N. Maki

Detailed by: Multiplex (J.P. Webb, A.H. date: March 1946  
Faulds)

Reviewed in compilation office by: unknown date:

FINAL REVIEW BY H.R. CRAVAT

Elevations on <sup>Manuscript</sup> Field Edit Sheet

checked by: ✓ H.R. CRAVAT date: April, 1948

STATISTICS (III)

Land Area (Sq. Statute Miles): 59

Shoreline (More than 200 meters to opposite shore): None

Shoreline (Less than 200 meters to opposite shore): 8

(Tidewater extends only to town of Aylett)

Number of Recoverable Topographic Stations established: None

Number of Temporary Hydrographic Stations located by radial plot: None

Leveling (to control contours) - miles:	Third Order	-	26
	Fourth Order	-	<u>101</u>
	Total		127

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: 1947, Mean magnetic Declination = 6° 15' W

Statement to Accompany Descriptive Report T-8613

1. This summary of survey methods used and the method of handling T-8613 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 the establishment and identification of horizontal and vertical control.
  - (c) Compilation of planimetry and contours by multiplex on 1:8500 scale manuscripts and the assembly of the multiplex manuscripts into a 1:20,000 scale manuscript.
  - (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 1:20,000 scale manuscript in accordance with the field edit survey.
3. T-8613 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-8613 has been filed as follows:
  - (a) Filed in the Division of Photogrammetry
    - (1) 1:20,000 scale manuscript, field edit and final review corrections applied.
    - (2) Original 1:8500 scale multiplex manuscript not corrected after field edit.
    - (3) Field edit Sheet T-8613.
  - (b) Filed in the Coast and Geodetic Survey Archives.
    - (1) The descriptive report, with a 1:20,000 scale cloth mounted photographic print of the map manuscript is being permanently registered. When T-8613 is published, a 1:24,000 cloth backed copy of the published map will also be registered.

*Harland R. Cravat*

Harland R. Cravat  
Cartographer, Photogrammetrist  
April 12, 1948

# FIELD INSPECTION REPORT

TO ACCOMPANY

QUADRANGLE T 8613

PROJECT CS-318

VIRGINIA

Harland R. Cravat, Chief of Party

## 1. Description of the Area.

Quadrangle T 8613 is a seven and a half minute quadrangle located near the head of tide water in the Mattaponi River drainage area, and about midway, via U. S. Highway 360 between Richmond and Tappahannock, Virginia.

For the most part the land is characterized by deep, sharp drains and long narrow ridges with the elevations ranging from mean sea level to well above 180 feet above mean sea level.

A particularly interesting feature found in the area is the large number of old grist mills and mill ponds; they are most picturesque and are reminiscent of the days now past. The majority of them are still operating, as the adequate water supply enables them to compete commercially with the more modern methods.

Over half the area is covered by stands of pine, hardwoods, and mixed species. Pine is cut for pulp, lumber and wood. There are extensive oak cuttings for barrel staves, ties, and fence posts. The remainder of the land is given to agricultural activities.

There are no thickly populated areas but a good network of roads, and in many sections sufficient electric power and telephone facilities give the local population conveniences comparable to a more urban area.

## 2. Completeness of Field Inspection.

Field inspection was done in conjunction with 4th order leveling by Mr. Alfred R. Knaack, Engineering Aid. It is felt the inspection is neither adequate nor complete, and as an aid to the field edit party the phases of the field inspection are broken down under two headings, "Adequate and Inadequate". It was felt the items mentioned under inadequate could be completed efficiently and economically at the time of field edit.

## "Adequate"

### Woods

Classified as per the Director's Instructions dated 30 June 1945.

### Roads

Classified as per the Director's Instructions dated 30 June 1945. Also all road numbers have been included.

*All roads reclassified in May, 1947. (classified in accordance with photogrammetry instructions #10)*

### Bridges

Bridges were classified as per Military specifications for the War Mapping Project. There were no bridges over navigable waters. *All Military Bridge classifications were removed from the manuscript during FINAL REVIEW.*

### Obscure buildings

Obscure buildings were circled in red ink.

### Public buildings

Public buildings were circled in red ink and the name of the building inked on the photo.

### Boundaries

Boundaries were drawn on the photos with red ink, in the field.

Other photographic detail as barrow pits and sawdust piles which might not be obvious to the compiler have been noted on the photographs.

## "Inadequate"

### Telephone lines

None were located

### Power lines

None were located

Out buildings and buildings past their useful life have not been deleted.

### 3. Interpretation of the Photographs.

Open lands appear on the photos from a smooth white tone to a smooth grey tone. Forested areas appear from a light mottled grey tone to a mottled black tone.

Pure stands of pine are mottled black. Pure stands of hardwoods are mottled grey. Mixed stands are a combination of the two above tones. Recently logged areas may be distinguished by white thread like fissures interwoven in the mottled grey or black tones.

Deciduous timber is found chiefly in low areas, in flat draws, and flat bottom lands. In many instances the swampy land can be delineated by the presence of deciduous timber. Generally the pine is found on the higher ground.

#### 4. Horizontal Control.

All previously established horizontal control stations established by this bureau were ~~located by "FIPs"~~ <sup>identified by the substitute station method</sup>. This work was done by Mr. Harland R. Cravat during the month of March 1945. The existing U. S. Geological Survey Primary Traverse Stations were not pricked for horizontal control. They were identified on the photographs as bench marks and their geographic plotting to be withheld for the purpose of a horizontal accuracy test.

To the north of the quadrangle seven linear miles of open ended, third order traverse was started under the supervision of Lieut. Dale E. Sturmer, U.S.C. & G.S. on April 23, 1946, and completed on June 5, 1945 by Mr. Harland R. Cravat. No stations were monumented.

Angle measurements were made with a 7 inch White Theodolite. Six D and R angles were measured at each hub with a horizon closure less than 6 seconds. The shorter hubs were reobserved with 3 D, and R measurements. The horizontal distances were measured with a standardized invar tape, and wye levels run over the taping. Check measurements were made by both the steel tape, and stadia. Polaris observations for azimuth were made at the mid and terminal points of the traverse. All work in connection with the traverse was done with extreme caution and carefulness, because of the large number of short sights encountered on the narrow woods roads.

The field party computed the traverse and the azimuths at the mid-point checked the observed polaris observation within a few seconds, while the terminal point, showed a difference of 50 seconds, between the observed polaris and traverse azimuth. The azimuth however was well within the limits of third order accuracy. It is felt the geodetic positions as furnished by the field party is within the requirements either with or without an azimuth adjustment.

Ten picture points were pricked on photographs 342, 350, and 414; their identification was positive.

All horizontal control was pricked on single lens photographs of January 1945.

#### 5. Vertical Control.

Twenty six miles of third order leveling was started on March 23, 1945 by Mr. Alfred R. Knaack, Engineering Aid, and completed the latter part of May. The methods used and character of marks are those as prescribed in Special Publication No. 140.



Vertical control was pricked and recovered at the time of 4th order leveling which was started on June 2, 1945, by Mr. Richard H. Mac Ewan, Engineering Aid, and completed on August 31, 1945, by Messrs. Knaack and La Fave.

101 miles of 4th order levels were completed. The elevations were carried by trigonometric methods, using a 7 inch Berger Theodolite, fitted with stadia hairs, and Simmons-Adams Leveling rods. Elevation computations were made to the nearest 1/10 of a foot. Trigonometric loops over one mile in length were closed on either a previously determined elevation or an existing bench mark. Short spur lines less than one mile in length were run either open ended or double rodded. (Double rodded is where a foot scale was read on the front and a meter scale was read on the back of the rod. At the terminal point the spread between the feet and meter values were computed. If the spread exceeded one foot the spur was rerun).

All loops were closed within the specifications as designated in the Acting Director's letter of June 2, 1945, Amendment to Supplemental Instructions - Fly levels, Project CS-318, dated 17 April 1945.

Level information appears on the photographs in blue ink. All points were pricked, and the necessary information written on the backs of the photographs, near their respective points.

The code letters AY prefix all 4th order points, and the following system was used to segregate the closed elevations from unclosed elevations.

Elevations circled indicate the loop was not closed on a known point of elevation.

Elevations underscored by a full line indicate the loop was closed on an existing mark or previously determined elevation.

Elevations underscored by a dashed line indicate the point in question is a spur double rodded line.

All new and old Coast & Geodetic Survey bench marks recovered in good condition were pricked on the photos. All permanently marked U. S. G. S. marks were pricked and recovered with the exception of U. S. G. S. B. M. 192, 1917 whose proximity was too near St. Stephens Triangulation Station to show and B.M. 118, 1917 which was not recovered. It is recommended the field edit party make a search for the latter mark.

Several bench marks were recovered and pricked outside the quad. limits as they were needed for control for the 4th order leveling. The following are the BM's which were pricked:

U. S. Geological Survey Bench Marks  
175, 1916  
PTS No. 33  
PTS No. 43  
156, 1916

U. S. Coast & Geodetic Survey BM's  
X 293, 1945  
Z 293, 1945  
A 294, 1945 to and including Q 294, 1945  
(There are no I & O)  
H 88, 1935 reset  
J 88, 1935

#### 6. Contours and Drainage.

No contouring was done at time of field inspection and very little drainage clarification and classification. The swamp areas along the Mattaponi have been delineated at the time of shoreline inspection.

While leveling all culverts were marked in red ink. The letters CV were used and the symbol (X) indicating the crossing.

No other inspection was done as it was felt the work could be done with far less overlapping if done by the field edit party.

#### 7. Mean High Water.

The Mattaponi River is affected by tidal waters up to the village of Aylett's, Virginia, of which only a small portion of this quadrangle is affected. Some years ago the river was dredged to Aylett's placing most of it in steep well defined banks, which make the mean high-water line and low water line synonymous as far as detailing is concerned.

The mean high water line has been indicated by a red dashed line at intervals where the shoreline is indistinct.

A portion of the area is in a marsh grass, and swamp area. The inshore boundaries of these details were indicated by dashed blue lines and labeled with appropriate field notes, directly on the photographs.

Mr. Aziel La Fave, Jr. Photogrammetric Engineer, inspected the shoreline on foot, during the latter part of August 1945.

8. Low Water Line

No attempt was made to locate the low water line. Marsh and grassy tufts which are awash at low water have been indicated on the photographs by field notes.

9. Wharves and Shoreline Structures.

The Mattaponi is used for barge traffic below the village of Ayletts. Much pulp wood is transported by this means, also the waterway is used extensively by small pleasure craft.

There are no large wharves or shoreline structures in the area, however, there are many small docks which are clearly visible on the photographs.

The landings used by the pulp-wood barge traffic are not of a permanent nature. New landings are frequently added as the source of pulp wood supply is shifted.

10. Details Offshore from the High-water Line.

Since the shoreline was inspected on foot it was difficult to obtain the offshore detail. No rocks or wreckage was visible and it is felt there were no such obstructions in the water. Local information also contends there are no such obstructions.

11. Landmarks and Aids to Navigation.

There are no prominent landmarks or aids to navigation within the limits of the quadrangle. The Mattaponi River winds and twists through mostly wooded sections with an occasional clearing breaking the dense woods.

12. Hydrographic Control.

No hydrographic control was established, or any existing control located.

13. Landing Fields and Aeronautical Aids.

There are no landing fields within the limits of the area. The Mattaponi River and main roads as U. S. Highway No. 360 are aids to aeronautical navigation in day time flight. There are no beacons in the area.

14. Road Classification.

~~Roads have been classified according to the Director's instructions dated 30 June 1945. Route numbers have been included.~~

Roads reclassified, May 1947, in accordance with photogrammetry instructions # 10, 4-14-47

15. Bridges.

There are no bridges over navigable waters. Bridges were classified, however, according to War Mapping Instructions. They may be disregarded.

16. Buildings and Structures.

Obscure buildings were circled in red ink. Public buildings were circled in red ink and the name of the building inked on the photograph. Out buildings and buildings past their useful life have not been deleted.

17. Boundary Monuments and Lines.

The county and political boundaries were verified in the field and inked on the photographs by Mr. La Fave.

18. Geographic Names. <sup>214 ✓</sup>

Geographic names are the subject of a special report by Mr. ~~Knaack~~ CRAVAT. (Filed in the Geographic Names Section of the Division of Charts.)

Respectfully submitted,  
Sept. 7, 1945

(Signed) HARLAND R. CRAVAT

Harland R. Cravat  
Photogrammetric Engineer

T-8613

COMPILATION REPORT

Horizontal Control.

The following stations fell within the limits of the sheet:

Stevens  
St. ~~Stephens~~, 1934  
U.S.G.S. PTS 43, 1917 (not used)

The following stations fell outside the limits of the sheet but had considerable effect upon the compilation:

Indian Neck, 1934  
Indian Neck Traverse, 1945  
Vine, 1912  
Rumford, 1941  
Epworth, 1941  
Grove, 1912

Vertical Control

Discussed adequately in the Field Inspection Report.

# RADIAL PLOT REPORT - PROJECT GS-318

Washington Office

December 1945

The sheet layout, photographs, and horizontal control for this plot are shown on the enclosed index. The plot was made for breakdown of horizontal control for multiplex mapping. The multiplex bar now available in this office is limited to six projectors. Therefore, horizontal control is required at both ends of each strip of six photographs. To provide this control entirely by ground methods would have been extremely costly in this area. Therefore, it was decided to establish sufficient control for a rigid slotted templet plot and then to use the points located by the slotted templet plot for horizontal control of the multiplex work.

For a detailed description of the method of radial plotting with slotted steel templates refer to the radial plot for project 289-X4. Filed in the Division of Photogrammetry, General Files

The base sheets used for the slotted templet plot were polyconic projections ruled on dyrite (vinylite). The sheets were laid out so as to provide a separate plotting sheet for each multiplex strip of six photographs. The sheet layout is shown on the enclosed diagram. A large overlap was provided between the separate sheets so as to facilitate the transfer of details between adjoining multiplex strips. For this reason, it was not necessary to include all of the sheets in the slotted templet base. After the slotted templet plot had been completed, pass points were transferred to all overlaps.

After these sheets are detailed on the multiplex, contours and planimetry will be transferred and then inked to the 1:20,000 scale quadrangle manuscripts Nos. T-8609 to T-8613, inclusive.

## Control

The control was adequate for the steel slotted templet method with the possible exception of the east border of T-8613. To aid in adjusting the templates in this area four points located by a controlled nine-lens vinylite-templet photo plot and falling east of T-8613 were plotted on the base sheets and were held by the plot.

Substitute stations were furnished in the field for all occupied U.S.C. & G.S. triangulation stations, and field photographs and pricking cards were furnished for all control in the area.

Points located by nine-lens controlled photo plots were transferred to the base sheets along the east border of T-8610 and T-8611 to aid in the adjustment of this area and to check the junctions of the plots. All of these points did not exactly agree in position, but no difficulty should be encountered at 1:20,000 scale.

#### Photographs

Two sets of 1:20,000 scale photographs were available. The second set being the most complete, 186 of these were ratio printed on positype paper to 1:8,500 scale and were used in making the photo plot. Ten photos from the first set were also ratioed and used to give added control coverage. Photo number 2044 from the second set had excessive tilt and was not used. All photographs used in the plot are shown on the attached index.

#### Accuracy

The only parts of the area photo plotted which are of questionable accuracy fall on the ends of the flights and are all outside the area to be mapped by the multiplex. Because of this known characteristic of the slotted steel templet method, at least two photo centers should fall outside the mapping project on the ends of the flight lines.

Radial plot made under direction of:

G. B. Willey  
G. B. Willey

Report by:

G. B. Willey  
G. B. Willey

Approved by:

L. C. Lande  
L. C. Lande

NOTE:

This method of providing horizontal control for multiplex work was more or less necessary because of the fact that only a short multiplex bar was available and no extensive multiplex bridging was possible. The accuracy of plotting by slotted templets was tested rather exhaustively on project 289X-4 and slotted templet control was used for part of the multiplex work on that project. The test plot and the multiplex use of the slotted templet control both proved very satisfactory.

On this project, 318, the layout of ground control was based on experience with the test plot on project 289X-4. However, examination of the first two strips set up on the multiplex on project 318 indicates that the slotted templet control is not agreeing so close with the multiplex points. There are numerous differences of 1 to 2 millimeters and occasional differences of 2 to 3 and 4 millimeters. This indicates that the slotted templet method may be too loose to be used for multiplex control on standard mapping. We do not yet have sufficient experience to reach a conclusion. It is expected that a long bar for multiplex bridging will be available in Baltimore early in 1946. When this bar is available, multiplex bridging will be accomplished between ground control points and a comparison with the slotted templet work in an endeavor to determine whether we should continue to use slotted templet plots for horizontal control. Facts derived from these proposed tests will be added to this report.

In making further plots of this nature, it is to be noted that on the test plot 289X-4, ratio prints six 13.4 by 13.4 inches were used; whereas, on project 318 the ratio prints used for the slotted templet plot were approximately 20 inches by 20 inches. It remains to be determined whether the larger ratio prints, and considering the longer templet arms, have materially decreased the accuracy of the templet plot.

by G.B. Willey  
Jan., 1946



### Detailing.

The detailing was with a six projector unit of a wide-angle Bausch and Lomb multiplex apparatus at a scale of 1:8,500 on polyconic projections on vinylite in ink. Each sheet comprised one multiplex strip of four to six photographs. The sheets contained the control points, the pass points, and principal points as determined with the radial plot.

The multiplex projectors were oriented relatively as usual. The scale was adjusted so as to fit the radial plot positions in the best over-all manner consistent with the retention of relative orientation.

Discrepancies between the multiplex position and the radial plot position for the same point was frequently 1.0 mm (at 1:8,500). Multiplex positions were considered as correct. In two instances the differences were as great as 3 mm for a series of local points, indicating a possible error in the radial plot caused by one photograph being tilted an unusual amount. Special difficulty was encountered on the eastern side of the sheet due to an attempt to fit positions obtained from a nine-lens radial plot (T-8349) which was made at 1:20,000 and enlarged to 1:8,500, and which was reported to have been a troublesome plot. The difficulties mentioned in the two sentences above were <sup>not</sup> satisfactorily overcome by making repeated independent orientations of adjoining strips. Occasionally an isolated point was in error as much as 3 mm which was usually found to be the result of faulty identification on one or more photographs of the radial plot. It was to be noted that the radial plot principal point seldom coincided with the multiplex position, the discrepancy varying up to 3 mm. This phenomenon is understandable from the geometry of the radial plot and the separate methods of locating the principal point.

The Field Inspection Report mentioned that the inspection was not complete. Discrepancies have been noted and a field edit is to follow.

The method of compiling the 1:8,500 instrument sheets onto the 1:20,000 manuscript was unusual and unsatisfactory. Film positives of 1:20,000 were made from the instrument sheets which showed only skeleton map detail - roads, contours, buildings, and streams. A projection was ruled on vinylite at 1:20,000 for the quadrangle. The film positives were cut on the minute

See Review Report  
Item 27

lines and stuck onto the projection with special ingenious sheets of double-parafin-coated cellophane. The composite was photographed, and a black and white print pulled on vinylite, 1:20,000. This became the manuscript. It was retouched and all field inspection data were added to make it a complete map. The retouching job was time-consuming. It would have taken less time to have traced the film positives onto the projection. The manuscript is now monotone (except for woodland) where it would have been shown in the usual colored inks if it had been traced.

Refer to the Field Inspection Report for mean high-water line, low-water and shoal lines, offshore details, shoreline structures, aids to navigation, and hydrographic control.

The sheet compared satisfactorily with U.S.G.S. Aylett quadrangle, 15-minute, 1:63,360, 1917; and also with the Virginia State Highway Maps, 1 inch per mile, 1939.

The sheet compared satisfactorily with Nautical Chart 504.

*G. C. Tewinkel*

G. C. Tewinkel  
Chief, Stereoscopic Mapping Section  
October 7, 1946

Field Edit Report  
T-8613  
Aylett Virginia Quadrangle  
37 45, 77 00 / 7.5  
Project CS-318

This report is a summary of the Field Edit Reports of Robert A. Horn and I.Y. Fitzgerald.

Mr. Horn started the field edit of T-8613 in November 1946, and after completing about 27 square miles in the southern portion of the quadrangle the work was suspended with recommendations for a portion of the quadrangle to be recontoured by multiplex.

Mr. Fitzgerald completed the field edit during the months of April and May 1947 as well as completing additional vertical accuracy tests and further isolating and furnishing elevations for the recontouring of the erroneous portion, reported by Mr. Horn.

Subject numbers used in this report have not been adequately covered in previous portions of the descriptive report.

4. Horizontal Control.--The identification of U. S. Geological Survey, PTS 43-1916 was found to be in error. It has been shown on the field edit sheet in its correct position, relative to the road junction.

5. Vertical Control.--U. S. Geological Survey 118-1917 is stamped 116. This should be checked in the office to determine if 118.033' as shown on the manuscript is in error. U.S.G.S. verifies elevation of 118. It is thought that the lettering is 118 and age makes it appear as 116.

BM "Y 293 - 1943" was not identified correctly by the field inspection party, and has been re-identified on single-lens photograph No. 45-C-1983.

6. Contours and Drainage.--The contouring of approximately two square miles in the vicinity of 37-47, 77-04 was found to be below national standards of map accuracy. On the field edit sheet this area was exhaustively tested, by planetable methods, in an effort to determine the reason for the errors and to furnish sufficient vertical control for the recontouring of the area by multiplex.

The remaining contours appeared adequate and complete.

9. Wharves and Shoreline Structures.--A pulpwood and lumber loading chute has been indicated on the west bank of the Mattaponi River, at Rose-Spout.

Two small piers were added in the same river, one approximately 3/4 mile southeast of Aylett; the second at the mouth of George's Swamp.

10. Details Off-Shore From High Water Line.---

A duck blind has been located on the field edit sheet in the Mattaponi River, near Poplar Landing.

14. Road Classification.---The roads were re-classified in accordance with Photogrammetry Instructions No. 10, Road Classification, dated 14 April 1947.

16. Buildings and Structures.---New structures were added where necessary. Obscure buildings which were not delineated have been added. Many out-buildings shown on the map were deleted.

All power lines were deleted. Existing lines are for local distribution and are not landmark features.

17. Boundary Monuments and Lines.---The boundary line between Essex and King and Queen counties was fully investigated. The Clerks of Court of the two counties concerned were consulted. As the original records were destroyed during the Civil War, no description of the boundary could be found.

It was necessary to find local residents who had knowledge of the boundary in the area in question. Mr. P. T. Gatewood, farmer and owner of the land in the area and whose address is Cauthorville, Virginia, states that the county line follows the top of the dividing ridge between the Mattaponi and Rappahamock Rivers.

No other local resident could be found who would admit a knowledge of the boundary in this area.

18. Geographic Names.---These names and changes of same were all checked with either county records, or local residents, and posted signs. The changes and additions recommended are as follows:

A. Add "Coons Creek".

Reference: Mr. Lynwood Anderson,  
Logger, Hanover, Va.  
Mr. Samuel Garrison,  
Logger, Hanover, Va.

B. Change "Fleet Branch to Mikes Branch"

Reference: Mr. R. C. Carlton,  
Lumber Dealer, St. Stephens  
Church, Virginia  
Mr. G. T. Clark, Garageman,  
Aylett, Virginia.

- C. Change "Garnetts Creek" to ~~Fleets~~ <sup>Fleets</sup> Creek"  
Add "~~Fleets~~ <sup>Fleets</sup> Mill Pond"

Reference: Mr. J. T. Page, Farmer,  
Bruington, Virginia  
Mr. C. H. Allen, Farmer,  
St. Stephens Church, Va.

- D. Change "Watkins Mill" to ~~Fleets~~ <sup>Fleets</sup> Mill"  
Although the mill has changed ownership  
several times i.e., from Fleet to Watkin, ✓  
to Sower (the present owner) it is most  
commonly referred to as Fleets Mill.

Reference: Same as C.

- E. Add "Dogwood Fork".  
This name appeared on the drain south of  
highway "#14" which is in error. Actually  
it applies to the drain north of highway  
#14, running off the east margin of this  
quadrangle.

Reference: Same as C.

- F. Change "St. Stephens" to St. Stephens Church".  
The official name in the Postal Directory,  
and on the Post Office, is St. Stephens  
Church.

- G. Add "Dixons Creek".

Reference: Mr. M. C. Burkner, Commissioner  
of Revenue, St. Stephens Church,  
Va.  
Mr. G. T. Clark, Garageman,  
Aylett, Virginia.

- H. Change "Walkerton Branch" to "Clarks Swamp".

Reference: Mrs. Susie Taylor, Homemaker,  
Walkerton, Virginia  
Mrs. Lucy Jackson, Homemaker,  
Walkerton, Virginia

- I. Add "Walkerton Branch"  
The name Walkerton Branch should be moved  
to the next stream West.

Reference: Mr. W. D. Braine, Farmer &  
Merchant, Walkerton, Virginia.  
Mr. W. B. Clark, Farmer,  
Walkerton, Virginia

- J. Change "Chapel Hill Creek" to Chapel Creek". The creek has never been known as Chapel Hill Creek. The road crossing the creek at the present site of Virginia Route 14 was, before the advent of paved roads, a poor one. The grade at this point was bad. Consequently the hill was called Chapel Hill, taking its name from the creek.

Reference: Mr. J. D. Fogg, Postmaster,  
Owenton, Virginia  
Mr. R. Hill, Farmer,  
Biscoe, Virginia  
Mr. B. O. Nimoo, Storekeeper,  
Biscoe, Virginia

46. Methods.--All delineated data such as roads, structures, and drainage were checked by riding or walking over the roads and trails in the area.

The relief as depicted by the contours was observed closely while riding over the roads and trails. In areas where the contours appeared to give a false or incorrect representation of the relief, the planetable was used to check the contours.

Deletions and some additions and corrections were noted directly on the field edit sheet. Some additions and corrections were noted on the photographs and a reference made on the field edit sheet to the appropriate photograph.

The uses of the various colored inks have been noted in the margin of the field edit sheet.

47. Adequacy of the Compilation.--With due consideration given to the amount of field inspection completed prior to office compilation, this map was found to be adequate and complete, except as mentioned under heading 6 and minor field edit changes.


48. Accuracy Tests.--In addition to the vertical accuracy tests made prior to the recontouring of a portion of this quadrangle a complete new test was made. The results were as follows.

No point in error more than one full contour interval.  
93.5 % of all points tested were within  $\frac{1}{2}$  contour interval of error or better.

49. Review of First Proof.--Mr. M. C. Burke, Commissioner of Revenue, St. Stephens Church, Virginia has expressed his willingness to review one of the first proofs of this quadrangle.

He is a life-long resident of the area and frequents all localities in the vicinity. It is felt that he is a competent individual to make the review.

Summarized from the Field  
Edit Reports T-8613 of Robert  
A. Horn and I. Y. Fitzgerald  
by

  
Harland R. Cravat  
Cartographer, Photogrammetrist

ADDENDA  
to  
DESCRIPTIVE REPORT CS-318, T-8613

To correct contours after field edit, model 45-C-1943-1944 was set up with the multiplex and the entire model was recontoured.

Models 45-C-1942-1943, and 45-C-1944-1945 were set up to make corrections to small portions of the models where contours were in error as shown by vertical accuracy tests.

It was found that some contours moved a full interval while other contours were not moved.

It is believed that all corrected contours will meet the accuracy required by instructions for this project.

Respectfully submitted  
20 February 1948

  
Stanley W. Trow  
Cartographer

Approved and forwarded  
27 February 1948



Thos. B. Reed  
Officer in Charge  
Baltimore Photogrammetric Office



Division of Photogrammetry  
Review Report of  
Topographic Map Manuscript T-8613

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

27. Radial Plot. - As previously discussed in this report, numerous discrepancies were encountered between the multiplex position and the slotted steel templet position for the same points.

In the troublesome area the Washington Office, Graphic Compilation Section, laid a 9-lens plot which satisfactorily overcame all slotted steel templet discrepancies. During the investigation the source of the trouble was determined as faulty office computations of substitute stations on the Indian Neck Traverse and triangulation station, St. Stephens. Furthermore, it became evident that the steel plot was either forced or was not sufficiently rigid to detect the source of the trouble.

28. Detailing. - All additions and corrections, made by the reviewer have been shown in red plastic ink on the 1:20,000 scale composite map manuscript; no corrections were made on the original multiplex manuscripts.

In addition to the routine review corrections, the following corrections were made:

- A. Multiplex spot elevations removed.
- B. Denomination in church names removed.
- C. Woods reclassified in accordance with Photogrammetry Instructions No. 15, dated June 16, 1947.

39. Junctions. - As mentioned in the compilation report, a satisfactory junction to the east with the U.S. C. and G.S., Howertons Quadrangle, scale 1:31,680 was not made.

The junction discrepancy was resolved in the Washington Office and verified by the field edit party.

Corrections to Map Manuscript T-8349 have been applied, as well as to the registered copy. Notification of junction changes to previously published map T-8349 has been furnished to the Chief of Engineers, U. S. Army Map Service.

44. Comparison with Existing Topographic Surveys. - Comparison was made with both (A) Previous Surveys and (B) Quadrangle. The planimetry and topography in all common areas is superseded by T-8613.

A. Previous Surveys

3256 1:20,000 1912

B. Quadrangle

Aylett, Va. U.S.G.S. 15' 1:62,500 1917

45. Comparison with Nautical Charts 504 1:40,000 March 1936  
Re-issue January 1947. - Nautical Chart 504 is superseded  
by T 8613 in all common detail. This map manuscript has not  
been applied to nautical chart 504.

47. This compilation is adequate and complete. It meets all national map accuracy requirements.

48. Accuracy Test. -

A. Vertical

Adequately covered in field edit report.

B. Horizontal

A U.S. Geological Survey 1916 transit traverse, adjusted to the North American 1927 datum was used to make the horizontal accuracy investigation.

Traverse points, verified as identical points were plotted on the map manuscript by geographic coordinates. The results of the accuracy test were well within the limits of national map accuracy requirements.

Reviewed April 1948 by:

Harland R. Cravat  
Harland R. Cravat  
Cartographer, Photogrammetrist

Reviewed under direction of:

S. V. Griffith  
S. V. Griffith  
Chief, Review Section *B*

Approve by:

B. J. Jones 5/48  
Technical Asst. to the  
Chief, Div. of Photogrammetry

R. P. Stirling  
Chief, Nautical Chart Branch  
Division of Charts

K. T. Adams  
Chief, Div. of Photogrammetry

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

GEOGRAPHIC NAMES

Survey No. T-8613

AYLETT, Va., 7 $\frac{1}{2}$ ' quad.

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>									USGB	1
<u>Essex County</u>										2
<u>Central District</u>										3
<u>King and Queen County</u>										4
<u>Newtown District</u>										5
<u>King William County</u>										6
<u>Accquinton District</u>										7
<u>Mattaponi River</u>									USGB	8
<u>U.S. No. 760</u>										9
<u>State No. 14</u>										10
										11
<u>Clark Swamp</u>										12
<u>Walkerton Branch</u>										13
<u>New Mt. Zion Baptist Church</u>										14
<u>Ridge Road</u>										15
<u>Dogwood Fork</u>										16
<u>London Swamp</u>										17
<u>Georges Swamp</u>										18
<u>Greenbriar School</u>										19
<u>New Morning Star Church</u>										20
<u>Jones Landing</u>										21
<u>Dixon Creek</u>										22
<u>Poplar Landing</u>										23
<u>Aylatt Mill</u>										24
<u>Aylatt Pond</u>										25
<u>Cabin Landing Point</u>										26
<u>Rosesput</u>										27

GEOGRAPHIC NAMES

Survey No.

T-8613

2 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>Pointers Landing</u>									USGB 1
<u>Aylett</u>									" 2
<u>Aylett P.O.</u>									3
<u>St. Davids Church</u>									4
<del>King William Public Library</del>			Deleted by Field Edit Party; <i>ARL</i>						5
<u>Old Hall Landing</u>									6
<u>Mikes Branch</u>									7
<u>Coons Creek</u>									8
<u>Buckyard Branch</u>									9
<u>Chapel Creek</u>									10
<u>Beaver Branch</u>									11
<u>Biscoe</u>									12
<u>Biscoe P.O.</u>									13
<u>Marriott School</u>									14
<u>St. Stephens Church</u>				(village)					15
<u>St. Stephens Church P.O.</u>									16
<u>Shepherds Methodist Church</u>			<i>ARL</i>						17
<u>Fleets Mill</u>									18
<u>Fleets Mill Pond</u>									19
<u>Fleets Creek</u>									20
					Names underlined in red are approved.				21
					4/8/48. L. Heck				22
									23
									24
									25
									26
									27

TOPOGRAPHIC MAPPING  
SUMMARY OF ACCURACY TESTS

Quadrangle No. T-8613  
~~Quadrangle Name~~ Project CS 318

Method of Test Planimetric

Contour Interval <u>20 ft.</u>	Publication Scale <u>1/24,000</u>
Planimetry by <u>Multiplex</u>	Plotting Scale <u>1/8,500</u>
Topography by <u>Multiplex</u>	Plotting Scale <u>1/8,500</u>

VERTICAL ACCURACY

	<u>Number</u>	<u>Per Cent</u>
Test points correct within one-half contour interval	<u>82</u>	<u>95.5</u>
Test points in error between one-half and full contour interval	<u>4</u>	<u>4.5</u>
Test points in error by more than full contour interval	<u>0</u>	<u>0.0</u>
 Total Test Points	 <u>86</u>	 <u>100</u>

Map elevations low 12 Map elevations high 45 Map elevations correct 29  
 Average elevation error 3.7 Maximum elevation error 16

REMARKS

*Elevation errors did not seem to seriously affect location of contours, except the 160 top contour lying just NW of Hwy 360, halfway between Aylett & St. Stephens Church.*  
 Horizontal Shift allowed in interpolation of Map Elevations:

<u>Publication Scales</u>	<u>Shift in Meters</u>	<u>Shift in Feet</u>
1/5,000 to 1/12,000 inclusive	12	40
1/12,000 to 1/24,000	15	50
1/24,000 to 1/62,500	31.5	104

TOPOGRAPHIC MAPPING  
ABSTRACT OF VERTICAL ACCURACY TEST

Project No. CS 312

Test By RAH

Quad No. T-8613

Date 1/8/47

Contour Interval  
Length of Profile

miles

Shift allowed 50 feet  
meters

Test Elev	Map Elev	Error + or -	Error after shift +	Remarks	Test Elev	Map Elev	Error + or -	Error after Shift +	Remarks
129	119	-10	-9		163	165	+2	+2	
106	106	0	0	on rd. fill	150	148	-2	0	
99	90	-9	-9	in drain	143	134	-9	-9	Stream
117	110	-7	-3		145	160	+15	+10	
129	120	-9	-7		162	165	+3	+3	
139	139	0	0		143	148	+5	+5	
140	139	-1	-1		135	142	+7	+5	
119	110	-9	-9	in drain	144	145	+1	+1	
146	152	+6	0		88	88	0	0	
153	152	-1	-1		155	163	+8	+6	
155	155	0	0		158	158	0	0	
154	151	+5	+3		142	145	+3	+3	
154	151	+5	+3		142	142	0	0	
155	155	0	0		136	141	+5	+2	
148	148	0	0		106	112	+6	0	
149	148	-1	-1		54	59	+5	+4	
148	140	-8	-6		92	82	-10	0	
158	142	+4	+2		133	138	+5	0	
119	127	+8	+1		133	142	+9	+7	
100	92	+8	+8		133	141	+8	+8	
112	108	-4	0		137	143	+6	+5	
112	112	0	0		138	145	+7	+7	
140	145	+5	+5		137	145	+8	+8	
139	145	+7	+7		139	143	+4	+3	
132	145	+13	+13		147	155	+8	+8	
119	123	+6	+6		149	165	+16	+16	
141	145	+4	+4		147	161	+14	+14	
132	142	+4	+3		148	150	+2	+2	
154	130	-4	0		154	162	+8	+8	
140	145	+5	+5		156	162	+6	+6	
134	142	+8	+7		141	155	+14	+12	
136	145	+9	+8		170	170	0	0	
132	143	+1	+1						
152	160	+8	+7						





# NAUTICAL CHARTS BRANCH

SURVEY NO. \_\_\_\_\_

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
11-9-51	504	<i>Jane Bell</i>	<del>Before</del> After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

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.