

8612

Diag'd. on Diag. Ch. 78-3

Form 504

U. S. COAST AND GEODETIC SURVEY  
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Topographic  
Project CS-318  
Field No. OLD CHURCH Office No. T-8612

LOCALITY

State Virginia  
General locality 4 miles northeast of Richmond  
Locality 2 1/2 miles southwest of Tappahannock

1945

CHIEF OF PARTY

William F. Deane

LIBRARY & ARCHIVES

DATE June 7 - 1947

B-1870-1 (1)

8612

## DATA RECORD

T- 8612

Quadrangle (II): OLD CHURCH

Project No. (II): CS-318

Field Office: West Point, Va.

Chief of Party: Dale E. Sturmer

Compilation Office: Baltimore, Md. Chief of Party: William F. Deane

Instructions dated (II III): March 10, 1945

OFFICE FILES  
 Copy filed in Descriptive  
 Report No. T- (VI)  
 OF THE DIVISION OF PHOTO-  
 GRAMMETRY

Completed survey received in office: JAN. 22, 1947

Reported to Nautical Chart Section: JAN 29, 1947

Reviewed: MAY 1948

Applied to chart No.

Date:

Redrafting Completed:

PRELIMINARY

May 17, 1948

Registered: FINAL

Published:

Compilation Scale: 1:20,000

Published Scale: 1:24,000

Multiplex Scale: 1:8500

Scale Factor (III):

None

Geographic Datum (III): N.A. 1927

Datum Plane (III): Mean Sea Level

Reference Station (III): OLD CHURCH, 1941

Lat.: 37° 38' 39.966"

Long.: 77° 13' 15.898"

Adjusted  
Used just as dx

State Plane Coordinates (VI): VIRGINIA, SOUTH ZONE

X = 2,370,291.69

Y = 479,861.85

Military Grid Zone (VI)

PHOTOGRAPHS (III)

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Scale</u>	<u>Stage of Tide</u>
2023 to 2032	3/23/45		1:20,000	
2051 to 2060	3/25/45		"	
2063 to 2072	3/25/45		"	
2095 to 2103	3/25/45		"	
AMS #491	1/27/47		1:24,000	

Tide Tables, Atlantic Ocean, 1945, White House  
Tide from (III): Pomunkey River. Reference Station Hampton Roads.

Mean Range: 3.0 ft.

Spring Range: 3.4 ft.

Camera: (Kind or source) C&GS, Single Lens, "C"

Field Inspection by: Harland R. Cravat, Robert R. Kim date: Spring, summer, fall,  
Alfred R. Knaack, Thomas W. Merriken, Jr. 1945

Field Edit by: I. Y. Fitzgerald date: August 1947

Date of Mean High-Water Line Location (III): Same as date of photographs

Projection and Grids ruled by (III) S. Rose date: May 1945 (1:25,000)  
 " " " " " S. Rose " Jan 1946 (1:20,000)  
 " " " checked by: S. Rose date: May 1945  
 " " " " " " " Jan 1946

Control plotted by: A.C. Rauck, Jr. (1:20,000 manuscript) date: Sept. 1946  
 Norman A. Cluff, Wash. Office (1:8500 work sheets) June 1945  
 Control checked by: S.W. Trow (1:20,000 manuscript) date: Sept. 1946  
 S.W. Trow (1:8500 work sheets) June 1945

Radial Plot by: G.B. Willey date: Dec. 1945

Detailed by: H.P. Eichert & A.C. Rauck, Jr. date: May-June 1945  
Reductions traced by: A.C. Rauck, Jr. Nov. Dec. 1946

Reviewed in compilation office by: date:  
Stanely W. Trow Dec. 1946

Elevations on <sup>Map Manuscript</sup> ~~Field Edit Sheet~~  
checked by: H.P. Cravat date: Dec. 1947

STATISTICS (III)

Land Area (Sq. Statute Miles): 59.14

Shoreline (More than 200 meters to opposite shore): 0.0

Shoreline (Less than 200 meters to opposite shore): 16.0 statute miles.

Number of Recoverable Topographic Stations established: none

Number of Temporary Hydrographic Stations located by radial plot: none

Leveling (to control ~~stations~~<sup>multiplex models</sup>) - miles: Sea Field Inspection Report

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: Magnetic Declination =  $6^{\circ} 00' W$ , 1947-8

Statement to Accompany Descriptive Report T-8612<sup>2</sup>

1. This summary of survey methods used and the method of handling T-8612 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 assembling 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 manuscript in accordance with the field edit survey.
3. T-8612 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-8612 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) 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.

(b) Filed in Coast and Geodetic Survey Archives

The descriptive report together with a 1:20,000 scale cloth mounted photographic print of manuscript is being permanently registered. When T-8612 is published a cloth backed copy of the published map will also be registered.



Harland R. Cravat  
Cartographer Photogrammetrist  
May 7, 1948

FIELD INSPECTION REPORT

T-8612, Old Church Quadrangle, (37 37.5 / 77 07.5 / 7.5)

Project CS-318

Harland R Cravat, Chief of Party

1. Description of the Area.

Quadrangle T-8612 is a seven and one half minute quadrangle located at the head of tide water in the Pamunkey River drainage area, and about midway, via U.S. Highway #360 between Richmond and Tappahannock, Virginia.

The Pamunkey River which is little used by water traffic in the vicinity winds through the center of the quadrangle from northwest to southeast. There are some swamp lands, but well over one fourth of the area along the river is level and very fine farm land. There are two or three large dairy farms here.

The northern and southern parts of the quadrangle away from the river are characterized by deep sharp drains and long narrow ridges with the elevation ranging from mean sea level to almost 190 feet above mean sea level.

There are two post offices in the quadrangle, Manquin and Enfield, of which both are north of the Pamunkey River.

Over half the area is covered by stands of pine, and mixed species. Pine is extensively cut for pulp, and fire wood. The majority of the hardwood has been cut over and little is being cut at present. The remainder of the land is given to agricultural activities.

There are no thickly populated areas but a network of roads and in many sections, sufficient electric power and telephone facilities give the local population conveniences comparable to a more urban area. This is especially true along the Pamunkey River and along U.S. Highway #360, which crosses the quadrangle from southwest to northeast.

From a historical point of view the area is particularly interesting. The Old Civil War Battlefields are marked and the local people take great interest and pride in discussing the past with outsiders. This is especially true near the small settlement of Old Church and between there and the Pamunkey River Bridge on U.S. Highway #360, where Stewart and McClellan were engaged in battle.

## 2. Completeness of Field Inspections:

Field inspection was done in conjunction with 4th order leveling by Mr. Robert R. Kim, Photogrammetric Aid. As the roads were in very poor condition when the inspection was done and as it was done on rainy days it is felt that the inspection is neither adequate nor complete. As an aid to the field edit party the phases of the field inspection are broken down under two headings, "Adequate, and Inadequate". It is felt the items mentioned under inadequate could be completed efficiently and economically at the time of field edit.

All field inspection notes appear on the even numbered photographs in red colored ink.

### "Adequate"

#### Roads

Classified as per the Director's instructions dated, 30 June 1945. Also road numbers were included.

#### Woods

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

#### Bridges

Bridges were classified as per Military specifications for the War Mapping Project. They may be disregarded. There were no bridges over navigable waters.

#### Public Buildings

Public Buildings were circled in red ink and the name of the building inked on the photo, beside the circle

#### Boundaries

Boundaries were obtained and drawn on the photos with red ink by Mr. Robert R. Kim, Photogrammetric Aid on July 15, 1945.

### "Inadequate"

#### Obscure Buildings

Although most of the obscure buildings were circled in red ink some of them, which were situated back away from the roads were missed.

Buildings past their useful life were deleted but out buildings were not deleted.



"Inadequate

Telephone lines  
none were located

Power lines  
All power lines were located which did not parallel roads.

4. Horizontal Control:

The work consisted of locating the old horizontal control and the establishing of new control by 3rd. order traverse methods. The work was done early in the spring of 1945 by Mr. Harland R. Cravat, under the direction of Lt. Dale E. Sturmer, U.S.C. & G.S.

Substitute Stations

Old Church, 1941, Triangulation Station was the only existing U.S.C. & G.S. horizontal control station within the quad limits. It was positively identified by the substitute station method, on photo, of January 1945

3rd Order Traverse

About 3.5 linear miles of 3rd order open ended traverse was completed. One traverse started at Triangulation Station Old Church and extended westward to the westerly quad limits. The other traverse was north of the quadrangle, starting at Triangulation Station Epworth and extended southward about 2.5 miles.

Angle measurements were made with a 7-inch White Theodolite. Three D, and R angles were measured at each hub with a horizon closure less than 10 seconds. The horizontal distances were measured with a 100 foot steel tape and check measurements with a 40 meter steel tape.

The short traverse was checked for azimuth at the terminal point by two complete sets of sun observations and the longer traverse was checked by azimuth by two complete sets of Polaris observations.

The field party computed the traverses and observed azimuths. The observed azimuths checked the azimuths of the traverses within third order limits.

No stations were monumented along the traverses and either a hub in the traverse or a substitute station was pricked for photographic control.

## 5. Vertical Control

The work consisted of BM recovery, establishing of new 3rd order and 4th order levels. All vertical control information appears on the photos in blue colored ink. For the most part this information is on the odd numbered photographs.

### Recovery

All previous existing Geological Survey and bench marks of this bureau were pricked on the photographs and recovery notes submitted by Mr. Robert R. Kim, Photogrammetric Aid, at the time of 4th order leveling.

### U.S.C. & G.S.

#### Pricked and Recovered

K	88	1935
N	88	1935
M	88	1935
V	88	1935
W	88	1935
P	274	1942
Q	274	1942
R	274	1942
S	274	1942

#### Destroyed

L 88 1935

### U.S.G.S.

#### Pricked and Recovered

PTS	31	1916
PTS	32	1916
42	Va	1917
70	Va	1917
153	Va	1917
171	Va	1917
182	Va	1917

#### Destroyed

PTS 44, 1916

### 3rd. Order Levels

About 25 miles of 3rd. order leveling was completed by Mr. Alfred R. Bissak, Engineering Aid, under the direction of Lieut. Dale E. Sturmer, U.S.C. & G.S. The methods used and character of marks are those as prescribed in special publication number 140. On the following page is a list of Bench Marks established of which N, and P 295, 1945 are west of the project limits.

### New 3rd Order control Established

D 293, 1945	M 293, 1945
E 293, 1945	N 293, 1945
F 293, 1945	P 293, 1945
G 293, 1945	Q 293, 1945
H 293, 1945	T 293, 1945
K 293, 1945	U 293, 1945
L 293, 1945	V 293, 1945

### 4th Order levels

About 65 linear miles of 4th order leveling was completed by Mr. Robert R. Kim, between the dates of 7-6-45, and 8-31-45.

Elevations were carried by trigonometric methods, using 7-inch Berger Theodolite #279, fitted with stadia hairs, and Simmons-Adams Leveling Rods. The Berger Theodolite was used as a combination vertical angle and spirit level instrument.

Elevation computations were made to the nearest 1/100 of a foot. Trigonometric loops over one mile in length were closed on either a previously determined elevation or on a bench mark.

Short spur lines were double rodded. (Double rodded is where a foot scale was read on the front of the rod and a meter scale was read on the back of the rod. At the terminal point the spread between the feet and the 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 Directors 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 code letters, numbers, and elevations were written on the backs of the photographs, near their respective points.

The code letters OC prefix all points, and the following system was used to segregate the closed elevations from the double rodded lines.

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

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

No loops were left with out at least a double rodded check.

Submitted with the photos is a level layout index showing the approximate position of the spot elevations. Also on the fly leaf of each level volume is found the following information: loop (spot elevations), page closure, field notes checked by, adjustment checked by, inked on photo #, and copy checked by.

#### 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 Pamunkey River have been delineated at the time of shore line inspection.

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

No other drainage clarification nor classification was done as it was felt the work could be done with far less over lapping if done by the field edit party.

#### 7. Mean High Water:

The shore line was inspected by Mr. Thomas W. Merriken Jr., Photogrammetric Aid, in the fall of 1945. The mean high water line was indicated by a dashed red line at intervals where the shore line was indistinct. The swamp areas were indicated by a dashed blue line.

Although the Pamunkey River is affected by tide water the high and low water lines are synonymous as far as detailing is concerned; the banks are of a steep nature.

In the areas where the river flows through low bottom lands it has formed natural levees of its banks which are a foot or two higher than the ground back from the river. This phenomenon has inundated large areas, forming swamp lands.

#### 8. Low Water Line:

See item #7

#### 9. Wharves and Shoreline Structures:

There were no wharves or shore line structures of a permanent nature.

10. Details offshore from the High-water line:

Since the shore line was inspected on foot it was difficult to obtain the off shore detail. No rocks or wreckage was visible and it was 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 were no prominent land marks or aids to navigation within the limits of the quadrangle.

12. Hydrographic Control:

No hydrographic control was established.

13. Landing Fields and Aeronautical Aids:

There are no landing fields within the limits of the area. The Pamunkey River and main roads as U.S. Highway #560 are aids to aeronautical navigation in day time flight. There are no beacons in the area.

14. Road Classification:

Roads were classified according to the directors instructions dated 30 June, 1945. Route numbers were included.

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:

Most of the 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.

26. CONTROL:

The Baltimore Compilation Office was furnished by the Washington Office, vinylite multiplex instrument sheets at a scale of 1:8500. These were used by the Washington Office to lay a steel templet radial plot.

Recovery notes <sup>and identification records</sup> for horizontal control stations in this area plus those falling outside the north limits of this quadrangle were furnished the compilation office. One set of 1:20,000 scale contact prints with vertical and horizontal control points identified, and one set of 1:8500 scale ratio prints which were used in making the steel templet radial plot, were also furnished. The ratio prints show horizontal control points, photo control points and principal points as were used in the making of the radial plot.

The following horizontal control stations were held to during multiplex plotting:

Sub. Sta. OLD CHURCH, 1941  
B - HUB 6 (Old Church Traverse)  
E - HUB 19 (Epworth Traverse) North of T-8612

Inasmuch as the diapositives were not available and the horizontal control was too far north of this quadrangle, the following horizontal control stations were not used when plotting with the multiplex:

EPWORTH, 1941  
P.P. - 1 (Epworth Traverse)  
P.P. - 2 (Epworth Traverse)

27. RADIAL PLOT:

A radial plot, using steel templets, was made at the Washington Office. See "Radial Plot Report", Project CS-318, December 1945.  
*Copy of this Radial Plot report is filed in Desc. Report T 8613.*

28. DETAILING:

The Zeiss Wide Angle Multiplex, a German stereoscopic plotting instrument, was used for the orthographic plotting of all planimetry and topography in this quadrangle. The detail was plotted on eight strips of vinylite at a scale of 1:8500.

Each strip comprised of four or five models. The horizontal control points were held on as near as possible in order to obtain the best overall scale. The most readily identifiable triangulation points were given more consideration than less well defined photo points. Poorly identified photo points were sometimes sacrificed when they could not be held with more positive identified points.

In preparation for contouring, each model was horizontalized to

28. DETAILING (Continued):

vertical control previously established in the field.

There were a minimum of four vertical control points in each model, except where the model contained extensive water areas. In these instances it was necessary to horizontalize on the water's edge.

Upon the completion of the compilation and review of these eight vinylite multiplex instrument sheets, they were reduced photographically to a scale of 1:20,000. These reductions were then traced onto the 1:20,000 scale acetate map manuscript.

As previously discussed under item 2 of the Field Inspection Report some field data was termed "Inadequate" for this quadrangle and will be completed by the field edit party.

29. SUPPLEMENTAL DATA:

None.

30. MEAN HIGH WATER LINE:

The mean high water line was plotted with the multiplex after careful examination of the field photos.

Mean high water line was adequately inspected.

31. LOW WATER AND SHOAL LINES:

No data pertaining to the low water and shoal lines were furnished the compilation office, and none were plotted.

32. DETAILS OFFSHORE FROM THE HIGH WATER LINE:

At Newcastle Bridge over the Pamunkey River there is an object in the water that has not been identified by field inspection party. This has been noted on the discrepancy overlay to be investigated by the field edit party.

33. WHARVES AND SHORELINE STRUCTURES:

None

34. LANDMARKS AND AIDS TO NAVIGATION:

In the farm areas adjacent to both shores of the Pamunkey River there are numerous silos of sufficient elevation that they may be of use as landmarks. These silos were prominent enough to be accurately plotted.

Field Edit recommended most silos for deletion.

35. HYDROGRAPHIC CONTROL:

None

36. LANDING FIELDS AND AERONAUTICAL AIDS:

See item 13 of the Field Inspection Report.

37. DISCREPANCY OVERLAY:

A discrepancy overlay was prepared to accompany this map manuscript. Omissions, discrepancies, and notes to the field edit party have been shown. ~~Filed as a special report on Geographic Names, Project 318, in the General Files of the Div. of Hydrography~~

38. GEOGRAPHIC NAMES: → *614*

A special report on geographic names was written and submitted by Harland R. Cravat. Only undisputed, new, and recommended names are shown on this map manuscript.

39. HORIZONTAL ACCURACY:

The horizontal accuracy of this map manuscript is believed to be within the limits set forth for previous projects.

40. VERTICAL ACCURACY:

It is believed that over 90% of the contours are accurate to within one-half their contour interval.

41. JUNCTIONS:

Complete and satisfactory junctions were made with the following:

To the east with map manuscript for Survey No. T-8611

To the south with map manuscript for Survey No. T-8609

To the west, a narrow strip of planimetry and topography has been transferred from the U.S. Geological Survey, Studley, 15 minute quadrangle, to this map manuscript. This junction was unsatisfactory.

To check positions of the detail along the west edge of this survey, a long multiplex bar was used. Diapositives of negatives 45-C-2052 to 45-C-2060 were made with the U. S. Coast and Geodetic Survey reduction camera. The nine multiplex models were set up with Bausch and Lomb wide angle projectors. *See junctions in Final Review Report*

Control used in this strip was E-HUB-19 which was held at the north end. At the south end B-HUB-6 and substitute station OLD CHURCH were used. Substitute Station OLD CHURCH is a poor image in the model and cannot be identified within 0.25 to 0.5 mm, thus B-HUB-6 was held and substitute station OLD CHURCH fell to the west about 0.5 mm. U.S.G.S. "PRIM TRAV. STA. NO. 31, 1916" was plotted and distances to center line of roads were measured.



41. JUNCTIONS:(Continued)

The description of this station says, "25 feet (7.62 meters) north and 35 feet (10.66 meters) west from crossroads". The scaling of distances to the crossroads was 8.96 meters north and 12.54 meters west, which is within the limits of error.

All planimetric detail was found to be in the same position as when plotted with Zeiss equipment except two pieces of road which have been replotted and corrected on the map manuscript.

No junction was made to the north.

42. BOUNDARY LINES:

The Mongohick-Acquinton District line follows the highway on road No. 604, then east and northeast on road No. 610 in the vicinity of Enfield to the north of this map manuscript. Inasmuch as this district line follows the highway, it was not inked on the map manuscript. The respective names of the two districts were inked on each side of the road to indicate that the road is the boundary.

No data for boundary monuments were furnished the compilation office.

44. COMPARISON WITH EXISTING TOPOGRAPHIC QUADRANGLES:

Comparison was made with the U.S. Geological Survey, King William, 15 minute quadrangle, scale 1:62,500, surveyed in 1917-18.

The topography is not in agreement generally. This may be due to the lapse of time between surveys and the difference in survey methods.

The comparison of planimetry showed several new roads which were not in existence during the 1917-18 Geological survey. Most prominent of these are the U.S. Route No. 360 from Manquin to west of Old Church, and the forest fire trail, Route No. 639 from Manquin to Enfield.

In addition, there are several swamp areas adjacent to the Pamunkey River which are not shown on the Geological Survey quadrangle.

45. COMPARISON WITH NAUTICAL CHARTS:

Comparison was made with U. S. Coast and Geodetic Survey Chart No. 504, scale 1:40,000, published in 1936, revised 11 July 1944.

As this chart covered only an area west to longitude  $77^{\circ} 13'$ , only a partial comparison could be made.

The meandering course of the Pamunkey River is in good agreement, difference being noticed particularly in the swamp areas. A swamp south-southeast of Newcastle Bridge is not shown on the chart.

45. COMPARISON WITH NAUTICAL CHARTS: (Continued)

A larger area of swamp, north of Horseshoe, is shown on the chart than is delineated on this map manuscript. Newcastle Bridge is no longer in existence. Original Bridge in ruins, however a new bridge on U.S. 360 crossing Pamunkey River bears the name.

Roads in general do not agree. Many new ones are in existence now which are not shown on the chart.

The contours agree only along the steep banks of the Pamunkey River. In flat areas they are in poor agreement.

No shoreline structures are in this area; therefore, no comparative notes can be made.

It is believed that after the field edit data is added to this map compilation it should supersede the previously charted information.

Respectfully submitted  
19 December 1946

Albert C. Rauck, Jr.  
Albert C. Rauck, Jr.  
Photogrammetric Aid

Stanley W. Trow  
Stanley W. Trow  
Supervisor

Stanley W. Trow  
Stanley W. Trow  
Cartographer  
Photogrammetric Office  
Review

Approved and Forwarded  
22 January 1947

William F. Deane  
William F. Deane  
Lieutenant, C&G Survey  
Officer in Charge  
Baltimore Photogrammetric  
Office

FIELD EDIT REPORT  
T-8612  
Old Church Quadrangle  
(37-37.5/77.0-07.5/7.5)  
Project GS-318  
Riley J. Sipe  
Chief of Party

The field edit of this quadrangle was completed in the period 20 June to 10 July 1947 by I. Y. Fitzgerald, Cartographer. All work was done in accordance with the Director's Field Edit Instructions, dated 24 August 1945; Field Edit Instructions - Supplement I, dated 4 February 1946; and other recent instructions applicable to field edit as herein noted.

46. METHODS:

All delineated features such as roads, structures and drainage were checked while walking and/or riding over the roads and trails.

The relief as depicted by the contours was observed closely while checking other features. In areas where the contours did not appear to "fit the ground" the planetable was used to check and correct them if necessary. Some minor corrections were made visually.

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

Structures erected and clearings made subsequent to photography were located by measurements from topographic details or by planetable methods.

The uses of the various colored inks were noted on the field edit sheet.

47. ADEQUACY OF THE COMPILATION:

With due consideration given to the amount of field inspection completed prior to compilation, the compilation is adequate. Because of the lack of field inspection many buildings were compiled which were deleted by field edit.

48. ACCURACY TESTS:

One vertical accuracy test was made. Starting on U.S.C. and G.S. BM M-88 at New Castle Bridge and proceeding northeastward along U.S. Route 360. U.S.G.S. PTS 32.76 at Manquin was closed 0.60 ft. low. Elevations were adjusted to this BM and carried to the closing BM, U.S.C. and G.S. K-88 at Central Garage. Closure on K-88 0.13 ft. high. Refer to review report.

No horizontal accuracy test was made <sup>by the field edit party</sup> ~~in this quadrangle.~~  
Refer to Review Report for Accuracy Tests.

6. CONTOURS AND DRAINAGE:

The contours, with a few minor exceptions adequately depict the relief. These exceptions were discovered when making the vertical accuracy test, determination of stream elevations, and an area questioned by the compiler. No discrepancies of importance were discovered during visual inspection.

Drainage on the whole was adequate. Some streams compiled as perennial were changed to intermittent.

- Revisions of the swamp line along the Pamunkey River was necessary in two areas.

7. MEAN HIGH WATER LINE:

The mean high water line along the Pamunkey River was changed from apparent to fast shoreline in areas of change in swamp line as mentioned in the preceding paragraph.

9. WHARVES AND SHORELINE STRUCTURES:

An object is shown projecting towards the channel from the north bank of the Pamunkey River at a point approximately one mile east of New Castle Bridge. Upon examination this object was found to be a pier of the old bridge which spanned the river at this point. This pier parallels the channel. An accumulation of driftwood creates the impression that it projects from the bank. A close stereoscopic examination together with this knowledge will enable the reviewer to correct the shape on the manuscript.

14. ROAD CLASSIFICATION:

All roads were reclassified in accordance with Photogrammetry Instructions No. 10, Road Classification, dated 14 April 1947.

16. BUILDINGS AND STRUCTURES:

New structures were added to the field edit sheet. (See Item 46).

Obscured and omitted structures were delineated on the photographs and a reference made on the field edit sheet.

17. BOUNDARY MONUMENTS AND LINES:

The legal description of the boundary between Hanover and New Kent Counties is given in the Field Edit Report of Quadrangle T-8609.

18. GEOGRAPHIC NAMES:

Delete the name PAMUNKEY. This was a station on the old Richmond and Rappahannock River Railroad. This railroad was abandoned 33 years ago and the name subsequently fell into disuse.

814

References:

- S.S. Robinson, Farmer  
Palls, Va. Resident 60 years
- J.D. West, Storekeeper  
R.F.D.#1  
Tunstall, Va. Resident 60 years
- J.A. Williams, Rural Carrier  
Quinton, Va. Resident 60 years

The name RETREAT is misplaced on the manuscript.

The name NEW CASTLE BRIDGE is still used although the original bridge was destroyed many years ago.

49. JUNCTIONS:

A junction on the west with U.S.G.S. Quadrangle "Studley" was made. This consisted of effecting a junction of U.S. Route 360 in southern section of the quadrangle, and a junction of contours and a road in the northern section of the quadrangle

The position of U.S. Route 360 was fixed by measurements from B-Hub-6 in quadrangle T-8612 and TT-22D in quadrangle Studley. The distance from B-Hub-6 to the centerline of the road was 36m.

The distance from TT-22D was 50 feet. All other roads in this section can be junctioned by the Washington Office using the new fixed position of U.S. Route 360 as a base.

JUNCTIONS (Cont'd)

A junction of the contours in the northern section north of the Pamunkey River was made by a planetable traverse with elevation based upon OC 52 (125.9).

A junction of the contours south of the Pamunkey River were based upon a road intersection elevation of 101 feet in Quadrangle Studley.

To junction the road in the northern section, a planetable traverse was run along this road from its junction with Fire Trail No. 639. Orientation was made southeastwardly along the Fire Trail. The traverse was carried to the second junction of the road with the Fire Trail and thence back along the Fire Trail to a junction in quadrangle T-8612.

50. REVIEW OF THE FIRST PROOF:

The following gentlemen have consented to review a first proof of this quadrangle:

S.S. Robinson  
Falls, Va.

J.D. West  
R.F.D.#1, Tunstall, Va.

Mr. Robinson is a farmer and has been a resident of the area for 60 years. He has, at different times, cruised timber, done surveying and property appraising. He is thoroughly familiar with the entire area.

Mr. West is a storekeeper and a resident of 60 years. He is, perhaps, not as familiar with the area as is Mr. Robinson.

Submitted:  
15 August 1947

*I. G. Fitzgerald*  
I. G. Fitzgerald,  
Cartographer

Division of Photogrammetry  
Review Report of  
Topographic Map Manuscript T-8612

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

28. Detailing.--All additions and corrections made by the reviewer, have been shown in red ink on the map manuscript. In addition to the routine review corrections, the following changes were made:

- A. Multiplex spot elevations removed.
- B. Obsolete bridge classifications removed.
- C. Denominations in Church names removed.
- D. Doubtful bench mark locations clarified.
- E. Woods re-classified in accordance with Photogrammetry Instructions No. 15, dated 16 June 1947.

41. Junctions.--

Contours:

All questionable contours between this map manuscript and Studley Quadrangle were junctioned by planetable traverse methods.

In most instances, a satisfactory junction was made at the neat line, but occasionally it was necessary to work back into Studley Quadrangle seeking agreement. If this was not accomplished within  $\frac{1}{8}$  inch outside the neat line of T-8612, no further effort was made to afford a contour junction.

Planimetry:

The southern portion of the junction between this map manuscript and Studley Quadrangle is not in agreement. In addition to the exhaustive investigation made by the compilers to clear up the discrepancies, field measurements were made by Mr. Stanley Hathorn.

The field measurements were in agreement with the compilation of T-8612, and were used as conclusive evidence that further work on planimetry discrepancies is unwarranted.

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-8612.

(a) Previous Surveys

3383 1:20,000 1912-1913

(b) U.S.G.S., New Kent, Va. Quadrangle, 15',  
1:62,500, edition of 1930, published 1919.

45. Comparison with Nautical Charts.--

504 1:40,000 March 1936 Re-issue Jan. 1947

Planimetric and shoreline details on the chart are superseded by those on T-8612 in all areas common to both. This map manuscript has not been applied to nautical Charts.

48. Accuracy Tests.--

A. Vertical

All points tested were within tolerances prescribed by national map accuracy standards. A summary and abstract of vertical accuracy test is attached to this report.

b. Horizontal

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

Eleven of these described points, verified as identical points, were plotted on the map manuscript by geographic coordinates. No attempt was made to verify indefinite points such as Y road intersections.

The result of the accuracy test was well within the limits of national map accuracy requirements. A tabulation of the horizontal accuracy test is attached to this report.



Reviewed:

Harland R. Cravat  
Harland R. Cravat  
Cartographer, Photogrammetrist  
May 1948

APPROVED BY:

S. V. Griffith  
Chief, Review Section  
Div. of Photogrammetry

A. J. Salenka  
Chief, Nautical Chart Br.  
Div. of Charts

K. T. Adams  
Chief, Div. of Photogrammetry

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



TOPOGRAPHIC MAPPING

Summary & Abstract of Vertical Accuracy Test

Project No. 318 Quad. No. T 8 6 12 Quad. Name Old Church  
 Method of Testing Plane table Profile  
 Tested by Y F Date July 1947 Evaluated by H R C  
 Contour interval 20 ft. 0.6 M.M. allowable shift at 1:20,000  
 map or manuscript scale.

- 68 Total number of points tested
- 98 % of points within  $\frac{1}{2}$  contour interval or better
- 67 Test points correct within  $\frac{1}{2}$  contour interval
- 1 Test points in error between  $\frac{1}{2}$  and full contour interval
- 0 Test points in error over full contour interval

Test Elev.	Map Elev.	Error	Error after shift	Remarks	Test Elev.	Map Elev.	Error	Error after shift	Remarks
171	170	1	1	Flat	92	90	2	1	Smooth
157	157	0	0	Smooth	62	58	4	2	Smooth
154	154	0	0	"	40	44	4	1	"
153	155	2	1	"	35	37	2	2	Flat
149	141	8	7	"	66	66	0	0	"
166	161	5	4	"	71	71	0	0	"
158	158	0	0	"	73	73	0	0	Smooth
166	166	0	0	"	71	71	0	0	"
154	145	9	8	"	76	76	0	0	"
149	149	0	0	"	89	89	0	0	"
153	153	0	0	"	125	120	5	0	steep
154	154	0	0	"	79	83	4	4	Flat
159	159	0	0	"	71	71	0	0	Smooth
160	160	0	0	"	63	63	0	0	"
159	159	0	0	"	46	46	0	0	"
152	152	0	0	"	70	70	0	0	"
159	159	0	0	"	70	70	0	0	"
164	160	4	2	"	70	60	10	8	"
158	158	0	0	"	63	63	0	0	"
167	154	8	8	Flat	72	74	2	1	"
164	158	6	6	"	70	70	0	0	"
161	155	6	6	"	75	75	0	0	"
148	148	0	0	Smooth	64	64	0	0	"
162	155	7	7	Flat	59	59	0	0	Steep
162	155	7	7	"	63	60	3	0	"
155	155	0	0	"	68	68	0	0	Smooth
154	161	7	7	"	61	61	0	0	"
130	124	6	0	Steep	54	54	0	0	"
136	124	12	11	Drain Bottom	58	58	0	0	"
147	147	0	0	Smooth	74	74	0	0	"
141	141	0	0	"	61	61	0	0	"
139	140	1	0	"	64	61	3	1	"
121	121	0	0	steep	45	40	5	3	"
136	140	4	4	Flat					
110	110	0	0	steep					

GEOGRAPHIC NAMES

Survey No. T-8612

OLD CHURCH 7½' quadrangle

1 Name on Survey

	A	B	C	D	E	F	G	H	K	
	On Chart No.	On previous survey No.	On U. S. Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List		
<u>Virginia</u>									USGB	1
<u>Pamunkey River</u>									"	2
<u>Henover County</u>										3
<u>Henry District</u>										4
<u>King William County</u>										5
<u>Acquinton District</u>										6
<u>Mangohick District</u>										7
<u>U.S. No. 360</u>										8
<u>State No. 30</u>									<u>Washington Burgess Route</u> <u>Pamunkey Trail</u>	9
										10
<u>South of river:</u>										11
<u>Retreat</u>									(note change in position, as on chart 504)	12
<u>Whiting Swamp</u>										13
<u>Springfield</u>										14
<u>Horseshoe</u>										15
<u>Appersons Store</u>										16
<u>Mt. Zion Church</u>										17
<u>Mt. Zion School</u>										18
<u>Bethlehem Church</u>									apparently a locality name: no other usage of this sort found	19
<u>Bethlehem Presbyterian Church</u>										20
<u>Matadequin Creek</u>									USGB	21
<u>West's Pond</u>									(not West's)	22
<u>Old Church</u>									(village)	23
<u>Immanuel Church</u>										24
<u>Pony S. amp</u>										25
<u>Totopotomoy Creek</u>									USGB	26
<u>Newcastle Bridge</u>									(on U.S. 360)	27

GEOGRAPHIC NAMES

Survey No. T-8612

2	Name on Survey										
		A	B	C	D	E	F	G	H	K	
		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		
	<u>North of River:</u>										1
	<u>Forest Fire Trail No. 601</u>										2
	<u>Mahixen Creek</u>										3
	<u>Enfield</u>										4
	<u>Enfield School</u>										5
	<u>Judy Swamp</u>										6
	<u>McKendree Methodist Church</u>										7
	<u>Rock Spring Baptist Church</u>										8
	<u>Clements Mill</u>										9
	<u>Dabneys Mill</u>										10
	<u>Wormley Landing</u>										11
	<u>Forest Fire Trail No. 639</u>										12
	<u>Forest Fire Trail No. 640</u>										13
	<u>Church of Good and Christ</u>										14
	<u>Central Garage</u>	(settlement or crossroads name)									15
	<u>Sharon Baptist Church</u>										16
	<u>King William High School</u>										17
	<u><del>Jack</del> Jackpen Creek</u>										18
	<u>Boshers Mill</u>										19
	<u>Manquin Creek</u>										20
	<u>Manquin</u>										21
	<u>Manquin School</u>										22
	<u>The Island</u>										23
	<u>The Meadows</u>										24
	<u>Hollyfield Pond</u>										25
	<u>Tyler</u>										26
	<u>Dan Creek</u>										27

GEOGRAPHIC NAMES

Survey No. T-8612

3 Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
<u>Carters Landing</u>									USQB	1
										2
										3
				Names underlined in red are approved.						4
				12/21/47.				L. Heck		5
										6
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# NAUTICAL CHARTS BRANCH

SURVEY NO. 8612

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
11-15-51	504	<i>Gene Ball</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
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			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

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.