5779

Form 504
Ed. June, 1928

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

State: FLORIDA

DESCRIPTIVE REPORT

~~*Topographic*~~
Hydrographic } *Sheet No.* 9

LOCALITY

BISCAYNE BAY ~~FROM LATITUDE~~

~~25° 48'~~ ~~TO~~ HEAD OF BAY to

Venetian Islands

193 5

CHIEF OF PARTY

E. R. McCarthy

U. S. GOVERNMENT PRINTING OFFICE: 1933

5779

Form 537
Ed. [illegible]

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

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

Field No. 9 5779

REGISTER NO.

State FLORIDA

General locality BISCAYNE BAY

Locality ~~Venetian Islan~~ ~~LATITUDE 250 40' TO~~ HEAD OF BAY to Venetian Islands

Scale 1:10,000 Date of survey FEB. - MAY, 19 35

Vessel FIELD PARTY NO. 14

Chief of Party E.R.MCCARTHY

Surveyed by H.J.SEABORG & A.E.DURIE

Protracted by H. J. STANSELL

Soundings penciled by E. L. PATTERSON

Soundings in ~~FATHOMS~~ feet

Plane of reference MLW

Subdivision of wire dragged areas by

Inked by Bowers, McCann, Boyce Boyce 29½

Verified by A.H.YEOMANS

Instructions dated Nov. 17, 19 33,
Supp. Ins. Oct. 29, 1934

Remarks:

U. S. GOVERNMENT PRINTING OFFICE, 1933

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SHEET NO. 9

BISCAYNE BAY FROM

LATITUDE 25° 48' TO HEAD OF BAY

PARTY NO. 14

E. R. McCarthy
Lieut.(j.g.) C&GS,
Chief of Party.

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SHEET NO.9

AUTHORITY:

Original instructions to H. A. Cotton dated November 17, 1933 and supplemental instructions to H. A. Cotton dated October 29, 1934.

LIMITS:

Biscayne Bay from Latitude 25° 48' to head of Bay. Includes tributary creeks.

METHODS:

Soundings were taken with a sounding pole graduated to feet and half feet except in the few depths over 15' where a bronze centered lead line graduated in fathoms and feet was used.

Position was fixed by sextant angles on signals located by triangulation or topography except in narrow creeks where it was fixed in relation to the topography.

EQUIPMENT:

A 22' launch drawing about 1' and powered by an internal combustion engine was used for the greater part of the work. It was supplemented by a skiff with an outboard motor.

COMPARISIONS WITH PREVIOUS SURVEYS:

The survey was compared with Chart No. 583 and the depth curves agree quite well except in the inshore areas on either side of the Bay where dredging for material for fill has deepened those areas considerably. The areas on either side of the Intracoastal Waterway have been used for deposit of spoil from dredging and there were several small islands formed by the spoil.

DISCREPANCIES:

The soundings cross satisfactorily.

GENERAL STATEMENT OF AREA:

The area enclosed within the limits of the sheet was originally shallow but since improvement of its shores by spoil thrown up by dredging and through the construction of artificial islands has now a good small boat channel on the east bank. It is also traversed by the Intracoastal Waterway which follows a short distance off the west shore. Some dredging has been done in spots on the west bank.

SHOALS AND DANGERS:

There are no shoals and dangers within the limits of the sheet except for the spoil banks thrown up by the dredge in cutting through the Intracoastal Waterway. These spoil banks parallel the east side of the channel from the southern limits of the sheet to Latitude 25° 52' and the west side at approximately the same distance to the head of the bay.

An extensive bank broken only by the dredged cuts extends from shore to shore of the bay at Latitude 25° 50'. General depths are 2' and least depth $\frac{1}{2}$' (16g).

CHANNELS:

There are several dredged channels within the limits of the sheet. The Intracoastal Waterway is the most important but several of the others are used extensively in the winter season by pleasure craft.

CHANNELS: (CONTINUED)

INTRACOASTAL WATERWAY:

This waterway has been dredged recently to a project depth of 10' by the U. S. Engineers but has, since dredging, shoaled along the edges particularily north of the 79th Street Causeway.

Directions from Florida East Coast R.R. bridge at head of Bay:

Follow beacons as found to Beacon No. 6, (1.3 miles), set course 214½ (T) and follow along west side of beacons 4.3 miles to Beacon No. 59, (220 meters± above 79th Street Causeway Bridge) at Beacon No. 59 turn east to course 199 (T) to pass through draw and after passing draw turn east to course 185½ (1.2 miles) to Beacon No. 69; at Beacon No. 69 turn west to course 192(T) (2.3 miles)to Venetian Causeway Draw.

Controlling depths are:

East Coast R.R. Bridge - Beacon No. 6 ~~9.5'~~ 9'
Beacon No.6 - Beacon No. 59 *(near Bn 43)* ~~8.0'~~ 6½'
Beacon No. 59 - 79th St. Bridge - - - - - 10.0'±
79th St. Bridge - Beacon No. 69 *(north of Bn 61)* ~~10.0'~~ 8'
Beacon No. 69 - Venetian Causeway *(near Bn 75)* ~~10.0'~~ 9'

Depth of 61

A vessel of over 6' draft should navigate this cut with caution particularily between Beacons Nos. 55 - 57 where shoaling has occurred from the east edge.

LITTLE RIVER:

This river may be entered through either side of the island at its mouth - the north channel is deeper and is used to a greater extent.

No directions are necessary as it may be easily entered from the Intracoastal Waterway.

CHANNELS:(CONTINUED)

LITTLE RIVER: (CONTINUED)

Controlling depths are 5' in the north entrance, 3½' in the south entrance and 4½' in the river.

It is used only by pleasure craft. A dredged area (hard bottom) off the south entrance forms a fair anchorage basin for boats with a draft of not over 6'.

CHANNELS & BASINS ON THE WEST SHORE:

The west shore between Latitudes 25o 48' and 25o 49' has been dredged for material to build up the shore and a number of slips for small boats have been made. There is ample water along the shore and in the slips for any boats that may be able to enter. Controlling depth is 4' in the area between the Intracoastal Waterway and the dredged areas. Care should be taken to avoid the spoil bank in Latitude 25o 48.7' Longitude 80o 10.9' part of which bares.

A cut, the entrance to which is in Latitude 25o 49.0' Longitude 80o 11.0', is closed by filling at its mouth. It may be entered at High Water by a skiff.

The shallow bight about 0.5 miles north of Latitude 25o 49' has been dredged close to shore for fill material and an unmarked channel leads to it from the Intracoastal Waterway. Controlling depth in the entrance is 4½' and depths inside are ample for any boat capable of entering. It is little used.

There are several dredged slips and basins for small boats above the 79th Street Causeway most of which are unmarked and are seldom used. Some development was made of some of the entrances but they are in poor condition and are of little importance.

CHANNELS: (CONTINUED)

CHANNELS ALONG EAST SHORE:

BELOW 79TH STREET CAUSEWAY:

A wide and well defined channel parallels the shore from the southern limits of the sheet to La Gorce Island (lat 25° 51') where it divides, the east branch leading to Indian Creek and the west to the 79th Street Causeway drawbridge. It was formed by dredging for fill for the artificial islands and made land which borders the eastern shore.

The western limits of the Channel are marked by iron stakes which were placed and maintained by private interests.

Directions (from south):

From Sunset Isles follow about 100 meters off and parallel to the shore until abeam of the entrance to Biscayne Waterway then steer to ~~bays~~ pass close by Collins Island and St. Johns Island; after leaving St. Johns Island steer mid-channel course to division of the channel at Isle of Normandy (care should be taken to avoid ~~part~~ point of shoal marked by private marker west of basin south of La Gorce Island.) From point where channel divides -- if bound west -- turn and follow 100 meters off south shore of Isle of Normandy and if bound for Indian Creek turn and steer mid-channel courses.

Controlling depth is 6' (39-42 l) but with local knowledge 7' may be carried.

ABOVE 79TH STREET CAUSEWAY:

North of the causeway the general depths in the bay are greater, the shore less developed and the channel ~~is~~ not as well defined. The channel was not developed as carefully as that south of the causeway as it is little used and then only by small craft.

CHANNELS: (CONTINUED)

ABOVE 79TH STREET CAUSEWAY(CONTINUED):

An unmarked channel with a controlling depth of 8' follows parallel to the shore from the causeway to the north side of Biscayne Point - it may be easily followed if the water is clear otherwise it is best to obtain a local pilot. It is very narrow in vicinity of Biscayne Point, not developed

North of Biscayne Point the channel is quite wide and 9' may be carried to the south shore of Indian Creek Golf Club Island. From here if bound to the Intracoastal Waterway 7½' may be carried by following parallel to the south shore until clear and then heading for a point just south of Beacon No. 41. If bound for Bakers Haulover 6½' (65 c) may be carried by following mid-channel courses through the canal east of the island and when clear of canal following 30 meters off east shore of bay into Haulover. From north end of canal 5' may be carried into Intracoastal Waterway 50 meters south of Beacon No. 27.

BAKERS HAULOVER:

Bakers Haulover is an inlet protected by a short bulkhead. The depths 12' - 15' are ample as the boats using it are limited both by the depths in the bay entrance and the fixed bridge on the beach highway across it. A strong current sets through the passage. The ocean entrance is not marked. The bay entrance from the Intracoastal Waterway is marked by wooden stakes but should not be attempted without local knowledge as the channel is crooked. Controlling depth is 5'.

Tide gauge not shown

INDIAN CREEK:

Indian Creek extends from the Collins Canal at the east end of the Venetian Causeway, between the beach strip and the islands to the west, northward passing east of the Isle of Normandy and turning west to join the Bay south of Biscayne Point. Several canals and waterways enter it through which passage for small craft may be had to the bay. Allison Island is an artificial island constructed in the center of the Creek near its confluence with an arm of the East Shore Channel.

CHANNELS:(CONTINUED)

ABOVE 79TH STREET CAUSEWAY(CONTINUED):

INDIAN CREEK(CONTINUED):

Controlling depths are:

6' in Pancoast Lake 5' near Ocean 43rd
7' to Allison Island
8' can be carried 7½' channel west of Allison Island page 126
7' " " " 5' channel east of Allison Island
not developed; 8' to Biscayne Point
8' to Bay.

The passes south of Biscayne Point are not marked and not sufficient development was done to clearly define them. However, the pass to the Bay is not blocked off but is located close to the islands. not developed

Size of boats using the Creek is limited by fixed bridges.

BISCAYNE WATERWAY AND CONNECTING WATERWAYS:

Biscayne Waterway is a dredged canal between two islands and in conjunction with Surprise Lake and Flamingo Waterway affords a short cut to Indian Creek. From Surprise Lake, Surprise Waterway leads directly to the Bay.

Controlling depths are:

5' from Bay to Surprise Lake
8' Surprise Lake
8' Flamingo Waterway
7' 8' Surprise Waterway. at mouth

The size of boats using these waterways is limited by fixed bridges.

NORMANDY WATERWAY:

This waterway was never completed due to the collapse of the real estate boom. A canal parallels the line of piling marking its original south bulkhead and about 3½' may be carried through it and probably more with local knowledge. The east entrance has a ruined bridge extending half way across from its south shore. It is shoaling. 3' 67-68Z

CHANNELS:(CONTINUED)

ABOVE 79TH STREET CAUSEWAY(CONTINUED):

WATERWAY NORTH OF INDIAN CREEK GOLF CLUB ID.

An unmarked waterway with a controlling depth of 6' in the waterway and 5' in its west entrance parallels the north bulkhead of the island and may be used as a passage by small craft from the Bay to the back creek.

ADDITIONAL CHANNELS & BASINS ON EAST SHORE:

There is a small basin south of La Gorce Island with general depths 7 - 8 feet and a canal south of the island with a controlling depth of 4', which canal leads to Indian Creek. Lat 25-51 Long 80-08.

Lat 25-51.5 There is a canal on the east side of Indian Creek at the Isle of Normandy which leads from the Creek to the cove north of Biscayne Point. It has two entrances on the north, the southerly of which can be used only by skiffs and has a controlling depth of ½' (44-5 c) and the northerly 4'. The north entrance has a controlling depth of 3'.2½'.

There are three canals at Biscayne Point, the easterly has a controlling depth of 4½', the westerly 2' (closed at north end) and the connecting 4½'-4' at west end. channel leads north from the easterly canal to the canal mentioned below. There is a small cutoff canal about 0.1 mile east of the south entrance to the creek ⊙ OLD east of Indian CreekGolf Club Island, with a controlling depth of 4½'. There is an anchorage basin on its east shore near the south entrance with ample depth for any boat which may use the passage.

Most of the canals and basins mentioned above were made real estate sub-divisions, are now abandoned and the bulkheads in rather poor condition. The canals show a tendency to shoal.

MISCELLANEOUS:

The three foot curve is shown on the sheet. Not inked

Exact limits of shoals and edges of channels show clearly on the air photographs and will be defined on the compilation sheets. not yet completed

Statistics and tidal notes are attached.

Respectfully submitted,

E.R. McCarthy

E. R. McCarthy,
Lieut.(j.g.) C&GS,
Chief of Party.

MEMORANDUM BY CHIEF OF PARTY:

The hydrography on this sheet was done by Mr. H. J. Seaborg, Deck Officer and Mr. A. E. Durie, Surveyor. Mr. Seaborg did the greater part of the work but was detached before the sheet was completed.

The hydrography of the southern section of the sheet was very closely supervised in order to insure that the proper development was being made but due to press of other activities of the party a less rigid check was maintained on the northern section. Some additional development was done here but it was felt that the little importance of the area did not warrant any great amount of additional work.

The Intracoastal Waterway has been surveyed by the U. S. Engineers but at the present time the survey is not available.

E. R. McCarthy

E. R. McCarthy,
Lieut.(j.g.) C&GS,
Chief of Party.

STATISTICS TO ACCOMPANY HYDROGRAPHIC SHEET NO. 9

KULP LAUNCH

DAY	DATE	MILES	SOUNDINGS	POSITIONS
A	2-4-35	16.1	773	113
B	2-5-35	2.5	127	16
C	2-6-35	13.3	717	97
D	2-7-35	13.2	786	116
E	2-8-35	16.7	902	120
F	2-12-35	13.5	797	110
G	2-13-35	22.3	1228	163
H	2-14-35	10.9	601	93
J	2-15-35	7.5	493	75
K	2-18-35	6.0	373	68
L	2-19-35	8.8	460	74
M	2-20-35	8.9	510	87
N	2-21-35	16.7	885	120
P	2-22-35	8.0	394	49
Q	2-27-35	20.0	938	133
R	2-28-35	16.4	738	120
S	3-4-35	10.2	598	88
T	3-5-35	8.7	431	71
U	3-6-35	10.6	635	106
V	3-7-35	10.4	520	77
W	3-11-35	17.5	844	123
X	3-13-35	4.3	221	46
Y	3-15-35	6.7	307	57
Z	5-8-35	6.7	508	74
TOTALS		276.4 54.9 331	14786	2196

SKIFF

DAY	DATE	MILES	SOUNDINGS	POSITIONS
a	2-5-35	4.5	339	51
b	2-11-35	17.1	926	121
c	2-25-35	15.9	870	118
d	2-26-35	10.3	571	78
e	3-5-35	2.1	84	13
f	3-7-35	5.0	340	54
TOTALS		54.9	3130	435
Grand Total			17,916	2,631

LAE

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Ed. Feb. 1935

TIDE NOTE FOR HYDROGRAPHIC SHEET

June 17, 1935.

Division of Hydrography and Topography:

Division of Charts: Attention Mr. E. P. Ellis

Tide Reducers are approved in
12 volumes of sounding records for

HYDROGRAPHIC SHEET 5779

Locality Head of Bay to Venetian Islands, Biscayne Bay and tributary waterways, Florida.

Chief of Party: E. R. McCarthy in 1935
Plane of reference is mean low water, reading
2.2 ft. on tide staff at Pier 4
6.6 ft. below B.M. 1
2.0 ft. on tide staff at Miami Beach (Carters Pier)
7.5 ft. below B. M. 6 (USED)
2.2 ft. on tide staff at 79th Street Causeway
5.1 ft. below B.M. 1
2.0 ft. on tide staff at Indian Creek Golf Club
7.6 ft. below B. M. 1

Height of mean high water above plane of reference is 2.0 ft. at Pier 4; 2.5 ft. at Miami Beach (Carters Pier); 2.0 ft. at 79th Street Causeway; 1.9 ft. at Indian Creek Golf Club.

Condition of records satisfactory except as noted below:

Actg Chief, Division of Tides and Currents.

U. S. GOVERNMENT PRINTING OFFICE

Survey No. 5779

Date. May 21, 1935 GEOGRAPHIC NAMES

Chart No. 1248 & 583

Diagram No. 1248.

Approved by the Division of Geographic Names, Department of Interior. ✳

Referred to the Division of Geographic Names, Department of Interior. R

Under investigation. Q

Status	Name on Survey	Name on Chart	New Names in local use	Names assigned by Field	Location
	Bakers Haulover Cut		same		140
	Biscayne Point	same			140
	Normandy Waterway		"		140
	Little River	"			140
	Bird Key *	"			140
	Indian Creek	"			200
	Biscayne Bay *	"			290
	Biscayne Waterway		"		140
	Pancoast Lake		"		120
	Venetian Islands	"			200
	Intracoastal Waterway *				140
		APPROVED NAMES UNDERLINED IN RED H.L. Flemer.			

(M-136)

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. 5779

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	2631
Number of positions checked	16
Number of positions revised	6
Number of soundings recorded	17916
Number of soundings revised	47
Number of signals erroneously plotted or transferred	0

Date: July 18, 1935

Verification by A.H. YEOMANS
Inked By Bowers, McCann, Boyce
Time: 60 hrs
29½ hrs

Review by [signature]
Time: 16 hrs.

HYDROGRAPHIC SURVEY NO. 5779

Smooth Sheet yes

Boat Sheet 1

Sounding Records 12 Vols.

Descriptive Report yes

Title Sheet yes

List of Signals vol 1

Landmarks for Charts (Form 567) Chart letter 443 (1935)

Statistics yes

Approved by Chief of Party yes

Recoverable Station Cards (Form 524) None

Special Chart for Lighthouse Service (Circular Nov. 30, 1933) yes

Remarks

140 (1932) Edmunds.

443 (1935) ✓

886 1934 ✓

Report on H-5779

1. The records conform to the requirements of the General Instructions.
2. The usual depth curves were completely drawn. The delineation of the depth curves by the field party was satisfactory but the 3 foot curve was not inked.
3. The field plotting was completed to the extent prescribed in the Hydrographic Manual
4. The office draftsman did no drafting over that had been done by the field party.
5. The junction with H-5727 (1934-35) was made and found to be satisfactory.
6. The only available topography for this sheet was the air-photo compilation sheets T 4528 and T 4529 (1927-28). The topography was omitted from the smooth sheet, awaiting the completion of new air-photo compilations now being made of this area. Some spoil banks and bridges were transferred from graphic control sheet (T-6297 a + b). Beacon 37, removed during the progress of the work (March) is shown on the sheet, in red. The later location of Beacon 37 is also shown, in blue. ~~Beacon 85 is not shown on this sheet but on H-5727 (1934-35).~~ Notes concerning topography could not be checked in the records.

Submitted by,

A. H. Yeomans

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5779 (1935) - FIELD NO. 9

Biscayne Bay, Head of Bay to Venetian Islands, Florida
Surveyed in 1935
Instructions dated Nov. 17, 1933 and Oct. 29, 1934 (H. A. Cotton)
Also letter of Jan. 2, 1935 to Lt. E. R. McCarthy

Pole and hand lead soundings. 3 Point Fixes on Shore Signals.

Chief of Party - E. R. McCarthy.
Surveyed by - H. J. Seaborg and A. E. Durie.
Protracted by - H. J. Stansell.
Soundings plotted by - E. L. Patterson.
Inked by - Bowers, McCann, Boyce.
Verified by - A. H. Yeomans.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual except that there was no evidence that the plotting of hydrographic signals was checked in the field since the initials of the checker were not shown on the sheet. This was accomplished in the office.

The Descriptive Report is clear and comprehensive and adequately covers all matters of importance.

2. Compliance with Instructions for the Project.

This survey is satisfactory and complies with the instructions for the project.

3. Shoreline.

The signals used for control of the Hydrographic work on this survey originate with T-~~6279~~ 6297 a and b (1934-35 - Graphic Control).

Only short sections of the shoreline from T-~~6279~~ 6297 a and b (1934-35) are shown on the smooth sheet. The airphoto compilation was not available at the time the smooth sheet was plotted in the field and has not as yet been received in the office.

4. Sounding Line Crossings.

Cross lines were run about one mile apart in the flat shoal areas. The agreement of depths with the main system of lines is satisfactory; differences in nearly all cases being not greater than one foot.

5. Depth Curves.

The usual depth curves can be satisfactorily drawn.

6. Junctions with Contemporary Surveys.

The junction with H-5727 (1934-35) on the south is satisfactory.

At the present time there is no contemporary survey to the northward.

7. Comparison with Prior Surveys.

a. H-1329 (1876).

Over large flat areas in the middle of the northern end of Biscayne Bay there is fair agreement in depths between the old and present survey, but due to extensive improvements along the shores and the cutting of the Intracoastal Waterway, radical changes in depth and the building of artificial islands with the spoil have resulted. Because of its age and the above mentioned artificial changes, this survey should be superseded by the present survey.

b. H-1605b (1884).

This survey overlaps the present survey to the extent of about one mile at the northern extremity of Biscayne Bay. The depths are not in agreement except close to the shore, because of the dredging of the channel for the Intracoastal Waterway through the center.

This survey is of no charting value and should be superseded by the present survey within the common area.

c. H-4075 (1919).

This survey is on a 1 to 20,000 scale and includes the entire area covered by the present survey. The development is sparse and the soundings in large flat areas in the middle of the Bay are in fair agreement with the present survey. Extensive waterfront improvements as well as the dredging of the Intracoastal Waterway channel have resulted in radical changes in depth and the building of artificial islands with the spoil.

Because of these changes and improvements and because the present survey is on a larger scale and more detailed, H-4075 (1919) should be superseded by the present survey.

d. H-4811 (1928).

This survey covers a small section along the outside coast at lat. 25°54.0'. It is not in agreement with the present depths and extensive improvements appear to have been made in this area. The shoals appearing on H-4811 (1928) have apparently been removed. A 3 foot sounding (charted) in lat. 25°54.05', long. 80° 07.2', and a 6 foot sounding (charted) in lat. 25°54.00', long. 80°07.31', fall in this category and both soundings should be removed from the chart. Because of the changes indicated, H-4811 (1928) should be superseded by the present survey, within the small common area.

8. Comparison with Chart No. 583.

a. Hydrography.

Within the area of the present survey the chart is based on surveys discussed in the foregoing paragraphs and U. S. Army Engineers surveys made from time to time, and contains no additional information that needs consideration in this review. All hydrography from these sources should now be superseded by the present survey.

b. Aids to Navigation.

Within the limits of the survey, the day beacons along the Intracoastal Waterway, which were charted from L. H. N. to M. 47, 1933, were located by the plane table in positions which vary from agreement to 250 meters different from their charted positions. Beacon No. 37, which was destroyed, was relocated by the hydrographic party and the hydrographic position should be used for charting. These beacons should be charted in the positions located by the present survey.

c. Controlling Depths.

In the Intracoastal Waterway a controlling depth of 8 feet is charted by authority of chart letter No. 264 (1934). Later information, chart letters No. 77 (1935) and No. 712 (1935), confirms this depth, however the waterway has been dredged to a project depth of 10 feet but has shoaled since dredging. (See p. 3 Descriptive Report). A 6½ foot sounding was obtained just north of Bn. 43 and another 6½ foot shoaling occurs between Bn. 55 and Bn. 57.

The controlling depths of the less important waterways are fully discussed in the Descriptive Report on pages 3, 4, 5, 6, 7, and 8.

9. Field Plotting.

The protracting and plotting are satisfactory.

10. Additional Field Work Recommended.

This survey is complete and no additional work is required.

11. Superseding Old Surveys.

Within the area covered the present survey supersedes the following surveys for charting purposes:

H-1329	(1876)	in part.
H-1605b	(1884)	" "
H-4075	(1919)	" "
H-4811	(1928)	" "

12. Reviewed by - Leo S. Straw, August 23, 1935.

Inspected by - R. L. Johnston, August 27, 1935.

Examined and approved:

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

L. O. Colbert
Chief, Division of Charts.

H. S. Borden
Chief, Section of Field Work.

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

25 Jan 2, 1936
E.A.S

Applied to Cht. 583, Feb. 11, 1936 K.R.

Applied to chart 847 - May 23, 1936 H.P.C.

Applied to chart 1248 Mar. 19, 1937 G.H.S.

Applied to Chart 547 (drawing) May 4, 1942

H 5777

Chart 1248

adj S- H 5727 on south (Cooper)

Topo 6297 a + b , 6275