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

DESCRIPTIVE REPORT

Topographic Sheet No. A 6181
~~Hydrographic~~

State FLORIDA
LOCALITY
EAST COAST
NEW RIVER INLET

1934

CHIEF OF PARTY

W. H. Bainbridge

6181

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. A

REGISTER NO. **6181**

State FLORIDA

General locality FLORIDA EAST COAST BAY COUNTY

Locality VICINITY OF NEW RIVER INLET, 10 MILES S. OF LAUDERDALE

Scale 1:5000 Date of survey June 23 - Aug. 15, 1934

Vessel PARTY NO. 22, PROJECT H.T. 181

Chief of party W.H. BAINBRIDGE

Surveyed by E.W. ALBRECHT

Inked by E.W. ALBRECHT

Heights in feet above _____ to ground to tops of trees

Contour, Approximate contour, Form line interval _____ feet

Instructions dated APRIL 30, AND MAY 10, _____, 1934

Remarks: _____

Applied to Chart 1248 - June 1936: H. S. Gumble

DESCRIPTIVE REPORT TO ACCOMPANY TOPOGRAPHIC SHEET "A", OF PROJECT H.T. 181, OF THE VICINITY OF FORT LAUDERDALE, FLORIDA, IN ACCORDANCE WITH INSTRUCTIONS DATED APRIL 30, 1934.

GENERAL:

Sheet "A" drawn to the scale of 1:5000 covers topographically an area of nearly two square miles.

It is graphically limited to the south by an east-westerly line running about 15" south of parallel $26^{\circ} 06'$; easterly by the Atlantic coastline as it hugs closely to the meridian $80^{\circ} 06' 15''$. It extends northward to latitude $26^{\circ} 07' 30''$, more or less. The westerly margin reaches nearly to longitude $80^{\circ} 08' 30''$.

The principal features represented on this sheet are:

The New River Inlet.

The New River up to the heart of the town of Ft. Lauderdale. The New River Sound, and,

The Stranahan River - the latter two being part of the Intracoastal Waterway route.

The Atlantic coastline in this zone is predominantly sandy.

Along the shore sparse vegetation made up of grass, low brush, and second growth trees, is found south of New River Inlet, on the dune land averaging in width about sixty meters. Here a shoal lagoon, approximately 80 meters wide, lies to the westward, while further inshore Australian pines, palms and palmettos grow on the higher ground. Barren, coarse shell-sand patches occur at frequent intervals. The abundant swampy regions are partly covered by mangrove thickets, partly waste area.

North of New River Inlet the land adjacent to the shore is largely garden land, the southern portion of the section being U.S. Coast Guard station grounds, the northerly one, subdivisions and residential units.

LANDMARKS:

From the ocean are visible:

1. The Beacon light at the easterly extreme of the northerly jetty at New River Inlet, (now unlighted).
2. The steel observing tower in the southerly section of the U. S. Coast Guard Base. The tower is erected over the U.S. Coast & Geodetic Survey triangulation station "FORT 2", of a height of about fifty feet,
3. The red cupola of the Casino, at Las Olas Beach, including the Casino building itself.

Visible from the air as well as otherwise, are:

1. A large number of concrete and steel frame bridges, constructed in the easterly and central parts of this area by former development companies; some are municipally owned. Out of a total of 38 smaller, as well as larger bridges in evidence on this

sheet, only about 18 are in use. the remainder is said to have been condemned to be broken up. In the meantime they serve as excellent landmarks.

2. The large boat-hotel grounded solidly in the sands of New River Sound, to the northwest of the U.S. Coast Guard station grounds.

3. Numerous private residences and estates, of which three appear on Sheet "A", along the north bank of New River.

4. The large Courthouse, with its conspicuous bell tower (triangulation station "Count" on this sheet).

5. The aluminum colored water tank bearing the inscription "Victoria Park" in black lettering.

6. Sixteen aids to navigation.

CHARACTER OF CONTROL:

From the data of the second order triangulation stations "Dale" and "Count" (Courthouse, Fort Lauderdale, Fla.), adjusted in accordance with attached correction sheet to conform with values given in Appendix No. 6, Report for 1911, various points of third and lower order were:

- (a) Recovered.
- (b) Newly determined.

They are:

- (a) Black Water Tank, Fort 2, Cupola (Casino, Las Olas Beach).
- (b) Mullet (U.S.E.D.), Skeet, Draw, Head, River (U.S.E.D.), N. Jetty Light Structure (unlighted), Bridge, Quarter Section Corner 11/14, Temp, (West Pole (Wat)).

Triangulation station "West Pole" was removed while topographical operations were in progress. The approximate position was recovered by plane-table operation and served as the hydrographic control point "Wat".

With the exception of "Dale" all points above mentioned constitute the basic control for Sheet "A". With their help a scheme of graphical triangulation was effected. It included stations of the U.S. Engineer Corps (U.S.E.D.) such as: Morang, Sub, Road, Rock, House, Scout, Jack, Guard, U.S.E.D.#7 and U.S.E.D.#5, which were incorporated in the system of main traverse stations. The latter category was selected in such a manner that at least every other point occupied admitted sights to no less than two stations fixed by triangulation, and out of three points no less than one (sometimes all three) could be determined by resection and independent of elements of polar co-ordinates of the traverse proper.

TRAVERSE CLOSURES:

Due to ^{the} selection of stations as outlined in the foregoing paragraph, the accumulation of errors remained well below the officially fixed limits. The procuring - a priori - of a well controlled traverse appreciably vouchsafed accuracy in the course of operation.

SURVEYING METHODS USED:

The topographical and numerous geographical data recorded and interpreted on Sheet "A" were compiled by stadia measurements

employing a plane-table with alidade. Graphical triangulation was frequently resorted to, and the three point problem found frequent application. The determination of the low water line often had to be made dependent on estimation. In the event of wide discrepancies between the fixation of a "topographical" low water line and the results of hydrographic operation, preference was given to the latter.

Artificial waterways or canals branching off from the Stranahan River to the east, the southeast and west, from the New River north as well as southward, and above Las Olas Boulevard westward, were located from stations of the main traverse along principal arteries of communication and also from points of additional auxiliary traverses through Lake Sylvia, through the canals running approximately south, from the New River, near longitude $80^{\circ} 07' 30''$, and westward through the most northerly canal, on this sheet, via Las Olas Boulevard to join the New River line.

Either extreme of the canal was, in the majority of cases, mapped from traverse points and, upon local inspection, a roughly straight line drawn connecting those extremes. Heavy overhanging vegetation prevented an advantageous placing of control for profitable hydrographic operation in these narrow waterways. Wherever the shore alignment between the extremes of a canal presented broken lines additional sights and set-ups had to be effected.

CHANGE OF PROMINENT FEATURES:

The fixed aids to navigation No. 3 and No. 5 shown on U.S. Coast & Geodetic Survey Chart No. 1248, near the inshore end of the southerly jetty, at New River Inlet is no longer in existence. The Beacon light, now at the easterly extreme of the northerly jetty is not in evidence on the chart referred to.

The north entrance to the lagoon west of the dunes and south of New River Inlet has been closed by wave action during the months of April and May 1934, according to information gathered from local fishermen.

The creation of islands and extensive flats near the southerly entrance of New River Sound as located by this party appear to be of a relatively recent origin since former maps do not note this condition. It is believed that the new topographic features were built up artificially by the dredging of the Intra-Coastal Waterway in that vicinity. The opinion is based on assurances obtained locally.

INCOMPLETED WORK AND REASONS THEREFOR:

The topographical information given on the westerly bank of Stranahan River, along the parallel of latitude $26^{\circ} 06' 00''$, was copied from the U.S. Army aero-photographic sheets. Inaccessibility, due to the existence of impassable swamps and spongy ground motivated this decision.

The narrow canals to the northwest of the locality just mentioned, and represented by dashed lines, were taken from the

same source; their almost isolated nature makes them undeserving of more attention.

The location of Himashee Canal, in the northwest sector of the sheet, has been secured from maps of local engineers; its minor importance as an artery of communication imposed the action as a means of economy.

PLANE-TABLE POSITIONS; HYDROGRAPHIC CONTROL:

Out of 84 hydrographical control points found on Sheet "A", 28 were likewise plane-table positions. (The figure 84 excludes points determined by triangulation proper and used by the hydrographic party). Of these, nine were U.S.E.D. stations. Their hydrographic designation, together with the corresponding name applied to them originally by the U.S. Engineers follows:

U.S.E.D. Designation	U.S.C. & G.S. Designation
Morang	Mang
Sub	do
Road	Bank
Rock	Must
House	Tak
Jack	do
Scout	do
No. 7	Pipe
No. 5	Kit

All fixed aids to navigation were utilized by hydrographic operation, after their positions had been determined "topographically" by the intersection method, in conjunction with distance measurements.

Additional U.S.E.D. stations located in this manner were: Guard (U.S. Coast Guard grounds), Bar, "F", "E", and No. 6. None of these stations, with the exception of "Guard", was occupied by the topographic party.

CHARACTER OF MARSHES AND EXTENT COVERED BY WATER:

The marshes are generally covered with mangrove thickets, an impenetrable root and shrub growth. The soil is of a spongy disposition. At high tide all swamps in this area are awash.

MAGNETIC OBSERVATIONS:

At the stations "River", "Mang" and near the hydrographic station "Mis", magnetic observations were practiced, by means of the oblong box-type Declinatoire. An average of the three observations gave the magnetic declination of $N 1^{\circ} 26' E$, which compares satisfactorily to that shown on Chart No. 1248; a magnetic bearing of $N 1^{\circ} 30' E$, with no annual change, is recorded officially for this zone.

NEW NAMES:

The designations "Stranahan", "Lake Sylvia", and "New River Sound" as found on Sheet "A" were taken from blue-prints of the U.S.

Engineer Corps.

STATISTICS:

Area surveyed, in square statute miles - - - - -	2.25
Length of detailed shoreline, in statute miles - - -	44.00
Length of low water line surveyed, in statute miles-	5.50
Length of roads, in statute miles - - - - -	1.10

Submitted by

E. W. Albrecht
E.W. Albrecht, Surveyor,

Approved:

W. H. Bairdridge
W.H. Bairdridge, Chief of Party,
Party No. 22,
U.S. Coast & Geodetic Survey,

Jan 8, 1935

* CORRECTION TO TRAVERSE

	Latitude			Longitude		
Baker from Publication 1911	25	54	28.538	80	07	20.992
Baker by Traverse, 1928	25	54	28.850	80	07	20.92
Correction Traverse to Publication			-0.312"			+0.072"
Hillsboro Inlet Light from publication 1911	26	15	32.350	80	04	51.572
Hillsboro Inlet Light by traverse 1928	26	15	32.62	80	04	51.52
Correction Traverse to Publication			-0.27"			+0.052"
Mean Correction Traverse to Publication:			-0.29"			+0.06"

TRAVERSE STATIONS PLOTTED ON TOPOGRAPHIC SHEETS

	Traverse			Corr.	Corrected Position			Meters
Black Water <u>Tank</u> , (Ft. Lauderdale)	26	07	22.62	-0.29	26	07	21.73	(1177.8) 668.7 (839.1) 827.9
<u>Count</u> , Broward Co.- Courthouse (Ft. Lauderdale)	26	06	53.84	-0.29	26	06	53.55	(198.5) 1648.0
	80	08	26.84	+0.06	80	08	26.90	(919.63) 747.3
<u>Sand</u> (Lost)	26	04	27.16	-0.29	26	04	26.87	(1019.6) 826.9
	80	06	34.51	+0.06	80	06	34.57	1151.3 960.9 (516.4) (706.8)
<u>Cupola</u> , Bathing Casino, (Ft. Lauderdale)	26	06	58.90	-0.29	26	06	58.61	(42.7) 1803.7
	80	06	18.52	+0.06	80	06	18.58	(1150.8) 516.2

* NOTE:

The positions on topographic sheets A and B, vicinity Port Everglades, Florida, are based on the coastal traverse of 1928. The positions were taken from field computations but were adjusted for the discrepancies found at Station Baker and Hillsboro Light House. When this traverse was run northward from Biscayne Bay discrepancies as indicated above were found at Baker and at Hillsboro Light House. As the locality of this work is approximately half way between those two stations the mean of the discrepancies was used in correcting the field computations. This should make the positions used correspond with the values for this locality given in Appendix No. 6, Report for 1911.

F. S. Borden
F. S. Borden.

Attach to Description Report Sheet "A"
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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

7-6181

LANDMARKS FOR CHARTS

Fort Lauderdale, Florida.

August 15, 1934

DIRECTOR, U. S. COAST AND GEODETIC SURVEY :

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted.

W. H. Bainbridge
W. H. Bainbridge,

Chief of Party.

DESCRIPTION	POSITION					DATUM	METHOD OF DETERMINATION	CHARTS AFFECTED
	LATITUDE			LONGITUDE				
	°	'	D. M. METERS	°	'			
Bancroft Light, New River								
Inlet, North Jetty	26	06	1179	80	06	423	N. A.	Triangu- lation 1248
Port 2, U.S.C. & G.S.	26	06	1296	80	06	539	" "	1248
Water Tank, Victoria Park	26	07	669	80	07	828	" "	1248 847
Court House, Ft. Lauderdale (U.S.C. & G.S. Count)	26	06	1648	80	08	747	" "	1248 847
Cupola (Bath, Casino)	26	06	1804	80	06	516	" "	1248, 546 847

Note: The above positions were corrected in latitude by -0.29; in longitude by +0.06 to co-ordinate with those in Appendix No. 6, Report for 1911.

A list of objects carefully selected because of their value as landmarks as determined from seaward together with individual descriptions, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report.

The selection, determination, and description of these points are an important factor in the value of the chart. Landmarks selected at appropriate intervals can be clearly charted. However, when none is outstanding, a group of two or three objects may by their interrelationship provide positive identification. A group so selected should be indicated.

The description of each object should be short, but such as will clearly identify it; for example, a standpipe, elevated tank, gas tank, church spire, tall stack, red chimney, radio mast, etc. Assign numerals to landmarks to indicate: (1) offshore, (2) inshore, (3) harbor, 1, 2, 3 would be a mark useful on all charts. Generally, flagstuffs and like objects are not sufficiently permanent to chart.

Section of Field Records

REVIEW OF TOPOGRAPHIC SURVEY NO. 6181 (1934).

Vicinity of New River Inlet, Florida East Coast, Florida

Surveyed June-August, 1934

Instructions dated April 30, 1934

Plane Table Survey - Aluminum Mounted

Chief of Party - W. H. Bainbridge.

Surveyed by - E. W. Albrecht.

1. Condition of Records.

The records conform to the requirements of the Topographic Manual with the following exceptions:

a. Evidence that the projection and plotting of the triangulation stations had been checked was lacking, since the usual notations at the bottom of the sheet were omitted. This has been accomplished in the office.

b. Channel markers and beacons are inked in solid triangles. This method of indicating beacons is not desirable because it covers up the prick point which marks the exact location. } |

2. Compliance with Instructions for the Project.

The survey complies with the instructions for the project.

3. Junction with Contemporary Surveys.

The junction with T-6182(1934) is good.

4. Comparison with Prior Surveys.

a. T-1510 (1883).

This survey is on a scale of 1:20,000 and a very detailed comparison was not attempted. The character of the country has been changed considerably by dredging operations and Jetty construction.

b. T-1656 (1884).

This survey is on 1:40,000 scale. It was not feasible to make a detailed comparison with the present survey (scale 1:5,000) because of the large difference in scale. The surveys agree in general characteristics except where improvements and construction have taken place.

c. T-4357 (1928).

This survey is incomplete and appears to have been intended to furnish air photo control. Although there appear to be some minor changes in shoreline, there is on the whole a good agreement.

d. T-4527 (1927-30).

This is an air photo compilation on the scale of 1:20,000. The agreement is remarkably good not only in general characteristics but in geographic location as well. The only discrepancy which was noticed was in lat. 25°07.2', long. 80°07.0' where the former survey shows more land than is now shown.

5. Field Drafting.

The field inking of the survey is satisfactory.

6. Additional Work Recommended.

The survey is complete and no additional work is necessary.

7. Superseding Prior Surveys.

Insofar as the topography actually covered on the present survey is concerned it supersedes the following surveys for charting purposes:

T-1510	(1883)	In part.
T-1656	(1884)	" "
T-4357	(1928)	" "
T-4527	(1928)	" "

8. Reviewed by A. F. Jankowski, February 1935.

Inspected by A. L. Shalowitz.

Examined and approved:

C. K. Green, *C. K. Green*
Chief, Section of Field Records.

L. O. Polbut
Chief, Division of Charts.

F. S. Bonden
Chief, Section of Field Work.

G. H. de
Chief, Division of H & T.

*Applied to chart 546
11/8-35 g.H.S.*

TOPOGRAPHIC
REVIEW OF GRAPHIC CONTROL SURVEY T-6181 , SCALE *1/5000*

Date of Review *Jan 10, 1936*

1. This survey has been reviewed in connection with Air Photo Compilation Nos. T-*5633* , , with particular attention to the following details:

- (a) Projection has been checked in the Field.
- (b) Accuracy of location of plane table control points.
- (c) Discrepancies between detail on this survey and the air photo compilations ~~listed above.~~ *mentioned in report for T-5633. Discrepancies are large.*
- (d) Discrepancies found in descriptions submitted on Form 524 when compared with the air photo compilations listed above.

2. Refer to the reviews and descriptive reports of air photo compilations Nos. T-*5633* , , for a more complete discussion of any errors or discrepancies found.

Any material errors found on this survey are noted in subsequent paragraphs of this review, and these have been reported to the Field Records Section and the Cartographic Section.

Notes and corrections resulting from the review are shown on this survey in green. - *Note has been made on T6181 referring to the photo compilation T5633 for correct detail in this area. See review T5633 for discussion of large differences between T6181 and T5633*

Leonard A. McGowan
Jan 10, 1936
B.G. Jones