H10749A

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC/SIDE SCAN SONAR

Field No. AHP-10-4-98

Registry No. H10749A

LOCALITY

State FLORIDA

General Locality NORTH ATLANTIC OCEAN

Sublocality APPROACHES TO PORT EVERGLADES, FLORIDA

19 98

CHIEF OF PARTY
BRIAN A. LINK

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DATE MAY 3 1999

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NOAA FORM 77-28 (10/72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTER NO.

H-10749A

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS - 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.

AHP-10-4-98

State Florida

General locality Approaches to Port Everglades

Locality

Scale 1:10,000 Date of survey May 5,1998- June 10, 1998

Instructions dated 1-21-98 Project No. OPR-H395

Vessel Launch 0517

Chief of party Brian A. Link

Surveyed by Atlantic Hydrographic Party

Soundings taken by echo sounder, ~~hand lead, pole~~

Graphic record scaled by M.J. McMann, J.B. Gaskin

Graphic record checked by MJM, JBG

Protracted by HPS Automated plot by HP 750CPlus (Field) HP 2500CP (AHB)

Verification by ~~AHB~~ Atlantic Hydrographic Branch personnel

Soundings in ~~METERS~~ FEET ~~fathoms~~ ~~feet~~ at ~~MLW~~ MLLW

REMARKS: Notes in the Descriptive Report in red were made during office processing.

Awois & SURF 4/30/99 MCR

NOAA FORM 77-28 SUPERSEDES FORM C & GS-837.

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10749A
FIELD NO. AHP-10-4-98
SCALE: 1:10,000
1998
ATLANTIC HYDROGRAPHIC PARTY
CHIEF OF PARTY: Brian A. Link

A. PROJECT

This survey was conducted in accordance with Hydrographic Project Instructions OPR-H395-AHP, Approaches to Port Everglades, Florida, dated January 21, 1998.

This project was conducted to provide 200% side scan sonar coverage for item investigations and echo sounder developments in the approaches to Port Everglades. This project also supplements 1997 LIDAR hydrography, which responded to a request from the Port Everglades Pilots Association.

B. AREA SURVEYED

The area surveyed for H-10749A covers numerous areas near the approaches to Port Everglades, Florida within the following boundaries:

North - 26°07'57"N
South - 26°03'33"N
East - 080°03'59"W
West - 080°08'08"W

In addition to the areas outlined in the Project Instructions, single beam hydrography was run in the Dania Cut-off Canal, as well as in several pier slips inside Port Everglades in response to a request by the Port Everglades Pilots to CDR John Wilder, NOAA.

This survey was conducted from May 5 (DN 125) to June 10, 1998 (DN 161).

C. SURVEY VESSELS

NOAA launch 0517, a 21-foot MonArk, was the vessel used to collect all survey data. There were no unusual vessel configurations nor problems encountered.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

HYPACK version 7.1A was used for on-line data acquisition. HPS version 8.2 programs updated through May 29, 1998 and HP Tools version 1.72 were used for data processing. MapInfo Professional Version 4.5 was used to support processing and for plotting all survey data.. The NOS programs VELOCITY (Ver. 3.0) and Microsoft Word 97 were also used during this survey.

E. SIDE SCAN SONAR EQUIPMENT

Side scan sonar (SSS) operations were conducted using an EG&G model 260 slant-range corrected SSS recorder and an EG&G 272-T dual-channel, single frequency towfish. The towfish was operated on the 100-kHz frequency and was configured with a 20° beam depression. The side scan sonar equipment used for the survey was towfish serial number 016835 and recorder serial number 016671. On May 14,1998 (DN 134) the recorder failed and was replaced with recorder serial number 016942.

Side scan sonar data was collected utilizing the 50-meter range scale. In order to acquire the required 200% coverage, main-scheme lines were run at 40-meter spacing. Adequate coverage was determined by producing two separate swath plots and ensuring 100% coverage on each plot.

The side scan sonar towfish was maintained at a height off the bottom of 8 to 20 percent of the range scale used. Confidence checks were performed on a routine basis, primarily by noting changes in bottom texture on the outer edges of the sonargram, and on buoys and other contacts in the survey area.

All significant contacts were measured off the sonargrams and entered into an HPS contact table. Field Party personnel determined contact heights, positions, and cross reference correlations using the HPS contact Utility program. Contacts were investigated by echo sounder development.

F. SOUNDING EQUIPMENT

An Innerspace model 448 depth sounder, serial number 187, was used to collect all soundings up to May 17,1998. Thereafter, echosounder serial number 241 was used.

A standard lead line calibrated in meters, serial number 0517, was used during this survey for comparison readings with the echo sounder.

G. CORRECTIONS TO SOUNDINGS

Soundings were recorded using the Innerspace model 448 depth sounder. It was adjusted for an assumed speed of sound through water of 1500 meters/second. Changes to the gain and/or chart speed were noted on the echogram. Digitized soundings agreed with the analog trace within 0.1 meter.

Corrections for the speed of sound through water were computed from data obtained with Sea-Bird Electronics Inc. SEACAT electronic profiler, serial number 192276-287. Data quality assurance tests were performed in accordance with Field Procedures Manual (FPM) 2.1.3.2. Program VELOCITY was used to compute speed of sound through water corrections. Copies of the velocity tables and cast data are in the survey separates. *

Correctors for the velocity of sound through water were determined from the casts listed below:

Velocity Table No.	Cast No.	Deepest Depth (m)	Applicable DN	Cast Position	Day
1	1	15.7/20.4*	125-153	26°05'36"N 080°05'25"W	132
2	2	18.5/24.0*	160-161	26°05'36"N 080°05'25"W	161

* software extrapolated depth

Correctors were applied to the sounding data prior to plotting.

Weather permitting, lead line comparisons were conducted each day in accordance with FPM 2.1.3.1. No instrument error was detected from these comparisons. The lead line comparison form is in the survey separates. *

A static draft of 0.3 meter was applied to the on-line data. The draft was measured by subtracting the difference from a punch mark on the side of launch 0517, 0.6 meter above the transducer, to the water surface.

Settlement and squat measurements were performed on September 15, 1997 (DN 258), at Pasadena, Maryland, using Lietz level S/N 08754. Settlement and squat correctors were applied to the final sounding plot using the HPS REAPPLY program. Copies of the field data, the graphs of the settlement and squat correctors vs. speed in meters/second, and the offset table are included in the survey separates. *

* Data ~~Field~~ filed with original Field records

The Virginia Key, FL tide station (872-3214) served as control for datum determination. Unverified actual water level heights from this gauge were downloaded from the NOAA web site (http://www.opsd.nos.noaa.gov/ftp/pwldata.html) and used to correct the soundings for this survey. This station is also the reference station for the predicted tides. This survey required one tide zone. A time correction of –54 minutes for both high and low water was used for the actual tides. The height correction was x1.24.

Approved tides were requested from the Ocean and Lake Levels Branch, N/OES231, in a letter dated July 23, 1998. A copy of the letter is appended to this report. Approved tides and zoning were applied during office processing

H. CONTROL STATIONS

The horizontal control datum for this project is the North American Datum of 1983. The USCG Differential GPS (DGPS) Beacon at Miami, FL was used to control this survey. The position for the Rbn antenna is 25° 44' 00N, 080° 09' 36"W.

I. HYDROGRAPHIC POSITION CONTROL - See also the Evaluation Report

DGPS was used as the method of positioning for all hydrographic data on this survey. The USCG Differential GPS beacon at Miami, Florida was used as the reference station in conjunction with beacon receiver serial number X-1086 and antenna serial number MBA-M1039 on launch 0517. A Starlink sensor, serial number 700417A1065 was used as the remote station on vessel 0517. This equipment met the accuracy standards for this 1:10,000 scale survey.

Performance checks were conducted periodically during the project. An opening check was performed by resting the launch alongside "Crandon Marina Channel LT 14" and comparing the launch position with the third order position of the light (25°43'35.08350"N, 80°09'34.34963"W). Subsequent checks were performed with the launch on it's trailer parked over "USN North Range 2 1981" (26°05'30.92918"N, 80°06'29.91996"W). Results of the performance checks were within allowable tolerances and are shown on the critical check form in the survey separates.

Occasionally a good position misplotted on the raw track plot. This problem was attributed to good DGPS data following a period of questionable DGPS data. These positions were reviewed, then edited or rejected as necessary.

J. SHORELINE - See also the Evaluation Report

Shoreline shown on the final sounding plot was from the raster image of 11468, 33rd Edition, May 4, 1996. The MapInfo program was used for plotting. There were no shoreline changes noted.

A complete list of all detached positions by day is included in the accordion file. It lists the position of each feature and the AWOIS item number when applicable.

K. CROSSLINES

Crosslines were run only in the large anchorage area in the northeast corner of the project area. This area was surveyed with single beam echo sounder coverage only, in response to a request from the Port Everglades Pilots Association. The pilots wanted current data for the area in order to be able to use it as an alternate anchorage area. There are presently no soundings charted in the anchorage. Due to the configuration of the assigned areas, most crosslines would only check two or three soundings. In areas where contact investigations were conducted, sounding agreement with the main scheme hydrography is within 1 meter.

L. JUNCTIONS - See also the Evaluation Report

This survey does not junction with any contemporary surveys.

M. COMPARISON WITH PRIOR SURVEYS - See also the Evaluation Report

The prior survey covering this project is H-10749, 1:10,000 scale, 1997.

No dangers to navigation were identified during the course of this survey.

Sounding comparison between the prior survey and the current survey is difficult to generalize. Throughout the scattered areas of this survey, agreement with the LIDAR survey varies. Within any given area some soundings are 2 feet shallower and some are 2 feet deeper, with no pattern detectable. There were no serious discrepancies. The hydrographer recommends that data from the present survey be used to supersede that of H-10749 within their common areas.

N. ITEM INVESTIGATION REPORTS

Eight AWOIS items, numbers 9906-9913 were assigned to this survey. Item investigation reports follow in section N.1. - N.8.

N.1.- AWOIS 9906

Item Description: WRECK

Source: LNM31/82

AWOIS Position: Lat - 26° 05' 33.20"N, Lon - 80°05' 25.00"W

Required Investigation: S2, E2, DI

Charts Affected: 11470

INVESTIGATION

Date(s)/DN(s): 5-21-98/020, 6-10-98/161 (OPR-H395-AHP, H-10749A)

Position Numbers: 1691-1729, 3451-3477 **Launch Number**: 0517

Investigation Used: 200% side scan sonar, Echosounder

Position Determined By: DGPS

Investigation Summary: Two-hundred percent side scan sonar coverage was performed in the area of the charted obstruction and two significant contacts were found. The area was covered in the process of surveying one of the main scheme areas for OPR-H395. A 3.1-meter high (shadow) contact in 15.9 meters of water at position 1712.7 was investigated on DN 161, position 3472-3480 and a spike with a least depth of 13.9 meters was found. A 2.0-meter high (shadow) contact in 15.1 meters of water found at position 1726.6 was investigated on DN 161, position 3451-3471 and nothing was found. Captain Brian Hanley of the Port Everglades Pilots Association believes that the wreck no longer exists. The bottom in the area is very rocky, and any contacts or spikes located were probably rocks. No divers were available.

CHARTING RECOMMENDATION

The hydrographer recommends removing the wreck from the chart. Representative soundings from this survey, including the 13.9 meter (45.6 feet) sounding, should be charted in this area.

Concur with clarification. Delete the charted wreck. Chart a wreck with a depth of 43 feet (13' m) as shown on the presant survey. Side Scan Sonar Images indicated a rocky area Chart as 43 with rky notation

mcr 6/17/99

N.2. - AWOIS NO: 9907

Item Description: OBSTRUCTION (Submerged Breakwater -south)

Source: BP27315/34

AWOIS Position: Lat - 26° 05' 32.00"N, Lon - 80° 05' 45.50"W

Required Investigation: S1

Charts Affected: 11470

INVESTIGATION

Date(s)/DN(s): 5-20-98/140 (OPR-H395-AHP, H-10749A)

Position Numbers: 1580-1619 **Launch Number**: 0517

Investigation Used: 200% side scan sonar

Position Determined By: DGPS

Investigation Summary: Two-hundred percent side scan sonar coverage was conducted in the area of the charted jetty by towing the side scan along each side of the jetty. Complete coverage was not obtained due to loss of bottom lock because of the shallow nature of the area. Side scan sonar was employed primarily to define the limits of the rock jetty. The offshore half of the area was covered by main scheme 200% side scan coverage in addition to this investigation. No contacts were found.

CHARTING RECOMMENDATION

Delete the submerged breakwater and chart current survey soundings in the area. While evidence of a submerged jetty exists, the Port Everglades Pilots Association feels that having this non-dangerous (supported by survey findings) feature charted, leads toward clogging the main ship channel with pleasure boat traffic afraid to cut across this area because of the chart representation. Charting soundings in lieu of the jetty would alleviate this problem. - Concur with clarification. Chart present survey depths. Retain breakwater as charted.

N.3. - AWOIS NO: 9908

Item Description: OBSTRUCTION (Submerged Breakwater - north)

Source: BP27315/34

AWOIS Position: Lat - 26° 05' 43.00"N, Lon - 80° 05' 45.50"W

Required Investigation: S1

Charts Affected: 11470

INVESTIGATION

Date(s)/DN(s): 5-20-98/140 (OPR-H395-AHP, H-10749A)

Position Numbers: 1531-579 **Launch Number**: 0517

Investigation Used: 200% side scan sonar

Position Determined By: DGPS

Investigation Summary: Two-hundred percent side scan sonar coverage in the area of the charted submerged breakwater was accomplished by reducing the range scale to 25 meters and running a line on each side of the breakwater and one down the center. The offshore area of this item was developed using 10-meter line spacing and the single beam echo sounder where the coverage area overlapped with the side scan sonar coverage. There was no clear indication of a submerged breakwater in the area of the investigation. Current survey soundings are slightly deeper than charted soundings, including over the charted breakwater.

CHARTING RECOMMENDATION

Delete the submerged breakwater and chart current survey soundings in the area. While evidence of a submerged jetty exists, the Port Everglades Pilots Association feels that having this non-dangerous (supported by survey findings) feature charted, leads toward clogging the main ship channel with pleasure boat traffic afraid to cut across this area because of the chart representation. Charting soundings in lieu of the jetty would alleviate this problem. - Concur with clarification. Chart present survey depths. Retain breakwater as charted

N.4. - AWOIS NO: 9909

Item Description: OBSTRUCTION

Source: LNM7/71-7th CGD

AWOIS Position: Lat - 26° 05' 49.00"N, Lon - 80° 06' 01.50"W

Required Investigation: S1

Charts Affected: 11470

INVESTIGATION

Date(s)/DN(s): 5-20-98/140 (OPR-H395-AHP, H-10749A)

Position Numbers: 1492-1530 **Launch Number**: 0517

Investigation Used: S2, Echosounder

Position Determined By: DGPS

Investigation Summary: Two-hundred percent side scan sonar coverage as well as single beam hydrography at 10-meter line spacing was conducted in the deeper area of this investigation. In the shallower area, four lines of single beam hydrography were run at 5-meter line spacing parallel to the charted shoal. A rocky shoal was found. A white beacon charted at the offshore end of the most dangerous area no longer exists.

CHARTING RECOMMENDATION

The hydrographer recommends retaining the "shoal with boulders" note and charting current survey soundings. The U.S. Coast Guard should replace the missing beacon to direct pleasure traffic offshore of the shoal. The U.S. Coast Guard is completely aware of this situation.

Concur.

N.5. - AWOIS NO: 9910

Item Description: OBSTRUCTION (Discontinued Spoil Area)

Source: BP63165/ AUG 1962

AWOIS Position: Lat - 26° 05' 50.00"N, Lon - 80° 05' 45.00"W

Required Investigation: S2, ES

Charts Affected: 11470

INVESTIGATION

Date(s)/DN(s): 5-12-98/132, 6-2-98/153 (OPR-H395-AHP, H-10749A)

Position Numbers: 464-764,2439-3280 **Launch Number**: 0517

Investigation Used: 200% side scan sonar, echosounder

Position Determined By: DGPS

Investigation Summary: Two-hundred percent side scan sonar coverage as well as single beam hydrography at 10-meter line spacing was conducted over the area of this item. Numerous shoal areas and side scan contacts were identified. Rather than investigate each item individually, line spacing was reduced to 10 meters over the whole area.

CHARTING RECOMMENDATION

Remove the discontinued spoil area and chart current survey soundings in this area. ~Concur

N.6. - AWOIS NO: 9911

Item Description: OBSTRUCTION ("Shoaling Rep Aug 1983")

Source: LNM35/83—7th CGD

AWOIS Position: Lat - 26° 06' 00.00"N, Lon - 80° 05' 37.00"W

Required Investigation: S2, ES

Charts Affected: 11470

INVESTIGATION

Date(s)/DN(s): 1-29-98/029, 4-3-98/093 (OPR-H300-AHP, H-10748A)

Position Numbers: 1623-1684,4592-4671 **Launch Number**: 0517

Investigation Used: 200% side scan sonar

Position Determined By: DGPS

Investigation Summary: Two-hundred percent side scan sonar coverage as well as single beam hydrography at 10-meter line spacing was conducted over the area of this item. No indication of a shoal was found.

CHARTING RECOMMENDATION

The hydrographer recommends removing the "Shoal rep Aug 1983" note from the chart and charting current survey soundings in the area. -Concur.

N.7. - AWOIS NO: 9912

Item Description: OBSTRUCTION [Subm groin (10 ft rep)]

Source: CL967/68—COE

AWOIS Position: Lat - 26° 06' 39.20"N, Lon - 80° 05' 53.30"W

Required Investigation: ES

Charts Affected: 11470

INVESTIGATION

Date(s)/DN(s): 5-20-98/140 (OPR-H395-AHP, H-10749A)

Position Numbers: 1433-1491 **Launch Number**: 0517

Investigation Used: Echosounder, Visual search

Position Determined By: DGPS

Investigation Summary: Single beam hydrography was run at 10-meter line spacing over the entire search area. A man-made groin was found and a center line (position 1484-1491) was run over the top of it. A least depth of ~~12~~ 11 feet was found on the groin. The water was clear enough to see the submerged groin.

CHARTING RECOMMENDATION

The hydrographer recommends retaining the "submerged groin" note and charted groin outline and charting current survey soundings in the area. - Concur.

N.8. - AWOIS NO: 9913

Item Description: Wreck PA (KATHRYN DWYER)

Source: LNM20/81—7th CGD

AWOIS Position: Lat - 26° 06' 00.31"N, Lon - 80° 04' 52.12"W

Required Investigation: S2, ES

Charts Affected: 11470

INVESTIGATION

Date(s)/DN(s): 5-13-98/133, 5-20-98 (OPR-H395-AHP, H-10749A)

Position Numbers: 765-1087,1621-1661 **Launch Number**: 0517

Investigation Used: 200% side scan sonar, Echosounder

Position Determined By: DGPS

Investigation Summary: Two-hundred percent side scan sonar coverage as well as single beam hydrography at 10-meter line spacing was conducted over the area of this item. No indication of a wreck was found. Information from the Port Everglades Pilots indicates this wreck no longer exists.

CHARTING RECOMMENDATION

The hydrographer recommends removing the wreck PA from the chart and charting current survey soundings in the area. -Concur.

O. COMPARISON WITH THE CHART - See also the Evaluation Report.

Comparisons were made with chart 11468, 33rd Edition, May 4, 1996. There were no dangers to navigation identified on this survey.

The majority of the areas of the current survey agree very well with the chart, with differences of less than 2 feet. In some of the deeper areas, shoal soundings from the chart were not found, and current survey soundings are up to 10 feet deeper.

The following contacts were identified during the course of this survey:

Position Number	Investigation Position	Least Depth	Contact Position	Recommendation
467.1	See Below		26°05'40.36" 80°05'45.71"	Chart current survey soundings
470.2	3481-3495	13.3m	26°05'40.88" 80°05'51.43"	Chart current survey soundings
473.1	3507-3522	11.9m	26°05'40.16" 80°05'57.14"	Chart current survey soundings
481.8	See Below		26°05'42.81" 80°06'07.29"	Chart current survey soundings
482.6	See Below		26°05'42.95" 80°06'05.91"	Chart current survey soundings
484.5	See Below		26°05'42.46" 80°06'02.40"	Chart current survey soundings
493.0	See Below		26°05'42.08" 80°05'46.67"	Chart current survey soundings
505.6	See Below		26°05'45.81" 80°05'54.09"	Chart current survey soundings
505.9	See Below		26°05'45.68" 80°05'54.61"	Chart current survey soundings
505.9	See Below		26°05'45.29" 80°05'54.62"	Chart current survey soundings

507.3	See Below	26°05'45.89" 80°05'57.29"	Chart current survey soundings
508.0	See Below	26°05'46.24" 80°05'58.47"	Chart current survey soundings
508.1	See Below	26°05'45.76" 80°05'58.60"	Chart current survey soundings
510.8	See Below	26°05'46.36" 80°06'03.51"	Chart current survey soundings
511.1	See Below	26°05'46.46" 80°06'04.03"	Chart current survey soundings
512.6	See Below	26°05'46.40" 80°06'07.02"	Chart current survey soundings
546	See Below	26°05'50.74" 80°05'31.99"	Chart current survey soundings
547.8	See Below	26°05'50.09" 80°05'35.39"	Chart current survey soundings
548.5	See Below	26°05'50.83" 80°05'36.52"	Chart current survey soundings
550.5	See Below	26°05'50.96" 80°05'40.13"	Chart current survey soundings
550.7	See Below	26°05'50.54" 80°05'40.66"	Chart current survey soundings
552.6	See Below	26°05'50.44" 80°05'44.02"	Chart current survey soundings
556.7	See Below	26°05'51.09" 80°05'51.15"	Chart current survey soundings
558.5	See Below	26°05'51.07" 80°05'54.86"	Chart current survey soundings
560.5	185-5194	26°05'50.98" 80°05'58.48"	Nothing found

565	See Below		26°05'52.50" 80°06'03.45"	Chart current survey soundings
565.5	See Below		26°05'52.95" 80°06'02.64"	Chart current survey soundings
566.2	3541-3555		26°05'53.27" 80°06'01.40"	Nothing found
566.8	See Below		26°05'53.01" 80°06'00.27"	Chart current survey soundings
567.7	See Below		26°05'54.03" 80°05'58.64"	Chart current survey soundings
568.5	See Below		26°05'53.97" 80°05'57.10"	Chart current survey soundings
568.9	3556-3568	6.5m	26°05'53.16" 80°05'56.39"	Chart current survey soundings
570	See Below	6.7m	26°05'52.82" 80°05'54.29"	Chart current survey soundings
570.5	See Below		26°05'53.18" 80°05'53.38"	Chart current survey soundings
570.7	185-5194		26°05'54.47" 80°05'53.06"	Chart current survey soundings
571.2	See Below		26°05'53.75" 80°05'52.05"	Chart current survey soundings
579.8	3569-3578	10.6m	26°05'53.04" 80°05'36.17"	Chart current survey soundings
589.2	See Below		26°05'55.34" 80°05'34.37"	Chart current survey soundings
589.3	See Below		26°05'54.88" 80°05'34.78"	Chart current survey soundings

590.9	See Below	26°05'55.01" 80°05'37.45"	Chart current survey soundings
591.6	See Below	26°05'55.69" 80°05'38.73"	Chart current survey soundings
593.4	See Below	26°05'55.59" 80°05'42.10"	Chart current survey soundings
604.8	See Below	26°06'01.46" 80°05'39.04"	Chart current survey soundings
611.0	See Below	26°06'03.54" 80°05'40.00"	Chart current survey soundings
631.0	See Below	26°06'02.47" 80°05'39.37"	Chart current survey soundings
647.2	See Below	26°05'55.19" 80°06'01.31"	Chart current survey soundings
648.3	See Below	26°05'55.21" 80°05'59.46"	Chart current survey soundings
648.6	See Below	26°05'54.16" 80°05'58.74"	Chart current survey soundings
648.8	See Below	26°05'54.74" 80°05'58.39"	Chart current survey soundings
649.4	See Below	26°05'54.07" 80°05'57.31"	Chart current survey soundings
651.6	3579-3590	26°05'54.57" 80°05'53.35"	Nothing Found
659.2	See Below	26°05'53.47" 80°05'39.03"	Chart current survey soundings
685.4	See Below	26°05'52.16" 80°05'53.42"	Chart current survey soundings
686.6	See Below	26°05'53.35" 80°05'55.63"	Chart current survey soundings

689.1	185-5194		26°05'52.66" 80°06'00.17"	Nothing found
708.8	See Below		26°05'50.80" 80°05'36.04"	Chart current survey soundings
709.3	3600-3608		26°05'49.89" 80°05'35.01"	Nothing found
711.2	See Below		26°05'50.47" 80°05'31.64"	Chart current survey soundings
724.0	See Below		26°05'46.90" 80°05'53.53"	Chart current survey soundings
724.5	See Below		26°05'46.97" 80°05'54.45"	Chart current survey soundings
726.6	See Below		26°05'46.92" 80°05'58.33"	Chart current survey soundings
726.8	See Below		26°05'46.89" 80°05'58.69"	Nothing found
728.7	See Below		26°05'46.39" 80°06'02.12"	Chart current survey soundings
736.1	See Below		26°05'44.29" 80°06'02.61"	Chart current survey soundings
740.7	See Below		26°05'44.32" 80°05'54.05"	Chart current survey soundings
741.0	See Below		26°05'44.32" 80°05'53.56"	Chart current survey soundings
751.2	3609-3619	7.0m	26°05'41.25" 80°05'45.42"	Chart current survey soundings
754.3	See Below		26°05'41.77" 80°05'51.09"	Chart current survey soundings

762.3	See Below		26°05'41.72" 80°06'05.84"	Chart current survey soundings
763.2	See Below		26°05'41.76" 80°06'07.36"	Chart current survey soundings
1092.9	3325-3338	7.4m	26°05'33.72" 80°05'44.56"	Chart current survey soundings
1096.8	3339-3353		26°05'34.11" 80°05'51.84"	Nothing Found
1098.9	3354-3365	5.9m	26°05'33.82" 80°05'55.82"	Chart current survey soundings
1114.0	3366-3374		26°05'32.12" 80°05'46.84"	Nothing Found
1118.7	3375-3388	11.3m	26°05'30.89" 80°05'37.98"	Chart current survey soundings
1133.2	3389-3402		26°05'29.80" 80°05'55.32"	Nothing found
1134.3	3403-3411		26°05'29.44" 80°05'57.51"	Nothing found
1200.1	See Below		26°05'30.42" 80°05'55.40"	Chart current survey soundings
1253.4	3427-3433	4.7m	26°05'09.00" 80°05'58.63"	Chart current survey soundings
1254.0	3434-3449	4.2m	26°05'10.03" 80°05'58.72"	Chart current survey soundings
1532.0	See Below		26°05'43.97" 80°05'48.14"	Chart current survey soundings
1537.2	See Below		26°05'45.49" 80°05'57.58"	Chart current survey soundings
1549.0	See Below		26°05'46.03" 80°06'12.50"	Chart current survey soundings

1549.6	185-5194		26°05'45.92" 80°06'11.49"	Nothing found
1552.1	See Below		26°05'45.46" 80°06'06.91"	Chart current survey soundings
1569.1	See Below		26°05'45.41" 80°05'55.89"	Chart current survey soundings
1589.9	3412-3424		26°05'29.69" 80°06'02.49"	Nothing found
1707.4	3450-3461		26°05'34.96" 80°05'26.25"	Nothing found
1708.2	3472-3480	13.9m	26°05'33.24" 80°05'23.04"	Chart current survey soundings
1726.6	3462-3471		26°05'34.88" 80°05'24.55"	Nothing found

All of the significant contacts that weren't investigated individually were within areas that were developed with reduced line spacing. Some isolated contacts were investigated singly. The majority of these contacts were borderline insignificant according to the scaled heights from the sonargrams. The bottom is very jagged, particularly in deeper areas. Local information indicates the survey area is a hard, rocky bottom. This could explain the numerous contacts that were identified.

The hydrographer recommends that sounding data from this survey be used to update the chart.
Concur

P. ADEQUACY OF SURVEY - See also the Evaluation Report

This survey is complete and adequate to supersede all prior surveys within the common area.

Q. AIDS TO NAVIGATION - See also the Evaluation Report.

There were ~~twelve~~ eleven fixed aids to navigation and three buoys located by detached position in the survey area. These aids were compared with the U.S. Coast Guard Light List Volume III, 1998. The comparison of the surveyed position for the fixed aids with the charted location was:

Port Everglades Light 5 (Light List #10335)
Light List Published Position - None
Surveyed Position (No. 1415) – 26°05'33.465"N, 80°06'08.637"W
Surveyed position is 80 meters south-southwest of the charted position.

White Daybeacon "Danger Shoal" (Not in Light List)
Light List Published Position - None
Surveyed Position (No. 1420) – 26°05'50.928"N, 80°06'11.113"W
Surveyed position is 70 meters south-southwest of the charted position.

Port Everglades Light 4 (Light List #10330)
Light List Published Position – 26°05.7'N, 80°06.1"W
Surveyed Position (No. 1421) – 26°05'40.897"N, 80°06'08.856"W
Surveyed position agrees with the charted position

Port Everglades Light 6 (Light List #10340)
Light List Published Position - None
Surveyed Position (No. 1423) – 26°05'40.136"N, 80°06'31.885"W
Surveyed position is 15 meters east of the charted position.

Port Everglades Light 7 (Light List #10345)
Light List Published Position – 26°05.6'N, 80°06.5'W
Surveyed Position (No. 1424) – 26°05'33.958"N, 80°06'31.902"W
Surveyed position is 70 meters south-southwest 0f the charted position.

Port Everglades Light 9 (Light List #10350)
Light List Published Position - None
Surveyed Position (No. 1425) – 26°05'33.522"N, 80°06'43.933"W
Surveyed position is 80 meters south-southwest of the charted position.

Port Everglades Turning Basin Light 11 (Light List #10355, 47485)
Light List Published Position - None
Surveyed Position (No. 1426) – 26°05'26.522""N, 80°06'49.589"W
Surveyed position is 80 south of the charted position.

Port Everglades Coast Guard Station Daybeacon 1 (Light List #10375, 47495)
Light List Published Position - 26°05.4'N, 80°06.8'W
Surveyed Position (No. 1427) - 26°05'23.159"N, 80°06'48.800"W
Surveyed position is 90 meters south of the charted position.

Port Everglades Coast Guard Station Breakwater Light (Light List #10380, 42830)
Light List Published Position – 26°05.4'N, 80°06.8'W
Surveyed Position (No. 1428) - 26°05'22.074"N, 080°06'48.113"W
Surveyed Position is 70 meters south of charted position.

Port Everglades Pier 7 Light - Private Aid (Light List #10365, 47490)
Light List Published Position – 26°05.6'N, 80°07.0'W
Surveyed Position (No. 1429) – 26°05'24.741"N, 80°06'57.927"W
Surveyed position agrees with charted position

Port Everglades Turning Basin Light 12 (Light List #10360, 47480)
Light List Published Position – 26°05.7'N, 80°07.7'W
Surveyed Position (No. 1430) - 26°05'40.536"N, 80°06'57.468"W
Surveyed position agrees with the charted position

Stranahan River Light 29 (Light List #47470)
Light List Published Position - None
Surveyed Position (No. 1431) - 26°05'48.166"N, 80°07'01.852"W
Surveyed position agrees with the charted position.

The aids serve their intended purpose, though should be re-charted using current surveyed positions.

There were no bridges, ferry routes, pipelines or overhead power cables within the survey area.

R. STATISTICS

Description	Quantity
Total Number of Positions	3619
Total Lineal Nautical Miles of Hydrography	82.3
Square Nautical Miles of Hydrography	0.5
Days of Production	12
Detached Position	32
Bottom Samples	0
Tide Stations	1
Velocity Casts	2

S. MISCELLANEOUS

No anomalous currents or tides were observed during this survey.

No bottom samples were taken.

T. RECOMMENDATIONS

No additional field work was identified after field office processing was completed. Specific recommendations are made in sections J., N., O., and Q. of this report.

U. REFERRAL TO REPORTS

Title	Transmittal Information
Coast Pilot for OPR-H395-AHP	Atlantic Hydrographic Branch N/CG244, Norfolk, VA 23510 (1998)
User Evaluation for OPR-H395-AHP	Atlantic Hydrographic Branch N/CG244, Norfolk, VA 23510 (1998)

Submitted by:

Mark J. McMann
Launch Hydrographer-In-Charge

APPROVAL SHEET
Basic Hydrographic Survey
OPR-H395-AHP
AHP-10-4-98
H-10749A
1998

This basic hydrographic survey was completed in accordance with the Project Instructions for OPR-H395-AHP, the Hydrographic Manual, the Hydrographic Survey Guidelines, and the Field Procedures Manual. All reports, records, and survey sheets were reviewed by Mr. Mark J. McMann, Launch Hydrographer-in-charge of OPR-H395. The Descriptive Report was also reviewed by the Chief, AHP. The chief of party did not directly supervise any part of this survey.

This survey is a complete basic hydrographic survey for the area described in Section B of this report.

Brian A. Link
Chief, Atlantic Hydrographic Party (acting)

Mark J. McMann
Hydrographer-in-charge of daily operations

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: February 11, 1999

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-H395-AHP
HYDROGRAPHIC SHEET: H-10749A

LOCALITY: Florida - Atlantic Ocean
Approaches to Port Everglades

TIME PERIOD: May 5, 1998 - June 10, 1998

TIDE STATION USED: 872-3214 Virginia Key, FL
Lat. 25° 43.9′N Lon. 80° 09.7′W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.667 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: EC200, PEG1, PEG2, PEG4, PEG6, PEG7 & PEG8.

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time.

Thomas K. Moon 2/12/99

CHIEF, REQUIREMENTS AND ENGINEERING BRANCH

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

SURVEY NUMBER

H-10749A

GEOGRAPHIC NAMES

Name on Survey

Name on Survey	A ON CHART NO. 1470, 1467, 11466	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
BIRCH OCEAN FRONT (ppl)	X		X							1
BURNHAM POINT	X		X							2
CLIFF LAKE	X		X							3
DANIA	X		X							4
DANIA CUT-OFF CANAL	X		X							5
FLORIDA (title)	X		X							6
FORT LAUDERDALE	X		X							7
FORT LAUDERDALE BEACH	X		X							8
HARBOR BEACH (locale)	X		X							9
HARBOR HEIGHTS (ppl)	X		X							10
HIMMARSHEE CANAL	X									11
KAREN CANAL	X		X							12
MABEL, LAKE	X									13
MAYAN LAKE	X		X							14
MOONEY POINT	X		X							15
NEW RIVER	X		X							16
NEW RIVER SOUND	X		X							17
NORTH ATLANTIC OCEAN	X		X							18
NURMI ISLES (ppl)	X		X							19
OUTER BAR CUT	X		X							20
PORT EVERGLADES	X		X							21
RIO BARCELONA CANAL	X		X							22
RIO SUNSET	X									23
RIO VISTA ISLES (ppl)	X		X							24
SOSPIRO CANAL	X									25

Approved

DEC 18 1998

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

SURVEY NUMBER

H-10749A

GEOGRAPHIC NAMES

Page 2 of 2

Name on Survey	A ON CHART NO. 11470, 11466, 11467	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
SOUTH BEACH PARK (park)	X		X							1
STRANAHAN RIVER	X		X							2
SUNRISE KEY	X		X							3
SUNSET LAKE	X		X							4
SYLVIA, LAKE	X		X							5
TARPON BEND	X		X							6
TARPON RIVER	X		X							7
WHISKEY CREEK (channel)	X		X							8
					Approved					9
					Chief Cartographer					10
										11
								DEC 18 1972		12
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NOAA FORM 76-155 SUPERSEDES C&GS 197

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H10749A (1998)

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

Hydrographic Processing System (HPS)
NADCON, version 2.10
SiteWorks 02.01
MicroStation 95, version 5.05
I/RAS B, version 5.01

The smooth sheet was plotted using an Hewlett Packard DesignJet 2500CP plotter.

H. CONTROL STATIONS

7. Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27 datum move the projection lines 1.314 seconds (40.423 meters or 4.04 mm at the scale of the survey) north in latitude, and 0.842 seconds (23.392 meters or 2.34 mm at the scale of the survey) east in longitude.

All geographic positions listed in this report are on NAD 83 datum unless otherwise specified.

J. SHORELINE

Brown shoreline originates with National Ocean Survey (NOS) chart 11470 (32nd Edition, November 22, 1997) and is for orientation purposes only.

K. JUNCTIONS

There are no junctional surveys. Present survey depths are in harmony with the charted hydrography to the north,

south, east, and west.

M. COMPARISON WITH PRIOR SURVEYS

a. Hydrographic

H10749 (1997) 1:10,000

The prior survey listed above covers most of the present survey area. The hydrographer did compare this survey with the prior survey listed above. See section M. of the Descriptive.

A comparison between the present survey and H10749 (1997) showed good agreement in the common areas. The following should be noted:

1. Automated Wreck and Obstruction Information System (AWOIS) Item #9906, a charted sunken wreck, in the vicinity of Latitude 26°05'33.2"N, Longitude 80°05'25.0"W, originates with Local Notice to Mariners 31 of 1982 (LNM31/82). A wreck with a depth of 44 feet (13^4 m), in Latitude 26°05'34.69"N, Longitude 80°05'25.17"W, is shown on H10749 (1997). A wreck with a depth of 43 feet (13^1 m), in Latitude 26°05'34.74"N, Longitude 80°05'25.37"W, was located by the field unit and is shown on the present survey. It is recommended that the charted wreck be removed, and a wreck be charted as shown on the present survey. See page 6 AWOIS FORM N.1.

The present survey is adequate to supplement the prior survey in the common areas.

O. COMPARISON WITH CHART 11468 (35th Edition, Apr 18/98) 11470 (32nd Edition, Nov 27/97)

Hydrography

The charted hydrography originates with prior surveys and miscellaneous sources. The hydrographer makes adequate chart comparisons in Section O. of the Descriptive Report. The following should be noted:

Charted features in the Dania Cut Off Canal and other areas investigated for the Port Everglades Pilots were not addressed by the field unit and not specifically investigated. These features should retained as charted or charted at the

be

discretion of the chart compiler.

The present survey is adequate to supersede the charted hydrography in the common areas.

P. ADEQUACY OF SURVEY

This is an adequate hydrographic survey. No additional work is recommended except as recommended in section M. and O. of this report.

Q. AIDS TO NAVIGATION

The aids to navigation shown on the present survey are adequate to serve their intended purpose.

for **Douglas V. Mason**
Cartographic Technician
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
H10749A (1998)

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Robert G. Roberson Date: 4/28/1999
Robert G. Roberson
Cartographer
Chief, Cartographic Section

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Andrew L. Beaver Date: 4/28/99
Andrew L. Beaver
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch

****

Final Approval:

Approved: Samuel P. DeBow, Jr. Date: 5-3-99
Samuel P. DeBow, Jr.
Commander, NOAA
Chief, Hydrographic Surveys Division