5601

Diag. Cht. No. 1210-2

Form 504
Rev. Dec. 1933

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

Topographic / *Hydrographic* Sheet No. T ~~6180~~ 5601

Field No. 1

December 10, 1936

State Rhode Island

LOCALITY

Sakonnet River. Sakonnet Point

~~to High Hill Point.~~ And vicinity

1936

CHIEF OF PARTY

Thos. B. Reed

U.S. GOVERNMENT PRINTING OFFICE: 1934

Dec. 10, 1936

237

applied to drawing of chart 237 - Nov. 20, 1936 - J.F.W.

" " " " " 1210 - Dec. 12, 1938 - K.R.

" " " " " 353 Feby. 15, 1939 - J.F.W

Form 537a
Ed. Nov. 1929

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

REG. NO.

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 1 T5601

REGISTER NO. T ~~6120~~ 5601

State Rhode Island

General locality Sakonnet River

Locality Sakonnet Point ~~to High Hill Point~~ And Vicinity

Scale 1:10,000 Date of survey Photos November 15,1934. Compilation July-Aug 1936, 19

Vessel Field Party No.16

Chief of party Thos. B. Reed

Surveyed by ~~See Data in Descriptive Report.~~

Inked by Thos. B. Reed

Heights in feet above ---------- to ground to tops of trees

Contour, No Contours Approximate contour, Form line interval ..... feet

Instructions dated September 28, 1935.

Remarks: Compiled on scale of 1:10,000

Black and white line print scale 1:10,000 registered 11/14/36

PHOTO TOPOGRAPHIC SHEET NO. 1

REGISTER NO. ~~T-6120~~ 5601

Photos Nos	Date	Time
M299 to M309	November 15,1934	11:30 AM
M377 to M387	" " "	11:55 AM

Projection by — Projection machine Washington Office Feb 1936.

Triangulation Stations plotted by — R. S. Poor — June 1936

Triangulation Stations Checked by — Thos. B. Reed — June 1936

Topographic Stations transferred from plane table sheets by — Washington Office — Feb 1936

Smooth Radial Plot by — Thos. B. Reed and R. S. Poor — June 1936

Detail Inked by — Thos. B. Reed — July-Aug 1936

~~Field inspection~~

STATISTICS

Area of detail inked (land area)	16.7 sq. stat. mi.
Length of shore line (more than 200 meters from nearest shore)	16.5 stat. mi.
Length of shore line (streams less than 200 meters wide).	2.0 stat. mi.

DATUM: North American, 1927, ~~Adjusted~~ Unadjusted

REFERENCE STATION: Sakonnet 1932 Lat. 41 27 37.129 1145.4 m.
Long. 71 11 22.621 525.0 m.

Triangulation in process of readjustment and values from first adjustment not final.

Ref. Sta. -
X = 585,079.13 Ft. } R.I. Grid
Y = 137,608.65 Ft. }

DESCRIPTIVE REPORT
to accompany

Photo Topographic Sheet No. T-6120 5601

Sakonnet Point to High Hill Point, Rhode Island.

Thos. B. Reed, Chief of Party.

DATE OF INSTRUCTIONS: Letter dated Sept. 28, 1935, No. 22-AA 1990 (16)

DATE OF SURVEY: Nov. 15, 1934, with revision by Field Inspection Party November, 1935 to February, 1936.

GENERAL INFORMATION:

Photographs: This sheet was compiled from parts of three flights of 1:10,000 scale five lens aerial photographs taken by the Army Air Corps on November 15, 1934 with Model T3A camera No. AC 31-78-A. The flights were designated 886-14. The photographs of the lower flight were numbered M-299 to M-303 (numbers increasing from west to east); the photographs of the middle flight were numbered M-304 to M-309 (numbers increasing from west to east); the photos of the upper flight were numbered M-377 to M-387 (numbers increasing from east to west). The camera had a focal length of six inches and the photographs were taken from a height of approximately 5,000 feet. The stage of the tide when the photographs were taken was 1.7 feet (computed from the Tide Tables).

General Description: This sheet comprises the area between Sakonnet Point and Longitude 71° 09' and northward to about Latitude 41° 33'.

This region is entirely rural with a large number of small farms, two small rural villages, Sakonnet and Little Compton, and an area of large summer homes and beach cottages near Sakonnet and along the southern part of the sheet.

The land is quite hilly and rolling, with elevations of over 100 feet in several parts of the sheet. Most of the eastern part of the area is wooded except where it has been cleared for farm land or pasture. Most of the shore line, both of the river and the outer coast is rocky with many offlying rocks except in a few places where there are small sand beaches. The interior area is drained by a number of small brooks, the positions of most of which could be obtained from the photographs.

CONTROL:

Sources: 2nd and 3rd order triangulation by E. Blunt 1843.

3rd order triangulation by D. B. Wainwright 1897.

3rd order triangulation by R. P. Strough 1917.

1st order triangulation by C. D. Meany 1932.

3rd order triangulation by W. D. Patterson 1934.

Topographic stations established by plane table by Party of W. D. Patterson in 1934. (Not used for photo control).

Errors: No errors were found in triangulation stations. Errors in Topographic Stations are discussed under the heading "Comparison with Plane Table Sheet No. 6118" in this report.

Other Sources of Control: No control, other than that mentioned above was used in the compilation of this sheet.

COMPILATION:

Method: The usual five lens radial line method of plotting was used in the compilation of this sheet. There were sufficient triangulation stations at the southern part of the sheet to control the plot without the use of any topographic station as control. The positions of the plane table stations were checked by radial plot.

The sheet was joined to Sheet No. 2 while making the radial plot and the plot was continued across the two sheets. An extension was also placed on the west side of the sheet to enable two triangulation stations on the west side of the Sakonnet River to be used for additional control for the upper flight.

Adjustments of Plot: No unusual adjustments of plot were found necessary.

INTERPRETATION:

In general, no difficulty was experienced in interpreting the detail from the photographs except in a few places where minor details, small brooks, fences or trails were obscured by trees. However it is believed that no detail of any importance has been omitted from the compilation. Most fences in this area are made of stone and show clearly on the photos except where obscured by trees. The interpretation of the high and low water line and offlying rocks will be discussed in the comparison with the plane table sheets of this area.

The stereoscope was used, where necessary for defining buildings. However the shape and size of some buildings on the sheet may be slightly in error due to being partly obscured by trees or hard to pick on the wing prints.

The shore line in the marshy areas on this sheet is very indefinite and was shown as nearly in its correct position as could be determined from the photographs and from field inspection.

CONVENTIONAL TOPOGRAPHIC SYMBOLS:

Only graphic symbols, approved by the Board of Surveys and Maps were used, except as follows:

The symbol ( ) was used to designate brush. An attempt was made, by useing this symbol in conjunction with the tree symbol to show the density of woods and brush in the various areas. Deciducus trees predominate in this area and the woods are a combination of medium sized trees and underbrush.

Cultivated fields were left blank to avoid a too congested appearance on the sheet; otherwise all areas were filled in with symbols. Many fields which are now sown with grass, but which have been under cultivation in the past and probably will again in the future, were shown as cultivated. In the southern part of the sheet however a grass symbol is shown in practically all fields as this region is now a large summer colony and the land is owned by the owners of the large summer homes and will probably be left in grass.

First class roads were shown by a full double line and private or less important roads by a broken double line. Very poor roads or trails were indicated by a single dashed line. Fences were indicated by lines of short dashes.

INFORMATION FROM OTHER SOURCES:

None available.

GEOGRAPHIC NAMES:

Names of geographic features were obtained from C. & G. S. charts and Geological Survey Quadrangles and were verified by the Field Inspection Party from local residents.

New Names: The name "Brigg's Marsh" was obtained from the custodian of the hunting club at the marsh.

Conflicting Names: The names "Brown Point" and "Church Point" were written in the non possive form as the names appear on the U. S. G. S. Quadlangle.

COMPARISON WITH OTHER SURVEYS:

Junctions: This sheet makes a satisfactory junction on the east with Photo-compilation No. 2.

Comparison With Plane Table Sheet No. T-6118 (1934).

Topographic Stations: The following stations were picked on the prints by the field inspection party and the location by radial plot checked the plane table position: WESTERLY BATH HOUSE, SEA, VAN, MAC, CUP, GUL and CHY. Topo station GAS is no longer in existance. Station WES was shown on the sheet although not checked by radial plot. Station WOS was found to be 10 meters in error and the position obtained by radial plot is shown on the sheet. An exact intersection from six photographs by radial plot was obtained for the location of this station.

High and Low Water Lines: As a considerable number of discrepancies were found in the position of the high water line and offlying rocks and islands on Plane Table Sheet No. T-6118, the entire shore line on the compilation was drawn as sketched by the field inspection party on the photographs and by interpretation of the photographs on rocks and islands which the field inspection party were unable to visit. The largest error on the plane table sheet is in the northern part of the 1:5,000 scale insert where the high water line is in error about 100 meters. The plane table shore line was drawn on the compilation in blue ink before tracing shore line from the photographs and in all cases its position was given consideration before drawing in the high water line. The low water line was drawn from the photographs and from T-6118.

Offlying Rocks: In Lat. 41° 26' 1720m., Long. 71° 11' 1030m. a rock "awash at low water" is shown on T-6118 which does not show on the photographs. This rock was shown on the compilation in the same position as on T-6118. About 50 meters south west of the above rock is a rock which shows on the photos and which is shown on the compilation as a "rock awash". The high water line of rocks and islands in this vicinity differs considerably from the plane table sheet. There is a foul area with several rocks awash extending eastward from East Island, which was not shown on T-6118. The rock "awash at L. W." about 100 meters south of East Island does not show on the photographs and its position was taken from T-6118. The positions and high water line of several of the rocks between Sakonnet Point and Sakonnet L. H. are considerably in error on T-6118 and have been plotted in their correct positions from the photographs. There is no "Rock (3')" in Lat. 41° 27' 324m. Long. 71° 11' 1330m. This is evidently an error in the location of the rock shown on the compilation about 50 meters to the southeast. Several rocks awash in this area show clearly on the photographs and were located by radial plot and differ several meters from the plane table sheet.

The "rock awash" symbol shown in Lat. 41° 27' 535m. Long. 71° 11' 1260m. does not show on the photographs and is shown in the same position as on T-6118. There are three rocks awash about 120 meters offshore in Lat. 41° 27½' which are not shown on T-6118. There is a large rock lying 50 meters offshore about 290 meters south of Sakonnet Harbor Light which is not shown on T-6118.

The shore line and offlying rocks on the 1:5,000 scale insert are greatly in error north of the dock with gas pump. The two rocks, "bare 2 and 3 ft. at L. W. in Lat. 41° 27' 650m. Long. 71° 11' 700m. do not show on the photographs and their position was taken from T-6118. The "Rock (1')" shown on T-6118 about 280 meters south of triangulation station SAKONNET does not exist and was not shown on the compilation. The two rocks "bare 1 ft. at L. W." in Lats. 41° 27' 800m. and 916m., Longs. 71° 10' 890m. and 590m. respectively were found to be about 36 meters in error on T-6118 by radial plot. These two rocks appear as black spots on several photographs. Incidently the positions obtained for these two rocks by radial plot checks almost exactly with the positions shown on Sheet No. T-1161 (1870) when the datum of the old sheet is changed to N. A. 1927.

This rock removed from T-6118 by review of H-5553. See page 2 (Add'l Wk.) paragraph 3f.

*Radial plot positions for these two rocks checked by H-5553.

The group of rocks in Lat. 41° 27' 1050m. Long. 71° 10' 390m. are in error about 70 meters on T-6118. The rock "bare 1 ft. at M. L. W." in Lat. 41° 27' 970m. Long. 71° 10' 260m. is in error about 40 meters on T-6118. Air photo position of this rock checked by H-3553.

The dashed line outside the low water line on the compilation, designates, as well as it could be ascertained from the photographs, the outer limit of rocks and foul area along the shore. Foul area line removed, upper Sakonnet River

Comparison with Plane Table Sheet No. T-1161 (1870): A comparison of the compilation with the above sheet shows a remarkably small change in the shore line in the 66 years since the old survey was made. The high water line has receded considerably in the vicinity of Sakonnet Point and in the area about $\frac{1}{2}$ mile north of Warren Point. The remainder of the shore line is of a more permanent nature and very little change has occurred.

The old survey appears to have been very accurately executed and such topographic details as have remained permanent agree very closely with the compilation.

Comparison With Plane Table Sheet No. T-1156 (1870): Except for the shift in the mouth of the stream from the marsh southeast of High Hill Point and the new road around Windmill Hill there has been very little change in this area since the old survey was made.

Comparison with Chart No. 353. In Lat. 41° 28' 910m. Long. 71° 11' 900m. a rock awash was located from the photographs. This is evidently one of the two shown in this locality on the chart. In Lat. 41° 29' 300m. Long. 71° 11' 963m. a rock awash was located from the photographs which checks very close to the charted position. Other rocks awash shown on the chart along shore to the northward could not be determined from the photographs. *Other off-lying rocks and topographic data on Chart No.353 have been covered in comparisons with previous topographic sheets.

*See Review

Landmarks:

A list of landmarks for charts of this area was submitted by Lieut. W. D. Patterson in connection with hydrographic surveys and triangulation in 1934. No additional landmarks have been established since that time.

RECOMMENDATION FOR FURTHER SURVEYS:

The wing prints in the northwestern corner of this sheet are considerably off scale and there may have been some error in tracing detail, especially as this is over half way out on the wings and the area is quite hilly. If, when compilations are continued up the Sakonnet River, a proper junction cannot be made at the northwestern corner of this sheet the new sheet should overlap this sheet about a quarter of a mile or until they join correctly.

Except for the above area this compilation is believed to have a probable error of not more than $3\frac{1}{2}$ meters in position of well defined detail of importance for charting purposes and of $6\frac{1}{2}$ meters for other data.

To the best of my knowledge this compilation is complete in all detail of importance for charting purposes within the accuracy stated above and as mentioned in the foregoing report, and no further surveys are required.

Respectfully submitted,

Thos. B. Reed,
Lieut., C. & G. Survey,
Chief of Party.

	Remarks	Decisions
1		
2		
3		
4		
5		
6		
7		
8	See official Gazetteer of R.I.	Awashonks Swamp
9		
10		
11		
12		
13		
14		
15	Find "h" omitted on chart 353	
16		
17		
18	See official Gazetteer of R.I.	Little Compton Commons P.O., M.
19		
20	Add also	
21	Awashonks Park } From official gazetteer	
22	Simmons Hill }	
23		
24		
25		
26	Names underlined in red approved by K.T.A on 11/17/36	
27		

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GEOGRAPHIC NAMES

Survey No. T-5601

Name on Survey	A: On Chart No. 353	B: On previous survey No.	C: On U. S. quadrangle Maps	D: From local information	E: From official gazetteer of Rhode I. (On local Maps)	F: P. O. Guide or Map	G: Rand McNally Atlas	H: U. S. Light List	K	
High Hill Point	✓		✓		✓					1
Windmill Hill	✓		✓		✓					2
Brown Point	Browns Pt		✓		✓					3
Church Point	Churchs Pt		✓		✓					4
Church Cove	Churchs Cove		✓		✓					5
Sakonnet River	✓		✓		✓					6
Sakonnet Harbor					✓					7
Awashonks ~~Briggs Marsh~~				-						8
Sakonnet Point	✓		✓		✓					9
West Island	✓		✓		✓					10
East Island	✓		✓		✓					11
Round Pond	✓		✓		✓					12
Long Pond	✓		✓		✓					13
Warren Point	✓		✓		✓					14
Cullywaugh Rocks					✓					15
Sakonnet	✓				✓					16
Pachet Brook	✓		✓		✓					17
~~Little Compton~~	✓		✓							18
Cold Brook					✓					19
Richmond Hill					✓					20
Church Rocks					✓					21
Breakwater Pt					✓					22
Sakonnet Rocks					✓					23
Quoquasset Inlet					✓					24
Briggs Beach					✓					25
Briggs Point					✓					26
Dundery Brook					✓					27

From official gazetteer of R.I.

Add Nonquit Pond - R. I. Gazetteer

M 234

REVIEW OF AIR PHOTO COMPILATION T-5601
Scale 1:10,000

Comparison with Graphic Control Surveys

T-6118 (1935), 1:10,000

Although T-6118 has been registered and reviewed as a topographic survey it has been considered as a graphic control survey in connection with this compilation, T-5601.

The discussion of the comparison between these two surveys is given on pages 3 to 5 of this descriptive report.

All detail on T-6118 over the common area is shown on T-5601 (in the correct position) except temporary signals and the magnetic meridian.

Comparison with Previous Topographic Surveys

This compilation, T-5601, is adequate to supersede the previous topographic surveys in this area over the common area except as noted below.

Miscl. 20	(1832), 1:24,000	(Chart of Narragansett Bay)
T- 180	(1844), 1:10,000	- except for rocks
T- 182	(1844), 1:10,000	- except for rocks
chart 357 T- 183	(1844), 1:10,000	
T-1156	(1870), 1:10,000	- except for foul area line, rocks and contours
dat 237 T-1161	(1870), 1:10,000	- except for foul area line, rocks and contours
T-3678	(1917), 1:10,000	- except for rocks.

There is good shoreline agreement between these old surveys and T-5601 as mentioned on page 5 of this descriptive report. All of the rocks on the outer coast surveys T-183 and T-1161 are shown.

In regard to T-1161 the breakers at lat. 41° 28.5', long. 71° 09.5' and lat. 41° 27.9', long. 71° 10.0' have been disposed of in the review of T-6118. The rock on T-1161 at lat. 41° 28.15', long. 71° 10' is represented on T-5601 by two rocks awash. These two rocks were transferred from H-5553. A dark spot appears on several photographs which coincides with these rocks.

On the surveys covering Sakonnet River (T-180, T-182, T-1156 and T-3678) there are a number of rocks which are not shown on the compilation.

T-1156 (1870)

The foul line along the eastern shore of Sakonnet River was not adequately covered by the field inspection and is not shown on the compilation. The foul line on T-1156 is not superseded. There are a number of bare rocks on T-1156 which are not visible in the photographs and are not shown on the compilation. Although it is definite that these rocks do not exist as bare rocks, their existence as rocks awash is not disproved, due to inadequate field inspection.

T-3678 (1917)

A rock awash at lat. 41° 29.9', long. 71° 12.4' (Church Point) and a bare rock at lat. 41° 31.2', long. 71° 12.3' (Brown Point) are shown on T-3678 which are not shown on this compilation, T-5601. At Church Point T-3678 shows both a rock awash and a bare rock. The bare rock is visible in the photographs and is shown on the compilation. The rock awash which is outside the bare rock is not visible, however a foul line is shown on the compilation which includes the position of this rock awash. At Brown Point a bare rock is shown on T-5601 about 70 meters south of the bare rock on T-3678.

Comparison with Contemporary Hydrographic Surveys

H-5553 (1934), 1:10,000

This hydrographic survey covers the outside shore of T-5601.

There are no conflicts with the hydrography.

The topographic features were originally from T-6118. As mentioned under the comparison with T-6118, numerous errors in the plane-table work were found. The hydrographic survey has been corrected to conform with the compilation, T-5601.

Comparison with Charts 1210 and 353

Due to the inadequacy of the field inspection up Sakonnet River as discussed under comparison with previous topographic surveys, T-1156 (1870), T-1161 (1870), T-3678 (1917) and H-3995 should be used in conjunction with this survey, T-5601, for corrections and additions to the charts.

Attention is called to the fact that at Church Point, lat. 41° 29.8', long. 31° 12.5', the charts show rocks from the 1917 hydrographic survey only. There are two rocks in this area onT-3678 (1917) which are not on the charts.

All landmarks and aids to navigation submitted by the field parties (chart letter #802-1934) in this area are shown on the compilation.

Frank G. Erskine

Oct. 30, 1936. F. G. Erskine.

REVIEW OF AIR PHOTO COMPILATION NO. T-~~6120~~ 5667

Chief of Party: Thos. B. Reed — Compiled by: Thos. B. Reed

Project: Vicinity of Westport, Mass. — Instructions dated: Sept. 28, 1936.

1. The charts of this area have been examined and topographic information necessary to bring the charts up to date is shown on this compilation. (Par. 16a, b,c,d,e,g and i; 26; and 64)

   Yes

2. Change in position, or non-existence of wharfs, lights, and other topographic detail of particular importance to navigation which affect the chart, is discussed in the descriptive report. (Par. 26; and 66 g,n)

   Yes

3. Ground surveys by plane table, sextant, or theodolite have been used to supplement the photographic plot where necessary to obtain complete information, and all such surveys are discussed in the descriptive report. (Par. 65; and 66 d,e)

   None necessary

4. Blue-prints and maps from other sources which were transmitted by the field party contain sufficient control for their application to the charts. (Par. 28)

   None transmitted

5. Differences between this compilation and contemporary plane table and hydrographic surveys have been examined and rectified in the field before forwarding the compilations to the office and are discussed in the descriptive report.

   Yes, see descriptive report.

6. The control and adjustment of the photo plot are discussed in the descriptive report. Unusual or large adjustments are discussed in detail and limits of the area affected are stated. (Par. 12b; 44; and 66 c,h,i)

   Yes

7. High water line on marshy and mangrove coast is clear and adequate for chart compilation. (Par. 16a, 43, and 44)

   See descriptive report.

NOTE: Strike out paragraphs, words or phrases not applicable and modify those requiring it. Paragraph numbers refer to those in the Topographic Manual. Refer also to the pamphlet "Notes on the Compilation of Planimetric Line Maps from Five Lens Air Photographs." M-67

8. The representation of low water lines, reefs, coral reefs and rocks, and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41)

Yes

9. Recoverable objects have been located and described on Form 524 in accordance with circular 30, 1933, circular letter of March 3, 1933, and circular 31, 1934. (Par. 29, 30, and 57)

Yes.

10. A list of landmarks was furnished on Form 567 and instructions in the Director's letter of July 16, 1934, Landmarks for Charts, complied with. (Par. 16d, e; and 60)

Furnished by W. D. Patterson in conjunction with Hydrographic and Topographic Surveys of this area in 1934. No changes since then.

11. All bridges shown on the compilation are accompanied by a note stating whether fixed or draw, clearance, and width of draw if a draw bridge. Additional information of importance to navigation is given in the descriptive report. (Par. 16c)

No bridges on compilation.

12. Geographic names are shown on the overlay tracing. The accepted local usage of new names has been determined and they are listed in the report, together with a general statement as to source of information and a specific statement when advisable. Complete discussion of place names differing from the charts and from the U. S. G. S. Quadrangles is given in the descriptive report, together with reasons for recommendations made. (Par. 64, and 66k)

Yes

13. The geographic datum of the compilation is N. A. 1927, adjusted and the reference station is correctly noted.

Yes

14. Junctions with adjoining compilations have been examined and are in agreement. (Par. 66j)

Yes

15. The drafting is satisfactory and particular attention has been given the following:

1. Standard symbols authorized by the Board of Surveys and Maps have been used throughout except as noted in the report. ✓

2. The degrees and minutes of Latitude and Longitude are correctly marked. ✓

3. All station points are exactly marked by fine black dots. ✓

4. Closely spaced lines are drawn sharp and clear for printing. ✓

5. Topographic symbols for similar features are of uniform weight. ✓

6. All drawing has been retouched where partially rubbed off. ✓

7. Buildings are drawn with clear straight lines and square corners where such is the case on the ground. ✓

(Par. 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48)

16. No additional surveying is recommended at this time. ✓

17. Remarks:

18. Examined and approved;

Thos B Reed
Chief of Party

19. Remarks after review in office:

Reviewed in office by: Frank G. Eckine

Examined and approved:

E. K. Green
Chief, Section of Field Records

Fred. L. Peacock
Chief, Section of Field Work

L. O. Colbert
Chief, Division of Charts

G Rude
Chief, Division of Hydrography and Topography.

M-350

T-5601

PLANE COORDINATE GRID SYSTEM
(Rhode Island system)

Positions of grid intersections used for fitting the grid to this compilation were computed by Division of Geodesy and the computation forms are included in this report.

Positions plotted by H. D. REED, Jr.

Positions checked ~~by~~ on Ruling machine

Grid inked on machine by H. D. R., Jr.

Intersections inked by H. D. R., Jr.

Points used for plotting grid:

x = 585,000 FT y = 155,000 FT.	x 580,000 y 140,000
x 595,000 y 170,000	x y
x 595,000 y 140,000	x y
x 580,000 y 170,000	x y

Triangulation stations used for checking grid:
X = 585,079.13 FT - Y = 187,508.65 FT.

Ref. sta

1. Sakonnet, 1932
2.
3.
4.
5.
6.
7.
8.

T-5601

Form No. 743
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Ed. May 1935

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE R.I. STATION

x	585,000.00	$\log S_g$	4.92941775
K	500,000.00	$\log (1200/3937)$	9.48401583
x' $(=x-K)$	+ 85,000.00	$\log (1/R)$	271
$x'^3/(6\rho_o^2)_g$	− 23	$\log S_m$	4.41343629
S_c	84,999.77	cor. arc to sine	− 119
		$\log S_1$	4.41343510
3 log x'	14.78825679	$\log A$	8.50904006
$\log 1/(6\rho_o^2)_g$	4.58083361	$\log \sec \phi$	0.12559952
$\log x'^3/(6\rho_o^2)_g$	9.36909279	$\log \Delta\lambda_1$	3.04481468
		cor. sine to arc	+ 213
$\log S_m^2$	8.82687258	$\log \Delta\lambda$	3.04481681
$\log C$	1.3513000	$\Delta\lambda$	1117.1637
$\log \Delta\phi$	0.178173		
y	155,000.00		
ϕ' (by interpolation)	41° 30′ 31.3851	λ (central mer.)	71° 30′ 00.0000
$\Delta\phi$	− 1.5072	$\Delta\lambda$	18′ 37.1637
ϕ	41 30 29.8779	λ	71 11 22.8363

Explanation of form:

$x'=x-K$

$S_g=x'-\frac{x'^3}{(6\rho_o^2)_g}$

$S_m=\frac{1}{R}\left(\frac{1200}{3937}\right)S_g$

R=scale reduction factor

ϕ' is interpolated from table of y

$\Delta\phi=C\,S_m^2$

$\phi=\phi'-\Delta\phi$

$\Delta\lambda_1=S_1 A \sec\phi$

$\log S_1=\log S_m-$cor. arc to sine

$\log \Delta\lambda=\log \Delta\lambda_1+$cor. arc to sine

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

U. S. GOVERNMENT PRINTING OFFICE 11—11521

T-5601

Form No. 743
DEPARTMENT OF COMMERCE
U. S. Coast and Geodetic Survey
Ed. May 1965

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE R.I. STATION

x	595,000.00	$\log S_g$	4.97772210
K	500,000.00	$\log (1200/3937)$	9.48401583
x' $(=x-K)$	95,000.00	$\log (1/R)$	271
$x'^3/(6\rho_o^2)_g$	− .33	$\log S_m$	4.46174064
S_g	94,999.67	cor. arc to sine	− 148
		$\log S_1$	4.46173916
$3 \log x'$	14.93317083	$\log A$	8.50407908
$\log 1/(6\rho_o^2)_g$	4.58083601	$\log \sec \phi$	0.12548 5663
$\log x'^3/(6\rho_o^2)_g$	9.51400684	$\log \Delta\lambda_1$	3.09667487
		cor. sine to arc	+ 266
$\log S_m^2$	8.92348128	$\log \Delta\lambda$	3.09667753
$\log C$	1.3519 25	$\Delta\lambda$	1249.3310
$\log \Delta\phi$	0.27 5406		3
y	170,000.00		
ϕ' (by interpolation)	41 32 59.6499	λ (central mer.)	71 30 00.0000
$\Delta\phi$	− 1.8854	$\Delta\lambda$	20 49.3310
ϕ	41 32 57.7645	λ	71 09 10.6690

Explanation of form:

$x' = x - K$

$S_g = x' - \frac{x'^3}{(6\rho_o^2)_g}$

$S_m = \frac{1}{R}\left(\frac{1200}{3937}\right) S_g$

R = scale reduction factor

ϕ' is interpolated from table of y

$\Delta\phi = C\, S_m^2$

$\phi = \phi' - \Delta\phi$

$\Delta\lambda_1 = S_1 A \sec \phi$

$\log S_1 = \log S_m$ − cor. arc to sine

$\log \Delta\lambda = \log \Delta\lambda_1$ + cor. arc to sine

$\lambda = \lambda$ (central mer.) $- \Delta\lambda$

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STATE R. I. STATION

x	595,000.00	$\log S_g$	4.97772210
K	500,000.00	$\log (1200/3937)$	9.48401583
x' $(=x-K)$	95,000.00	$\log (1/R)$	271
$x'^3/(6\rho_o^2)_g$	− 33	$\log S_m$	4.46174064
S_g	94,999.67	cor. arc to sine	− 148
		$\log S_1$	4.46173916
3 log x'	14.93317083	$\log A$	8.50408111
$\log 1/(6\rho_o^2)_g$	4.58083611	$\log \sec \phi$	0.12532300
$\log x'^3/(6\rho_o^2)_g$	9.51400694	$\log \Delta\lambda_1$	3.09614327
		cor. sine to arc	+ 265
$\log S_m^2$	8.92348128	$\log \Delta\lambda$	3.09614592
$\log C$	1.350676	$\Delta\lambda$	1247.8027
$\log \Delta\phi$	0.274157		
y	140,000.00		
ϕ' (by interpolation)	41 28 03.2511	λ (central mer.)	71 30 00.0000
$\Delta\phi$	− 1.8800	$\Delta\lambda$	20 47.8027
ϕ	41 28 01.3711	λ	71 ~~50~~ ~~47.8027~~ 09 12.1973

Explanation of form:

$x'=x-K$

$S_g=x'-\frac{x'^3}{(6\rho_o^2)_g}$

$S_m=\frac{1}{R}\left(\frac{1200}{3937}\right)S_g$

R=scale reduction factor

ϕ' is interpolated from table of y

$\Delta\phi=C\,S_m^2$

$\phi=\phi'-\Delta\phi$

$\Delta\lambda_1=S_1 A \sec\phi$

$\log S_1=\log S_m-$cor. arc to sine

$\log \Delta\lambda=\log \Delta\lambda_1+$cor. arc to sine

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

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GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE P. I. STATION

x	575,000.00	$\log S_g$	4.47506033
K	500,000.00	$\log (1200/3937)$	9.9484015833
x' $(=x-K)$	+ 75,000.00	$\log (1/R)$	271
$x'^3/(6\rho_o^2)_g$	− .16	$\log S_m$	4.35907887
S_g	74,999.84	cor. arc to sine	− 93
		$\log S_1$	4.35907794
3 log x'	14.625183378	$\log A$	8.50907960
$\log 1/(6\rho_o^2)_g$	4.58083661	$\log \sec \phi$	0.12547661
$\log x'^3/(6\rho_o^2)_g$	9.20601999	$\log \Delta\lambda_1$	2.99448355
		cor. sine to arc	+ 166
$\log S_m^2$	8.71815774	$\log \Delta\lambda$	2.99403521
$\log C$	1.351925	$\Delta\lambda$	986.3595"
$\log \Delta\phi$	0.070083		1052.1159
y	170,000.00		
ϕ' (by interpolation)	41 32 59.6499	λ (central mer.)	71 30 00.0006
$\Delta\phi$	− 1.1501	$\Delta\lambda$	16 26.3595
ϕ	41 32 58.4748	λ	71 46 26.3595
	58.3129		43 33.6405
			71 12 27.8841

Explanation of form:

$x'=x-K$

$S_g=x'-\frac{x'^3}{(6\rho_o^2)_g}$

$S_m=\frac{1}{R}\left(\frac{1200}{3937}\right)S_g$

R=scale reduction factor

ϕ' is interpolated from table of y

$\Delta\phi=C\,S_m^2$

$\phi=\phi'-\Delta\phi$

$\Delta\lambda_1=S_1 A \sec\phi$

$\log S_1=\log S_m-$cor. arc to sine

$\log \Delta\lambda=\log \Delta\lambda_1+$cor. arc to sine

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

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STATE R.I. STATION

x	575,000.00	$\log S_g$	4.87506933
K	500,000.00	$\log (1200/3937)$	9.48401583
x' $(=x-K)$	+ 75,000.00	$\log (1/R)$	271
$x'^3/(6\rho_o^2)_g$	− .16	$\log S_m$	4.35907787
S_g	74,999.84	cor. arc to sine	− 93
		$\log S_1$	4.35907694
3 log x'	14.62518378	$\log A$	8.50908111
$\log 1/(6\rho_o^2)_g$	4.58063661	$\log \sec \phi$	0.12532432
$\log x'^3/(6\rho_o^2)_g$	9.20601999	$\log \Delta\lambda_1$	2.99348337
		cor. sine to arc	+ 165
$\log S_m^2$	8.71815774	$\log \Delta\lambda$	2.99348502
$\log C$	1.35067676	$\Delta\lambda$	985.1107
$\log \Delta\phi$	0.06884		1050.7838
y	140,000.00		
ϕ' (by interpolation)	41 24 03.2511	λ (central mer.)	71 30 00.0000
$\Delta\phi$	− 1.1717	$\Delta\lambda$	16 25.1107
ϕ	41 24 02.0794	λ	71 46 25.1107
	01.9179		+13 34.8895
			71 12 29.2162

Explanation of form:

$x'=x-K$

$S_g=x'-\frac{x'^3}{(6\rho_o^2)_g}$

$S_m=\frac{1}{R}\left(\frac{1200}{3937}\right)S_g$

R=scale reduction factor

ϕ' is interpolated from table of y

$\Delta\phi=C\,S_m^2$

$\phi=\phi'-\Delta\phi$

$\Delta\lambda_1=S_1 A \sec\phi$

$\log S_1=\log S_m-$cor. arc to sine

$\log \Delta\lambda=\log \Delta\lambda_1+$cor. arc to sine

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

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