

A

H10606

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Hydrographic
Type of Survey Side Scan Sonar.....
Field No.MI-10-4-95.....
Registry No. .H-10606.....

LOCALITY

StateFlorida.....
General Locality Tampa Bay.....
Sublocality Port Manatee to Port of.....
.....St. Petersburg.....

19 95

CHIEF OF PARTY

.....CDR R. L. Parsons.....

LIBRARY & ARCHIVES

DATEAPR 24 1997.....

PRODUCTS

H10000

Charts

(E)

Ref: Bp-161365-66

PRODUCTS

CP 5

11413 + INSET

11414

June 11417 A Oppd 4/2/97 Jca
11417 B → INSET Oppd 5/2/97 Jca
May 11412 oppd 7/29/97 Jca
11400 NC

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 NUMBER:

MI-10-04-95 (F)

State: Florida

General locality: Tampa Bay

Locality: Port Manatee to Port of ST Petersburg

Scale: 1: 10,000 Date of survey: 29 May to 25 August 1995

Instructions dated: 03 March 1995 & 30 March 1995 Project Number: OPR-J343-MI-95

Vessel: NOAA Ship MT MITCHELL S-222

Chief of Party: CDR Roger L. Parsons

Surveyed by: J.A. Ferguson, T. Duffy, E. J. Van Den Ameele, J.D. Swallow, J.A. Mann, E.J. Sipos, R.H. Aldridge, R.C. Jones, S.A. Shaulis, U.L. Gardner, Jr., P.G. Lewit, M.J. Annis, E.R. Yniguez, C.A. Neely, S. L. Scherer, M.S. Platz, and M. Wiseman.

Soundings taken by echo sounder, hand lead-line, or pole: DSF 6000N fathometer

Graphic record scaled by: MT MITCHELL personnel

Graphic record checked by: MT MITCHELL personnel

Protracted by: N/A Automated plot by: Zeta 936 Plotters (FIELD)

Verification by: ATLANTIC A Hydrographic Surveys Branch PERSONNEL

Soundings in: Feet: ✓ Fathoms: (AHB) Meters: (*) at MLW: (FIELD) MLLW: (*):

Remarks: Basic Hydrographic and 200% Side Scan Sonar coverage of project area, including

AWOIS item #'s 8431, 8433 and 8435.

Time zones used: 0 (UTC) for data acquisition and tidal data.

Electronic Data Processing (EDP) numbers involved in data acquisition: 2223, 2224, 2225 and 2226.

NOTES IN THE DESCRIPTIVE REPORT WERE MADE IN RED

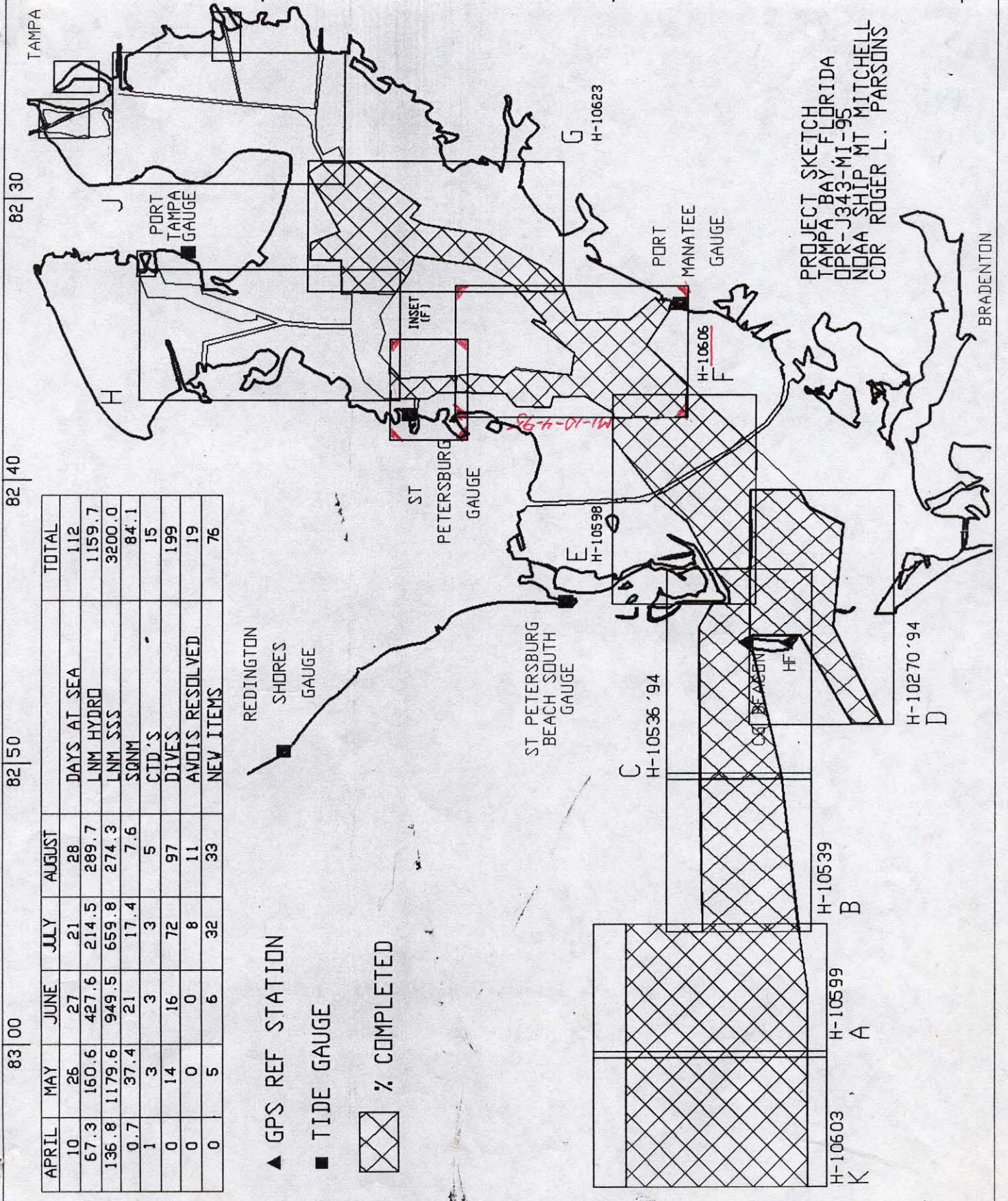
DURING OFFICE PROCESSING

SA 4-24-97

AWOIS/SURF 4/17/97 MCR

APRIL	MAY	JUNE	JULY	AUGUST	TOTAL
10	26	27	21	28	112
67.3	160.6	427.6	214.5	289.7	1159.7
136.8	1179.6	949.5	659.8	274.3	3200.0
0.7	37.4	21	17.4	7.6	84.1
1	3	3	3	5	15
0	14	16	72	97	199
0	0	0	8	11	19
0	5	6	32	33	76

- ▲ GPS REF STATION
- TIDE GAUGE
- ▣ % COMPLETED



PROJECT SKETCH
 TAMPA BAY, FLORIDA
 DPR-J343-MI-95
 NDAA SHIP MT MITCHELL
 CDR ROGER L. PARSONS

BRADENTON

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** FILED WITH THE ORIGINAL FIELD RECORDS*

A. PROJECT

- A.1. This survey was conducted following Project Instructions OPR-J343-MI-95: Approaches to Tampa Bay, Florida.
- A.2. The instructions date from March 3, 1995.
- A.3. Change No.1: Amendment to Instructions for section 5.0. **TIDES** is dated March 30, 1995.
- A.4. The main part of survey H-10606 was identified as "F". The inset part of the survey was named "F Inset".
- A.5. This project responds to requests from the Tampa Bay Pilots, the Tampa Bay Marine Advisory Council, local port authorities, the Seventh U.S. Coast Guard District, and the U.S. Army Corps of Engineers. The primary users of the shipping lanes have requested modern hydrography of the areas adjacent to the USACE dredged channels. Knowledge of these depths will allow some relief from the narrow and heavily used shipping lanes.

B. SURVEYED AREA

B.1. The survey area is in two parts. The main area, sheet F, lies 1 nautical mile East of the Sunshine Skyway Bridge, and covers the southern two-thirds of the auxiliary channel, Cut C channel, and portions of Cut B and Cut D channels. The second area, F Inset, lies just east of U.S. Coast Guard St. Petersburg Group base and covers the remainder of the auxiliary channel. Water depths range from 15.2 meters in the channel to 2.0 meters in the southeast corner of the survey area, by Port Manatee. Cut B, C, and D channels are referred to as the "primary channel" in this report.

An enormous amount of vessel traffic traverses the survey area regularly. Types of traffic include tankers, freighters, and bulk carriers over 400 feet in length, tug boats with tows, fishing vessels, private motor vessels and sail vessels, and cruise ships.

B.2. The main survey lies within the latitudes 27° 37' 48"N and 27° 44' 26"N and the longitudes 082° 33' 00"W and 082° 37' 40"W. The inset survey lies within the latitudes 27° 44' 14.5"N and 27° 46' 15"N and longitudes 082° 34' 30"W and 082° 38' 15"W. The survey limits covered three AWOIS items which are listed below.

<u>AWOIS No.</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Search Radius(m)</u>	<u>Location</u>
8799	27° 39' 43"	082° 35' 47"	200	F
8798	27° 39' 36"	082° 35' 53"	200	F
9378	27° 45' 15"	082° 35' 13"	300	F Inset

B.3. Data acquisition began on May 9 (DN 129) and ended on August 26 (DN 238).

C. SURVEY VESSELS

C.1. The vessels used to survey H-10606 are listed below.

Table C.1: H-10606 Survey Vessels

<u>Name</u>	<u>Data Processing No.</u>	<u>Function</u>
MI-1	none	Assist Dive Ops
LAUNCH 1004 (MI3)	2223	Side scan, Hydro Ops
LAUNCH 1002 (MI4)	2224	Bottom Samples
LAUNCH 1021 (MI5)	2225	Side scan, Hydro Ops
LAUNCH 1008 (MI6)	2226	Side scan, Hydro, Dive Ops

The launches shall be referred to by their data processing numbers in this report.

C.2. None of the survey vessels employed unusual vessel configurations.

D. AUTOMATED DATA ACQUISITION AND PROCESSING *SEE ALSO THE EVALUATION REPORT*

D.1. Hydrographic Data Acquisition and Processing (HDAPS) software gathered and processed all survey data using the versions listed in Table D.1. The programs CLASSIFY, CONTACT, and DAS_SURV were installed on April 12, 1995. All other programs were installed on March 8, 1995.

Table D.1: HDAPS Software Versions

<u>Program</u>	<u>Version</u>	<u>Program</u>	<u>Version</u>
BACKUP	2.00	LOADNEW	2.13
BASELINE	1.14	LSTAWOIS	3.10
BIGABST	2.07	MAINMENU	1.20
BIGAUTOST	3.01	MAN_DATA	3.02
BLKEDIT	2.02	NEWPOST	6.13
CARTO	2.17	PLOTALL	2.32
CLASSIFY	2.12	POINT	2.12
CONTACT	2.48	PREDICT	2.01
CONVERT	3.65	PRESURV	7.11
DAS_SURV	6.80	PRINTOUT	4.04
DIAGNOSE	3.05	QUICK	2.07
DISC_UTIL	1.00	RAMSAVER	1.02

DP	2.18	REAPPLY	2.12
EXCESS	1.03	RECOMP	1.04
FILESYS	3.31	SCANNER	1.00
GRAFEDIT	1.06	SELPRINT	2.05
HIPSTICK	1.01	SYMBOLS	2.00
HPRAZ	1.26	VERSIONS	1.00
INVERSE	2.02	ZOOMEDIT	2.33
LISTDATA	1.02		

SHIPDIM version 2.1 and a LOTUS 1-2-3 spreadsheet were used to compute DGPS performance checks.

D.2. The program VELOCITY version 2.11 and CAT version 2.00, dated September 21, 1995 and December 18, 1992, respectively, were used to compute sound velocity correctors. Programs DAILYDQA (Ver. 2.2), and SMLGAUGE (Ver. 2.2), both dated March 23, 1995, were used to compute least depths and conduct quality control for the MOD III diver's least depth gauge.

D.3. Nonstandard automated data acquisition or data processing methods were not used.

E. SIDE SCAN SONAR EQUIPMENT

E.1. Survey launches used an EG&G Model 260TH slant-range-corrected side scan sonar recorder with a single frequency model 272-T towfish. The recorders and towfishes were replaced when repairs dictated. Their serial numbers are listed in Table E.1.

Table E.1: Side Scan Sonar Equipment Schedule

<u>Vessel</u>	<u>Device</u>	<u>S/N</u>	<u>Days Used</u>
2223	EG&G Recorder	0012102	DN 114 - end
	EG&G Towfish	10823	DN 114 - 145
	EG&G Towfish	11591	DN 151 - end
2225	EG&G Recorder	016672	DN 115 - end
	EG&G Towfish	11591	DN 115 - 145
	EG&G Towfish	10823	DN 151 - end
2226	EG&G Recorder	016669	DN 115 - end
	EG&G Towfish	0011904	DN 115 - end

E.2. All side scan towfish were configured with a 20° beam depressor, the normal setting.

E.3. A side scan frequency of 100 KHz was used throughout the survey.

E.4.a. The survey launches used 25 meter, 50 meter, and 75 meter range scales during survey operations. 75 meter range scale was initially used for main scheme side scan coverage. On DN 142, 50 meter range scale was set as the scale for remaining main scheme side scan coverage. 25 meter range scale was used for contact developments.

Cable length varied from 5 meters to 30 meters as a function of water depth, range scale, and picture clarity.

Line spacing for main scheme side scan coverage was computed by using the formula provided in section 7.3.2.2 of the Field Procedures Manual. The predicted maximum position error did not exceed 15 meters, so maximum line spacings were set at 120 meters for 75 meter range scale, 70 meters for 50 meter range scale, and 30 meters for 25 meter range scale.

E.4.b. Daily opening and closing confidence checks were obtained by towing the side scan towfish over bottom features like sand waves or bridge debris.

E.4.c. 200 percent side scan sonar coverage was achieved over all survey areas on F and F Inset with the exception of AWOIS 9378. The AWOIS item was resolved before 200 percent coverage was completed, making full coverage unnecessary.

E.4.d. Technical problems with a recorder or towfish forced equipment transfers on days listed in Table E.1. No other technical problems were experienced during the survey.

Weather patterns cooperated with side scan operations except when Hurricane Allison and Hurricane Erin passed near the survey area. Those weather systems caused data collection to be canceled on DN's 156, 213, 214, and 215.

E.4.e. The towfishes were deployed from the port or starboard quarters of each launch during the survey.

E.5. Thirty groups of side scan sonar contacts were located on F and F Inset. These groups were named contact items F1 to F28 (on Sheet F) and FI-1 and FI-2 (on F Inset). Of these, 22 were deemed significant or demanded further investigation and were developed using 25 meter range scale side scan and/or diver investigation.

E.6. Data processing involved (1) scanning and check-scanning side scan sonargrams for picture adequacy and contacts, (2) grouping, analyzing, and developing contacts, and (3) analyzing swath plots for holidays and deficient coverage. Contacts were selected on a sonargram if (1) a dark object with a connecting shadow leading out from the centerline was seen, and (2) the shadow indicated an object with significant height above the sea floor. Where fields of significant items were found, the most significant in the field between two

selected soundings was chosen as the contact.

F. SOUNDING EQUIPMENT

F.1. A Raytheon Digital Survey Fathometer (DSF) Model 6000 echosounder gathered sounding data in each survey launch. The echosounders were replaced when repairs dictated. A schedule of echosounder replacement is shown in Table F.1.

Table F.1: DSF 6000 Echosounder Schedule

<u>Vessel</u>	<u>Echosounder S/N</u>	<u>Days Used</u>
2223	B046N	DN 114 - 135
	B053N	DN 137 - 143
	B047N	DN 144 - 151
	B054N	DN 152 - 193
	A108N	DN 194 - 202 (a.m.)
	B047N	DN 202 - end
2224	B054N	DN 115 - 138
	B053N	DN 151 - end
2225	B053N	DN 115 - 130
	C066	DN 130 - 137
	B042N	DN 138 - 201
	B054N	DN 202 - end
2226	C066	DN 115 - 116
	B047N	DN 116 - 141
	B046N	DN 142 - end

F.2. A Mod III Diver Depth Gage (S/N 68337) was used on all dives on F and F Inset.

No other sounding equipment was used other than the echosounders listed above and the lead lines used for echosounder comparison. The lead lines are discussed in section G.1.a.2.

F.3. No faults were found in any DSF6000 echosounder used.

F.4. Both high (100KHz) and low (25KHz) frequency soundings were recorded. Low frequency sounding data were examined for spikes possibly indicating nearby items. All significant low frequency spikes were inserted.

G. CORRECTIONS TO SOUNDINGS

G.1. Detailed information and tables used to determine all corrections to soundings can be found in Separate IV. *

G.1.a.1. The velocity of sound through water was periodically determined by Seacat Conductivity, Temperature, and Density (CTD) gages (S/N 192472-0284 and 192472-0285).

A Data Quality Assurance (DQA) test was conducted with each velocity cast to ensure the meter was within tolerance. The DQA test was performed using hydrometers manufactured by the H-B Instrument Company, which meet the standards of the National Institute of Standards and Technology (NIST).

All data were processed using VELOCITY version 2.11 (21 Sep 94) and CAT version 2.00 (18 Dec 92) software. The computed correctors were entered into the HDAPS sound velocity tables and applied on-line during data collection days except the first day of each leg. Since the CTD cast was made on the first day, velocity table "0" was used for on-line correction, and velocity correctors were applied during processing.

G.1.a.2. Sound velocity corrector casts were taken on the dates and at the locations listed in Separate IV. *

G.1.b. There was no variation in the DSF6000 echosounder instrument initial.

G.1.c. No instrument corrections were performed on any DSF6000 echosounder.

G.1.d. No bar checks were performed on any survey vessel.

Lead line comparisons to the DSF6000 echosounder were made for all survey launches in the beginning, middle, and end of each underway leg, refer to Separate IV for a complete list.

G.1.e. All sounding correctors were applied to both low and high frequency sounding data.

G.1.f. The static drafts of launches 2223, 2224, 2225, and 2226 were determined in February, 1995, while the launches were out of the water at Atlantic Marine Center, Norfolk, Virginia. A calibrated steel tape was used to measure the distance from the transducer to horizontal reference lines above the launches' waterlines. Each launch was then put into water and the distance from the reference line to the water level was measured. These drafts were applied on-line and during processing in HDAPS offset tables. Consult Separate IV for static draft data. There was no significant difference between the static draft measured in the Elizabeth River and the static draft measured in the project area.

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G.1.g. Settlement and squat correctors for each launch were determined, using procedures outlined in the Hydrographic Manual, on the Elizabeth River in 1995 (2223 and 2226 in February, 2224 and 2225 in April). An observer, stationed with a level on a pier, measured changes in relative height as each launch ran toward and away from the observer at various speeds. Settlement and squat correctors were applied to soundings through the HDAPS offset table. Refer to Separate IV* for results of the static and dynamic draft determinations.

G.1.h. No survey launch was equipped with a heave, pitch, and roll sensor.

G.2. No unusual instruments or methods were employed to determine velocity correction.

G.3. There was no need for special sounding correctors.

G.4. Pneumatic depth gages were not used during this survey.

A Mod III Diver Depth Gage was used during all investigative dives on H-10606. The reading given by the gage was input into the program SMLGAGE v2.2 (23 Mar 95) to compute the least depth. A data quality analysis was performed once daily during non-dive days and before and after dive operations on dive days. The DQA was done by comparing the Mod III gage to the ship's barometer and entering the readings into the program DAILYDQA v2.2 (23 Mar 95). DQA results can be found in Separate IV.*

G.5. No other factors affected soundings.

G.6.a. Mean-lower-low-water served as the tidal datum for the survey. The reference tide station stood at St. Petersburg, Florida (872-6520). Refer to Appendix V* for detailed tides information.

G.6.b. Height and time correctors were provided by the Project Instructions for the immediate F and F Inset areas. In Tampa Bay, east of the Sunshine Skyway Bridge and south of a line between Point Pinellas and Piney Point, a -45 minute time correction was applied. North of this line time was direct on the predicted tides at St Petersburg. Heights both north and south of the line were direct on the predicted tides from St Petersburg. Predicted tides from the gage at St. Petersburg were provided on magnetic (floppy) disk before the start of the project. Tide tables were applied on-line and during processing. A copy of the tide tables is included in Separate IV.*

APPROVED TIDES AND ZONING WERE APPLIED DURING OFFICE PROCESSING.

G.6.c. Zoning for the survey did not differ from the project instructions.

H. CONTROL STATIONS

H.1 The horizontal datum for this project is the North American Datum of 1983 (NAD 83).

H.2 Two DGPS reference stations were used to control this survey. The list of horizontal control stations is located in Appendix III.*

H.3 Station TAMPA PILOTS on Egmont Key, Florida was recovered and position verified by MT. MITCHELL personnel in April, 1995. This position was used to set up a NOAA High Frequency (HF) DGPS system for secondary position control of the project. Program MONITOR version 3.0 was run for 24 hours once the system was established to confirm the position and ensure that no multi-path or other site specific problems existed. This was done by setting up an Ashtech M-XII receiver connected to a Magnavox MX-50R beacon receiver over the mark and comparing the known position to the computed position. The MX-50R received differential correctors from the U.S. Coast Guard beacon on Egmont Key. See Appendix III* for the MONITOR output.

H.4 The TAMPA PILOTS station mark was recovered in Egmont Key, Florida using the North American Datum of 1983 (NAD 83).

H.5 No horizontal control stations were established during this project.

H.6 No position anomalies, problems, or unconventional survey methods occurred during recovery of horizontal control for this project.

I. HYDROGRAPHIC POSITION CONTROL

I.1. The primary method of sounding position control was the Differential Global Positioning System.

I.2. At no time in this survey did the estimated position error consistently exceed 15 meters (1.5 mm to the scale of the survey). On occasion, DGPS correctors would not be received for a few minutes at a time. When this occurred, HDAPS went into "DR mode" for up to 30 seconds. After 30 seconds, data collection was halted. At no time in this survey did the EPE consistently exceed 15 meters.

I.3. Table I.3. lists the serial numbers of DGPS apparatus used during the survey.

Table I.3: DGPS Equipment and Serial Numbers

<u>Vessel</u>	<u>Device</u>	<u>Serial Number</u>	<u>Day Used</u>
Shore	Ashtech M-XII Receiver	700354B2501	DN 114 - 216
	Ashtech M-XII Receiver	700354B2504	DN 217 - 231
	L1/L2 GPS Antenna	700228D2311	DN 114 - 216
	L1/L2 GPS Antenna	700228D2313	DN 217 - 227
	L1/L2 GPS Antenna	700228D2311	DN 228 - 231
	Raytheon 152 Transceiver	BS29252	DN 114 - 231
	LRD-2 Data Modulator	606	DN 114 - 158
	LRD-2 Data Modulator	613	DN 159 - 231
2220	Ashtech DGPS Receiver	700417B1004	DN 114 - end
	Ashtech DGPS Receiver	700417B1129	DN 114 - end
	LRD-1 HF Receiver	205	DN 114 - end
	Magnavox MX-50R	315	DN 114 - end
	Magnavox MX-50R	316	DN 114 - end
	GPS Antenna (Stbd)	700391A0270	DN 114 - end
	GPS Antenna (Port)	700391A0451	DN 114 - end
2223	Ashtech DGPS Receiver	700417B1196	DN 114 - end
	LRD-1 HF Receiver	249	DN 114 - end
	Magnavox MX-50R	168	DN 114 - end
	GPS Antenna	700391A0533	DN 114 - end
2224	Ashtech DGPS Receiver	700417B1190	DN 115 - end
	LRD-1 HF Receiver	250	DN 115 - 139
	Magnavox MX-50R	207	DN 115 - end
	GPS Antenna	700378A0468	DN 115 - end
2225	Ashtech DGPS Receiver	700417B1182	DN 115 - end
	LRD-1 HF Receiver	206	DN 115 - 139
	LRD-1 HF Receiver	250	DN 141 - end
	Magnavox MX-50R	215	DN 115
	Magnavox MX-50R	313	DN 116 - 121
	Magnavox MX-50R	117	DN 122 - end
	GPS Antenna	700391A0517	DN 115 - end
2226	Ashtech DGPS Receiver	700417B1197	DN 115 - end
	LRD-1 HF Receiver	299	DN 115 - end
	Magnavox MX-50R	219	DN 115 - end
	GPS Antenna	700378A0232	DN 115 - 137
	GPS Antenna	700391A0509	DN 138 - end

I.4. DGPS performance checks were performed by comparing positioning of two independent DGPS stations. The inverse distance between the two independent stations' positions was computed to ensure it did not exceed the EPE_{max} of 15 meters. For the comparison, the launches would lay dead in the water alongside each other with their GPS antennae as close together as possible. The launches would then simultaneously mark their position by dumping the on-line HDAPS screen to the printer. The Easting and Northing values from each launch, along with the HDOP, and number of satellites used were entered into a LOTUS 1-2-3 spreadsheet for computation of position error. The performance checks were done with each launch receiving correctors from an independent DGPS reference station for most of the checks. Occasionally, the launches would use the same station, if problems were encountered receiving the signal of a shore station. When the same station was used by both launches an additional performance check was obtained aboard MT. MITCHELL using the SHIPDIM program which monitored two independent stations. Performance checks were attempted once per week but were subject to equipment problems and bad weather. A copy of the performance checks is included in Separate III. *

MT. MITCHELL monitored two reference stations and recorded performance checks with the SHIPDIM program Version 2.1 during all periods of hydrography. The outlier files produced by the program were reviewed daily. A printed copy of the performance checks is included in Separate III. *

I.5. No calibration data were applied to the DGPS raw positioning data.

I.6.a. No unusual methods of DGPS calibration were attempted.

I.6.b. No equipment malfunctions were encountered which affected positioning accuracy.

I.6.c. Thunderstorms hindered or eliminated DGPS reception when directly overhead. No other atmospheric activity affected DGPS performance.

I.6.d. No weak signals or poor geometric configurations were observed.

I.6.e. No systematic errors were noted.

I.6.f. All launch antennae position were corrected for offset and layback, and were referenced to the DSF6000 echosounder transducer position. These correctors were input to HDAPS offset tables 3, 4, 5, and 6 (the number corresponding to the last digit in each launch's data processing number), and corrected data while on line. Separate III* contains a copy of the offset tables used.

I.6.g. The offset tables also corrected for towfish position. Winch position, cable length, towfish height, and water depth enabled HDAPS to compute towfish location while on line.

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J. SHORELINE *SEE ALSO THE EVALUATION REPORT*

Project Instructions do not require shoreline verification.

K. CROSSLINES

K.1. The crosslines that were run on sheet F make up about 10 percent of the total mainscheme hydrography coverage. The crosslines on F Inset make up about 7 percent of total mainscheme coverage.

K.2. The crossline depths show good agreement with mainscheme depths on both F and F Inset.

K.3. No significant differences between crossline and mainscheme soundings need to be reconciled.

K.4. The vessels used to run the crosslines were also used to run mainscheme lines.

L. JUNCTIONS *SEE ALSO THE EVALUATION REPORT*

L.1. Survey H-10606 junctions with survey H-10594⁸ along its southwestern border and survey H-10623 along its northeastern border. Both H-10594⁸ and H-10623 were surveyed concurrently with H-10606. Sheet F also junctions with F Inset along its northern boundary.

L.2. The soundings of survey H-10606 agree with both H-10594 and H-10623 in the junctions.

L.3. Because of good junction agreement, no further investigation is warranted.

L.4. No adjustments to soundings or features shared between these surveys are recommended.

M. COMPARISON WITH PRIOR SURVEYS *SEE ALSO THE EVALUATION REPORT.*

M.1. Survey H-10606 is preceded by three 1:20,000 scale surveys; H-8428, dated August 1958, H-8429, dated September 1958, and H-8426, dated September 1958.

M.2. The AWOIS items covered by this survey have been addressed in Section N: Item Investigation Reports.

M.3. The soundings across the center of the survey area generally agree with those on the prior surveys. The soundings to the north and on F Inset are as much as 0.5 meters deeper than those on the prior surveys.

M.4. The deepening trend to the north may be caused by sediment transfer.

M.5. No non-NOS surveys were available for comparison to survey H-10606.

N. ITEM INVESTIGATION REPORTS

This survey examined 3 AWOIS items and 30 contact groups which were either proved or disproved. Details are on following pages. Least depths of items investigated by divers were determined by the Mod III depth gage. Dive least depths have not been corrected with predicted tides. Dive investigation forms are in Appendix I. *FILED WITH THE ORIGINAL FIELD RECORDS.*

AWOIS Item 8798

Location: Sheet F

Charted Position: 27° 39' 36.11"N 082° 35' 53.35"W

Feature Type: Buoy Anchor

Source: LNM11/83, 7th Coast Guard District, 16 Mar 93 - Hendry Corp advises that a dredging anchor buoy has been lost in about 32ft of water in approx position 27-39-35N, 082-35-54W (NAD 27).

Requirement: 200 percent side sonar coverage, diver investigation, salvage documentation, search radius 200 meters.

Method: The search radius was covered 200 percent. No dives or developments were performed.

Results: The 200 percent side scan sonar revealed no sign of the buoy anchor.

Prior Survey Comp: The buoy block was not reported before the prior survey.

Chart Comparison: "Obstn PA" charted at above position.

Recommendation: Delete "Obstn PA". *Concur*

AWOIS Item 8799

Location: Sheet F

Charted Position: 27° 39' 43.11"N 082° 35' 47.35"W

Feature Type: Pipe

Source: LNM39/71, 7th Coast Guard District, 29 Sep 91 - A steel pipe has been reported below the surface in position 27-39.7N, 082-35.8W (NAD 27). The pipe is fixed and is not inside the Port Manatee Channel.

Requirements: 400 percent side sonar coverage, diver investigation, salvage documentation, search radius 200 meters. Limit search to 200% side scan coverage inside the channel.

Method: The entire search radius was covered with 200 percent side scan. No dives or developments were performed.

Results: The 200 percent side scan sonar coverage revealed no sign of the pipe.

Prior Survey Comp: The pipe did not exist at the time of the prior survey.

Chart Comparison: "Subm Pipe" charted at above position.

Recommendation: Delete "Subm Pipe" from chart. *Concur.*

AWOIS Item 9378

Location: F Inset

Charted Position: 27° 45' 15.10"N 082° 35' 13.35"W

Feature Type: Burned and Sunk Fishing Vessel "Captain J".

Source: LNM53/85, 7th Coast Guard District, 31 Dec 85 - The fishing vessel is reported burned and sunk in Tampa Bay, west of Cut J channel range rear light in approximate position 27-45-14N, 082-35-14W (NAD 27).

Requirements: 200 percent side sonar coverage, diver investigation, salvage documentation, search radius 300m

Method: The search radius was covered 100 percent. During the second 100 percent coverage on DN 220, contact 4416.78, computed height 1.5 meters was found. A dive was performed on the contact on DN 233.

Results: The dive revealed no sign of the wreck of the Captain J. Divers instead found a pipe 4 feet in length lying on its side with a least depth of ^{2.4}3.3 meters in ^{3.6}4.2 meters of water. (8 FT) (12 FT)

Prior Survey Comp: The wreck did not exist at the time of the prior survey.

Chart Comparison: Wreck symbol "PA" charted at above location.

Recommendation: Delete wreck symbol "PA" from chart. *CONCOR, CHART AN 8 Obsta.*
IN LAT: 29-45-15.153 N
LONG: 82-35-15.906 W

Contact Item F1

Location: Sheet F

Position: 27° 41' 19.64"N 082° 35' 14.25"W

<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
144	4261.16	100% Side scan
169	2159.18	200% Side scan
169	2159.17	200% Side scan
169	2170.42	200% Side scan
202	9907.26	F1 Development
202	9911.19	F1 Development

Item was first found with fathometer hit 4261.16 indicating a height of 0.4 meters. A side scan development obtained side scan contact 9911.19 with a computed height of 0.8 meters. A dive on DN 221 revealed a metal pipe 21 feet in length with a least depth of 6.7 meters in 7.4 meters of water. (22 FT)

Recommendation: Do not chart. *Concure*

Contact Item F2

Location: Sheet F

Position: 27° 41' 48.43"N 082° 34' 12.86"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	170	2305.44	200% Side scan
	154	4396.52	100% Side scan
	170	2305.44	200% Side scan
	202	9913.42	F2 Development
	202	9915.35	F2 Development

Item was first found with side scan contact 4396.52, with a computed height of 0.1 meters. A side scan development obtained side scan contact 9915.35 with a computed height of 0.6 meters. A dive conducted on DN 234 revealed a metal pipe 70 feet in length with a least depth of 6.5 meters ^(21 FT) in 7.1 meters ^(23 FT) of water.

Recommendation: Do not chart. *CONCUR*

Contact Item F3

Location: Sheet F

Position: 27° 41' 54.72"N 082° 33' 37.05"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	135	4019.32	Hydrography
	135	4019.37	Hydrography
	171	8305.74	200% Side scan
	145	1693.00	100% Side scan
	169	7996.11	200% Side scan
	169	8021.84	200% Side scan
	202	9919.53	F3 Development
	202	9923.25	F3 Development

Item was first found during a hydrographic development of the primary traffic channel across sheet F. A side scan development obtained side scan contact 9923.25 with a computed height of 0.8 meters. A dive performed on DN 221 found a metal pipe 58 feet in length with a least depth of 6.8 meters ^(19 FT) in 7.6 meters ^(22 FT) of water.

Recommendation: Chart as an obstruction. *CONCUR. CHART AS A 19 OBSTN*

Contact Item F4

Location: Sheet F

Position: 27° 40' 58"N 082° 36' 29"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	155	4558.18	100% Side scan
	202	9933.56	F4 Development

Item was found during 100% side scan coverage and was marked as contact 4558.18 with a computed height of 0.7 meters. A dive performed on DN 233 found two items. Item F4.1 is a partially buried wooden pile on its side 25 feet in length with a least depth of 5.1 meters in 5.7 meters of water. Item F4.2 is a pillar 30 feet in length which extends less than 0.3 meters off the bottom.

Recommendation: Do not chart. *CONCUR. CHART SHOALER DEPTHS IN THE IMMEDIATE VICINITY.*

Contact Item F5

Location: Sheet F

Position: 27° 40' 59"N 082° 36' 33"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	171	8300.6	200% Side scan
	202	9941.23	F5 Development

Item was discovered during 200% side scan operations and was labelled as contact 8300.6 with a computed height of 2.5 meters. A subsequent development obtained contact 9941.23 with a computed height of 0.4 meters. A dive on DN 233 found two pieces. Item F5.1 is a broken wooden pile with a 4 feet piece and a 27 feet piece both lying on their sides, least depth ~~6.8~~ ^{2.8 (19 FT)} meters in ~~6.9~~ ^{2 (21 FT)} meters of water. Item F5.2 is a daymarker pile 26 feet in length lying on its side with a least depth of ~~4.9~~ ^{3 (11 FT)} meters in 5.2 meters of water.

Recommendation: Do not chart. *CONCUR. CHART SHOALER DEPTHS IN THE IMMEDIATE VICINITY.*

Contact Item F6

Location: Sheet F

Position: 27° 42' 12.5"N 082° 36' 37.0"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	135	4019.32	Hydrography
	135	4019.37	Hydrography
	171	8305.74	200% Side scan

The item was first identified as two different echosounder spikes on DN 125. Spike 4019.32 had a height of 1.7 meters. A side scan development on DN 202 found nothing. No dive was performed.

Recommendation: No further investigation. *Concur.*

Contact Item F7

Location: Sheet F

Position: 27° 42' 48.53"N 082° 36' 40.54"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	135	7101.36	100% Side scan
	171	8378.47	200% Side scan
	202	9959.33	F7 Development

This item was first seen on DN 135 during 100% side scan coverage, and was marked 7101.35, computed height 1.4 meters. Development with side scan on DN 202 found another hit at 8378.47, computed height 1.5 meters. A Dive on DN 233 found a 17 foot boat with a 6 foot beam and a least depth of 6.9 meters in 8.0 meters of water.
(17 FT) (23 FT)

Recommendation: Chart as a wreck. *Concur. CHART A 19 WK*

Contact Item F8

Location: Sheet F

Position: 27° 39' 11.64"N 082° 35' 23.42"W (position of 8a)

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	158	4787.23	100% Side scan
	158	4787.23	100% Side scan
	202	9965.57	F8 Development

The first 100% side scan coverage ran over this contact just beside Port Manatee Channel. Both the side scan and echosounder contacts 4787.23 showed a computed height of 0.9 meters. A development on DN 202 obtained contact 9965.57 with a computed height of 1.3 meters. A dive conducted on DN 221 found two pieces of debris spaced 30 feet apart. Item 8a was a buoy block, 4 feet square, least depth ~~7.4~~ ^{6 (21 FT)} meters in ~~8.6~~ ^{7.3 (24 FT)} meters of water. Item 8b was a concrete pillar 36 feet in length lying on its side with a least depth of ~~8.0~~ ^{7.9 (26 FT)} meters in ~~9.9~~ ^{9.9 (23 FT)} meters of water. *DO NOT CHART ITEM 8b.*

Recommendation: Chart an obstruction at the position above. *CONCUR. CHART AS 21 OBSTNS (ITEM 8a)*

Contact Item F9

Location: Sheet F

Position: 27° 39' 07.23"N 082° 35' 28.65"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	158	4772.25	100% Side scan
	168	2046.56	200% Side scan
	177	9011.12	200% Side scan gaps
	177	9011.13	200% Side scan gaps
	168	2046.558	200% Side scan
	220	5027.39	F9 Development
	220	5027.43	F9 Development
	220	5029.21	F9 Development
	220	5029.17	F9 Development

Item F9 was found about 150 meters southwest of item F8 on the other side of Port Manatee Channel. 100% side scan identified it as contact 4772.25, computed height 0.9 meters. A development on DN 220 found a highest computed contact height of 3.0 meters with contact 5029.21. A dive on DN 232 found a daymarker pile with a least depth of ~~7.4~~ ^{7.6 (25 FT)} meters in ~~8.4~~ ^{8.4 (21 FT)} meters of water.

Recommendation: Chart as an obstruction. *CONCUR. CHART A 21 OBSTN*

Contact Item F10

Location: Sheet F

Position: 27° 38' 31.4"N 082° 37' 9.2"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	141	7125.71	100% Side scan
	165	7657.68	200% Side scan
	165	7657.63	200% Side scan

The item was first seen during 100% side scan, and was marked as contact 7125.71 with a 1.4 meter computed height. A later development on DN 221 determined the contact to be a contact inside the primary channel. Its greatest computed height of 2.0 meters with contact 7657.63 was not found to exceed the controlling depth of the channel.

Recommendation: Do not chart. *Concur.*

Contact Item F11

Location: Sheet F

Position: 27° 38' 24.85"N 082° 36' 49.02"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	221	5041.29	F11 Development
	166	1851.38	200% Side scan
	131	1288.69	100% Side scan

Side scan operations on DN 131 detected item F11 and marked it as contact 1288.69. A side scan development on DN 221 found the item at contact 5041.29, computed height 1.3 meters. A dive on DN 234 found three large tires tied together with a least depth of 6.8 meters in 7.6 meters of water.

Recommendation: Do not chart. *CONCUR. THE OBSTRUCTION IS WITHIN THE LIMITS OF A SPOIL AREA. SHOALER DEPTHS ARE IN THE IMMEDIATE VICINITY*

Contact Item F12

Location: Sheet F

Position: 27° 38' 50.1"N 082° 36' 52.5"W

History:	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	192	9837.14	100% Side scan Gaps

The item was spotted on only one side scan picture as contact 9837.14. A side scan development on DN 221 found no further contacts. No dive was performed

Recommendation: No further investigation. *Concur.*

Contact Item F13

Location: Sheet F

Position: 27° 39' 39.1"N 082° 36' 11.3"W

History:	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	192	9812.86	100% Side scan Gaps
	141	7132.40	100% Side scan
	165	7651.11	200% Side scan
	221	5049.15	F13 Development
	221	5055.15	F13 Development

The item was first seen on 100% side scan, and was marked as 7132.40. A 25 meter range scale side scan development found that the item was one of many contacts lying at the bottom of the primary channel. A hydro development on DN 233 of channel Cut "C" (positions 10075 to 10161) found that a field of contacts like F13 did not intrude into the channel's controlling depth. The hydrographic coverage of F13 was deemed sufficient to prove no interference with controlling depth. No dive was performed.

Recommendation: No further investigation. *Concur.*

Contact Item F14

Location: Sheet F

Position: 27° 39' 40.4"N 082° 36' 10.2"W

History:	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	192	9812.76	100% Side scan Gaps
	141	7132.51	100% Side scan
	141	7132.51	100% Side scan

The item was first seen on 100% side scan, and was marked as 7132.51. A 25 meter range scale side scan development found that the item was one of many contacts lying at the bottom of the primary channel. A hydro development on DN 233 of channel Cut "C" (positions 10075 to 10161) found that a field of contacts like F14 did not intrude into the channel's controlling depth. The hydrographic coverage of F14 was deemed sufficient to prove no interference with controlling depth. No dive was performed.

Recommendation: No further investigation. *Concur*

Contact Item F15

Location: Sheet F

Position: 27° 39' 39.6"N 082° 36' 4.6"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	192	9802.55	100% Side scan Gaps
	177	9031.20	200% Side scan Gaps
	177	9031.24	200% Side scan Gaps
	221	5059.18	F15 Development

The item was first seen on 200% side scan and was marked as 9031.20. A 25 meter range scale side scan development found that the item was one of many significant boulders lying at the bottom of the primary channel. A hydro development on DN 233 of channel Cut "C" (positions 10075 to 10161) found that a field of contacts like F15 did not intrude into the channel's controlling depth. The hydrographic coverage of F15 was deemed sufficient to prove no interference with controlling depth. No dive was performed.

Recommendation: No further investigation. *Concur.*

Contact Item F16

Location: Sheet F

Position: 27° 38' 54.1"N 082° 35' 0.3"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	192	9864.75	100% Side scan Gaps
	192	9864.75	100% Side scan Gaps
	192	9864.68	100% Side scan Gaps
	175	2622.01	100% Side scan Gaps

The item was composed of two pairs of contacts: the two named 9864.75, and 9864.68 and 2622.01. A side scan development was performed over both pairs on DN 221 and found nothing significant. No dive was performed.

Recommendation: No further investigation. *Concede.*

Contact Item F17

Location: Sheet F

Position: 27° 38' 56.9"N 082° 35' 7.8"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	159	7442.41	100% Side scan
	171	2441.83	200% Side scan
	221	5071.22	F17 Development
	221	5075.14	F17 Development

The item was first seen on 100% side scan and was marked as contact 7442.41. A 25 meter range scale side scan development found that the item was one of a few contacts lying at the bottom of Port Manatee Channel. A hydro development on DN 233 of channel Cut "C" (positions 10075 to 10161) found that a field of contacts like F17 did not intrude into the channel's controlling depth. The hydrographic coverage of F17 was deemed sufficient to prove no interference with controlling depth. No dive was performed. A later contact item called F23 was actually F17 erroneously identified.

Recommendation: No further investigation. *Concede*

Contact Item F18

Location: Sheet F

Position: 27° 38' 45.1"N 082° 34' 50.9"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	166	7679.422	100% Side scan
	177	9016.79	200% Side scan Gaps
	221	5083.12	F18 Development

The item was first seen on 100% side scan, and was marked as 7679.422, computed height 1.6 meters. A 25 meter range scale side scan development found that the item was one of a few

contacts lying at the bottom of Port Manatee Channel. A hydro development on DN 233 of channel Cut "C" (positions 10075 to 10161) found that a field of contacts like F18 did not intrude into the channel's controlling depth. The hydrographic coverage of F18 was deemed sufficient to prove no interference with controlling depth. No dive was performed.

Recommendation: No further investigation. *Concur*

Contact Item F19

Location: Sheet F

Position: 27° 38' 17.8"N 082° 34' 53.9"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	166	7692.64	100% Side scan
	166	7692.68	100% Side scan
	171	2511.38	200% Side scan

The item was first seen on 200% side scan and was marked as 7692.64, computed height 1.0 meter. A 25 meter range scale side scan development found that the item was one of a few contacts lying at the bottom of Port Manatee Channel. A hydro development on DN 233 of channel Cut "C" (positions 10075 to 10161) found that a field of contacts like F19 did not intrude into the channel's controlling depth. The hydrographic coverage of F19 was deemed sufficient to prove no interference with controlling depth. No dive was performed.

Recommendation: No further investigation. *Concur*

Contact Item F20

Location: Sheet F

Position: 27° 42' 29.89"N 082° 36' 31.86"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	228	5192.50	F20 Development
	155	4532.69	200% Side scan
	171	8275.82	200% Side scan
	228	5194.25	F20 Development
	228	5196.47	F20 Development

Item F20 was first seen on DN 155 during 200% side scan operations, and was identified as

4532.69 with a computed height of 2.0 meters. Development of the item obtained contact 5192.5 with a computed height of 1.1 meters. A dive on DN 232 found a partially buried buoy block, 4 feet square, with a least depth of ~~5.4~~^{4.7 (15 FT)} meters in ~~6.4~~^(21 FT) meters of water.

Recommendation: Chart as an obstruction. *CONCUR. CHART AS A 15 Obstr.*

Contact Item F21

Location: Sheet F

Position: 27° 41' 48.1"N 082° 36' 26.8"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	155	4563.12	100% Side scan
	217	4879.53	200% Side scan Gaps

The item was first seen on 100% side scan and was marked 4563.12, computed height 0.3 meters. A second hit on the same item, contact 4879.53, had a computed height of 0.4 meters. On both pictures the item appears to be a collection of pilings lying on their sides. The insignificant computed heights of both contacts was deemed sufficient proof of the item's insignificance.

Recommendation: Do not chart, no further investigation required. *CONCUR*

Contact Item F22

Location: Sheet F

Position: 27° 38' 17.82"N 082° 35' 44.78"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	171	2431.80	200% Side scan
	159	7419.44	100% Side scan
	159	7432.52	100% Side scan

The item was seen twice on DN 159 during 100% side scan operations. A 200% side scan hit at 2431.80 had a computed height of 1.2 meters. A dive on DN 234 found a nun buoy 20 feet in length lying on its side with a least depth of 6.2 meters in 6.5 meters of water.

Recommendation: Do not chart. *CONCUR.*

Contact Item F23

Location: Sheet F
Position: Same as Item F17
History: See Item F17

Item F17 was renamed F23 in error. No item F23 exists except that already addressed by F17. *Concur*

Contact Item F24

Location: Sheet F
Position: 27° 39' 27.21"N 082° 36' 12.27"W
History:

<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
166	1761.41	200% Side scan
166	1775.22	200% Side scan

The item was seen during 200% side scan operations and was marked as contact 1761.41 with a computed height of 1.3 meters. A dive on DN 234 found two items 30 feet apart. One was a daybeacon tower 24 feet in length lying on its side with a least depth of ~~8.4~~ ^{8.3 (24 FT)} meters in 9.4 ^(30 FT) meters of water. The other was a buoy block 3.5 feet square with a least depth of ~~9.0~~ ^{9.5} meters in 9.7 ^(32 FT) meters of water.

Recommendation: Chart as an obstruction. *CONCUR CHART AS A 24 OBSTN*

Contact Item F25

Location: Sheet F
Position: 27° 38' 52.04"N 082° 34' 54.92"W
History:

<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
159	7484.44	100% Side scan
159	7484.48	100% Side scan

The item was seen on 100% side scan and was marked as contact 7484.44 with a computed height of 1.2 meters. A dive on DN 234 found two metal buoy bases 54 feet apart, both lying

on their sides. The least depth of the first was ^{4.8 (15 FT)} ~~5.6~~ meters in ^{5 (18 FT)} ~~6.4~~ meters of water. The second had a least depth of ^{16 FT} ~~5.8~~ meters in ~~6.6~~ meters of water.

Recommendation: Chart as an obstruction. *CONCUR CHART A 15 OBSTN*

Contact Item F26

Location: Sheet F and F Inset Junction

Position: 27° 44' 22"N 082° 36' 42"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	135	7000.01	100% Side scan
	228	5099.56	200% Side scan Gaps

The item was first seen during 100% side scan operations. It was labelled contact 7000.01, with a computed height of 1.5 meters. The item was found to be the F Inset item FI-1. See item FI-1 for further description. *CONCUR*

Contact Item F27

Location: Sheet F

Position: 27° 38' 13.79"N 082° 37' 24.81"W

<i>History:</i>	<u>DN</u>	<u>Contact Number</u>	<u>Activity</u>
	165	7660.85	200% Side scan
	192	9842.51	100% Side scan Gaps
	165	7660.88	200% Side scan

The item was first seen on 200% side scan and was marked as contact 7660.85 with a computed height of 4.0 meters. A dive performed on DN 234 found a partially buried buoy anchor 4 feet square with a least depth of 14.5 meters in 15.1 meters of water.

Recommendation: Do not chart. *CONCUR. CHART SHOALER DEPTHS IN THE IMMEDIATE VICINITY.*

Contact Item F28

Location: Sheet F

Position: 27° 40' 50.14"N 082° 36' 20.73"W

History:	DN	Contact Number	Activity
	192	9867.19	100% Side scan Gaps
	192	9867.19(echosounder hit)	100% Side scan Gaps

The item was first found on 100% side scan gaps and was marked as contact 9867.19 with a computed height of 2.5 meters. A dive on DN 234 found a recreation vessel with its anchor line still extended. The vessel was 25 feet in length with a 7 foot beam and a least depth of 4.2 meters in 7.3 meters of water.
(14 FT) (22 FT)

Recommendation: Chart as a wreck. *CONCUR. CHART AS A 14' W*

Contact Item FI-1

Location: F Inset

Position: 27° 44' 21.84"N 082° 36' 42.34"W

History:	DN	Contact Number	Activity
	220	4448.14	F-I1 Development
	187	4108.88	100% Side scan
	187	4109.00	100% Side scan
	192	4194.80	200% Side scan
	192	4194.82	200% Side scan
	192	4197.56	200% Side scan
	192	4197.58	200% Side scan
	220	4442.48	F-I1 Development
	220	4444.27	F-I1 Development
	220	4446.15	F-I1 Development
	220	4448.16	F-I1 Development

After being found separately on sheet F as item F26, item FI-1 was found on 100% side scan on DN 187, and was marked as 4108.88 with a computed height of 2.2 meters. A side scan development of the item obtained contact 4448.16, computed height 1.2 meters. A dive on DN 233 found the remnants of a fixed aid to navigation 30 feet in length lying on its side with a least depth of 5.4 meters in 6.4 meters of water.
(14 FT) (18 FT)

Recommendation: Chart as an obstruction. *CONCUR. CHART AS A 14 OBSTN*

Contact Item FI-2

Location: F Inset

Position: 27° 46' 9.7"N 082° 36' 11.0"W

History:	DN	Contact Number	Activity
	187	4006.42	100% Side scan
	191	1111.45	200% Side scan

The item was first seen on 100% side scan, and was marked as 4006.42, computed height 1.5 meters. A side scan development of FI-2 on DN 220 found nothing. No dive was performed.

Recommendation: No further investigation. *CONCUR.*

O. COMPARISON WITH CHARTS *SEE ALSO THE EVALUATION REPORT*

O.1. Survey H-10606 was compared to the charts 11413 (40th ed, January 1 1994) and 11414 (35th ed, February 26 1994).

O.2. No danger to navigation reports have been filed for any item in the survey area.

O.3.a. The soundings in the central portion of the survey compare equally to those on the charts. The soundings to the north are about 0.5 meters deeper than those on the charts.

O.3.b. Diver investigations are discussed in Section N: Item Investigation Reports. No other special investigations were conducted.

O.3.c. Of special note is a collection of bridge debris which lies in the eastern corner formed by the confluence of Port Manatee Channel to primary channel Cut "C". The bridge debris is marked by a single privately maintained yellow precautionary buoy (DP number 27-39-48.85N 82-34-42.09W 123), and has a least depth of 3.1 meters at position number 1467.00. — 27-39-47.28N 82-34-46.14W
SEE ALSO SECTION O.1. OF THE EVALUATION REPORT.

O.3.d. The primary channel and Port Manatee channel have been sounded with 35 meter spaced hydrography along their lengths, and with 50 meter spaced hydrography across. All soundings indicate the channels have been maintained to their controlling depths. *CONCUR. NO CONFLICTS*

O.3.e. Note that spoil area flanking both the primary channel and Port Manatee Channel have been sounded well enough to replace the spoil areas with actual contours of spoil

mounds.

O.4. All non-sounding features printed on the chart have been located during this survey. Two of the features have been moved, and are listed in Table O.5. The Cut "B" range lights have been shifted toward Cut "B" channel along the line of position of the range. *CHART AS SHOWN ON THE PRESENT SURVEY*

Table O.5: Moved Non-Sounding Features

Feature		Old Position	New Position	DP#
Cut "B" Upper <i>REAR</i> Aft Range Light		27° 42' 47.08"N 082° 33' 24.59"W	27° 41' 59.41"N 082° 34' 05.66"W	135
Cut "B" Upper <i>FRONT</i> Fwd Range Light		27° 41' 59.38"N 082° 34' 05.56"W	27° 41' 19.38"N 082° 34' 40.48"W	138

THE NEW POSITIONS ARE LISTED IN THE 1996 LIGHT LIST, VOL. III, PAGE 412.
O.5. No changes to the chart scale, coverage, or format are recommended.

P. ADEQUACY OF SURVEY *SEE ALSO THE EVALUATION REPORT*

P.1. This survey is sufficient and adequate to supersede all prior surveys. All items have been resolved.

P.2. No part of this survey is incomplete or substandard.

Q AIDS TO NAVIGATION *SEE ALSO THE EVALUATION REPORT*

Q.1. No correspondence was conducted with the U.S Coast Guard regarding aids to navigation. Table O.5 lists the only aids to navigation not correctly positioned on the chart.

Q.2. All navigational aids found during the survey match their descriptions given on the area charts and are charted correctly.

Q.3. Table Q.3 list all aids to navigation recorded during the survey. Their descriptions match those given in the Light List. *THESE AIDS APPEAR ADEQUATE TO SERVE THEIR INTENDED PURPOSES.*

Table Q.3: H-10606 Navigational Aids

Name	Type	Light	Sound	DP No
Cut "C" Lower	Fwd Range	Red	None	4160
Red "2"	Daymarker	None	None	4161
Green "1"	Beacon	Green	None	4162

Red "4"	Beacon	Red	None	4163
Green "3"	Daymarker	None	None	4164
ICW Green "1"	Beacon	Green	None	4165
Red "6"	Beacon	Red	None	4166, 4167
Green "5"	Buoy	None	None	4168
Green "3B"	Buoy	Green	None	100
Red "4B"	Buoy	Red	None	101
Cut "A"	Aft Range	Red	None	102
Red "6A"	Buoy	Red	None	103
Green "1B"	Buoy	Green	Bell	104
Cut "C" Lower	Aft Range	Red	None	105
Cut "C" Lower	Fwd Range	Red	None	106
Red "6B"	Buoy	Red	None	107
Red "2"	Art Beacon	Red	None	108
Green "1"	Art Beacon	Green	None	109
Red "8B"	Buoy	Red	None	110
Green "9B"	Buoy	Green	None	111
Cut "A"	Aft Range	Red	None	112
Red "4"	Buoy	Red	None	113
Green "3"	Buoy	Green	None	114
Red "6"	Buoy	Red	None	115
Green "5"	Buoy	Green	None	116
Red "8"	Beacon	Red	None	117
Green "7"	Beacon	Green	None	118
	Dredge Pile	None	None	119
	Dredge Pile	None	None	120
	Dredge Pile	None	None	121
	3 Piles 15m E	None	None	122
Yellow "Fish Haven"	Buoy	None	None	123
Cut "D" Lower	Aft Range	Red	None	124
Cut "D" Lower	Fwd Range	Red	None	125
Red "12B"	Buoy	Red	None	126
Green "1C"	Buoy	Green	None	127
Red "2C"	Buoy	Red	Bell	129
Green "3C"	Buoy	Green	None	130
Red "4C"	Buoy	Red	None	131
Green "5C"	Buoy	Green	None	132
Red "6C"	Buoy	Red	None	133
Green "D1"	Buoy	Green	None	134
Cut "B" Upper	Aft Range	Red	None	135
"B"	Mile Marker	None	None	136
"C"	Mile Marker	None	None	137
Cut "B" Upper	Fwd Range	Red	None	138

Green "7"	Buoy	None	None	2803
Red "5"	Daymarker	None	None	2805

Q.4. No bridges, overhead cables, or overhead pipelines exist in the survey area.

Q.5. No submarine cables, pipelines, or ferry routes exist in the survey area.

R. STATISTICS

Table R outlines all statistical data.

Table R: Survey H-10606 Statistical Data

Sheet F Statistic	<u>2223</u>	<u>2224</u>	<u>2225</u>	<u>2226</u>	<u>Total</u>
No of Positions	3161	58	1303	1805	6327
Linear nm Covered	493.47	0	197.5	269.66	960.63
Production Days	24	2	14	21	43
Detached Positions	0	39	9	21	69
Bottom Samples	0	20	21	0	41
F Inset					
Statistics	<u>2223</u>	<u>2224</u>	<u>2225</u>	<u>2226</u>	<u>Total</u>
No of Positions	0	0	455	148	603
Linear nm Covered	0	0	68.28	18.6	86.88
Production Days	0	0	5	4	9
Detached Positions	0	0	12	6	18
Bottom Samples	0	0	4	0	4

S. MISCELLANEOUS *SEE ALSO THE EVALUATION REPORT.*

S.1.a. No unusual silting was observed.

S.1.b. The only unusual submarine feature, bridge debris, was discussed in Section O.4.f.

S.1.c. No anomalous tidal conditions were experienced.

S.1.d. No current observations were conducted.

S.1.e. No magnetic anomalies were noted.

S.2. All bottom samples were submitted to the Smithsonian Institution.

T. RECOMMENDATIONS

T.1. No inadequacies have been noted for this survey.

T.2. There is no known planned construction or dredging that will affect the findings of this survey.

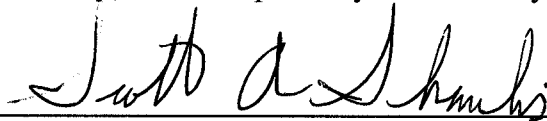
T.3. No unusual features exist that need to be studied before the next survey.

U. REFERRAL TO REPORTS

None

SUBMITTAL SHEET
Survey H-10606

This descriptive report accurately describes all activities pertaining to the control, collection and processing of data for this survey, and is respectfully submitted by:



Ensign Scott A. Shaulis, NOAA

APPENDIX III
List of Horizontal Control Stations

1. List of Horizontal Control Stations.
2. Copy of MONITOR program output plot and statistics.

Horizontal Control Stations

Station 000 - United States Coast Guard, Egmont Key, Florida Differential Beacon

Lat: 27° 36' 01.488" N

Long: 082° 45' 37.170" W

Transmission Rate: 200 bps

Transmission Frequency: 310 KHz

Source: USCG DGPS Radio beacon Prototype Status & Operating Specifications

Station 001 - TAMPA PILOTS, Egmont Key, Florida (NOAA-HF System)

Lat: 27° 35' 06.214" N

Long: 082° 45' 40.512" W

Transmission Rate: 100 bps

Transmission Frequency: 2774.50 KHz

Antenna Elevation: 14.0 meters

Source: NGS, established in 1981 and position confirmed by MT. MITCHELL in 1995

APPENDIX VII
Approval Sheet

Registry No. H-10606

Field operations of this survey were conducted under my supervision with frequent personal checks of progress and adequacy. This report and field sheets have been closely reviewed for accuracy pertaining to the control, collection and processing of data for this survey. The information obtained from this survey is adequate for updating the chart.

A handwritten signature in black ink, appearing to read "R. L. Parsons", written over a horizontal line.

Commander Roger L. Parsons, NOAA
Commanding Officer, NOAA Ship MT. MITCHELL



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: February 12, 1996

MARINE CENTER: Atlantic

HYDROGRAPHIC PROJECT: OPR-J343

HYDROGRAPHIC SHEET: H-10606

LOCALITY: Tampa Bay, Florida

TIME PERIOD: May 9 - August 26, 1995

TIDE STATION USED: 872-6384 Port Manatee, Tampa Bay Fl.
Lat. 27° 38.2'N Lon. 82° 33.8'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): -0.05 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.9 ft.

TIDE STATION USED: 872-6520 St. Petersburg, Fl.
Lat. 27° 45.6'N Lon. 82° 37.6'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 3.17 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.0 ft.

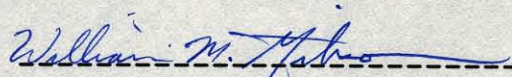


page 2 of 2 for H-10606

REMARKS: RECOMMENDED ZONING

1. Southwest of a line between Point Pinellas and Piney Point, times and heights are direct using Port Manatee, Fl. (872-6384).
2. Northeast of a line between Point Pinellas and Piney Point, apply a -15 minute correction to times and heights are direct using St. Petersburg, Fl. (872-6520).

- Notes:**
1. Times are tabulated on Greenwich Mean Time.
 2. Data for Port Manatee, Fl (872-6384) and St. Petersburg, Fl. (872-6520) are stored in temporary files #672-6384 and #672-6520 respectively.


CHIEF, DATUMS SECTION

H-10606

GEOGRAPHIC NAMES

Name on Survey	A CHART NO. 11411, 11412, 11413 B ON PREVIOUS SURVEY 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											
	BIG BAYOU	X		X								
FLORIDA (title)	X		X									2
MEXICO, GULF OF (title)	X		X									3
PORT MANATEE	X		X									4
PORT MANATEE CHANNEL	X											5
SAINT PETERSBURG	X		X									6
SAINT PETERSBURG												7
ENTRANCE CHANNEL	X											8
TAMPA BAY	X		X									9
TAMPA BAY CHANNEL -												10
CUT B	X											11
TAMPA BAY CHANNEL -												12
CUT C	X											13
TAMPA BAY CHANNEL -												14
CUT D	X											15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25

Approved:

Christopher A. Loy
Chief Geographer

NOV 15 1996

N/CS33-21-97

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU
BY (Check):

ORDINARY MAIL AIR MAIL

REGISTERED MAIL EXPRESS

GBL (Give number) _____

TO:

NOAA/National Ocean Service
Chief, Data Control Group, N/CS3x1
SSMC3, Station 6815
1315 East-West Highway
L Silver Spring, MD 20910-3282

DATE FORWARDED

April 8, 1997

NUMBER OF PACKAGES

1 Box, 1 Tube

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

H-10606

Florida, Tampa Bay, Port Manatee to Port of St Petersburg

1 Box Containing:

- 1 Original Descriptive Report for H-10606
- 1 Envelope with 2 HISTORY OF CARTOGRAPHIC WORK (NOAA form 76-71) for H-10606 for charts 11413 (inset) and 11414

1 Tube Containing:

- 1 Original Smooth Sheet for H-10606
- 2 Paper Composite plots, (1 of 2) & (2 of 2) of Survey H-10606 for NOS chart 11414
- 1 Mylar H-DRAWING of H-10606 for NOS chart 11414
- 1 Paper Composite plot, of Survey H-10606 for NOS chart 11413 (inset only)
- 1 Mylar H-DRAWING of H-10606 for NOS chart 11413 (inset)

FROM: (Signature)

Richard H. Whitfield

RECEIVED THE ABOVE

(Name, Division, Date)

Return receipted copy to:

Atlantic Hydrographic Branch N/CS331
439 W. York Street
Norfolk, VA 23510-1114

04/07/97

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H-10606

NUMBER OF CONTROL STATIONS		2
NUMBER OF POSITIONS		6327
NUMBER OF SOUNDINGS		13323
	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	125	07/11/96
VERIFICATION OF FIELD DATA	511	01/13/97
QUALITY CONTROL CHECKS	11	
EVALUATION AND ANALYSIS	55	
FINAL INSPECTION	17	03/18/97
COMPILATION	91	04/05/97
TOTAL TIME	810	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		03/27/97

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H-10606 (1995)**

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)
AutoCAD, Release 12
QUICKSURF, version 5.1
MicroStation, version 5.0
NADCON, version 2.10
I/RAS B, version 5.01

The smooth sheet was plotted using an ENCAD NovaJet III plotter.

H. CONTROL

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). 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, move the projection lines 1.112 seconds (34.22 meters or 3.42 mm at the scale of the survey) north in latitude, and 0.650 seconds (17.80 meters or 1.78 mm at the scale of the survey) east in longitude.

J. SHORELINE

Brown shoreline originates with a 1:20,000 scale inset of National Ocean Service (NOS) charts 11413 39th Ed., Sept.12/92 and a 1:80,000 scale chart 11412 35th Ed., Apr.24/93 and is shown on the smooth sheet for orientation purposes only.

L. JUNCTIONS

H-10598 (1995) to the southwest
H-10623 (1995) to the northeast

A standard junction was effected between the present survey and surveys H-10598 (1995) and H-10603 (1995).

There are no contemporary surveys to the north and south of the present survey. Present survey depths are in harmony with the charted hydrography to the north and south.

M. COMPARISON WITH PRIOR SURVEYS

A comparison of prior surveys was not done during office processing in accordance with section 4. of the memorandum titled *Changes to Hydrographic Survey Processing*, dated May 24, 1995.

The present survey is adequate to supersede the prior surveys in the common area.

**O. COMPARISON WITH CHARTS 11413 (40th Edition Jan 1/94)
11414 (35th Edition Feb 26/94)****Hydrography**

The charted hydrography originates with the previously discussed prior surveys and needs no further discussion. The hydrographer makes an adequate chart comparison with charts 11413 and 11414 in section O. of the Descriptive Report. The following should be noted:

1. The most northern of two charted private maintained yellow can buoys was located by the hydrographer in Latitude 27°39'48.85"N, Longitude 82°34'42.09"W. The second buoy charted in Latitude 27°39'05.5"N, Longitude 82°34'56.5"W was neither verified nor discussed. The hydrographer does state that there is only one yellow buoy marking bridge debris in this area. It is recommended that the southern yellow can buoy be deleted from the chart. It is also recommended that remaining yellow can buoy located by the hydrographer be revised and charted as shown on the present survey.

2. Four charted visible piles were located by the hydrographer in the following positions:

<u>Feature</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
Pile	27°38'06.94"	82°33'50.45"✓
Pile	27°38'03.71"	82°33'56.30"✓
Pile	27°37'57.85"	82°33'54.81"✓
Pile	27°37'54.35"	82°33'55.12"✓

It is recommended that the four charted visible piles be charted as shown on the present survey.

3. The charted Mile Marker in Latitude 27°42'35.8"N, Longitude 82°35'59.8"W was located by the hydrographer. No change in charting is recommended.

4. A charted visible pile in Latitude 27°40'04.5"N, Longitude 82°34'33.5"W was neither verified nor disproved by the present survey. It is recommended that the pile be revised to a submerged pile.

5. The following charted spoil areas were developed by the field unit:

<u>Feature</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
Spoil Area	27°42'10"	82°37'00"
Spoil Area	27°42'20"	82°36'16"
Spoil Area	27°41'36"	82°36'57"
Spoil Area	27°40'50"	82°36'10"
Spoil Area	27°41'30"	82°34'30"
Spoil Area	27°40'38"	82°34'45"
Spoil Area	27°39'30"	82°35'15"
Spoil Area	27°39'00"	82°34'36"
Spoil Area	27°39'00"	82°35'45"
Spoil Area	27°38'30"	82°35'05"

It is recommended that the charted limits and the notations Spoil Area be retained. It is also recommended that the blue tint be deleted within the limits of the spoil areas and depths from the present survey be charted as shown on the present survey.

6. The charted Spoil Area in the vicinity of Latitude 27°38'05"N, Longitude 82°37'00"W has been fully developed by the present survey. The spoil area was partially developed by survey H-10598 (1995). It is recommended that the charted limits and the notations Spoil Area be retained. It is also recommended that the blue tint be deleted within the limits of the spoil areas and depths from the present survey be charted as shown on the present survey.

7. The charted Spoil Area in the vicinity of Latitude 27°41'30"N, Longitude 82°33'00"W has been fully developed by the present survey. The spoil area was partially developed by survey H-10623 (1995). It is recommended that the charted limits and the notations Spoil Area be retained. It is also recommended that the blue tint be deleted within the limits of the spoil areas and depths from the present survey be charted as shown on the present survey.

P. ADEQUACY OF SURVEY

This is an adequate hydrographic/side scan sonar survey. No additional work is recommended.

Q. AIDS TO NAVIGATION

The following fixed aids to navigation were located by the field unit and are presently charted a Position Approximate (PA):

<u>Aid to Navigation</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
St Petersburg Channel Junction Light "S"	27°45'32.77"	82°36'41.33"
St Petersburg Channel Light "7"	27°45'30.99"	82°37'15.80"
St Petersburg Channel Light "11"	27°45'30.89"	82°37'33.91"
Big Bayou St Petersburg Outer Cut Light "9"	27°44'17.18"	82°36'44.21"
Point Pinellas Channel Light "6"	27°42'30.11"	82°36'34.04"
Cut C Channel Lower Range Front Light	27°40'14.15"	82°36'17.38"
Cut C Channel Lower Range Rear Light	27°39'47.76"	82°37'10.79"

S. MISCELLANEOUS

Chart compilation using the present survey was done by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland.

MT MITCHELL Processing Team

Reginald L. Keene Sr.

Reginald L. Keene Sr.
Cartographic Technician
Verification and Evaluation and Analysis

APPROVAL SHEET
H-10606

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.

Richard H. Whitfield
Richard H. Whitfield
Cartographer
Atlantic Hydrographic Branch

Date: 27 MARCH 1997

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.

Nicholas E. Perugini
Nicholas E. Perugini, CDR, NOAA
Chief, Atlantic Hydrographic Branch

Date: March 27, 1997

Final Approval:

Approved: Andrew A. Armstrong III
Andrew A. Armstrong III
Captain, NOAA
Chief, Hydrographic Surveys Division

Date: Apr ²⁸ 1997

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10606

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
11413	4/3/97	<i>[Signature]</i>	Full Part Before After Marine Center Approval Signed Via <i>INSET</i> Drawing No.
11414	4/3/97	<i>[Signature]</i>	Full Part Before After Marine Center Approval Signed Via Drawing No.
11417B	5/27/97	<i>[Signature]</i>	Full Part Before After Marine Center Approval Signed Via Drawing No.
11417A	6/3/97	<i>[Signature]</i>	Full Part Before After Marine Center Approval Signed Via Drawing No.
11412	7/29/97	<i>[Signature]</i>	Full Part Before After Marine Center Approval Signed Via Drawing No.
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