5542

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. 3 5542

LOCALITY

Florida

Barnes Sound and Blackwater Sound

Inlet, Florida Keys.

1934

CHIEF OF PARTY

Harold A. Cotton

U. S. GOVERNMENT PRINTING OFFICE: 1928

Form 537
Ed. Dec., 1930

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. S 5542

REGISTER NO.

State Florida

General locality Florida Keys

Locality Barnes Sound and Blackwater Sound

Scale 1:20,000 Date of survey Apr. 7 - July 26, 1934

Vessel Chartered Launch Dorothy - Powerboat

Chief of Party H. A. Cotton

Surveyed by W. O. Hinkley - Surveyor - H. J. Seaborg, D.O.

Protracted by A. Black

Soundings penciled by A. Black

Soundings in ~~fathoms~~ feet

Plane of reference M. L. W.

Subdivision of wire dragged areas by

Inked by PAUL H. SCHERR

Verified by P. H. SCHERR

Instructions dated November 17, 1933

Remarks:

U. S. GOVERNMENT PRINTING OFFICE, 1933

D E P A R T M E N T O F C O M M E R C E

U. S. C O A S T A N D G E O D E T I C S U R V E Y

R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEET NO. 3 FLORIDA KEYS PROJECT H. T. 158

SHORE PARTY NO.3

HAROLD A. COTTON,
Lieutenant Commander,
CHIEF OF PARTY.

1934

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET No.3

INSTRUCTIONS:

This survey was executed in compliance with Directors Instructions dated November 17,1933, Project H. T. 158.

LIMIT AND SCOPE:

The northern limit of this sheet makes a junction with the southern limit of sheet No. 5535 (No.1 H. A. Cotton 1934) of this same project, the junction being the Highway Bridge connecting the mainland with Key Largo and dividing Little Card Sound on the north from Barnes Sound on the south. The sheet extends south to Bakers Cut in about Lat. 25° 05' and included all of Big Buttonwood Sound. Key Largoforms the eastern limit. On the west lines were run to the mainland as far south as Snipe Point, thence south by west to the east shore of the two keys just to the N. W. of Whaleback Key and thence to the southern limit.

CONTROL: Twelve second order main scheme triangulation stations together with ~~twenty-two~~ intersection stations furnished the basic control for this survey.

Hydrographic signals were built and cut in from the triangulation stations with the sextant and with planetable in about the same ratio, although many of the signals shown as located with the sextant have one or more plane table cuts. Traverses were run thru Jewfish, Duzenburry and Grouper Creeks for the location of hydrographic signals (see report for control sheet).

There are five signals on the sheet shown as DOT #1,2, 3,4 and 5, which are sextant positions of the houseboat Dorothy, at anchor. From these positions other signals were cut in by sextant. At such anchorage positions, two to three anchors were used to insure a perfectly stationary position.

NATURE OF THE AREA SURVEYED:

The greater part of this sheet is taken up by eight more or less land locked sounds together with the northeast part of Florida Bay. The general depth in each particular area is quite uniform, Barnes Sound 8 - 9 feet, Manatee Bay 4-5 ft, Blackwater Sound 7-8 ft. in the eastern part and 6 - 7 feet in the western part, Little Blackwater Sound 5 feet, Long Sound 4-5 feet, Tarpon Basin 6-7 feet, Little Buttonwood Sound 5 - 6 feet, Big Buttonwood Sound 6 - 7 feet and the northeast part of Florida Bay 4 - 5 feet. Coral rock covered with a layer of mud quite soft in places and varying from 6" to 18" in. thickness covers most of this area. In spots the rock is bare and

the bottom has been so noted in the records. Where the bottom has been noted as soft or mud the sounding was taken on top of the mud layer. A growth of grass 4 to 6 inches long covers much of this area, there being no extensive area without it. It is especially pronounced in the western side of Barnes Sound and in Manatee Bay.

There are no extensive banks on this sheet. In the extreme northern and southern parts of Barnes Sound small strips of bank appear thru which the navigational cuts were made.

The northern entrance to Barnes Sound is through the cut south of Barnes Point and the southern entrance through Jewfish Creek. A swinging railroad bridge of the F. E. C. Railroad is located at the southern end of Jewfish Creek and beyond is Blackwater Sound. On the south of Blackwater Sound, Dunbury Creek leads into Tarpon Basin whence Grouper Creek leads on into Big Buttonwood Sound. Bakers Cut (the southern limit of the sheet) leads south out of Big Buttonwood Sound. The above route of travel is well marked with red and black pole beacons with pointers. Work of lighting this route is about complete. Nevertheless, travel at night will be hazardous because of the narrow winding creeks., The following cuts and creeks have been deepened or dredged (a) The cut at the highway bridge just south of Barnes Point (b) Both the north and south entrances to Jewfish Creek (c) Dunbury Creek and (d) Bakers Cut. Most of these cuts were put thru when the F. E. C. Railroad built their railroad, 1904 - 1912. Cuts were also put thru at that time between Blackwater and Little Blackwater Sounds, and Little Blackwater Sound and Long Sound.

There are no living coral heads or boulders, or pinnacles of any type in this area.

In calm weather the water in these areas is clear and the bottom is visible but continuous strong winds will stir up the mud bottom.

EQUIPMENT USED FOR THIS WORK:

The work on this sheet was done by a party of six or seven men with one fifty four foot houseboat, a twenty one foot powerboat and a 14 foot skiff with outboard. The houseboat drawing three and one half feet was used to run most of the north and south lines in Barnes Sound as well as some of the east and west lines. The powerboat drawing eighteen inches was used to run the remainder of the lines.

Ordinary hydrographic equipment was used although the leadline was of little service as depths over ten feet were seldom obtained. A fifteen foot sounding pole with disc was used almost exclusively.

METHOD OF PROCEEDURE:

This party built hydrographic signals, located them and performed all planetable operations before actual hydrography was run. Each sound or bay was treated as a unit, signals being built, located and hydrography finished in each area beforexmoving on to the next. Signals built in one sound could but seldom be seen in adjoining areas.

The type of signal built varied from cloth banners on single 2" x 4"s to tripods boarded over and whitewashed. The building of these tripods in the center of some of the smaller areas afforded an excellent center object from any place in the sound. "Dave", Eye, Pig, Steel, Pole, Dome, and Pump are some of these types. The layer of mud over the basic rock bottom was sufficient "ground" for holding the tripod legs in place.

As mentioned before the signals were located by wither sextant cuts or by planetable. Traverses were run thru Jewfish, Dugenbury and Grouper Creeks for the location of signals (see report on control sheet for further details).

Ordinarily three point sextant fixes controlled the hydrography in the open areas. However, thru the cuts and creeks most of the positions are referred to some near signal or set of signals as "Sig. Bow, fifty meters on the starboard beam" or thru a cut a position would be referred to as being "midway between 'Beacons' 25 and 22". At the beginning and ending of the lines thru the creeks and cuts three point fixes were obtained in the open areas thereby tieing in with the rest ofthe hydrography. Whenever possible, lines between the various bodies of water were run of sufficient length to obtain a good crossing of soundings. These lines appear as random lines on the sheets and in most cases trace the deepest water.

DEVELOPMENT:

In Barnes, Blackwater, Little and Big Buttonwood,Sounds, Manatee Bay, Tarpon Basin and Lake Surprise, 200 meter lines were run normal to the shore and crossed with lines spaced at one half mile intervals. The rest of this sheet was run with 300 meters lines crossed with one half mile lines. These 300 meters lines were run in different directions in each area, advantage being taken of the size and shape of the area.

Thru the navigatable cuts and creeks three longitudunal lines were run, one center line and a line on either side; two lines were run thru the bridges. These lines were extended on either end to make a crossing with the regular lines.

The shoalest soundings obtained on these lines were as follows:

A.	Highway Bridge - East side	8.0 feet
	West side	8.0 feet
B.	Cut just south highway bridge ℄	5.0 feet
C.	Jewfish Creek Center line	5.5 feet
D.	Railroad Bridge, Jewfish Creek	
	East side	9.0 feet
	West side	9.5 feet
E.	Cut, south Jewfish Cr. Center line	5.5 feet
F.	Dusenbury Creek - center line	4.5 feet
G.	Grouper Creek - center line	5.0 feet

Single lines were run through various cuts and channels between the sounds not ordinarily navigated. The shoalest soundings on these lines were as follows:

H.	Blackwater to Little Blackwater Sounds	2.5 feet
I.	Little Blackwater to Long Sounds	3.5 feet
J.	Grouper Creek to Little Buttonwood Sound	3.0 feet
K.	Between Big and Little Buttonwood Sounds	2.0 feet

In several places random lines were run into bights to more fully develop the area e.g. Near signals Mosquito Point and Hydrographic signal Barnes.

Lines were run up Manatee Creek from Manatee Bay to the Glades water tank. Three feet can be carried easily almost to the water tank and four (4) feet by picking the deep spots.

Manatee Creek was deepened and straightened in 1904 by the Florida East Coast Railroad in connection with their water supply in building the road.

On the east shore of Barnes Sound lines were run up the three canals of the real estate development of 1925 which is now dormant.

In Lake Surprise a line was run on either side of and close to the wooden bulkhead of the railroad fill which divides the Lake.

Descriptive Report Hydrogeaphic Sheet #3 (HAC)

A center line was run into the creek and small lake to the north of Long Sound. This creek is of no importance from a navigational viewpoint but the water here is almost free from salt.

About a mile southeast of Duck Key a shoal was developed. The shoalest water is one (1) foot (See sounding record for xx day).

NATURE OF THE ADJACENT SHORELINE AND COUNTRY:

The entire west shore of the area covered by this sheet, which in reality is the mainland, is much the same, being low and having a growth of mangroves to the waters edge or often just a short distance beyond. In many places the mangrove grows quite a distance off shore so the actual highwater mark of the land is inshore a corresponding distance. Wherever in reports, sounding records, description of recoverable stations, or in any other connection the shore is noted as "edge of mangrove" this is not to be taken as being the highwater mark.

The shore forming the northwest limit of this sheet (Long Sound,- Manatee Bay and north) is so muddy that a person readily sinks into the knees when stepping overboard, This shore is the Florida mainland and in this vicinity is an extensive swamp for a considerable distance inland with numerous creeks draining into surrounding water areas. There are no signs of habitation along this shore and the only sign of civilization is the railroad and the Glades Water Tank.

On thekey or east side of this area, the shore is hard with the bare coral rock showing in many places. The mangrove is also abundant here growing to the waters edge (or almost in most cases). There are a number of inhabitants along the keys, in the small communities of Key Largo and Rock Harbor as well as scattered along the highway.

A bridge tender lives at the Card Sound Bridge and a few others close by. There is a small store and picnic stand at the east end.

At the Jewfish Creek railroad bridge lives the bridge tender and a few others railroad employees. There are about five or six small wooden buildings here.

The country on all sides of this area is much the same being low and monotonous with no natural features of prominence. The power line poles at Jewfish Creek are quite prominent from both the north and south (discoussion of this has been taken up in Report on Control Sheet). The Glades Water Tank is easily distinguished from Barnes Sound.

The highway crosses over to Key Largo by way of the Card Sound Bridge and runs south down the middle of the Key.

The Florida East Coast Railroad comes down from the north and crosses from the mainland onto Cross Key, over Jewfish Creek, through Lake Surprise and thence south down Key Largo paralleling the highway about 100 meters west. The roadbed is laid on a fill which in extending across the keys has changed some of the natural water courses, indirectly causing changes in the shoreline. The changes will be treated later.

The railroad crossing from the mainland to Key Largo has filled in all channels except that through Jewfish Creek where a swing bridge has been constructed.

ANCHORAGES:

An anchorage can be had in almost any place on this sheet the bottom affording good holding ground and protection from any wind direction secured by anchoring under the lee shore. The limitation of course is the draft of vessel in getting into Little Blackwater, Long and Little Buttonwood Sounds and the upper northeast part of Florida Bay.

In stormy weather any of the Creeks afford protection as well as Tarpon Basin.

For hurricanes Steamboat Creek at the ~~extreme~~ north east corner of the sheet is excellent. (See also Descriptive Report Hydrographic Sheet No.5535 (H. A. Cotton 1934). The entrance from Barnes Sound has a minimum depth of about four and a half feet, the best anchorage area is near the north end behind a small island.

There is also a hurricane anchorage in the small land locked bight on the east side of Dusenbury Creek, near Tarpon Basin.

COMPARISON WITH CHART:

In general the present survey agreed well with the present chart.

The one half foot ($\frac{1}{2}$) sounding which shows on the chart about 1 mile southeast of Duck Key was found to be a mud bank about 0.2 of a mile further north than shown. The least depth was one foot.

The half foot spot just south of triangulation station BOAT does not exist.

About three quarters, of a mile northeast of Whaleback Key a one foot sounding appears on the chart. This sounding now marks the southern edge of a mangrove key which extends north for about 200 meters.

As mentioned before the railroad fill caused changes in the shoreline. In the eastern end of Long Sound, the sloughs between Long Sound and Manatee Bay, which now show as being simply closed off by the railroad fill are filled in and there is no evidence of the former channels.

In Jewfish Creek where there were formerly two other creeks besides the main creek, the one on the east side is now the only one remaining open and navigable.

Shoreline about the southern end of Main Key was run by planetable and also short sections east of triagulation station BARNES. This has been treated in the Control Sheet Report.

About the Tarpon Basin end of Dusenbury Creek considerable mangrove growth has taken place especially on the east side.

Triangulation station LONG appears now on the chart as being on a small detached piece of Key. The northern end has grown to meet the southern tip of the key above.

The southern end of Shell Key has extended so that now only a narrow channel runs between Blackwater Sound and Florida Bay. This channel is known locally as "BOGY".

The line of small keys northeast of triangulation station SEVER have grown together except for one small and shallow (one foot) passage.

TIDES:

Automatic portable tide gages were established at Main Key (near triangulation station Main Key), at Shell Key (near triangulation station Shell Key) and near triangulation station Sever. The gage at Main Key (M.L.W. 2.8 ft. on staff) served for reducers in Barnes Sound, Manatee Bay and in Jewfish Creek.

The gage at Shell Key (M.L.W. 3.6 ft. on staff) served for Blackwater Sound and Dusenbury Creek.

The gage at Sever (M.L.W. 3.0 ft. on staff) served for reducers in Florida Bay, Little and Big Buttonwood Sounds and Grouper Creek.

Tide staffs were established in Little Blackwater and Long Sounds, both being on the eastern sides near the railroad and were read only for the durations of the hydrography, one day in Little Blackwater (M.L.W. 12.9 ft on staff) and one and a half days in Long Sound (M.L.W. 12.9 ft on staff). The gage at Shell Key was in operation during this time. These staffs showed practically no variation of tide.

When hydrography was run in Tarpon Basin a staff was read. No variation was recorded. The gage at Sever was in operation during this time.

A float well of 4" pipe was used for each gage. This pipe was securely attached to two 2" x 4" timbers (nailed together) by means of U clamps. This was then set up plumbed and braced sufficiently to maintain its position. A platform at convenient level made the construction further rigid.

The tide staff was in all cases a 2" x 4" plumbed and held rigidly in place by braces with a section of vitrified scale attached.

Three bench marks were set and leveled in at each of the gages locations and one for each staff. However, the staff in Tarpon Basin was leveled to the triangulation disc TARPON.

The tidal range at all the above localities was very small and it was only occasionally necessary to apply reducers. There was actually no tidal ride and fall, the prevailing wind accounting for any variation in the height of the water; southerly winds caused the water to rise while northerly wind caused it to fall.

At one time there was a maximum rise at Shell Key of 1.4 feet; the maximum rise observed at Sever was 0.9 feet and at Main Key but 0.3 ft. At the staffs in Little Buttonwood and Long Sounds, the elevation of the water was practically stationary.

CURRENTS: Altho some current will at times be experienced in the creek channels, strong currents will frequently be found in Jewfish Creek which is the only connection between Barnes and Blackwater Sounds. This current depends on the wind and wind tides; it may amount to two or three knots. The Florida East Coast Railroad crosses the southern end of Jewfish Creek with a swinging span bridge. Great care should be exercised when approaching this bridge, with a current as there is only limited maneuvering room and the bridge being operated by hand may be slow to open.

BOAT SHEET:

When the soundings were put on the boat sheet a great many of the soundings were left off since the floor of the bay was so regular. It is to be understood that where there is a blank space on a sounding line that the soundings in this blank space are the same as those at the two ends of the blank space.

Descriptive Report
(Boat sheet)

Hydrographic Sheet #3 (HAC)

At the development on the east shore of Barnes Sound, lines of soundings were carried up the several canals. The fixes for the outside end of these lines did not give the actual mid channel positions, indicating that these canals were not well located. Each outside corner of the entrance to these canals, were later located by sextant fixes. *These positions plotted satisfactorily on smooth sheet.* HAC

BRIDGE DATA:

A. Card Sound Bridge

Vertical clearance	8.0 ft.
East opening width	40.0 ft.
West opening width	38.0 ft.
Width of bridge	17.0 ft.
Width of center pier	21.5 ft.

B. Jewfish Creek Bridge

Clearance	3.5 ft.
East opening width	40.5 ft.
West opening width	39.6 ft.
Width of bridge	10.0 ft.
Width of center pier	15.0 ft.

C. Elevation of wire over Jewfish Creek.
The elevation of the wires crossing Jewfish Creek was determined to be 76.6 feet allowing 5 ft. for sag of the wires. The elevation of the wires on the cross arms on the poles was 81.6 feet; the sag of wire was estimated at 5 feet.

MISCELLANEOUS:

The Florida East Coast Railroad have a pumping station at the Glades Water Tank where surface water is pumped from the Everglades for use in the railroad engines. Altho this water is not for domestic use it is reasonably pure and can be used in an emergency.

Otherwise water on the keys is either caught in cisterns or hauled by trucks or by the railroad.

Gasoline, oil and provisions in very small quantities can be secured at Rock Harbor and at the small store at the east end of Card Sound Bridge.

Guides for these waters can be secured either locally or in Miami.

Work on this sheet was preformed by Mr Hinkley, Surveyor and Mr Seaborg, Deck officer. The work north of the railroad bridge was done by Mr Hinkley; Mr Seaborg doing the rest.

Descriptive Report Hydrographic Sheet #3 (HAC)

STATISTICS:

Number of Miles Statute	696.1
Number of Positions	3871
Number of soundings	35014
Area. Sq. Stat. Miles	72.0

Respectfully submitted

Harold J. Seaborg

Harold J. Seaborg, Deck Officer,
U. S. Coast and Geodetic Survey

SECTION OF FIELD RECORDS

Verification
Report on H-5542.

Surveyed in April 7 - July 26, 1934.
Chief of Party, H. A. Cotton.
Surveyed by W. O. Hinkley, H. J. Seaborg.
Protracted by A. Black
Soundings plotted by A. Black
Verified and inked by P. H. Scherr.

1. The records conform to the requirements of the General Instructions. ✓

2. The usual depth curves were drawn. ✓

3. The field plotting was complete. ✓

4. The office draftsman did not change any drafting done by the field party. ✓

5. This sheet joins only H-5535 (1934), which is not verified as yet. ✓

6. Remarks.

(a) The entire topography on the sheet will be changed within the next few months since it has been found that the aero-photo topography previously made is in error due to weak control. This area is to be re-photographed and re-compiled. The following lines of soundings:

1-19 T day	entire JJ day
13-15 Y "	29-30 KK "
28-end Y "	103-106 MM "
entire H-H day	10-54 QQ "

in Dusenberry and Grouper Creeks, and Bakers Cut were not verified and inked, pending receipt of the corrected topography. ✓

(b) The hydrographic and topographic signals of the smooth sheet were checked by a tracing of the signals on the control, made by Mr. M. Gurnee of the office, as compared with those on the smooth sheet. An error found in plotting triangulation station "BATTI" at latitude 25°09.6'; longitude 80°27.1', found by him, was corrected by us. The adjustment makes no change necessary in the plotting of the affected positions due to the even character of the bottom. ✓

(c) A number of hydrographic, topographic, and triangulation stations are located in the water with no topography or description given concerning them. Descriptions of the following topographic stations found in the files are penciled on the sheet:

(Stake just off small key) STAR Lat. 25°05.6' Long. 80°27.3'
(Stake) ARE " 25°12.7' " 80°28.8'
(On small key) BUT " 25°08.7' " 80°27.1'

Descriptions of five triangulation stations apparently in water are as follows:

DUCK KEY (located on small key which T-857 & T-1154 delineate)	Lat. 25°10'	Long. 80°29'
CHANNEL (on pt. of land east of channel)	" 25°13'	" 80°27'
SOUND (on small swampy island off prominent point)	" 25°14'	" 80°26'
TONY (11 meters offshore in 2' water)	" 25°07'	" 80°27'
SEVER 2 (on tip of southern of 2 keys. T-857 delineates the key.)	" 25°06'	" 80°29'

(d) The name "Boggy Channel" was not inked on the sheet. The channel is not located by hydrography on the sheet although it is mentioned on page 7 of the descriptive report.

(e) A small island is noted on page 42, Vol. 3, of the records which is not located on the smooth sheet, boat sheet, or T-4601. No distance is given to the island. (lat. 25°11.7', long. 80°24.3')

(f) Halves were added to soundings to straighten out the curves and to open up greatest possible depths over any considerable area up to 7 feet of water.

(g) A bottom characteristic of "hard coral" was used consistently in the records (so penciled on the smooth sheet), which was the only coral notation used. It was considered unnecessary to use the adjective "hard".

(h) The datum note and projection data had been penciled by the field party and inked by us.

(j) One end of an island is noted on page 6, Vol. 11, of the records (lat. 25°12.8', long. 80°25.9'), on which island topographic station "LEE" is evidently located. This island is not found on the boat sheet or control sheet.

(k) The beacons listed in Vol. 1, checked by the tracing (paragraph b of this report), were not inked on the sheet. The complete hydrography in those channels indicated by the beacons is not verified.

Respectfully submitted,

P. H. Scherr

P. H. Scherr.

The Topography adjacent to Hydrography was examined on T5538, T5441 and T4577 and is now in good agreement with the hydrography on the present survey

Chas. R. Bush Jr.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5542

The following statistics will be submitted with the cartographer's report on the sheet: (not complete).

Number of positions on sheet	3871
Number of positions checked	11 +
Number of positions revised	2
Number of soundings recorded	35014
Number of soundings revised	56
Number of signals erroneously plotted or transferred	1

Date: February 15, 1935

Cartographer: Paul H. Scherr. +

Verification of protracting Verification & inking of rocks and shoals by P.H. Scherr + Time: 2 hrs

Verification of inking by P H. Scherr + Time:

Review by R. J. Christman (incomplete) Time: 28½ hrs

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

DESCRIPTIVE REPORT

to accompany

CONTROL SHEET NUMBER 3

HYDROGRAPHIC SHEET NUMBER 3

CARD SOUND BRIDGE

to

BAKERS CUT

FLORIDA KEYS

(Inside)

SHORE PARTY NO.3

HAROLD A. COTTON,
LIEUTENANT COMMANDER
U. S. COAST AND GEODETIC SURVEY
CHIEF OF PARTY

1934.

Form 587a
Ed. Nov. 1929

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

CONTROL
[redacted] 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. 5

REGISTER NO.

State Florida

General locality Florida Keys (Inside)

Locality Barnes Sound Bridge to Baker's Cut

Scale 1:20,000 Date of survey Apr. July, 1934

Vessel Chartered Launch Dorothy - Powerboat

Chief of party H. A. Cotton

Surveyed by W. O. Hinkley, Surveyor - H. J. Seaborg D.O.

Inked by

Heights in feet above to ground to tops of trees

Contour, Approximate contour, Form line interval feet

Instructions dated , 19

Remarks:

Filed with H-5542(1934) as boatsheet and marked "Do not destroy".

.DESCRIPTIVE REPORT
to accompany

CONTROL SHEET No.3

GENERAL DESCRIPTION OF COAST:

This sheet embraces the area between Card Sound Bridge on the north and Bakers Cut on the south. It is the same area as covered by hydrographic sheet No. 5542 (H.A.Cotton No.3-1934).

The general landscape of this area is similar to the areas to both the north and south, consisting of a more or less level line of mahgroves when seen from a distance and found on close approach to be from fifteen (15) to twenty five (25) feet high. When in Barnes Sound going north the highway bridge at its northern end can be seen and identified by the evenly spaced row of piling and also by the bridge house. The telegraph line towers over Jewfish Creek can be seen after passing through the Card Sound Bridge going south; and coming north they can be seen as soon as entering Blackwater Sound. Going south the square towered Post Office building at Rock Harbor on Key Largo can be seen soon after coming out of Grouper Creek. Further than the above, the general appearance of the main key line and the isolated are about the same.

CHARACTER OF CONTROL:

Twelve second order main scheme triangulation stations, together with twenty-five (22) intersection stations furnished the basic control for the survey.

Hydrographic signals were located by planetable cuts, supplemented by sextant cuts, all taken from triangulation stations where possible. Where considered necessary or desirable, additional cuts were secured from well located hydrographic signals. A great number of the signals indicated as having been located by sextant cuts have in reality one or more plane table cuts. However, all signals in Lake Surprise and Blackwater Sound were located with the sextant only.

The occupation of the triagulation towers was made quite feasible by placing the legless tripod head upon the wooden tripod and leveling by the use of thin wooden wedges under the leveling screws.

TRAVERSES FOR HYDROGRAPHIC CONTROL THROUGH CREEKS:

Thru Jewfish Creek a combination of the alidade and sextant was used as the overhanging mangrove made a plane-table traverse impossible. The alidade was used for obtaining distance

D E P A R T M E N T O F C O M M E R C E

U. S. C O A S T A N D G E O D E T I C S U R V E Y

R. S. PATTON, DIRECTOR.

DESCRIPTIVE REPORT

to accompany

CONTROL SHEET NUMBER 3.

HYDROGRAPHIC SHEET NUMBER 3.

CARD SOUND BRIDGE
to
BAKERS CUT.

FLORIDA KEYS
(Inside)

Shore Party No.3

Harold A. Cotton,
Lieutenant Commander,
U. S. Coast and Geodetic Survey,
Chief of Party.

1934.

and the sextant for obtaining azimuth. This traverse extended from Beacon #31 to triangulation station JEWFISH '34 and was later plotted on the control sheet.

Plane-table traverses were run through Dusenbury and Groupers Creeks although all of the setups were in water and considerable mangrove had to be cut for line.

At most places, the muddy bottom was so soft as to make it difficult to impossible to work about a plane-table after it had been set up in the mud. To facilitate such set ups, an old skiff was employed as follows. Three holes were cut in the bottom of the skiff for the legs of the plane-table tripod. The skiff was then sunk in place at the desired set-up and the plane table set up by extending the tripod legs through the holes in the bottom of the skiff. It was then possible to stand on the bottom of the skiff instead of in the mid while operating the Plane-table.

The Dusenbury Creek traverse was 1-1/4 statute miles long extending between triangulation station BUSH and Beacon 37 in Tarpon Basin. Beacon 37 was located by plane-table cuts in Tarpon Basin. The traverse failed to close by 25 meters. A trial adjustment was made by the ordinary method and the traverse was rerun in the field and the trial positions checked as being correct.

The traverse through Grouper Creek was a little short of being a mile long and was run between triangulation station Tarpon and Beacon 39. Beacon 39 was located by plane-table cuts. The traverse from triangulation station Tarpon to Beacon 39 failed to close by 20 meters. A trial adjustment was made and the traverse rerun in the opposite direction starting with a three point fix near Beacon 39. The trial positions of the signals were checked as being correct.

VERIFICATION AND REFERENCE FOR SHORELINE:

In running hydrogtaphy on this sheet, it became apparent that the shoreline as transferred from the aerial photographic compilation sheets Nos. 4601 and 4577 was at certain points in error. The case of the shoreline along Jewfish Creek, Dusenbury and Grouper Creeks is treated in a separate paragraph below. One section of shoreline was run at the southern end of Main Key where it is evident that the shoreline is rapidly being changed due to the rapid growth of mangrove. Short lengths of shoreline were also rerun on the east shore of Barnes Sound 1/4 mile southeast of triangulation station Barnes.

Short lengths of shoreline were also run about the triangulations stations not covered by the aerial photographic compilations. All new plane-table shoreline thus run in is shown in green.

Descriptive Report Control Sheet Hydrographic Sheet #3(HAC)

SHORELINE THROUGH MAIN CREEKS:

Through Jewfish, Dusenbury abd Grouper Creeks, (also along a section of shore northeast of Jewfish Creek), the shoreline as determined on the aerial photographic sheets will not properly fit the control points determined during the present survey.

Tracings (four) have been prepared of these localities giving all data for making an adjustment of the discrepancies. Projection lines in black and the position of all close-by signals were traced from the control sheet. The signals as a group were then fitted to the shoreline shown on the aerial photographic sheets. In thus fitting the signal locations on the shore line, full consideration was given to the actual location of each, signal on the ground. Information regarding the actual ground location of each signal is given on the tracing. After the position of the signals were thus fitted to the shoreline as well as possible, the position of the tracing on the aerial photographic sheet was indicated by tracing in green the projection lines of the aerial photographic sheet. Accordingly if each tracing is fitted to the aerial photographic sheet by means of the greem projection lines, the signals will fit onto the shoreline in as near their actual position as it is believed possible to put them and the difference between the black and green projection lines indicate the shift of the shoreline necessary for it to fit the control.

The four tracings in question accompany the control sheet.

NEW NAMES IN LOCAL USE:

Dusenbury Creek between Blackwater Sound and Tarpon Basin.

Grouper Creek from Tarpon Basin south.
Little Buttonwood Sound applied to body nosthwest of Tarpon Basin.
Big Buttonwood Sound - south of Grouper Creek.
Bakers Cut leading from Big Buttonwood Sound south.
The body of water between Blackwater Sound and Long Sound is known as Little Blackwater Sound.

LIST OF LIGHTED BEACONS:

Beacon No's. 24-29-34-35-38A-42-46-41.

RECOVERABLE TOPOGRAPHIC STATIONS:

The following topographic stations were marked.

HOUSE - ARE - BUT - STAR

Descriptions accompany this report

Descriptive Report Control, Sheet Hydrographic Sheet #3 HAC

PROMINENT OBJECTS:

The most prominent objects anywhere in this locality are the four high two-pole towers carrying telegraph lines across Jewfish Creek. These towers can be seen from all of Barnes Sound, most of Manatee Sound and from most of Blackwater Sound. They can also be seen out on the reef to the eastward of the keys.

Other prominent objects include the following for which a "List of Landmarks" have been prepared.

Triangulation station BRIDGE - on highway bridge
Triangulation station GLADES WATER TANK
Triangulation station SQUARE TOWER- Rock Harbor
Topographic signals Tall Telegraph tower Jewfish Cr.
Signals Nos. 1-2-3-4

Respectfully submitted

Harold J. Seaborg

Harold J. Seaborg,
Deck Officer,
U. S. Coast and Geodetic Survey.

Work on this sheet was performed by Mr. Hinkley Surveyor and Mr. Seaborg, Deck Officer. The work north of the railroad bridge was done by Mr. Hinkley; Mr. Seaborg doing the rest.

Form 567
Rev. Jan. 1933

DIVISION OF CHARTS, FILE NO._____

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

Miami, Florida

November 2, 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:

Harold A. Cotton — *Chief of Party.*

	DESCRIPTION	POSITION						DATUM	METHOD OF DETERMINATION	CHARTS AFFECTED
		LATITUDE			LONGITUDE					
		°	'	D.M. METERS	°	'	D.P. METERS	N.A.		1249
	E. Gable bridge house Barnes Sound Bridge	25	17	2744	80	21	1610.1		1930 Trian.	1249
	Glades Water Tank Wood Tank on timber tower	25	16	47.2	80	26	725.6		1934 Trian.	"
	Square tower Rock Harbor Observation Tower on P.O.	25	04	1394.9	80	27	663.1		1934 Trian.	"
1	Telegraph Pole on R.R. ridge at Jewfish Cr.	25	11	155	80	23	587		P.T.	"
2	" " " " " " " "	25	11	111	80	23	536		P.T.*	"
3	" " " " " " " "	25	11	60	80	23	467		P.T.*	"
4	" " " " " " " "	25	11	26	80	23	429		P.T.	"

* These ~~pkm~~ poles located by triangulation but positions not computed at time of making out this report. Both within 250 meters of triangulation station Jewfish and P. T. positions accordingly strong.

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 indentification. 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, flagstaffs and like objects are not sufficiently permanent to chart.

U.S. GOVERNMENT PRINTING OFFICE: 1934 25379

To: Mr. Bacon
From L. S. S.

Survey No. H 5542
T4577 & 4601

GEOGRAPHIC NAMES

Date. Nov. 16, 1934

Chart No. 1249

FLORIDA

Names underlined in red approved Nov. 26, 1934
H Bacon

Diagram No. 1249

* Approved by the Division of Geographic Names, Department of Interior. See Geog Names Std. 1249

Ø Not Approved by the Division of Geographic Names, Department of Interior.

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

Status	Name on Survey	Name on Chart	New Names in local use	Names assigned by Field	Location
	Barnes Sound	Same			25°14.5' 80°22.5'
	Manatee Bay	---"---	yes		
	Cross Key	"			25°11.5' 80°24.5'
	Boggy Chan.	see Names on Chart 1249	yes		
	---------	Shell Key as on 1249			25°12.7' 80°28.0'
	Little Buttonwood Sound	See Name Proof Chart 1249	yes		
	~~Shell Key~~ No	---- ----			25°10.6' 80°27.0'
	Big Buttonwood Sound	See Name Proof 1249	yes		
	Blackwater Sound	Same			25°09.9' 80°[illegible]'
	Little Blackwater Sound	See Name Proof Chart 1249	yes		
	Key Largo	" 1249			25°08.6' 80°23.7'
	Dusenberry Creek	Name Proof 1249	yes		
	Grouper Creek	" " "	"		
	Bakers Cut	" " "	"		
	Names to be added after verification [illegible] Nov 27. 1934				

(M 100)

LDC

December 15, 1934

Division of Hydrography and Topography:

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

Tide Reducers are approved in
19 volumes of sounding records for

HYDROGRAPHIC SHEET 5542

Locality Barnes Sound and Blackwater Sound, Florida Keys

Chief of Party: H. A. Cotton in 1934
Plane of reference is mean low water reading
2.8 ft. on tide staff at Main Key
2.9 ft. below B.M. 1
3.6 ft. on tide staff at Shell Key
1.8 ft. below B.M. 1
3.0 ft. on tide staff at Sewer
1.2 ft. below B.M. 1
12.9 ft. on tide staff at Little Blackwater Sound
3.8 ft. below B.M. 1
12.9 ft. on tide staff at Long Sound
1.9 ft. below B.M. 1
13.4 ft. on tide staff at Tarpon Basin
1.1 ft. below B.M. 1
There is very little periodic tide and the height of mean high water above plane of reference is negligible.
Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5542(1934) FIELD NO. 3.

Barnes Sound and Blackwater Sound, Florida Keys, Florida
Surveyed April - July 1934 Scale 1-20,000
Instructions dated Nov. 17, 1933 (H. A. Cotton)

Pole and Hand Lead Soundings 3 Point fixes on shore signals.

Chief of Party - H. A. Cotton.
Surveyed by - W. O. Hinckley and H. J. Seaborg.
Protracted and soundings plotted by - A. Black.
Verified and inked by - P. H. Scherr.

1. Condition of Records.

The records conform to the requirements of the Hydrographic Manual except as follows:

a. Evidence that the transfer of topographic and plotting of hydrographic signals had been checked in the field was lacking, since the initials of the checker were omitted. The checking of the transfer of signals from the control sheet to the smooth sheet was accomplished in the office.

b. A partial list of signals built in the water areas is given in the Descriptive Report pages 1 and 3. It would be a convenience if the nature of all offshore signals was indicated on the list of signals attached to the sounding records.

c. The shoreline on the smooth sheet was incomplete because of discrepancies on air photo compilation T-4601(1928) and T-4577(1928).

d. The Graphic Control sheet has been filed with the smooth sheet as a boat sheet and is marked Do not destroy. It is the original authority for the topographic signals and for the plotting of the hydrographic signals. A few small sections of revised shoreline are shown on it in green.

2. Compliance with Instructions for the Project.

The plan and extent of the development are in accordance with the instructions for the project except as follows:

a. The condition of some of the minor channels between the keys was not clearly indicated by the hydrography. (See par.7&-b-5 of this review.)

b. The areas in the vicinity of the two shoals listed in par.7&-b-3 were not adequately developed. (Par. 13.)

3. Shoreline and Signals.

The shoreline was derived from air photo compilations T-4601(1928) and T-4577(1928) and has been compared and revised to agree with air photo compilations T-5538(1935) and T-5441(1935).

Topographic signals were determined on a Graphic Control sheet which has been filed with the present survey as a boat sheet.

Hydrographic signals were located by sextant fixes also plotted on the Graphic Control sheet.

4. Sounding Line Crossings.

Depths at crossings of sounding lines are in excellent agreement. They show very few differences in excess of $\frac{1}{2}$ foot.

5. Depth Curves.

Within the limits of the survey the usual depth curves may be satisfactorily drawn. A few intermediate curves (3 foot) have been drawn to accentuate some of the shoal areas.

6. Junction with Contemporary Survey.

This sheet joins H-5535(1934) to the north. The junction will be considered in the review of that sheet. No contemporary survey to the southwest has been received in the office.

7. Comparison with Prior Surveys.

a. T-1154(1870) (contains hydrography)

This is a combined topographic and hydrographic survey on a scale of 1-40,000 showing a few widely spaced lines of soundings in Blackwater Sound and the northeast portion of Florida Bay. The depths in Florida Bay are in fair agreement but depths in Blackwater Sound are 10 to 15 feet where the present survey shows 7 to 8 feet of water. There are no dangers or other special features on the sheet that need comment in this review. As the present survey (H-5542 of 1934) is on a larger scale and shows much better development, it supersedes the above survey for charting.

b. H-2007(1890).

This survey is on a scale of 1-40,000. The agreement in depth is very good. Some of the minor channels have changed because of the construction of embankments for the railway and for the highway. The Descriptive Report also notes some changes due to mangrove growth.

(1) The shoal charted in lat. 25° 08.2', long. 80° 28.4' with a depth of 1 foot is now covered with mangroves and should be charted as a mangrove key. (Descriptive Report page 6).

(2) The shoal (charted $\frac{1}{2}$ foot in lat. 25° 10.2', long. 80° 28.6' was found to be a mud bank with a least depth of 1 foot. Because the water is usually clear enough to see the bottom easily the 1 foot sounding should be accepted as the least depth on this shoal.

(3) A 1 foot sounding (charted) in lat. 25° 09.55', long. 80° 27.9' and a 2 foot sounding (charted) in lat. 25° 06.6', long. 80° 26.3' are derived from the 1890 survey H-2007 where they are shown as the least depths on shoals detached from the main keys. The present survey does not adequately cover these shoals. The surrounding depths are in fair agreement with the present ones and both soundings have been carried forward to the present survey.

(4) The $\frac{1}{2}$ foot sounding (charted) in lat. 25° 08.7', long. 80° 30.2' first appeared on the 1893 edition of chart 167. Apparently, it was taken from the boat sheet because the sounding was not inked on the smooth sheet. The field party had rejected the preceding sounding line and it is impractical to plot this line from the inadequate notes in the sounding records. The Descriptive Report of H-5542(1934) states that "The half foot spot just south of triangulation station Moat does not exist." In view of the foregoing the $\frac{1}{2}$ should not be retained on the chart.

(5) The hydrography of the present survey does not show any channel between Shell Key and the mainland at the southwest end of Long Sound (lat. 25° 12.7', long. 80° 29.3'). The channel may be one that is now blocked by mangrove. The representation of this feature and similar features in other parts of the sheet should follow the new air photo compilations.

8. Comparison with Chart No. 1249 (New Print dated Sept. 5, 1936).

a. Hydrography.

Within the area of the present survey the chart is based on surveys discussed in the foregoing paragraphs, with a few minor changes from coast pilot information in the vicinity of the highway bridges (chart letter 344 of 1926 and accompanying blueprint 21946).

b. Aids to Navigation.

These consist of beacons placed to mark the narrow channels of the inland waterway. Several of the beacons have been changed to post lights. These are listed on page 3 of Descriptive Report of the Graphic Control sheet. (Also see NM 41 of 1934). As many of the beacons were destroyed by the 1935 hurricane, the beacons shown on the present survey should be used only if they are confirmed in location and characteristic by the Aid Proof.

9. Field Plotting.

The protracting of positions and penciling of soundings are satisfactory.

10. Additional Field Work Recommended.

The survey is satisfactory.

The two shoals mentioned in par. 7-b-3 are not of enough importance to justify investigation.

11. Superseding Old Surveys.

Within the area covered the present survey, with the indicated additions from previous surveys, supersedes the following surveys for charting purposes:

T-1154(1870) (contains hydrography) in part.
H-2007(1890) " "

12. Reviewed by R. J. Christman, April 1935, and Jan. 14, 1937.

Inspected by R. L. Johnston.

Examined and approved:

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

L. O. Colbert
Chief, Division of Charts

Fred. L. Peacock
Chief, Section of Field Work

Chief, Division of H. & T.

Applied to chart 848 Jan 7, 1937 H.H.C.

" " " 850 Nov 1957 - JFW

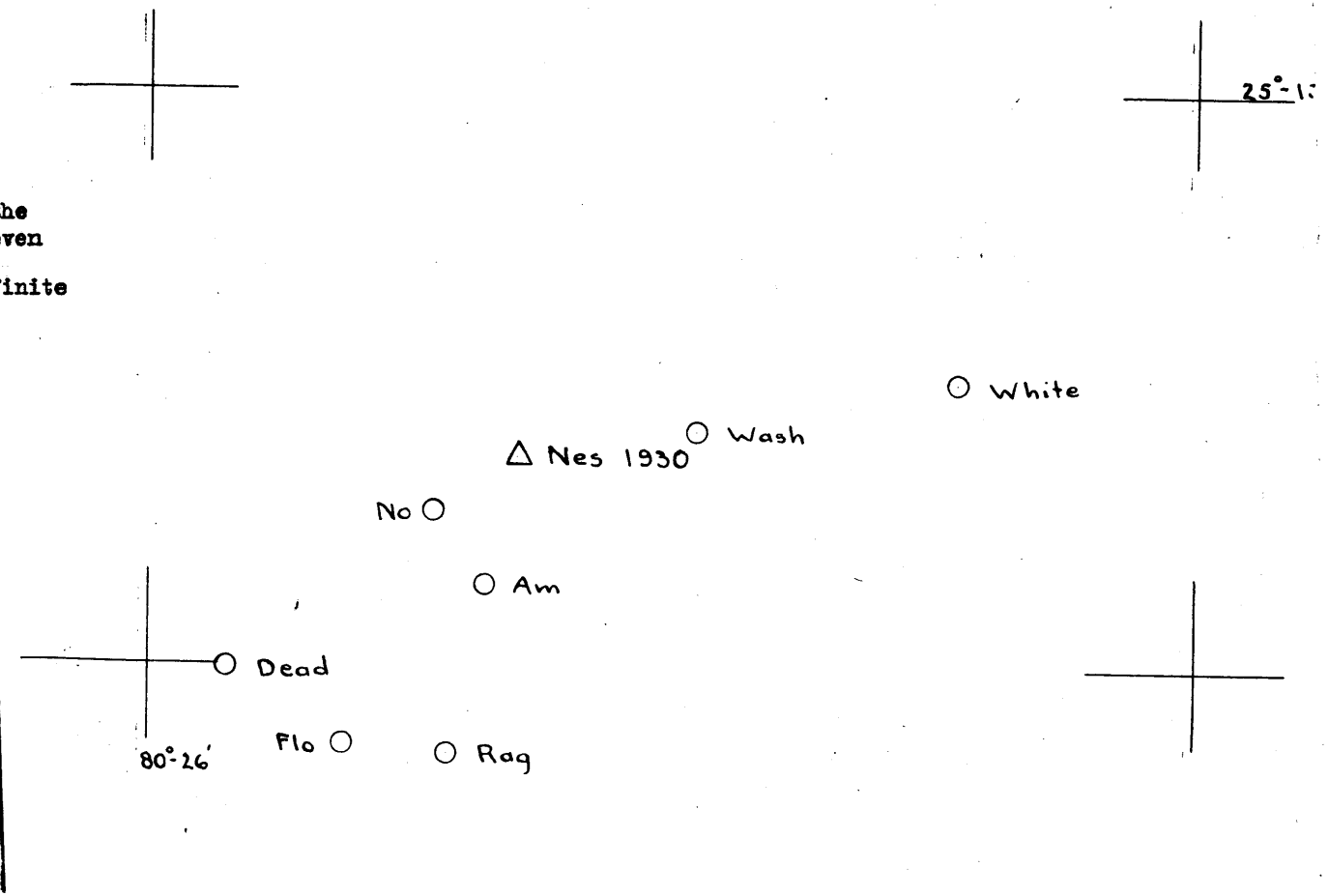
5542

5542

N.E. of Jewfish Creek

Signal	Location
White	On shoreline
Wash	On shoreline
Nes 1930	On bend of point
No	On tip of point
Am	On shoreline
Rag	On west knob of two
Flo	On shoreline
Dead	On bend

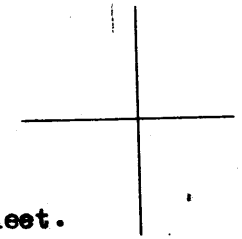
Note:
The signals as inspected in the field do not agree altogether even when the projection is shifted.
Signals 'NO' and RAG have definite points which can be spotted.

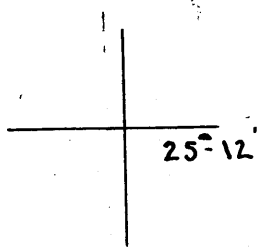


5542

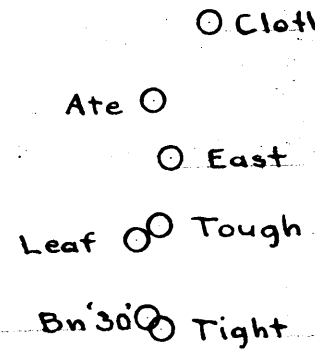
Jewfish Creek

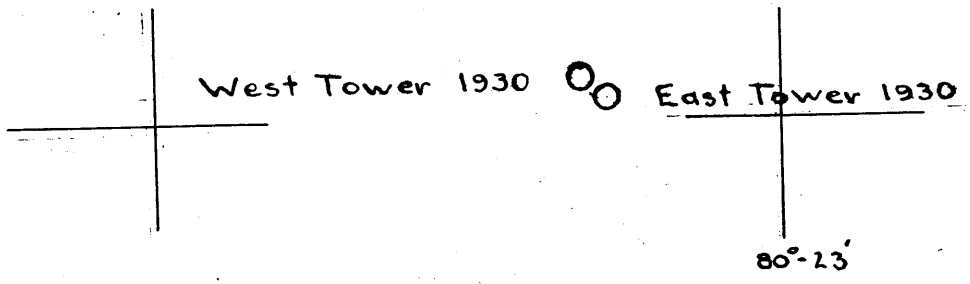
Signal	Location
Cloth	On mangrove line
Ate	11 m. S. of point
East	On mangrove line
Tough	On mangrove line
Leaf	On mangrove line
Bn 30	On Point
Light	On mangrove line
W.Tower 1930	(located by plane
E.Tower 1930	)table on control sheet.





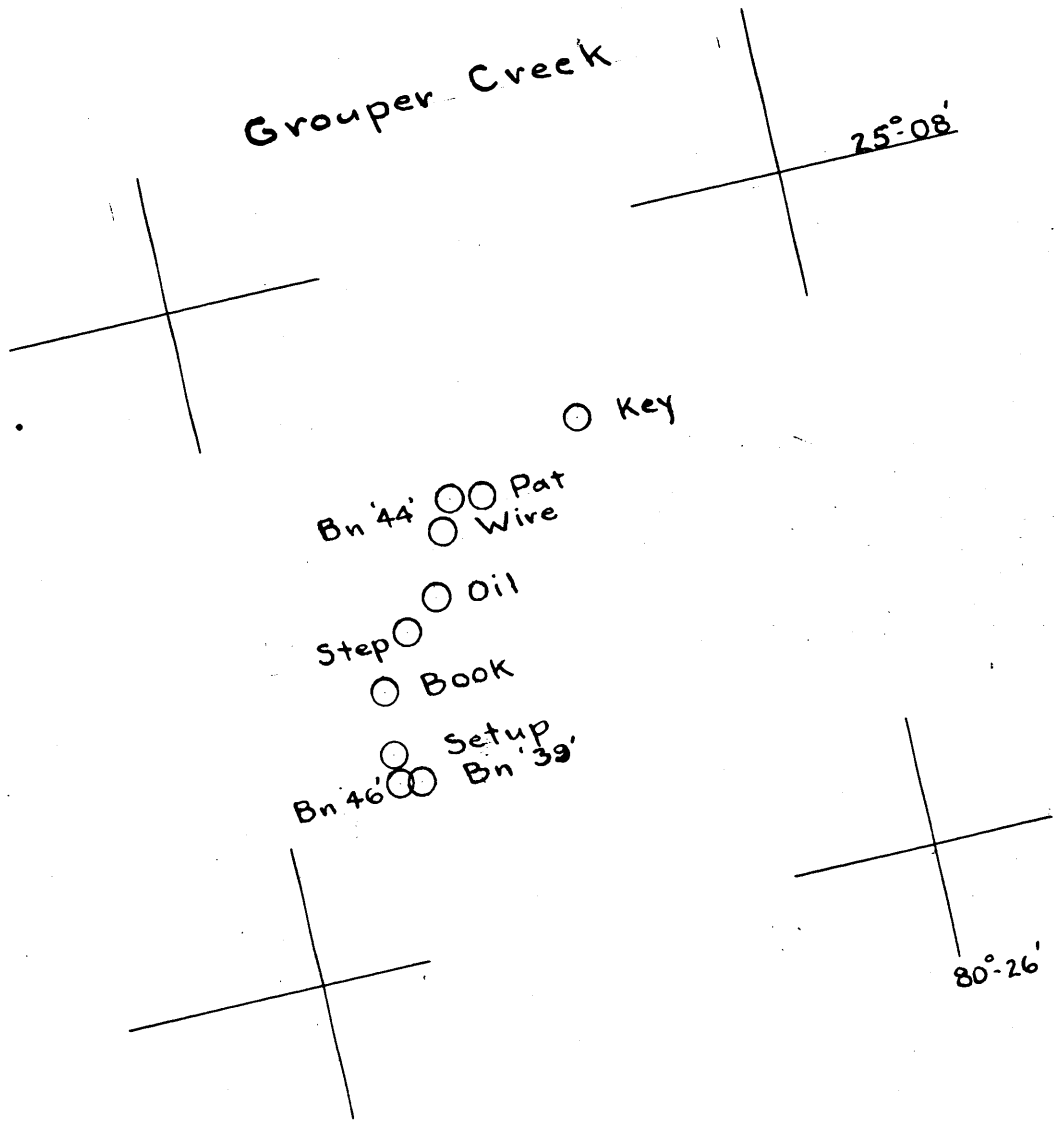
Note:
A fairly good agreement of signals on shoreline when projection is shifted.





5542

Signal	Location
Key	2 m. inshore
Pat	On mangrove line
Bn '44'	On bend of shore
Wire	On mangrove line
Oil	On mangrove line
Step	On mangrove line
Book	On bend of shore
Setup	On Point
Bn '46' - '39'	Indeterminate.

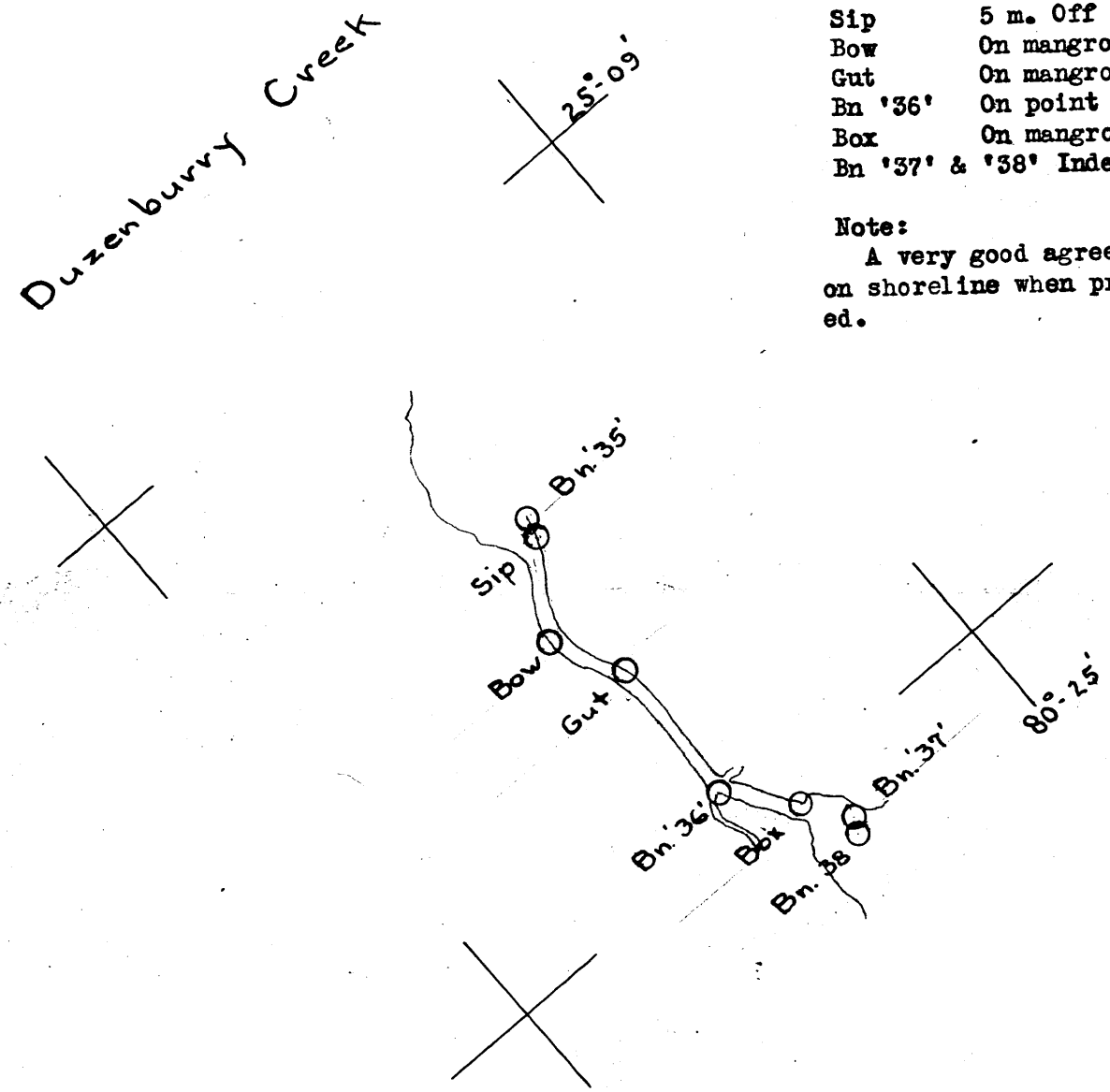


5542

5542

Signal	Location
Bn '35'	5 m. N. W. of Point
Sip	5 m. Off shoreline
Bow	On mangrove line
Gut	On mangrove line
Bn '36'	On point
Box	On mangrove line
Bn '37' & '38'	Indeterminate

Note:
A very good agreement of signals on shoreline when projection is shifted.



Applied to chart 848 Jan. 8, 1937 H.P.C.
Applied to chart 849 April 1939 H.P.C.
Five additional corrections applied to chart 1249 Aug. 1952
H.P.C.