

9808-9814 INCL

9808-9814.
INCL.

Diag. Cht. No. 77-5

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey TOPOGRAPHIC

Field No. Ph-70A(51) Office No. T-9808-14 Incl.

LOCALITY

State VIRGINIA

General locality FAIRFAX

Locality PENDER

194/ 51

CHIEF OF PARTY

H. A. Paton, Chief of Field Party.

H. A. Paton, Baltimore Photogrammetric Office

LIBRARY & ARCHIVES

DATE Dec 28-1951

DATA RECORD

T-9808 to
T-9814 incl.

Project No. (II): Ph-70A(51)

Quadrangle Name (IV):

Field Office (II): Baltimore, Md.

Chief of Party: H.A. Paton

Photogrammetric Office (III): Baltimore, Md.

Officer-in-Charge: H.A. Paton

Instructions dated (II) (III): 9 March 1951

Copy filed in Division of
Photogrammetry (IV)

Method of Compilation (III): Graphic and Kelsh Plotter

Manuscript Scale (III): 1:4,800

Stereoscopic Plotting Instrument Scale (III): 1:4,800

Scale Factor (III): None

Date received in Washington Office (IV): May, 1951 Date reported to Nautical Chart Branch (IV):

Applied to Chart No.

Date:

Date registered (IV): 11-27-51

Publication Scale (IV):

Publication date (IV):

Geographic Datum (III): N.A. 1927

Vertical Datum (III): MSL

Mean sea level except as follows:
Elevations shown as (25) refer to mean high water
Elevations shown as (5) refer to sounding datum
i.e., mean low water or mean lower low water

Reference Station (III): PENDER, 1943

Lat. 38° 52' 55.073"(1698.2m)

Long. 77° 22' 13.973"(336.8m)

Adjusted
~~Unadjusted~~

Plane Coordinates (IV):

State: Va.

Zone: N. (Lambert)

Y=

X=

Roman numerals indicate whether the item is to be entered by (II) Field Party, (III) Photogrammetric Office,
or (IV) Washington Office.

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

Areas contoured by various personnel
 (Show name within area)
 (II) (III)

See field records and Kelsh
 Plotter work sheets

DATA RECORD

Field Inspection by (II): *Partial - by various parties* Date: *Jan-April 1951*

Planetable contouring by (II): " " " " Date: " " "

Completion Surveys by (II): " " " " Date: " " "

Mean High Water Location (III) (State date and method of location):

Projection and Grids ruled by (IV): *T.L.J.* Date: *2-13-51*

Projection and Grids checked by (IV): *H.D.W.* Date: *2-15-51*

Control plotted by (III): *J.Honick* Date: *2-26-51*

Control checked by (III): *R.M.Whitson* Date: *2-27-51*

Radial Plot ~~of Stereoscopic~~ Date:
 ~~Radial Plot~~ by (III): *F.J.Tarcza* *3-22-51*

Planimetry Date:

Stereoscopic Instrument compilation (III): *Contours Wash. Office* Date:

Manuscript delineated by (III): Date: *5-7-51*

D.M.Brant R.R.Hartley A.C.Rauck L.A.Senasack
J.Y.Councill J.Honick J.C.Richter R.M.Whitson
J.D.McEvoy

Photogrammetric Office Review by (III): Date: *5-8-51*
R.Glaser

Elevations on Manuscript Date:
 checked by (II) (III): *R.Glaser* *5-8-51*

U.S.C. & G.S. type "O" camera-focal length, 6"
Camera (kind or source) (III): U.S.C. & G.S. type "D" camera-focal length, 12"

Number ²²⁵¹ Date Time Scale Stage of Tide
51-O-36 to 51-O-60 incl 1:4800
51-O-99 to 51-O-123 incl.
51-O-130 to 51-O-154 incl.
51-O-163 to 51-O-189 incl.
51-O-206 to 51-O-225 incl.
51-D-43, 45, 47, 48, 50, & 66)
51-D-68 to 51-D-73 incl.) Field
51-D-125 to 51-D-133 incl.) only
51-D-167 to 51-D-174 incl.)
51-D-327 and 51-D-329)

Tide (III)

Reference Station:
Subordinate Station:
Subordinate Station:

Ratio of Ranges	Mean Range	Spring Range

Washington Office Review by (IV): *Charles H. H. H. H.*

Date: *31 May 1954*

Final Drafting by (IV):

Date:

Compilation
Drafting verified for reproduction by (IV): *J. Sturges*

Date: *5/22 51*

Proof Edit by (IV): *J. Sturges*

Date: *5/24 51*

Land Area (Sq. Statute Miles) (III): *26.7*

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

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

Control Leveling - Miles (II):

Number of Triangulation Stations searched for (II): *26*

Recovered: *17*

Identified: *17*

Number of BMs searched for (II): *7*

Recovered: *6*

Identified: *6*

Number of Recoverable Photo Stations established (III):

none

Number of Temporary Photo Hydro Stations established (III):

none

Remarks:

Summary to Accompany Descriptive Report
for T-9808 to T-9814 incl.

Topographic maps T-9808 to T-9814 inclusive comprise project Ph-70A(51); it is in the vicinity of Pender about 3 miles west of Vienna, Virginia. The field operations consisted of the recovery and establishment of horizontal and vertical control, limited field inspection, and plane-table work for the whole area except for a narrow strip along the west edges of sheets T-9812 and T-9814, and the east edges of sheets 9811 and 9813, which was done by the Kelsh Plotter. All the sheets were field edited.

This special work was initiated by and executed for the CAA within the limits of the area designated by them, and chiefly for the purpose of obtaining 5-foot contour intervals at a scale of 1:4800. These maps will not be published. Each sheet is $2\frac{1}{2}$ ' in latitude and $2\frac{1}{2}$ ' in longitude.

No specific field project instructions were written; the organization of the work, including general supervision and other related phases, were directed by the Washington Office. No field inspection, field edit, or other special reports were submitted from the field.

The registered copies under T-9808 to T-9814 will include one cloth-back copy for each map manuscript.

Charles Hanavich
Charles Hanavich

PHOTOGRAMMETRIC PLOT REPORT

PROJECT PH-70A(51)

SURVEYS T-9808 to T-9814, incl.

21. AREA COVERED

This radial plot covers the areas of Surveys T-9808 to T-9814, inclusive, located west of Fairfax, Virginia. All of these are topographic surveys.

22. METHOD - RADIAL PLOT

Map Manuscripts - The map projections are on vinylite sheets, at a scale of 1:4800, ruled with polyconic projections in black, and Virginia North (Lambert) grid in red. No base sheets were furnished.

The control stations and substitute stations were plotted using beam compass and meter bar.

A sketch showing the layout of surveys, distribution of control and photograph centers, and a list of control stations are attached to this report.

Photographs - All photographs used in this radial plot are single lens photographs taken with the Type O camera, focal length 152.37 mm (6 inches). These are ratioed prints at a scale of 1:4800, the contact scale being about 1:8000. One hundred and twenty-two (122) photographs were used, numbered as follows:

51-O-36 to 51-O-60, incl.
51-O-99 to 51-O-123, incl.
51-O-130 to 51-O-154, incl.
51-O-163 to 51-O-189, incl.
51-O-206 to 51-O-225, incl.

There was another flight of photographs furnished for the western edge of this radial plot, 51-O-70 to 51-O-90, incl. Since the limit of compilation is east of the survey limits as ruled and the photographs used adequately cover the required area of compilation, this flight was not prepared for use.

All symbols used on the photographs are standard as prescribed in the Topographic Manual.

Templets - Acetate templets were made of all photographs used. Several photographs were checked by using the master templet furnished by the Washington Office. The errors due to paper and film distortion were found to be very small, or negligible and it was decided to omit the use of a master templet in order to expedite the making of templets due to the urgency of the work.

Closure and Adjustment to Control

Vinylite base sheets, previously furnished for other projects were adapted for use in this radial plot. A 2000 foot grid was ruled on the map manuscript. This does not correspond to the base grid but it was possible to use every fifth grid line for matching the base sheets.

The radial plot was begun on the middle flight, photographs 51-0-113 to 51-0-120, where there was a fix in two areas on this flight. It was found that considerable adjustment was necessary in order to hold all control stations even on this flight where good control was available. Other flights required more time and adjustment to obtain a satisfactory radial plot. A large number of photographs show evidence of tilt. A tilt determination was made on one, 51-0-55, and a tilt of $1^{\circ} 50'$ was determined. About 20% of the photographs were tilted by what appears to be a similar amount, or about 2° . Many others show evidence of smaller amounts of tilt. This made it difficult to construct an accurate radial plot. In two areas, near the junction of Surveys T-9809 and T-9811, and on the western side of Survey T-9812, the tilted photographs made it impossible to get good intersection of radial lines although adequate control was available. In the latter area, three consecutive photographs, 51-0-108 to 51-0-110 were considerably tilted. All control stations were held in the radial plot. The northern part of Survey T-9808 and the southern half of Survey T-9814 are known to be weak due to lack of control. However, in these areas the radial plot was extended beyond the designated limits of compilation to include all photographs available. The northeast area of Survey T-9810, also outside the area of compilation, may be weak too, though the radial plot appears good.

23. ADEQUACY OF CONTROL

Control stations furnished were adequate for a normal radial plot. However, with the large number of tilted photographs, there was difficulty in obtaining a satisfactory radial plot in some areas where there were gaps between control stations. All control stations were held in this plot, though some adjustment was necessary to hold several of them. A small error in control could not be isolated with the photography available and no serious discrepancies were found. Outside the area designated for compilation (as indicated in red on sketch) the radial plot was extended in three areas, without adequate control, to include all office photographs furnished within the limits of the surveys.

24. SUPPLEMENTAL DATA

No graphic control surveys were available for use in this radial plot.

25. PHOTOGRAPHY

The photographic coverage is adequate and definition of photographs is good. There was snow on the ground at time of photography. There is evidence of tilt in a large number of photographs. About 20% of them appeared considerably tilted, probably about 2° . A tilt determination, made on one of these, 51-0-55, showed $1^{\circ} 50'$ of tilt. A few appeared to be tilted to a greater degree than this. With photographs taken at a low altitude (about 4000') and at a large scale, the relief of terrain in this area causes considerable displacement. In tilted photographs this

introduces lateral errors in radial lines which caused difficulty in laying a good radial plot. Due to urgency of the work, it was considered impractical to make tilt determination on all tilted photographs.

Respectfully submitted

Frank J. Tarcza

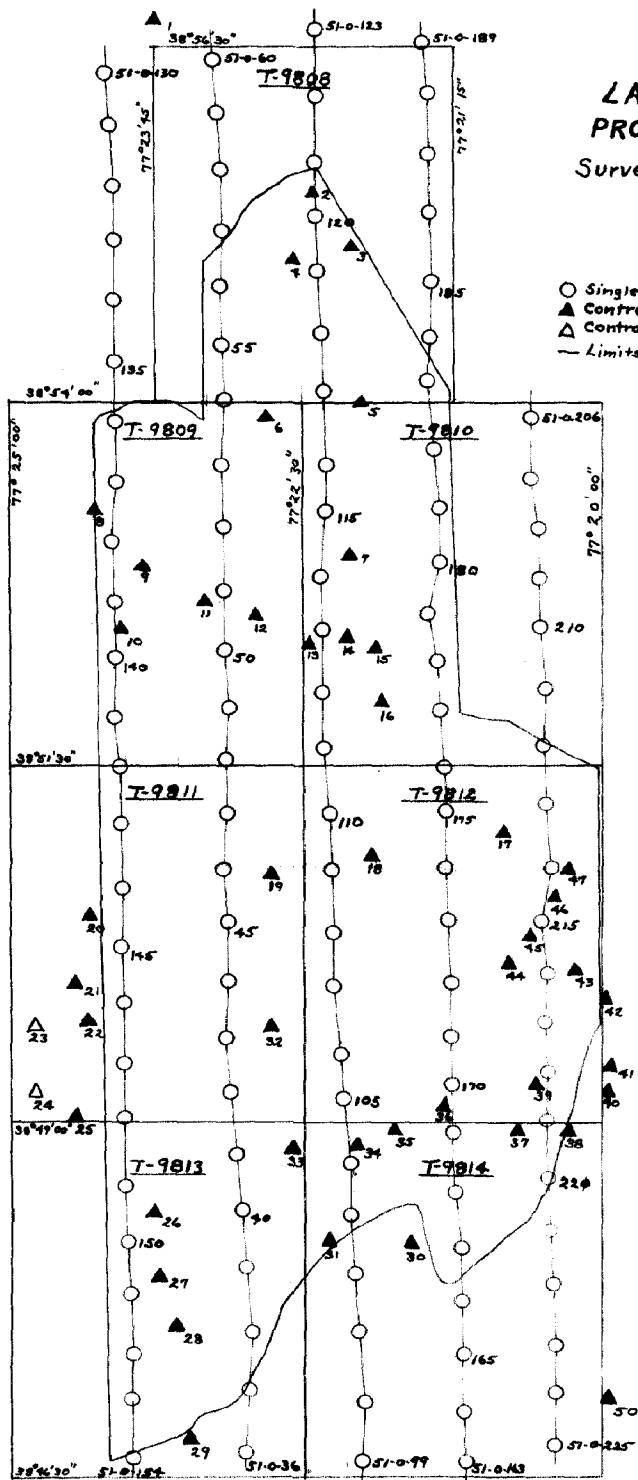
Frank J. Tarcza
Cartographic Engineer

NO.	STATION	IDENTIFICATION
1.	32 WSM 400, (USGS), 1949	Sub. Pt.
2.	33 WSM 431, (USGS), 1949	Sub. Pt. No. 3
3.	33 WSM " "	Sub. Pt. No. 2
4.	33 WSM " "	Sub. Pt. No. 1
5.	34 WSM 481, (USGS) 1949	Sub. Pt. No. 2
6.	34 WSM 481 (USGS) 1949	Sub. Pt. No. 1
7.	PENDER, 1943	Sub. Pt.
8.	CONTROL POINT 70A-6	Direct
9.	CONTROL POINT 70A-4	Direct
10.	CONTROL POINT 70A-5	Direct
11.	CONTROL POINT 70A-3	Direct
12.	CONTROL POINT 70A-2	Direct
13.	CONTROL POINT 70A-1	Direct
14.	PENDER LOOKOUT TOWER, 1943	Direct
15.	PENDER LOOKOUT TOWER, 1943	Sub.Pt.
16.	PTS. NO.6 (USGS) 1949	Sub.Pt.
17.	TT4 HDW (USGS) 1948	Sub.Pt.
18.	TT6 RCD (USGS) 1949	Sub.Pt. No.2
19.	TT6 RCD (USGS) 1949	Sub.Pt. No.1
20.	TT 5 HDW (USGS) 1948	Sub.Pt.
21.	CONTROL POINT 70A-7	Direct
22.	CONTROL POINT 70A-8	Direct
23.	CONTROL POINT 70A-9	Direct (Not used)
24.	CONTROL POINT 70A-10	Direct (Not used)
25.	CONTROL POINT 70A-11	Direct
26.	CONTROL POINT 70A-12	Direct
27.	CONTROL POINT 70A-13	Direct
28.	CONTROL POINT 70A-14	Direct
29.	D 232 (USGS) 1949	Sub.Pt.
29.	CONTROL POINT 70A-15	Direct (Not used)
30.	TT4 RCD (USGS) 1949	Sub.Pt.
31.	CONTROL POINT 70A-24	Direct
32.	TT5 RCD (USGS) 1949	Sub.pt.
33.	CONTROL POINT 70A-17	Direct
34.	CONTROL POINT 70A-18	Direct
35.	CONTROL POINT 70A-19	Direct
36.	CONTROL POINT 70A-20	Direct
37.	CONTROL POINT 70A-23	Direct
38.	CONTROL POINT 70A-22	Direct
39.	CONTROL POINT 70A-21	Direct
40.	CONTROL POINT 70A-16	Direct
41.	CONTROL POINT 70A-31	Direct
42.	CONTROL POINT 70A-25	Direct
43.	CONTROL POINT 70A-26	Direct
44.	CONTROL POINT 70A-27	Direct
45.	CONTROL POINT 70A-28	Direct

<u>No.</u>	<u>Name</u>	<u>Identification</u>
46.	CONTROL POINT 70A-29	Direct
47.	CONTROL POINT 70A-30	Direct
48.	TT 3 HDW (USGS) 1948	Sub. Pt. (Not used)
49.	PTS NO. 12 S (USGS) 1920	Sub. Pt.
50.	FAIRFAX, 1943	Sub. Pt.
51.	TT3 RCD (USGS) 1949	Sub.pt. (Not used)
52.	TT2 RCD (USGS) 1949	Sub.Pt. (Not used)

LAYOUT SKETCH
PROJECT PH-70A(51)
Surveys T-9808 to T-9814, incl.

- Single Lens Office Photographs
- ▲ Control Stations (Weldin Radial Plot)
- △ Control Stations (Not Used)
- Limits of Compilation



△
31

△
52

MAP T- 9808

PROJECT NO. Ph-70-A(51)

SCALE OF MAP 1:4,800

SCALE FACTOR

[illegible]

M - 2388-12

11 FT.=.3048006 METER
COMPUTED BY:.....K. Steinberg
.....K. Hartley

DATE 2/23/51

CHECKED BY: R.M. Whitson

DATE 2-26-51

MAP T-9809.....

[illegible]

[illegible]

MAP T-9812

PROJECT NO. Ph-70-A(51)

SCALE OF MAP 1:4800

SCALE FACTOR

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR ψ -COORDINATE LONGITUDE OR χ -COORDINATE	DISTANCE FROM GRID IN FEET. OR PROJECTION LINE IN METERS FORWARD (BACK)	DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD (BACK)	FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD (BACK)
TT-4-HDW (USGS) 1948	USGS Fairfax Quad P. 28 Pre-Ad.	N.A. 1927	38 51 02.12 77 20 32.71			65.37 (1784.79) 788.77 (658.07)	
TT-6-RCD (USGS) 1949	" Pg. 9	"	38 50 42.90 77 22 27.56			1322.86 (527.30) 664.64 (782.32)	
SUB. STA. TT-4-HDW			38 50 77 20			1837.4 (12.8) 1242.8 (204.1)	
Sub. Sta. No. 2 TT-6 RCD			38 50 77 21			1563.2 (286.9) 1190.0 (257.0)	
SUB. STA. No. 1 TT-6-RCD	(On T-9812)		38 50 77 22			1166.6 (683.6) 1062.9 (384.0)	
CONTROL POINT 70-A-16	Field Comp P. 4	N.A. 1927	421,995.78 2,332,345.11			608.3 (1.3) 105.2 (504.4)	
CONTROL POINT 70-A-19	"	"	420,855.56 2,324,424.25			260.8 (348.8) 129.3 (480.3)	
CONTROL POINT 70-A-20	"	"	421,688.77 2,326,679.44			514.7 (94.9) 207.1 (402.5)	
CONTROL POINT 70-A-21	"	"	422,548.80 2,329,874.81			167.3 (442.3) 571.4 (38.2)	
CONTROL POINT 70-A-25	"	"	426,258.18 2,331,864.17			78.7 (530.9) 568.2 (41.4)	
CONTROL POINT 70-A-26	"	"	427,172.07 2,330,596.37			357.2 (252.4) 181.8 (427.8)	
CONTROL POINT 70-A-27	"	"	427,179.75 2,328,174.71			359.6 (250.0) 53.3 (556.3)	

1 FT. = 3048006 METER

COMPUTED BY: R. M. Whitson

DATE 2/23/51

CHECKED BY: J. Steinberg

DATE 2/23/51

M-2388-12

SCALE FACTOR

[illegible]

DATE 3/19/51

MAP T. 9813

PROJECT NO. Ph-70-A(51)

SCALE OF MAP 1:4800

SCALE FACTOR

[illegible]

M-2388.12

1 FT. = 3048006 METERS
H. M. Whitson
2-23-51

Dr. M. M. Whitson

DATE:

2-23-51

CHECKED BY:

J. Steinberg

DATE _____

2/23/51

[illegible]

COMPILATION REPORT

T-9808 to T-9814 inclusive

Up to the time of this writing, no field inspection report for the seven surveys in this project has been received at the compilation office. It is assumed that when the field report is completed it will become a part of this descriptive report. *See "Summary to Accompany Descriptive Report"*

31. DELINEATION

The greater part of the project was compiled graphically; however, the Kelsh plotter was used to compile planimetry and hypsometry in the area covered by photographs 51-O-102 through 51-O-109 and is contained on seven Kelsh plotter work sheets.

While the higher altitude "D" photographs were much more desirable for graphic compilation, some difficulty was encountered in locating the same pass points and detail points originally chosen for use with the "O" photographs and plotted on the manuscripts. In some areas where consecutive "D" photographs were available, their approximate centers were located on the manuscripts by holding to planimetric detail; and detail points common to both the "O" and "D" photographs were then radially plotted on the manuscripts.

Only partial field inspection was received for the areas of T-9808, T-9809, and T-9810. No field inspection whatever, except of course, for contours, was available for the areas of T-9811, T-9812, T-9813, and T-9814.

32. CONTROL

See Radial Plot Report.
No further comment.

33. SUPPLEMENTAL DATA

None.

34. CONTOURS AND DRAINAGE

The only changes or adjustments made to the contouring other than those required by relief displacements were in reconciling the Kelsh plotter contours with those established by the planetable surveys. This was necessary only in the area where these surveys joined. In all cases the Kelsh plotter contours were adjusted to be consistent with spot elevations as shown on the contoured field inspection photographs.

It is noted that the topographic expression as depicted by the field survey portrays a gently rolling countryside while the Kelsh plotter contours represent a rather rugged terrain. The field edit party will no doubt dispose of this discrepancy. *See side heading 67 of the Review Report.*

35 thru 37

Not applicable.

38. CONTROL FOR FUTURE SURVEYS

None.

39. JUNCTIONS

All junctions between surveys in this project were carefully made and are in agreement.

40. HORIZONTAL AND VERTICAL ACCURACY

Weak areas, due to insufficient horizontal control and tilted photographs, has been adequately discussed in the photogrammetric plot report.

Any subnormality in vertical accuracy will probably be attributable to the use of low altitude, tilted photographs for graphic compilation.

41 thru 45.

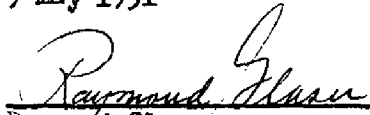
Inapplicable.

46. COMPARISON WITH EXISTING MAPS

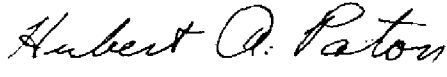
The manuscripts were compared with the USGS Fairfax, Va. quadrangle scale 1:62,500 edition of 1915, reprinted in 1944.

47. Inapplicable

Respectfully submitted
9 May 1951


Raymond Glaser
Cartographic Aid

Approved and forwarded


Hubert A. Paton
Comdr., C&GS
Officer in Charge
Baltimore Photo. Office

T-9808 to T-9814 incl.

48. GEOGRAPHIC NAME LIST

Braddock Road

Castle Creek

Clifton

* Colchester Road

Difficult Run

Johnny Moore Creek

* Lee Highway or Lee Boulevard

Little Difficult Run

Little River Road

Little Rocky Run

Fender

Popes Head Creek

Rocky Run

Sisson

Southern R.R.

U.S. 29

U.S. 50

U.S. 211

Warrenton Road

* Willow Spring

* Names to be verified

*Verified during field edit & noted
correctly on map manuscripts.
C.H.*

50 -

PHOTOGRAMMETRIC OFFICE REVIEW

T-9808 to T-9814 incl.

1. Projection and grids h 2. Title h 3. Manuscript numbers h 4. Manuscript size h

CONTROL STATIONS

5. Horizontal control stations of third-order or higher accuracy h 6. Recoverable horizontal stations of less than third-order accuracy (topographic stations) h 7. Photo hydro stations h 8. Bench marks h 9. Plotting of sextant fixes h 10. Photogrammetric plot report h 11. Detail points h

ALONGSHORE AREAS

(Nautical Chart Data)

12. Shoreline h 13. Low-water line h 14. Rocks, shoals, etc. h 15. Bridges h 16. Aids to navigation h 17. Landmarks h 18. Other alongshore physical features h 19. Other along-shore cultural features h

PHYSICAL FEATURES

20. Water features h 21. Natural ground cover h 22. Planetable contours h 23. Stereoscopic instrument contours h 24. Contours in general h 25. Spot elevations h 26. Other physical features h

CULTURAL FEATURES

27. Roads h 28. Buildings h 29. Railroads h 30. Other cultural features h

BOUNDARIES

31. Boundary lines h 32. Public land lines h

MISCELLANEOUS

33. Geographic names h 34. Junctions h 35. Legibility of the manuscript h 36. Discrepancy overlay h 37. Descriptive Report h 38. Field inspection photographs h 39. Forms h 40. Raymond Glass Joseph Steinberg
Reviewer Supervisor, Review Section or Unit

41. Remarks (see attached sheet)

FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT

42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted under item 43.

Compiler

Supervisor

43. Remarks:

Review Report T-9808 to T-9814 inclusive

Topographic
31 May 1951

62. Comparison with Registered Topographic Surveys

No prior surveys of this area were made by the Bureau.

63. Comparison with Maps of other Agencies

USGS; FAIRFAX QUADRANGLE; edition of 1915, reprinted 1944; scale 1:62,500.

64. Comparison with Contemporary Hydrographic Surveys

None

65. Comparison with Nautical Charts

Inapplicable since this is an inland survey.

66. Adequacy of Results and Future Surveys

Field edit corrections were applied during final review. Vertical accuracy tests were run on all maps but T-9812; the results of these accuracy tests indicate that the contours comply with the standard accuracy requirements. Only minor inadequacies were found, and they were corrected. These maps comply with the National Standards of Accuracy with the exception possibly of those areas referred to in the Photogrammetric Plot Report.

67. Contours

The second paragraph of sideheading 34 of the Compilation Report should be modified in that the terrain, on the whole, as depicted by both field and Kelsh plotter contours indicates a rolling terrain with moderate and gradual changes in relief with the steeper slopes to be noted along the more major drainages.

Reviewed by:

Charles Hamrick

Approved by:

S. V. Griffith
Chief, Review Section

H.R.B. 12/5/51

O. S. Reading
Chief, Div. of Photogrammetry

WHE