

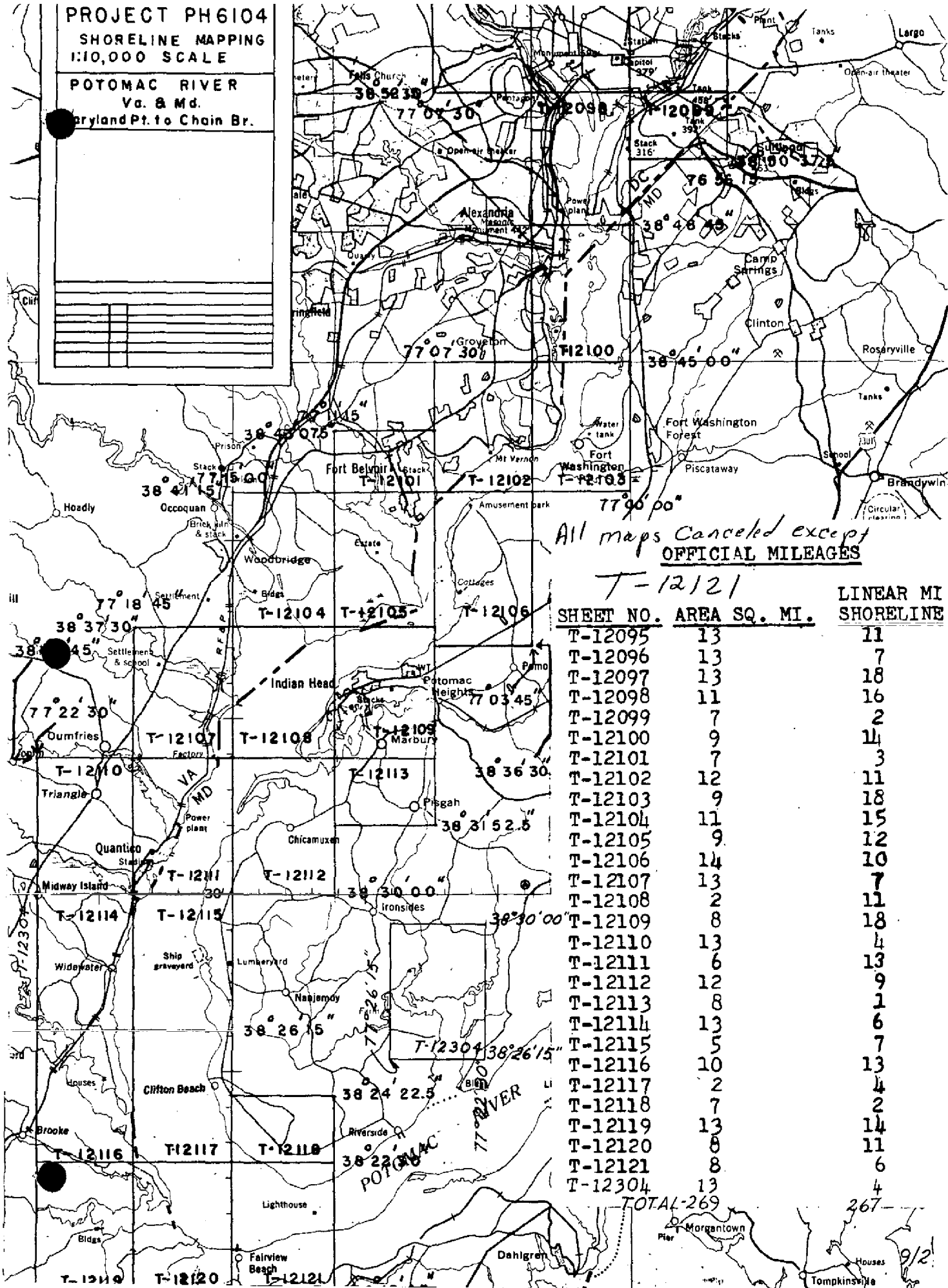
T-12121

T-12121

Form 504	
U. S. DEPARTMENT OF COMMERCE	
COAST AND GEODETIC SURVEY	
DESCRIPTIVE REPORT	
Type of Survey	SHORELINE (T-12121)
Field No.	Office No. PH-6104
LOCALITY	
State	Virginia
General locality	Potomac River
Locality	Fairview Beach
1961	
CHIEF OF PARTY	
Leo F. Beaumet	
LIBRARY & ARCHIVES	
DATE	

PROJECT PH6104
SHORELINE MAPPING
1:10,000 SCALE

POTOMAC RIVER
Va. & Md.
Maryland Pt. to Chain Br.



All maps canceled except
OFFICIAL MILEAGES

T-12121

SHEET NO.	AREA SQ. MI.	LINEAR MI SHORELINE
T-12095	13	11
T-12096	13	7
T-12097	13	18
T-12098	11	16
T-12099	7	2
T-12100	9	14
T-12101	7	3
T-12102	12	11
T-12103	9	18
T-12104	11	15
T-12105	9	12
T-12106	14	10
T-12107	13	7
T-12108	2	11
T-12109	8	18
T-12110	13	4
T-12111	6	13
T-12112	12	9
T-12113	8	1
T-12114	13	6
T-12115	5	7
T-12116	10	13
T-12117	2	4
T-12118	7	2
T-12119	13	14
T-12120	8	11
T-12121	8	6
T-12304	13	4
TOTAL-269		267

DESCRIPTIVE REPORT - DATA RECORD

T - 12121

Project No. (II): PH-6104

Quadrangle Name (IV):

Field Office (II): Fredericksburg, Virginia.

Chief of Party: Leo F. Beugnet

Photogrammetric Office (III): Baltimore, Md.

Officer-in-Charge:

Instructions dated (II) (III): (II) 26 June 1961. (FIELD & OFFICE) Copy filed in Division of Photogrammetry (IV)

FIELD & OFFICE, AMENDMENT I, dated AUG. 22, 1961

" " AMENDMENT II, dated APRIL 9, 1962

OFFICE AMENDMENT III, dated May 22, 1962

Method of Compilation (III): GRAPHIC

Manuscript Scale (III): 1:10,000

Stereoscopic Plotting Instrument Scale (III):

Scale Factor (III): 1

Date received in Washington Office (IV):

Date reported to Nautical Chart Branch (IV):

Applied to Chart No.

Date:

Date registered (IV):

Publication Scale (IV):

Publication date (IV):

Geographic Datum (III): N.A. 1927

Vertical Datum (III):

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): MARYLAND 2, 1901

Lat.:

Long.:

Adjusted

Unadjusted

Plane Coordinates (IV):

State:

Zone:

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.



COMM-DC-57842

DESCRIPTIVE REPORT - DATA RECORD

T - 12121

Field Inspection by (II): Leo F. Beugnet

Date: August - September
1961.

Planetable contouring by (II): NONE

Date:

Completion Surveys by (II): NONE

Date:

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

SEE "SUMMARY"

Projection and Grids ruled by (IV): A. ROUNDTREE

Date: 2-2-62

Projection and Grids checked by (IV): "

Date: 3-28-62

Control plotted by (III): B. KURS

Date: 8-20-62

Control checked by (III): J.W. VONASEK

Date: 8-20-62

Radial Plot or Stereoscopic Control extension by (III): L. WILLIAMS

Date: 8-24-62

Stereoscopic Instrument compilation (III):
Planimetry
Contours

Date:

Date:

Manuscript delineated by (III): B. WILSON

Date: 8-30-62

Photogrammetric Office Review by (III): L. WILLIAMS

Date: 8-30-62

Elevations on Manuscript
checked by (II) (III):

Date:

DESCRIPTIVE REPORT - DATA RECORD

Camera (kind or source) (III):

T-12121

5

PHOTOGRAPHS (III)

Number

Date

Time

Scale

Stage of Tide

Refer to "Summary"

Tide (III)

Reference Station:

Subordinate Station:

Subordinate Station:

Ratio of Ranges	Mean Range	Spring Range

Washington Office Review by (IV): None (refer to Summary)

Date:

Final Drafting by (IV):

Date:

Drafting verified for reproduction by (IV):

Date:

Proof Edit by (IV):

Date:

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

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): 5

Recovered: 3

Identified: 3

Number of BMs searched for (II): 0

Recovered: 0

Identified: 0

Number of Recoverable Photo Stations established (III):

Number of Temporary Photo Hydro Stations established (III):

Remarks:

No.	Name	Ident.
1.	FISHERY, 1901	Sub. Pt.
2	TWIN, 1928	Sub. Pt.
3	BS-04	Geodimeter Sta.- Sub. Pts.
4	BS-03	" " None
5	BS-02	" " "
6	WALLER, 1901	Sub. Pts.
7	SMITH 3, 1929	Sub. Pt.
8	SMITH POINT LIGHT, 1959 (CLIFTON BEACH LIGHT)	Direct
9	BRENT PT., 1934	Sub. Pts.
10	BS-01	Geodimeter Sta.- None
11	CONTROL PT "A", 1961	" " Direct
12	THOM 2, 1928	Sub. Pts.
13	104 (USE), 1928	None
14	BOUNDARY MONUMENT 37, 1929	None
15	MARYLAND POINT USNRL TELEMETRY ANTENNA, 1959	Direct
16	RM 1 MARLBOROUGH 2, 1928	None
17	MARLBORO PT. 1961 (temp)	Geodimeter Sta.- Sub. Pts.
18	CONTROL PT. "B", 1961	" " Sub. Pts.
19	BOUNDARY MONUMENT 35	None
20	TANZY 3, 1958	Sub. Pts.
21	MARYLAND 2, 1901	Sub. Pts.
22	MARYLAND POINT LIGHTHOUSE, 1928	Direct
23	GRIMES 4, 1959	Sub. Pts.
24	CASH, 1934	Sub. Pts.
25	METOMKIN 3, 1928	Sub. Pts.
26	McDANIELS 2, 1954	Sub. Pts.

JOB PH-6104
Summary to Accompany
Descriptive Report T-12121
And
Job Completion Report

T-12121 comprises project PH-6104. With the exception of the subject map, all maps were canceled on October 27, 1976, (refer to memorandum included in this Descriptive Report). *Page 8*

A complete field inspection was accomplished during August and September 1961.

The map manuscript was compiled in August 1962 and used in hydro operations (H-8706) during September and October of the same year.

This map was not final reviewed as the result of the following:

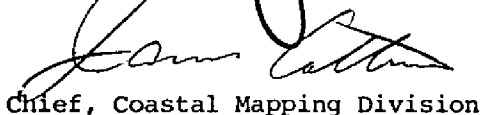
1. Field and office photographs were lost - either during or after the relocation of the Division files at Riverdale (as a result Control Station Identification Cards were destroyed prior to registration since they are useless without the field photographs).

2. Other than the mean high water line and a few structures extending into the water area, few details are shown on the map. The mean high water line is shown on the contemporary hydrographic survey as compiled on the map. No manuscript copies were furnished for application to nautical charts.

No Compilation Report was written. The Descriptive Report Data Record indicates compilation by graphic method.

The numbers of the photographs used in compilation are not indicated in the Descriptive Report Data Record. Available tide computation records, which are included in the Descriptive Report, indicate use of both single and nine-lens photographs. Centers of photographs covering the area are shown on the map. A later job (PH-6102), that includes maps covering the same area (T-12121), currently is being final reviewed. A Job Completion Report for PH-6104 will be registered in the Federal Records Center.


Chief, Photogrammetric Branch


Chief, Coastal Mapping Division


S. G. Blankenbaker
OCT. 1976



8
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

C3421/SB

October 27, 1976

TO: Chief, Photogrammetric Branch
Chief, Surveys Planning Branch

FROM: James Collins *James Collins*
Chief, Coastal Mapping Division

SUBJECT: Instructions-OFFICE-Job Disposition, PH-6104,
Potomac River, Virginia/Maryland

Background

Only five of the 28 job maps were compiled. The five maps (T-12117 thru T-12121) are in the incomplete stage. Only one map, T-12121, has been used in NOS operations - shoreline for contemporary hydrographic survey H-8706.

Procedures

Cancel all job maps with the exception of T-12121. Review and register map T-12121 and prepare a Job Completion Report.



FIELD INSPECTION REPORT
T-12116

NOTE: THIS IS A COMBINED
REPORT WHICH IN -
CLUDES T-12121
AA

2-AREAL FIELD INSPECTION

This survey covers that part of the Potomac River from just east of Maryland Point northward to Wades Bay. The shores of the Potomac River are heavily wooded throughout the greater portion of the area mapped. Many high bluffs are found along the shore of the Potomac with the highest being Bull Bluff near the confluence of Potomac River and Potomac Creek in sheet T-12120.

Potomac and Aquia Creeks enter the River from the west and northwest respectively on the westerly side of the River. These are relatively shallow creeks and many fish net stakes are encountered along their shores.

The nine-lens photography of the area was adequate but not outstanding. Fine detail on these photographs was found hard to interpret. The single lens photography of the creeks appeared sharp and the fine detail was excellent.

3-HORIZONTAL CONTROL

Two unmonumented traverses with the distances observed by Geodimeter were run to establish additional control for the single lens photography. One control point was established by Geodimeter to replace a station required by the project instructions.

All Coast and Geodetic Survey stations within the area were searched for and reported on Form 526. Those stations reported as lost are as follows:

T-12116

BRENT, 1928

BOUNDARY MONUMENT NO. 38, 1929

BOUNDARY MONUMENT NO. 39, 1929

T-12117

SMITH 2, 1901

T-12120

BOUNDARY MONUMENT NO. 36, 1929

MARLBOROUGH 2, 1928

TANZY 2, 1928

T-12121

GRIMES 3, 1928

4-VERTICAL CONTROL

There are no Tidal Bench Marks within the area of these sheets.

5-CONTOURS AND DRAINAGE

All drainage has been indicated on the field photographs. In many of the swamp areas there is no definite drainage. Notes to this effect appear on the photographs.

6-WOODLAND COVER

Woodland cover has been classified in accordance with Reference 5433 of the Topographic Manual-Part II and with Project Instructions.

7-SHORELINE AND ALONGSHORE FEATURES

The shoreline along the Potomac River is predominately fast. Some apparent shoreline is encountered in Potomac, Accokeek and Aquia Creeks in sheets T-12116, T-12119 and T-12120. The mean high-water line has been indicated on the photographs. It is usually in the center portion of the white sand strip at the foot of the bluffs.

The mean low-water line is usually parallel and very close to the mean high-water line. There are no sand-bars or mud flats in the area.

The foreshore is of sand and small rock along the major portion of the shoreline. A narrow mud foreshore is found along the marsh in the upper reaches of the creeks. It is too narrow to be accurately identified on the photographs.

Bluffs extend along the major portion of the shore-

line of the Potomac River. These are sometimes obscured by a heavy growth of trees and brush. The limits and heights of all bluffs have been noted on the photographs.

All docks, wharfs, piers and boat ramps have been indicated on the photographs.

The only submarine cables in the area cross Aquia Creek at the Railroad bridge. These have been identified on the photographs.

8-OFFSHORE FEATURES

Numerous fish net stakes dot the offshore area on the Virginia side of the Potomac River and in Potomac and Aquia Creeks. These are usually single stakes which are not identifiably on the photographs. No offshore features for investigation by the hydrographic party were noted during the course of shoreline inspection with the exception of an area of submerged piling south of Simms Point near Lat. $38^{\circ} 23.5'$ Long. $77^{\circ} 18.8'$. The exact limits of this foul area could not be accurately identified on the field photographs.

9-LANDMARKS AND AIDS

All Landmarks for nautical charts and Fixed Aids to navigation have been reported on Form 567. There are no Interior Landmarks.

10-BOUNDARIES, MONUMENTS AND LINES

Inapplicable.

11-OTHER CONTROL

No other control other than that mentioned in Paragraph 3 was established.

12-OTHER INTERIOR FEATURES

All roads have been classified in accordance with Photogrammetric Instruction No. 56, dated 2 January 1958.

All landmark buildings have been identified on the photographs.

There are no airports or landing fields within the area mapped.

13-GEOGRAPHIC NAMES

Inapplicable.

14-SPECIAL REPORTS AND SUPPLEMENTAL DATA

There are no special reports or supplemental data.

Respectfully submitted:

Leo F. Beugnet

Leo F. Beugnet
Surveying Technician

PHOTOGRAMMETRIC PLOT REPORT

Ph-6104

Potomac River

21. AREA COVERED

This report applies to map registry numbers: T-12116, T-12117, T-12118, T-12119, T-12120, and T-12121.

These maps are shoreline surveys at 1:10,000 scale of the Potomac River from just east of Maryland Point northward to Wades Bay and include the shorelines of Potomac Creek and Aquia Creek.

22. METHOD: RADIAL PLOT

Map Manuscripts:

Vinylite sheets with polyconic projections in black, Maryland State Grid in green, and Virginia North Zone Grid in red were furnished by the Washington Office for all the map manuscripts except T-12120. This manuscript had the polyconic projection in black, the Maryland State Grid in light red, and the Virginia North Zone Grid in dark red.

The positions of all triangulation stations, geodimeter traverse stations, and substitute stations were plotted on the manuscripts with the Coordinatograph.

A sketch showing the layout of the surveys, distribution of control, and photograph centers is attached to this report.

Photographs:

Nineteen (19) nine-lens photographs at a scale of 1:10,220; forty-eight (48) single lens photographs at a scale of 1:25,000 ratioed to 1:10,220; and seven (7) single lens photographs at a scale of 1:31,000 and ratioed to 1:10,220 were used in this plot. They are:

Nine-Lens

61721

61746 through 61757

61790 through 61795

Single Lens

61-S-2033 through 2040

2042 " 2046

2048 " 2052

2054 " 2061

2093 " 2095

2098 " 2110

2114 " 2121

3307 " 3315

3376 " 3382

Templets:

Vinylite templets were made for all photographs.

The master templet was used to correct for film and paper distortion and for chamber displacement on all nine-lens photographs. No master templet was used for the single lens photographs.

Closure and Adjustment to Control:

The radial plot was constructed directly on the map manuscripts.

First a plot was constructed using all the nine-lens templets and single lens templets for flight 61-S-3376 through 61-S-3382.

Then the remaining single lens templets were superimposed on this plot as follows: 1. Where conjugate centers of these single lens photographs could be transferred, a single lens plot was constructed holding pass points within 0.3 millimeters established in the nine-lens plot. 2. Where water prevented an accurate transfer of the conjugate centers, each single lens templet was fixed by pass points and identified control.

Nine-lens flight 61790 through 61794 had all-water centers and no conjugate centers could be transferred. Though this weakened the plot, sufficient control was identified to fix each photograph in this flight.

The final radial plot is believed to be within the specified horizontal accuracy requirements.

Transfer of Points:

The position of all pass points and photograph centers were pricked on the top templet and drilled down through the templets and map manuscripts.

23. ADEQUACY OF CONTROL

The density and distribution of identified control was adequate.

All identified control was held in this plot except Sub. Pt. SMITH 3, 1929. However, SMITH POINT LIGHT, 1959, adjacent to this sub. pt. was held in the plot.

Sub. Pt. SMITH 3, 1929 - The radial plot position for this point is 1.0 millimeters, or 10 meters ground distance, south-southeast of the plotted position of the sub. pt. Other trees are in the area and the sub. pt. might have been mis-identified. It is also possible there is an azimuth error in the unclosed, three set-up, traverse to the substitute station. The total distance from SMITH 3, 1929 to the sub. pt. is the same as that to the radial plotted position of the sub. pt.

24. SUPPLEMENTAL DATA

Planimetric manuscript T-10912 (project Ph-5901) was joined along the match line with sheet T-12121. The radial plot was laid on the manuscripts. A good tie was made with piers already delineated on survey T-10912.

25. PHOTOGRAPHY

Nine-lens photographs 61753 and 61754 did not have sufficient overlap to transfer the conjugate centers.

Respectfully submitted
September 1962

E. L. Williams
E. L. Williams
Carto. (Photo.)

Approved and forwarded

Joseph Steinberg
Joseph Steinberg
Acting Baltimore District Officer

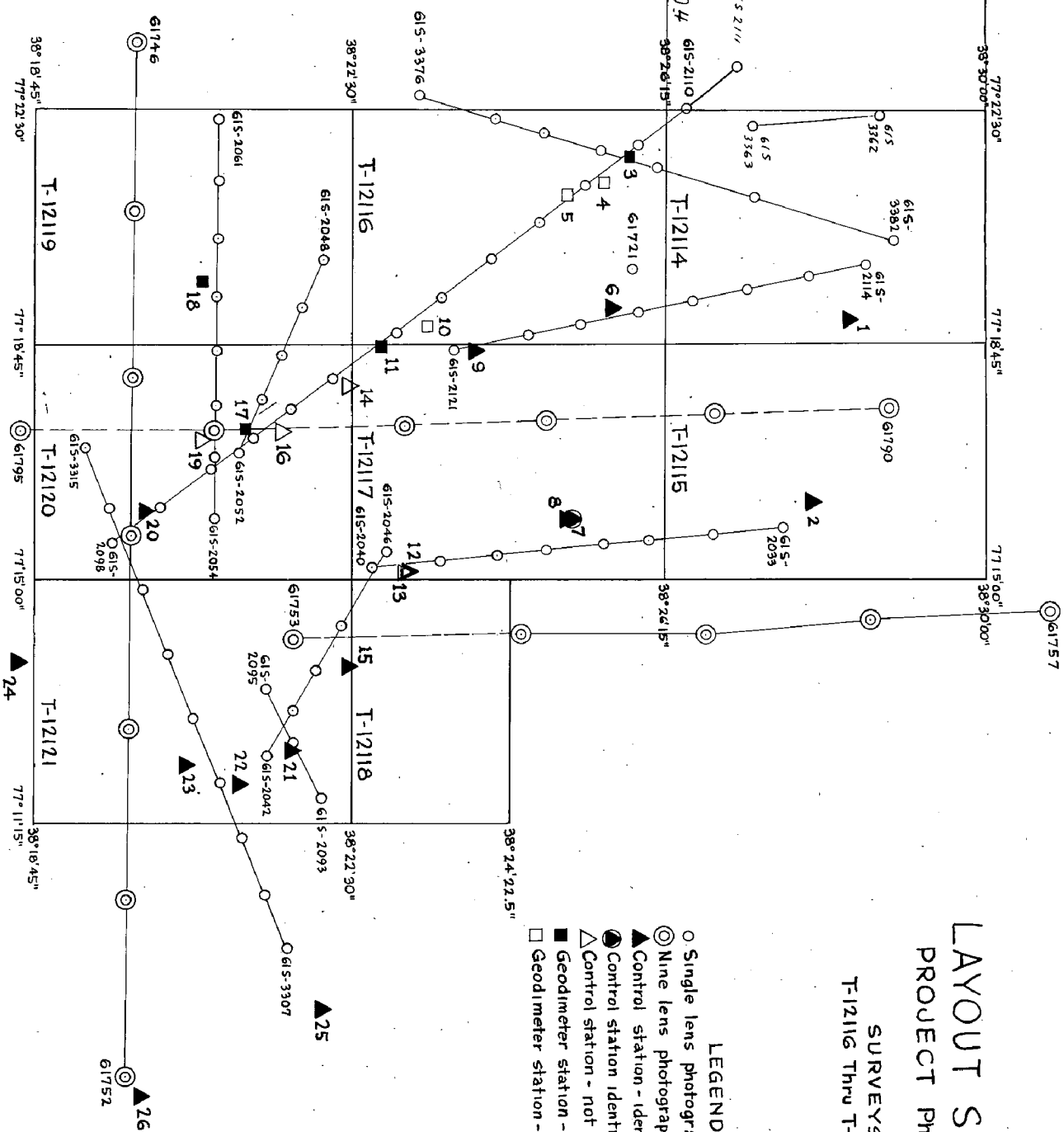
LAYOUT SKETCH

PROJECT Ph-6104

SURVEYS
T-12116 Thru T-12121

LEGEND

- Single lens photographs
- ⊙ Nine lens photographs
- ▲ Control station - identified
- Control station identified - not held in plot
- △ Control station - not identified
- Geodimeter station - identified
- Geodimeter station - not identified



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SUPPLEMENTARY
Photogrammetric Plot Report
Ph-6104
Potomac River

21. AREA COVERED

This report applies to map registry number T-12304.

This map is a shoreline survey at 1:10,00 scale of the upper reaches of Aquia Creek.

22. METHOD - RADIAL PLOT

Map Manuscript:

A vinylite sheet with polyconic projections in black and Virginia State Grid in red was furnished by the Washington office.

Data pertaining to this survey is shown in red ink on a sketch showing the surveys and photograph centers which is attached to the main plot report of which this report is a supplement.

Photographs:

One single lens photograph at a scale of 1:15,000 retioed to 1:10,000; and two single lens photographs at 1:31,000 and ratioed to 1:8,000 were used to extend the main plot.

They are:

61-S-2100
61-S-3362 and 61-S-3363

Templets:

Vinylite templets were made for the three (3) photographs.

Closure and Adjustment to Control:

The radial plot was constructed directly on map manuscript T-12116 and on a work sheet covering the area of survey T-12114. This work sheet had been used in the main radial plot and pass points and photograph centers established then had been transferred at that time.

Templets, which had been used in the main radial plot, for photographs 61-S-3381 and 3382, 61-S-2109 and 2110, and for nine-lens photograph 61721 were included in this plot with templets for photographs 61-S-2111 and 61-S-3362 and 3363.

Transfer of Points:

The map manuscript for survey T-12304 was superimposed on the radial plot holding to the Virginia North Zone Grid common to T-12116, the work sheet, and T-12304.

The position of the pass points and photograph centers was pricked on T-12304.

23. ADEQUACY OF CONTROL

This radial plot is extended for a short distance beyond identified control. However, it is believed to be within the specified horizontal accuracy requirements.

24. SUPPLEMENTAL DATA

Inapplicable.

25. PHOTOGRAPHY

Adequate.

Respectfully submitted
2 October 1962

E. L. Williams
E. L. Williams
Carto. (Photo.)

Approved and forwarded

Joseph Steinberg
Joseph Steinberg
Acting Baltimore District Officer

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

Fredericksburg, Virginia 12 September 1961

The positions given have been checked after listing by

Leo P. Benjamin
Chief of Party.

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 6-36, Fig. 79. Positions of charted landmarks and non-floating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

USCOMM-DC 25412-P61

~~XXXXXXXXXXXX~~

STRIKE OUT TWO

NONFLOATING AIDS ORGANS: DIVERSITY FOR CHARIT

Baltimore, Maryland

Sept. 4 1962

I recommend that the following objects which have ~~been~~ been inspected from seaward to determine their value as landmarks be charted on ~~our~~ the charts indicated.

The positions given have been checked after listing by **R. Claser**

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 6-36, Fig. 79. Positions of charted landmarks and non-floating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

*** TABULATE SECONDS AND METERS**

XXXXXXXXXXXX STRIKE OUT TWO!

Baltimore, Maryland

Sept. 4, 1962

I recommend that the following objects which have ~~(been)~~ been inspected from seaward to determine their value as landmarks be charted on ~~(charts)~~ the charts indicated.

The positions given have been checked after listing by Joseph W. Vonasek

Joseph Steinberg *Chief of Party.*

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 6-36, Fig. 79. Positions of charted landmarks and non-floating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

*** TABULATE SECONDS AND METERS**

ENCOUNTERING LANDSCAPE LANDMARKS FOR CHARTS

Fredericksburg, Virginia

The positions given have been checked after listing by
Les F. Beagnot

Leo F. Reusch *Chief of Party*

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 6-36, Fig. 79. Positions of charted landmarks and non-floating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

* TABULATE SECONDS AND METERS

TIDE COMPUTATION

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

PROJECT NO. PH-6104 T

1047 & 1105

Time and date of exposure
28 Aug 61

Reference station
Washington

Subordinate station
Aquia Creek Entrance

Mean range

12-14

Date of field inspection

Ratio of ranges

0.41

	Time	
	h.	m.
High tide	6	44
Low tide	13	46
Duration of rise or fall	6	32

	Height		Height x Ratio of ranges
	feet		
High tide	3.6	1.48	
Low tide	-0.3	-1.2	
Range of tide			1.60

	Time	
	h.	m.
High tide at Ref. Sta.	9	31
Time difference	-2	47
Corrected time at Subordinate station	6	44

	Time	
	h.	m.
Low tide at Ref. Sta.	16	20
Time difference	-3	04
Corrected time at Subordinate station	13	16

	h. m.	Ht. H. T. or L. T.	Ht. H. T. or L. T.	feet	Photo. No.
Time H. T. or L. T.	13 46	Ht. H. T. or L. T.			
Required time	10 47	Tabular correction			
Interval	2 29	Stage of tide above MLW			
Time H. T. or L. T.	13 16	Ht. H. T. or L. T.			
Required time	11 05	Tabular correction			
Interval	2 11	Stage of tide above MLW			
Time H. T. or L. T.		Ht. H. T. or L. T.			
Required time		Tabular correction			
Interval		Stage of tide above MLW			
Time H. T. or L. T.		Ht. H. T. or L. T.			
Required time		Tabular correction			
Interval		Stage of tide above MLW			
Time H. T. or L. T.		Ht. H. T. or L. T.			
Required time		Tabular correction			
Interval		Stage of tide above MLW			
Time H. T. or L. T.		Ht. H. T. or L. T.			
Required time		Tabular correction			
Interval		Stage of tide above MLW			

Computed by

Checked by

TIDE COMPUTATION

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

PROJECT NO. Ph-6104 T

Time and date of exposure 21 Apr 64Reference station WashingtonSubordinate station Aquia Creek EntranceDate of field inspection 1050Mean range 12-14Ratio of ranges 0.41

	Time	
	h.	m.
High tide	9	33
Low tide	16	35
Duration of rise or fall	7	02

	Height		Ratio of ranges
	feet		
High tide	3.0	41	1.23
Low tide	0.2	41	.08
Range of tide			1.15

	Time	
	h.	m.
High tide at Ref. Sta.	12	20
Time difference	-2	47
Corrected time at Subordinate station	9	33

	Time	
	h.	m.
Low tide at Ref. Sta.	19	39
Time difference	-3	04
Corrected time at Subordinate station	16	35

	h. m.		Ht. H. T. or L. T.	Tabular correction	Stage of tide above MLW	feet	Photo. No.
	h.	m.					
Time H. T. or L. T.	9	33	Ht. H. T. or L. T.			1.2	
Required time	10	50	Tabular correction			0.1	
Interval	1	17	Stage of tide above MLW			1.1	61746
Time H. T. or L. T.			Ht. H. T. or L. T.				61748
Required time			Tabular correction				
Interval			Stage of tide above MLW				
Time H. T. or L. T.			Ht. H. T. or L. T.				
Required time			Tabular correction				
Interval			Stage of tide above MLW				
Time H. T. or L. T.			Ht. H. T. or L. T.				
Required time			Tabular correction				
Interval			Stage of tide above MLW				
Time H. T. or L. T.			Ht. H. T. or L. T.				
Required time			Tabular correction				
Interval			Stage of tide above MLW				

COMM-DC-57848

Computed by JawChecked by S. J. Whitson

PROJECT NO. PH-6104²T

Time and date of exposure

Reference station

Mean range

Date of field inspection

Subordinate station

Ratio of ranges

	Time	
	h.	m.
High tide	9	58
Low tide	17	00
Duration of rise or fall	7	02

	Height	Height x Ratio of ranges
	feet	
High tide	3.0 x .45	1.35 ✓
Low tide	0.2 x .45	.09
Range of tide		1.34

	Time	
	h.	m.
High tide at Ref. Sta.	12	20
Time difference	-2	22
Corrected time at Subordinate station	9	58

	Time	
	h.	m.
Low tide at Ref. Sta.	19	39
Time difference	-2	39
Corrected time at Subordinate station	17	00

Time H. T. or L. T. Required time Interval	Time H. T. or L. T. Required time Interval	Time H. T. or L. T. Required time Interval	Time H. T. or L. T. Required time Interval	Time H. T. or L. T. Required time Interval
--	--	--	--	--

h. m.	
9 58	Ht. H. T. or L. T.
11 00	Tabular correction
1 02	Stage of tide above MLW
9 58	Ht. H. T. or L. T.
11 35	Tabular correction
1 37	Stage of tide above MLW
	Ht. H. T. or L. T.
	Tabular correction
	Stage of tide above MLW
	Ht. H. T. or L. T.
	Tabular correction
	Stage of tide above MLW
	Ht. H. T. or L. T.
	Tabular correction
	Stage of tide above MLW
	Ht. H. T. or L. T.
	Tabular correction
	Stage of tide above MLW

feet	Feature bars Stage of tide above MLW Feature above MLW
1.4 <u>0.1</u> 1.3	
1.4 <u>0.2</u> 1.2	
	Feature bars Stage of tide above MLW Feature above MLW
	Feature bars Stage of tide above MLW Feature above MLW
	Feature bars Stage of tide above MLW Feature above MLW
	Feature bars Stage of tide above MLW Feature above MLW

	feet	Photo. No.
.....	1.3 ✓	61756 ✓
.....		61757 ✓
.....	1.2 ✓	61790 ✓
.....		61791 ✓
.....		61792 ✓
.....		61793 ✓
.....		
.....		
.....		
.....		

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Computed by

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TIDE COMPUTATION

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

PROJECT NO. Ph. 6104 T

Time and date of exposure 21 Apr 61 ✓
 Date of field inspection 1050 ✓
 Reference station Washington ✓
 Subordinate station Maryland Point Lt ✓
 Mean range 1.1-1.3 ✓
 Ratio of ranges 0.38 ✓

	Time		Height feet	Height x Ratio of ranges	High tide Low tide Range of tide	Time		Low tide at Ref. Sta. Time difference Corrected time at Subordinate station	Time h. m.
	h.	m.				h.	m.		
High tide	8	53	3.0 x .38	1.14		12	20		19 39
Low tide	15	55	0.2 x .38	.08		-3	27		-3 44
Duration of rise or fall	7	02		1.1		8	53		15 55

	h.	m.	Ht. H. T. or L. T. Tabular correction Stage of tide above MLW	feet	Feature bares Stage of tide above MLW Feature above MLW	feet	Photo. No.
Time H. T. or L. T. Required time Interval	8 53	10 50		1.1		0.9	61749
Time H. T. or L. T. Required time Interval	1 57			0.2			44 61752
Time H. T. or L. T. Required time Interval				0.9			
Time H. T. or L. T. Required time Interval							
Time H. T. or L. T. Required time Interval							
Time H. T. or L. T. Required time Interval							
Time H. T. or L. T. Required time Interval							
Time H. T. or L. T. Required time Interval							

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Computed by Jim

Checked by R. J. Williams

TIDE COMPUTATION

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

PROJECT NO. Ph-6104 T

Time and date of exposure 21 Apr 61 1100 & 1135 Washington
Reference station Agate Creek Entrance Mean range 1.2-1.4
Subordinate station Clifton Beach Ratio of ranges 0.41
Date of field inspection -----

	Time	
	h.	m.
High tide	9	33
Low tide	16	35
Duration of rise or fall	7	02

	Height		Height x Ratio of ranges
	feet	feet	
High tide	3.0 x .41	1.23	✓
Low tide	0.2 x .41	.08	✓
Range of tide		1.12	

	Time	
	h.	m.
High tide at Ref. Sta.	12	20
Time difference	-2	47
Corrected time at Subordinate station	9	33

	Time	
	h.	m.
Low tide at Ref. Sta.	19	39
Time difference	-3	04
Corrected time at Subordinate station	16	35

	h.	m.		feet		feet	Photo. No.
Time H. T. or L. T.	9	33	Ht. H. T. or L. T.	1.2	Feature bares		61753
Required time	11	00	Tabular correction	0.1	Stage of tide above MLW		61753
Interval	1	27	Stage of tide above MLW	1.1	Feature above MLW		61753
Time H. T. or L. T.	9	33	Ht. H. T. or L. T.	1.2	Feature bares		61792
Required time	11	35	Tabular correction	0.2	Stage of tide above MLW		61792
Interval	2	02	Stage of tide above MLW	1.0	Feature above MLW		61792
Time H. T. or L. T.			Ht. H. T. or L. T.		Feature bares		61721
Required time			Tabular correction		Stage of tide above MLW		61721
Interval			Stage of tide above MLW		Feature above MLW		61722
Time H. T. or L. T.			Ht. H. T. or L. T.		Feature bares		
Required time			Tabular correction		Stage of tide above MLW		
Interval			Stage of tide above MLW		Feature above MLW		
Time H. T. or L. T.			Ht. H. T. or L. T.		Feature bares		
Required time			Tabular correction		Stage of tide above MLW		
Interval			Stage of tide above MLW		Feature above MLW		
Time H. T. or L. T.			Ht. H. T. or L. T.		Feature bares		
Required time			Tabular correction		Stage of tide above MLW		
Interval			Stage of tide above MLW		Feature above MLW		

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Computed by JWDChecked by R. J. Whitman

TIDE COMPUTATION

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

PROJECT NO. PH-6104 T

Time and date of exposure

0915-0925
14 July 61

Reference station

Washi

Date of field inspection

Subordinate station

Aguia Creek Entrance

Mean range

12-14

Ratio of ranges

0.41

	Time	
	h.	m.
High tide	6	07
Low tide	12	56
Duration of rise or fall	6	49

	Height		Height x Ratio of ranges
	feet		
High tide	3.2 x 1.1	1.3	
Low tide	0.1 x 0.41	0.04	
Range of tide		1.3	

	Time	
	h.	m.
High tide at Ref. Sta.	8	54
Time difference	-2	47
Corrected time at Subordinate station	6	07

	Time	
	h.	m.
Low tide at Ref. Sta.	16	00
Time difference	-3	04
Corrected time at Subordinate station	12	56

	h.	m.	Ht. H. T. or L. T.	feet	feet	Photo. No.
Time H. T. or L. T.	6	07	Ht. H. T. or L. T.	1.3		
Required time	09	15	Tabular correction	-0.7		
Interval	3	08	Stage of tide above MLW	0.6		
Time H. T. or L. T.	6	07	Ht. H. T. or L. T.	1.3		
Required time	09	25	Tabular correction	-0.8		
Interval	3	18	Stage of tide above MLW	0.5		
Time H. T. or L. T.			Ht. H. T. or L. T.			
Required time			Tabular correction			
Interval			Stage of tide above MLW			
Time H. T. or L. T.			Ht. H. T. or L. T.			
Required time			Tabular correction			
Interval			Stage of tide above MLW			
Time H. T. or L. T.			Ht. H. T. or L. T.			
Required time			Tabular correction			
Interval			Stage of tide above MLW			
Time H. T. or L. T.			Ht. H. T. or L. T.			
Required time			Tabular correction			
Interval			Stage of tide above MLW			
Time H. T. or L. T.			Ht. H. T. or L. T.			
Required time			Tabular correction			
Interval			Stage of tide above MLW			

Computed by

JWV

Checked by

J. Whitmore

TIDE COMPUTATION

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

PROJECT NO. Ph. 6104 T

Time and date of exposure 14 July 61
0850 to 0830

Reference station

WASHINGTON

Mean range

12-1.4

Date of field inspection

Subordinate station

Clifton Beach
Aquia Creek Entrance

Ratio of ranges

0.41

	Time	
	h.	m.
High tide	6	03
Low tide	12	56
Duration of rise or fall	6	49

	Height feet	Height x Ratio of ranges
High tide	3.2' x 41	1.3
Low tide	0.1' x 41	0.4
Range of tide		1.3

	Time	
	h.	m.
High tide at Ref. Sta.	8	50
Time difference	-2	47
Corrected time at Subordinate station	6	03

	Time	
	h.	m.
Low tide at Ref. Sta.	16	00
Time difference	-3	04
Corrected time at Subordinate station	12	56

Time H. T. or L. T.	h.	m.
Required time	6	03
Interval	8	50
Time H. T. or L. T.	2	47
Required time	6	03
Interval	8	30
Time H. T. or L. T.	2	23
Required time		
Interval		
Time H. T. or L. T.		
Required time		
Interval		
Time H. T. or L. T.		
Required time		
Interval		
Time H. T. or L. T.		
Required time		
Interval		

Ht. H. T. or L. T.	1.3
Tabular correction	0.4
Stage of tide above MLW	0.9
Ht. H. T. or L. T.	1.3
Tabular correction	0.4
Stage of tide above MLW	0.9
Ht. H. T. or L. T.	
Tabular correction	
Stage of tide above MLW	
Ht. H. T. or L. T.	
Tabular correction	
Stage of tide above MLW	
Ht. H. T. or L. T.	
Tabular correction	
Stage of tide above MLW	
Ht. H. T. or L. T.	
Tabular correction	
Stage of tide above MLW	

Feature bares	0.7
Stage of tide above MLW	0.8
Feature above MLW	2061
Feature bares	0.9
Stage of tide above MLW	
Feature above MLW	2040
Feature bares	
Stage of tide above MLW	
Feature above MLW	
Feature bares	
Stage of tide above MLW	
Feature above MLW	
Feature bares	
Stage of tide above MLW	
Feature above MLW	
Feature bares	
Stage of tide above MLW	
Feature above MLW	

Photo. No.

feet

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Checked by

PROJECT NO. Ph-6104 T

Mean range

Ratio of ranges

	Time
	h. m.
Low tide at Ref. Sta.	16 00
Time difference	-3 44
Corrected time at Subordinate station	12 16

feet	Photo. No.
0.8 ✓	61-5-2042 thin 2046
0.4 ✓	61-5-2093 thin - 2095

Checked by _____

Time and date of exposure

WASHING-TON

Mean range

Date of field inspection:

Subordinate station

Ratio of ranges

	Time
	h. m.
Low tide at Ref. Sta.	15 32 ✓
Time difference	- 3 48 ✓
Corrected time at Subordinate station	11 48 ✓

	h.	m.	h.	feet		feet	Photo. No.
Time H. T. or L. T. Required time Interval	11 48 ✓ 13 40 ✓ 1 52 ✓		Ht. H. T. or L. T. Tabular correction Stage of tide above MLW	-1.1 ✓ 0.3 ✓ 0.2 ✓	Feature bares Stage of tide above MLW Feature above MLW	0.2 ✓	61-5-3307 then 3315
Time H. T. or L. T. Required time Interval			Ht. H. T. or L. T. Tabular correction Stage of tide above MLW		Feature Bares Stage of tide above MLW Feature above MLW		
Time H. T. or L. T. Required time Interval			Ht. H. T. or L. T. Tabular correction Stage of tide above MLW		Feature bares Stage of tide above MLW Feature above MLW		
Time H. T. or L. T. Required time Interval			Ht. H. T. or L. T. Tabular correction Stage of tide above MLW		Feature bares Stage of tide above MLW Feature above MLW		
Time H. T. or L. T. Required time Interval			Ht. H. T. or L. T. Tabular correction Stage of tide above MLW		Feature bares Stage of tide above MLW Feature above MLW		
Time H. T. or L. T. Required time Interval			Ht. H. T. or L. T. Tabular correction Stage of tide above MLW		Feature bares Stage of tide above MLW Feature above MLW		

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