

8610

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
Tunstall Quadrangle
Field No. T-8610 Office No. CS 318

LOCALITY

State Virginia
General locality 25⁺ Miles East of Richmond
Locality 15⁺ Miles West of West Point, Va.
and 4 Miles North of Providence, Forge, Va.

1946

CHIEF OF PARTY

William E. Deane

LIBRARY & ARCHIVES

DATE Dec 17 - 1947

B-1870-1 (1)++

8610

DATA RECORD

T- 8610

Quadrangle (II): Tunstall 7½ minute 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

Div. of Photogrammetry
Copy filed in Descriptive
~~Report No. T-~~ (VI)
Office Files

Completed survey received in office: Oct. 1, 1946

Reported to Nautical Chart Section: ✓ Oct. 3, 1946

Reviewed: Oct. 1947 Applied to chart No. Date:

Redrafting Completed:

Registered: ~~Final~~ ^{Re-registered Dec 10, 1947} *Dec. 1947* Published:

Compilation Scale: 1:20,000 (Multiplex scale 1:8500) Published Scale:

Scale Factor (III): None

Geographic Datum (III): N.A. 1927 Datum Plane (III): Mean Sea Level

Reference Station (III): Tunstall, 1941

Lat.: 37° 31' 57.019 Long.: 77° 06' 59.487 Adjusted
~~Handwritten~~

State Plane Coordinates (VI): Virginia South Zone

X =

Y =

Military Grid Zone (VI)

PHOTOGRAPHS (III)

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Scale</u>	<u>Stage of Tide</u>
45-C-1965 to 1973	3/23/45		1:20,000	
45-C-1911 to 1920	3/23/45		"	
45-C-1953 to 1961	3/23/45		"	
45-C-2006 to 2014	3/23/45		"	

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

Mean Range: 3.0 feet

Spring Range: 3.4 feet

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

Field Inspection by: Thomas W. Merriken

date: 12/29/45

Field Edit by: I. Y. Fitzgerald

date: June 1947

Date of Mean High-Water Line Location (III): March 23, 1945

Projection and Grids ruled by (III) S. Rose

date: May 1945

" " " checked by:

date:

Control plotted by: A. C. Rauck (1:20,000)

date: July 1945

Control checked by: E. L. Bauman "

date: July 1945

Radial Plot by: G. B. Willey

date: Dec. 1945

Detailed by: M. E. Richey & A. K. Heywood

date: March-May 1946

Reviewed in compilation office by: S. W. Trow

date: September 1946

Elevations on ^{Manuscript} Field Edit Sheet
checked by: S. W. Trow

date: September 1946

STATISTICS (III)

Land Area (Sq. Statute Miles): 59.14

Shoreline (More than 200 meters to opposite shore): 14.0 statute miles

Shoreline (Less than 200 meters to opposite shore): 5.0 " "

Number of Recoverable Topographic Stations established: None

Number of Temporary Hydrographic Stations located by radial plot: None

Multiples Models

Leveling (to control ~~points~~) - miles: See 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: The 1947 mean magnetic declination for the center of the Manuscript is 6° 15' W.

Statement to Accompany Descriptive Report T-8610

1. This summary of survey methods used and the method of handling T-8610 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. *In this case the multiplex manuscript was reduced photographically and copied on the 1:20,000 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-8610 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-8610 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 manuscripts not corrected after field edit.

(3) Field Edit Sheet

- (b) Filed in the 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-8610 is published a cloth backed copy of the published map will also be registered.

Harland R. Cravat

Harland R. Cravat
Cartographic Photogrammetrist
November 5, 1947

Field Inspection Report

T 8610 Tunstall Quadrangle, (37 30/ 77 00 /7.5)

Project CS 318

Harland R. Cravat, Chief of Field Party.

1. Description of The Area.

This is a seven and one half minute quadrangle. It extends about 5.5 miles north of, and 2.0 miles south of state highway # 33. The eastern boundary is about $\frac{1}{2}$ mile east of the intersection of highways # 33 and # 155. The western boundary is about $\frac{1}{2}$ mile west of Patterson's Store. It is about 25 miles east of Richmond, Virginia, 15 miles west of West Point, Virginia, and 4 miles north of Providence Forge, Virginia.

The drainage goes to the Pamunkey and Chickahominy Rivers. The drains are wide, flat bottomed streams with a great deal of swamp land in various spots.

The area is heavily wooded with both hard and soft woods. Pine is cut extensively for pulp wood. Cultivated fields dot the entire area; the chief crops are corn and soya beans, which are used for livestock feed.

There are many wild ducks and geese in the swamp areas of the Pamunkey River during the fall and many sportsmen go there to hunt.

2. Completeness of Field Inspection.

Field inspection was done in conjunction with 4th Order Leveling by Mr. Matthew A. Stewart, Engineering Aid. It is felt the inspection is neither adequate nor complete, and as an aid to the field edit party the phases of field inspection are broken down into two headings: "Adequate" and "Inadequate". It was felt the items under "Inadequate" could be completed at the time of field edit.

" Adequate "

Woods:

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

Bridges:

Bridges over navigable waters were measured and measurements noted on the respective photographs. The clearance was not checked against the " List of Bridges over Navigable Waters in the U.S.", published by the U.S. Corps of Engineers. Since the list was not available to the field party it is recommended the check be made by the Compilation Office; should any discrepancy arise, it can be clarified at the time of field edit (see photo 1970).

See item
15 of
review report

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 in red ink, in the field.

" Inadequate "

Roads:

All main roads have been classified as per the Director's instructions dated 30 June, 1945, and road numbers have been included. A review of the photographs indicates there are a large number of class 4, or less, roads which were overlooked by the field man. Obviously some of these should be deleted and others classified. It is hoped the compilers will show the unclassified roads, as they are an aid to the field edit man, and may be deleted or classified after they serve his needs.

Obscure Buildings:

Obscure buildings were not pricked and circled on the photographs.

Outbuildings and buildings past their useful life have not all been deleted

Power Lines:

At the time of field inspection the power lines were done adequately. However, new lines were started soon after the war's end, and there are some new lines in the area.

Telephone Lines:

At the time of the field inspection the telephone lines were done adequately. However, new lines were started soon after the war's end, and there are some new lines in the area.

3. Interpretation of the Photographs:

Open fields appear on the photos from a smooth gray to a smooth dark gray tone. The wooded areas appear from a mottled dark grey to a mottled black tone. The mottled dark grey is hardwood and the mottled black is mostly pine. Mixed stands appear as a combination of the two tones. Areas recently logged can be distinguished by white, thread-like lines interwoven in the mottled grey and black tones. Hardwoods are found generally in low land and pine is on higher ground. Small white spots in the wooded areas are usually sawdust piles.

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:

Eight substitute stations were positively identified and pricked on photos of January 1945, for the following triangulation stations:

Inside quad limits	Outside quad limits
Tunstall 1941	Mintree 1934
Monte 1912	New Kent 1934
Ball 1912	Manor 1912
Poplar 1912	Lanesville 1934

3rd Order Traverse:

A total of 3.5 linear miles of 3rd Order, open ended traverse was completed; one traverse starting at Triangulation Station Tunstall and extending southerly about 2.5 miles, the other started at Triangulation Station New Kent and extended westerly about one mile.

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

The azimuths at the terminal points were checked by two complete sets of sun observations, and the longer traverse a sun observation at the mid point.

The field party computed the traverse and sun azimuths. The sun azimuths checked the azimuths of the traverse within third order limits.

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

U.S.G.S. Primary Traverse Stations :

The U. S. Geological Survey stations within this area were not identified on the photographs for control of the compilation. They were, however, used for horizontal accuracy testing. See the summary at the back of this report.

5. Vertical Control:

All vertical control information appears on the photographs in blue ink. Vertical control is on both odd and even numbered photographs.

Recovery:

BM recovery was done by Messrs. Alfred R. Knaack, Engineering Aid, and Matthew A. Stewart, Engineering Aid. The following BM's were pricked on appropriate photographs and recovery notes submitted:

U.S.C. & G.S.

Previous Work	New Work
Z 48 1934	K 292 1945
A 49 1934	L 292 1945
C 264 1942	M 292 1945
D 264 1942	N 292 1945
E 264 1942	Z 291 1945
F 264 1942	A 292 1945
G 264 1942	B 292 1945
H 264 1942	
Y 274 1942	

U. S. G. S. - B.M's.

Pricked & Recovered

Destroyed

PTS 47 1916
PTS 48 1916
17 1917
36 1917

USGS 37 1917 ✓

4th Order Levels:

About 60 linear miles of fourth Order leveling was completed by Messers. Thomas W. Merriken, Jr., Matthew A. Stewart, and Alfred R. Knaack between the dates of 6-27-45 and 10-12/45.

Elevations were carried by trigonometric methods, using a Kern Theodolite, and a 7" Berger Theodolite, equipped with stadia hairs, and Simmons Adams leveling rods. Elevation computations were made with a stadia slide rule to the nearest 1/10 of a foot. Trigonometric loops longer than one mile were closed on either a previously determined elevation or an existing Bench Mark with the exception of two lines. These two lines were double rodded. Other spur lines less than one mile were also 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 meter values was computed. If the spread exceeded one foot the spur was re-run).

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

The code letters TV prefix all spot elevations and the following code was used to distinguish the closed elevations from the unclosed

1. Elevations circled indicate the loop was not closed on a known elevation.
2. Elevations underscored by a dashed line indicate the loop is closed on tidewater or that it is double rodded line.
3. Elevations underscored by a solid line indicate the loop is closed on a previously determined elevation or on an existing Bench Mark.

There were no fourth Order loops known to exceed the required limits of accuracy.

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

6. Contours & Drainage:

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

While leveling the culverts and bridges were marked in red ink; the letters CV or BR were used and the symbol (X) indicates the crossing.

7. Mean Highwater:

The Pamunkey River is affected by tidewater. Mr. Thomas W. Merriken, Jr., Engineering Aid, inspected the shore line in the fall of 1945.

The shoreline as seen by the navigator was indicated by a red dashed line at intervals where the shoreline is in-distinct; also, a red dashed line indicates the mean high water line.

A portion of the area is in a marsh grass and swamp area. The inshore boundaries of these details were indicated by a dashed blue line. Appropriate field notes on the photos were used as an aid to clarify the shore line details.

B. Low Waterline:

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 the field notes.

Most of the small islands are covered at M H W with grass extending above the surface, but at low water they are bare with about 1.5 feet extending above the surface.

9. Wharves & Shoreline Structures:

The Pamunkey River is used for barge traffic up to Waterloo. Much pulpwood is transported by this means. Also the waterways are used extensively for small pleasure craft.

There are no large wharves or shoreline structures of a permanent nature, but there are many small docks which are clearly visible on the photographs.

The landings used by the pulpwood traffic are not of a permanent nature as new landings are frequently added as the source of pulpwood supply is shifted.

10. Details Offshore From The Highwater Line:

Since the shoreline was inspected on foot it was difficult to obtain off-shore detail. No rocks or wreckage was visible and it is felt that there were no such obstructions in the water.

11. Land Marks & Aids To Navigation:

There are no prominent land marks within the limits of the quadrangle. The river is bordered by both wooded areas and open fields.

12. Hydrographic Control:

No new hydrographic control was established. The four horizontal control stations recovered by Mr. Harland R. Cravat are thought to be Hydrographic Stations (see item # 4).

13. Landing Fields & Aeronautical Aids:

There are no landing fields within the limits of the quadrangle. The Pamunkey River, the main roads, and the Southern Railroad are all aids to the aeronautical navigation in daytime flight. There are no beacons in the area.

14. Road Classification:

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

15. Bridges:

The Southern Railroad bridge at White House, Virginia is the only bridge over navigable waters. This bridge is a swing draw and is attended. While closed it has a 3.5 foot clearance.

See
Item 15
in Review
Report

When open the clearance is unlimited. It has a 57.5 foot fender clearance. (see bridges under item # 2).

16. Buildings & Structures:

Obscure buildings have not been pricked and circled in red. Public buildings have been circled in red ink and the name of the building inked on the photo.

Deletion of outbuildings and buildings past their useful life is inadequate.

17. Boundary Monuments & Lines:

The county and political boundaries were verified in the field and inked on the photographs in red ink by MR. Matthew A. Stewart, Engineering AIA.

18. Geographic Names:

Geographic names are the subject of a special report by Mr. Harland R. Cravat. Filed ~~Under Special Report, Geographic Names Section~~ *Section*
~~Project 318, in General Files of the Division of Photogrammetry~~ *Dir of Charts*

19. Notes For The Compilers:

The photographs used for this quadrangle were segregated into two sets; even numbers for interior inspection and odd numbers for leveling, except on photo # 2016. It is the only coverage available for that area and had to be used for leveling and interior inspection. Also, some of the Bench Marks are pricked on even numbered photographs.

The horizontal control was pricked on photos of January 1945 and forwarded to the Washington office in July, 1945.

See roads under item # 2

The following photos are being forwarded with this quadrangle: # 1911 to # 1919 inclusive; # 1954 to # 1972 inclusive; and # 2007 to # 2023 inclusive.

Photos # 2016-2023 also cover work in quadrangle # 8609

Respectfully submitted
Thomas W. Merriken, Jr.
Thomas W. Merriken, Jr.,
Engineering Aid

Approved 12/29/45 by
Harland R. Cravat
Harland R. Cravat
Photogrammetric Engineer

26. CONTROL:

The Baltimore compilation office was furnished by the Washington office Vinylite work sheets at a scale of 1:8500. These sheets were used by the Washington office to lay a steel template radial plot. The Vinylite sheets had triangulation stations, photograph centers, and secondary control plotted when received by the compilation office.

Recovery notes for horizontal control stations in this area plus stations falling just outside the limits of the quadrangle were furnished. One set of contact prints with vertical control, horizontal control and field inspection were furnished plus a set of ratio prints, scale 1:8500 which were used in making the steel template radial plot. The ratio prints show horizontal control stations, principal points, and secondary control points as used in the radial plot.

The following control points fell inside the quadrangle, all were held.

TUNSTALL,	1911	BALL,	1912
MONTE,	1912	POPLAR,	1912

HUB, 7) Established by traverse for photo control. Will not be shown with Δ symbol.

27. RADIAL PLOT:

A radial plot was made by the Washington office. See "Radial Plot Report", Project CS-318, December 1945. Filed in ~~General File of the Div. of Photogrammetry~~
Desc Report T-8613

28. DETAILING:

The field inspection furnished the compilation office by the field inspection party was neither adequate nor complete. See Field Inspection Report. It is planned to complete this inspection at the time of field edit.

Strips of four or five models were set up with Zeiss wide angle Multiplex equipment and scaled for the best overall scale. In some cases secondary control points could not be held. The control points which did not hold were off as much as 1.0 mm. at 1:8500 scale. In the cases where points were 1.0 mm. off, the identification of the point was usually doubtful or the point chosen was not a small well defined image.

Due to the rigidity of the Multiplex, it is believed that the horizontal accuracy of this map manuscript is within the limits set forth in the instructions for Project CS-318.

The planimetric detail was drawn with the aid of field inspection photographs only where field inspection was furnished. In areas where there is inadequate field inspection the manuscript is subject to additions, corrections, and deletions by the field edit party.

28. DETAILING: (Cont'd)

Each model was horizontalized with pre-requisitioned vertical control. A minimum of four control points per model were used to horizontalize. In the flat area along the Pamunkey River and the flat tops of ridges it was difficult to draw contours. However, more time was spent drawing contours in flat areas than in areas of more relief. It is, therefore, believed that 90% of the contours in flat areas are accurate to within one-half-contour interval.

29. SUPPLEMENTAL DATA:

None.

30. MEAN HIGH-WATER LINE:

Mean highwater line was detailed with the Multiplex using field inspection photographs for reference and inspection. The tide range being so small, tide correction was not used.

31. LOW-WATER and SHOAL LINES:

Approximate low-water lines, visible on the office photographs or shown by the field inspection data were detailed.

32. DETAILS OFFSHORE from the HIGH-WATER LINE:

None.

33. WHARVES and SHORE LINE STRUCTURES:

All wharves and piers visible on the photographs or indicated by the field inspection party were detailed.

34. LANDMARKS AND AIDS TO NAVIGATION:

None. See paragraph No. 11.

35. HYDROGRAPHIC CONTROL:

No hydrographic control stations were plotted with the multiplex.

36. LANDING FIELDS and AERONAUTICAL AIDS:

No data concerning landing fields and aeronautical aids has been furnished the compilation office by the field parties and none are visible on any of the photographs covering the area of this map manuscript.

45. COMPARISON WITH NAUTICAL CHARTS: (cont'd)

The nautical chart shows a wreck at Putneys Mill whereas neither the field inspection party nor photographs show a wreck in this location. This should be investigated by the Hydrographic Party.

Respectfully submitted,
September 24, 1946

Stanley W. Trow
Stanley W. Trow
Cartographer

Map manuscript, discrepancy
overlay and woods overlay
reviewed by:

Stanley W. Trow
Stanley W. Trow
Cartographer

Compilation of Map Manuscript
Supervised by:

Stanley W. Trow
Stanley W. Trow
Cartographer

Approved and Forwarded:
September 24, 1946

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

ADDENDA TO T-8610

38. GEOGRAPHIC NAMES:

A special report by Mr. Harland R. Cravat, was received by the compilation office October 16, 1946. All names furnished in this report have been shown on the map manuscript. ~~Filed under Special Report Geographic Names, Project 310, in General Files of the Division of Photogrammetry.~~ (see also p. 6)

40. JUNCTIONS:

The junction to the east with Survey No. T-8337 was made. Planimetry was in agreement with the following exceptions: A class four road west of Lanesville. This road has been changed on Survey No. T-8337 and is now shown as plotted by the Multiplex. A class four road at the south end of this junction is shown on Survey No. T-8337, but not on Survey No. T-8610 because of poor definition in the Multiplex Model. 10 cm. of this road should be deleted as shown on ozalid of Survey No. T-8337.

Contours that were not in agreement were drawn into Survey T-8337 to a point where they were in agreement. This method was successful except for a small area just south of State Highway No. 33. The field edit party will have to check and join these contours as shown on the discrepancy overlay for Survey No. T-8610.

Respectfully submitted:
22 October 1946

Stanley W. Trow
Stanley W. Trow
Cartographer

Approved:
22 October 1946

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

FIELD EDIT REPORT
T-8610
Tunstall Quadrangle
(37-30 / 77-00 / 7.5)
Project CS-318
R. J. Sipe, Chief of Party

The field edit of this quadrangle was completed in the period 22 May to 10 June 1947, by I. Y. Fitzgerald, Cartographer. All work was done in accordance with the Director's Field Edit Instructions, dated 24 August 1945 and Field Edit Instructions - Supplement 1, dated 4 February 1946. Other recent Instructions applicable to field edit were also followed as noted herein.

46. METHODS:

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

The relief as depicted by the contours was observed closely when checking other delineated features. In areas where the contours did not appear "to fit the ground" the plane table was used to check and correct them. (See Item 6).

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.

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

47. ADEQUACY OF THE COMPIATION:

With due consideration given to the amount of field inspection completed prior to compilation, the compilation is very adequate and complete.

Some roads were compiled which were deleted during field edit. These were of value to the field editor. Many structures were compiled which were deleted during field edit. These, in the main, were outbuildings. There were several structures added during field edit which were not clear on the photographs or were overlooked during compilation.

48. ACCURACY TEST:

One vertical accuracy test was made on this quadrangle. Beginning on U.S.C. & G.S. BM H-264 1942 and passing BM's M-292 1945, N-292 1945 and closing on U.S.C. & G.S. BM L-292 1945. Closures were as follows:

N-2920.40 low
M-2920.40 low
L-2921.20 low

See Review Report

6. CONTOURS AND DRAINAGE:

In flat areas, ~~of~~ the contours were either too wide or not wide enough. These contours were corrected by plane table. In some cases these corrections were made on the field edit sheet. In other cases the corrections were made on the photographs in order to use the stereoscope.

A reconciliation of the contours between Surveys Nos. T-8610 and T-8337 was made.

The drainage was found to be in error in some areas. This was corrected.

7. MEAN HIGH WATER LINE:

The mean high water line was found to be correct. One short section was clarified as requested by the reviewer.

10. DETAILS OFFSHORE FROM MEAN HIGH WATER LINE:

A submerged wreck as shown on the chart in the Pamunkey River approximately 5 miles Northwest of White House could not be seen from shore at low water. This could not be clarified as requested by the reviewer.

14. ROAD CLASSIFICATION:

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

16. BUILDINGS AND STRUCTURES:

New structures were added when necessary. Obscure buildings and buildings omitted during compilation were added to the field edit sheets or were delineated on the photographs and a reference was made on the field edit sheet.

17. BOUNDARY MONUMENTS AND LINES:

The boundary between New Kent and King William Counties follows the main channel of the Pamunkey River. This boundary is correct as compiled.

The boundary line between Acquinton and West Point Magisterial Districts in King William County was investigated during field edit of Survey No. T-8611. (See Field Edit Report T-8611).

The boundary between Black Creek and St. Peter's Magisterial Districts in New Kent County was investigated and was shown on the field edit sheet.

The boundary between St. Peter's and Cumberland Magisterial Districts in New Kent County was investigated and was shown on the field edit sheet.

The boundary of the Pamunkey Indian Reservation was investigated during field edit. All information available was that obtained as statements from the occupants of the reservation. This is not considered as being as complete and satisfactory as desired by the review section. However, no more complete nor authoritative information could be obtained during field edit. This information was added to the field edit sheet to guide the reviewer. It is recommended that the review section consult the records of the Bureau of Indian Affairs, Department of Interior, in regard to this boundary.

18. GEOGRAPHIC NAMES: 214

The name William's Creek does not appear on this compilation nor on the U.S.G.S. quadrangle "King William". This creek forms the Northern boundary of the Pamunkey Indian Reservation. The name was added to the field edit sheet. The following references are given:

A. J. Page, Farmer
Lester Manor, Virginia

18. GEOGRAPHIC NAMES, (Cont'd)

Harry Collins, Farmer
Lester Manor, Virginia

Nelson M. Jackson, Farmer
Tunstall, Virginia

The name of a tidewater creek on the Southeast side of the swamp surrounding Big Island was added to the field edit sheet. The following references are given:

Nelson M. Jackson, Farmer
Tunstall, Virginia

L. M. Ellyson, Storekeeper
Tunstall, Virginia

N. H. McKay, Post Master
Tunstall, Virginia

The name RICHARDSON should be omitted from the compilation as it is an obsolete name. The name was used to designate a siding of the Southern Rail Road just West of Tunstall. This siding was removed several years ago and the name now has no meaning. The following references are given:

Nelson M. Jackson- Farmer
Tunstall, Virginia

L. M. Ellyson- Storekeeper
Tunstall, Virginia

N. H. McKay- Post Master
Tunstall, Virginia

49. REVIEW OF THE FIRST PROOF:

The following named gentlemen have expressed their willingness to ^{review} the first proof of this quadrangle:

Mr. L. M. Ellyson, Storekeeper, Tunstall, Virginia. Mr. Ellyson is a life long resident of the area and is familiar with the section in general.

Mr. N. H. McKay, Postmaster, Tunstall, Virginia. Mr. McKay has been a resident of this section for thirty years. Although Mr. McKay has not been a resident as long as Mr. Ellyson, he has a more detailed knowledge of the country due to his experience as a timber cruiser.

Disregard → HRE
Name not given here
not found on Field
Edit sheet. H.H.
2/4

Submitted:
16 June 1947

M. L. M. Buckley

for I. Y. Fitzgerald,
Cartographer

Division of Photogrammetry

Review Report of
Topographic Map Manuscript T-8610

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

15. Bridges.

A discrepancy existed between the field inspection and the List of Bridges over the Navigable Waters of the United States for the Southern Railroad Bridge, crossing the Pamunkey River at White House. Since the field edit party did not reconcile the discrepancy, the values given in the 1941 bridge book are accepted as correct and are as follows: Southern Railroad, Swing bridge, 53 ft. horizontal clearance and 4.4 ft. above H. W.

17. Boundary Monuments and Lines.

The Pamunkey Indian Reservation Boundary has been delineated on the manuscript at the low water line, except where field edit notes indicate the boundary to be mid-stream, to include several marsh islands.

The Bureau of Indian Affairs was requested by letter to verify this boundary. No reply has been received from them as of the date of this report.

26. Control.

A narrow unchecked scheme of third order triangulation extends up the Pamunkey River. In Project 289-W considerable difficulty was encountered by the field party in the recovery of stations in this scheme. Instructions of Project 318 eliminated the systematic recovery of these stations and only sufficient stations needed to control the radial plot were recovered. The field party reported these stations to be in excellent condition.

In order to provide additional horizontal control for the area, the reviewer has plotted five triangulation stations; viz., Track, 1912 -- Sup, 1912 -- Doctor, 1912 -- Gar, 1912 and Dike, 1912 on the map manuscript. They were selected as follows:

- A. Monumented stations
- B. Plotted position in agreement with detail
- C. No information to indicate that the station would be disturbed.
- D. Proximity of adjacent stations.

28. Detailing.

All additions and corrections, made by the reviewer, have been shown in red ink on the 1:20,000 map manuscript, none were shown on the original multiplex manuscripts. In addition to the routine review corrections, the following changes were made:

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

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-8610.

A. Previous Surveys

722a	1:60,000	1862
3383	1:20,000	1912-13

The shoreline varies as much as 100 meters and many small marsh islands have been completely obliterated, probably due to tidal action.

B. Quadrangle

U.S.G.S. King William, Va. 15' 1:62,500 1917-18

45. Comparison with Nautical Charts.

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

Planimetric and shoreline details on the chart are superseded by those on T-8610 in all areas common to both. This map manuscript has not been applied to nautical charts.

47. Adequacy of Compilation.

This compilation is believed to be adequate and complete. It meets all national map accuracy requirements.

48. Accuracy Tests.

A. Vertical

92% of All points tested were within a tolerance of one-half contour interval of error or better. 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.

Ten 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 results of the accuracy test were well within the limits of national map accuracy requirements. A tabulation of horizontal accuracy test is attached to this report.

Reviewed by

Harland R. Cravat

Harland R. Cravat
Photogrammetrist

23 October 1947

Reviewed under direction of:

S. V. Griffith
S. V. Griffith 12/8/1947
Chief, Review Section

Approved by:

B. J. Jones 12/47
Technical Assistant to the
Chief, Div. of Photogrammetry

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Division of Charts

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

GEOGRAPHIC NAMES

Survey No. T-8610-

TUNSTALL 7 1/2' quadrangle

1 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>Virginia</u>									USCB	1
<u>Southern Railway</u>										2
<u>Pamunkey River</u>									*	3
<u>King William County</u>										4
<u>West Point District</u>										5
<u>Acquinton District</u>										6
<u>New Kent County</u>										7
<u>Guiberland District</u>										8
<u>St. Peters District</u>					(per Census Map no 's)					9
<u>Black Creek District</u>										10
<u>State Nos. 33, 155</u>										11
<u>Fire Trail No. 1723</u>					(near Tunstall)					12
										13
<u>South side of river, starting at east border:</u>										14
<u>Lilly Point</u>										15
<u>White House Creek</u>					(see field edit T-8387, to eastward)					16
<u>St. Peters Swamp</u>										17
<u>St. Peters Church</u>										18
<u>SECOND Mt ZION Baptist Church and Cemetery</u>					Field Edit					19
<u>Tallysville</u>										20
<u>Palham Swamp</u>										21
<u>Bens Swamp</u>										22
<u>Bunley Marsh</u>										23
<u>Toe Ink Swamp</u>										24
<u>Second Liberty Church and Cemetery</u>										25
<u>New Kent Training School</u>										26
<u>Crumps Mill</u>										27

GEOGRAPHIC NAMES

Survey No.

T-8610

2	Name on Survey	Source												
		A	B	C	D	E	F	G	H	K				
	<u>Southern Branch</u>		(of Black Creek)											1
	<u>Pattersons Store</u>													2
	<u>Clopton Swamp</u>													3
	<u>Tunstall</u>													4
	<u>New Branch Church</u>													5
	<u>Lebanon Church</u>													6
	<u>Lebanon School</u>													7
	<u>Dickerson Swamp</u>													8
	<u>Waterloo</u>													9
	<u>Northbury</u>													10
	<u>Putneys Mill</u>		(use as locality name)									USCB		11
	<u>Black Creek</u>													12
	<u>Little Island</u>													13
	<u>Macon Creek</u>													14
	<u>Big Island</u>													15
	<u>Creek</u>		(see Field Edit Report: name not shown on " " sheet)											16
	<u>Poplar Grove</u>													17
	<u>White House</u>													18
														19
	<u>North side of river, beginning at north border:</u>													20
	<u>Old Montague Landing</u>											USCB		21
	<u>Montague Creek</u>											"		22
	<u>Montague Landing</u>											"		23
	<u>Lacey Landing</u>		(not Lacy)											24
	<u>Polkwest Creek</u>													25
	<u>Liberty Hall</u>													26
	<u>Jacka Creek</u>													27

GEOGRAPHIC NAMES

Survey No. T-8610

g	Name on Survey											
		A	B	C	D	E	F	G	H	K		
	<u>Elsing Green</u>											1
	<u>Clayborne Creek</u>											2
	<u>Harrison Creek</u>											3
	<u>Williams Creek</u>			(not William's)								4
	<u>Pamunkey Indian Reservation</u>											5
												6
												7
												8
												9
												10
												11
												12
												13
												14
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												24
												25
												26
												27

Names underlined in red
are approved
L Heck
10/21/47

TOPOGRAPHIC MAPPING

Summary & Abstract of Vertical Accuracy Test

Project No. 318 Quad. No. T 8610 Quad. Name TUNSTALL
 Method of Testing Plane table Traverse
 Tested by J. Y. F. Date June 1947 Evaluated by H. R. C.
 Contour interval 2.0 ft. O.M.M. allowable shift at 1:20,000
map or manuscript scale.

- 74 Total number of points tested
- 92 % of points within $\frac{1}{2}$ contour interval or better
- 68 Test points correct within $\frac{1}{2}$ contour interval
- 6 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
136	130	6	6	Flat top	118	118	0	0	shallow drain
128	132	4	3	Smooth	139	141	2	1	Smooth
138	141	3	2	"	139	139	0	0	"
127	127	0	0	steep	132	132	0	0	"
132	121	11	10	drain Bottom	138	128	0	0	"
137	137	0	0	ridge top	126	118	8	7	Drain
146	146	0	0	Flat top	115	108	7	5	slope
144	144	0	0	" "	126	119	7	7	small top
142	142	0	0	" "	126	126	0	0	" "
145	144	1	1	" "	104	95	9	9	Smooth
132	137	5	4	Smooth	88	76	12	12	drain Bottom
120	119	1	0	"	101	81	20	19	slope
114	114	0	0	"	107	88	19	17	"
119	119	0	0	"	99	96	3	2	Smooth
131	131	0	0	"	94	95	1	0	"
138	138	0	0	"	104	104	0	0	"
127	127	0	0	"	108	108	0	0	"
129	120	9	7	"	108	108	0	0	"
109	101	8	6	steep drain	89	90	1	0	Smooth
128	121	7	4	" slope	106	98	8	7	"
126	126	0	0	Smooth	105	105	0	0	"
120	119	1	0	"	117	117	0	0	"
84	80	4	2	Slope	128	128	0	0	"
70	60	10	9	Gentle slope	99	99	0	0	"
84	73	11	8	" "	99	99	0	0	"
95	95	0	0	" "	118	105	12	9	Slope
104	104	0	0	" "	114	104	8	7	Smooth
116	106	0	0	" "	126	110	16	16	FLAT
113	113	0	0	" "	120	110	10	9	Smooth
123	119	4	3	" "	128	110	18	18	FLAT
117	114	3	2	Drain	136	119	17	17	"
121	117	4	3	Flat ridge	124	119	5	5	"
127	119	8	7	" drain	121	119	2	2	"
130	130	0	0	Flat Top	118	118	0	0	"
132	132	0	0	Smooth	119	119	0	0	"

