

10406

Diagram No. 1284-2

NOAA FORM 78-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. AHP2-10-16-91
Registry No. H-10406

LOCALITY

State Texas
General Locality Matagorda Bay
Sublocality Halfmoon Reef & Vicinity

1991-92

CHIEF OF PARTY
LT T.R. Waddington

LIBRARY & ARCHIVES

DATE April 27, 1993

10406

EC/G

PRODUCTS

11317

11319 'B'

11316

CP5

11300-NC

HYDROGRAPHIC TITLE SHEET

H-10406

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.

AHP2 10-16-91

State Texas

General locality Matagorda Bay

Locality Halfmoon Reef and Vicinity

Scale 1:10,000 Date of survey Oct. 14, 1991-Jan. 3, 1992

Instructions dated March 1, 1991 Project No. OPR-K228-AHP2

Vessel Launch 0517

Chief of party Lt. Thomas R. Waddington

Surveyed by AHP2-1, M. McMann, M. Mangual, C. Miller, J. Budlong

Soundings taken by echo sounder, hand lead, pole Innerspace Model 448

Graphic record scaled by MJM, MM, CBM, JLB

Graphic record checked by MJM, MM, CBM, JBL

Verification by: I. Almacen Automated plot by PHS Xynetics Plotter

Evaluation by: I. Almacen

Verification by: I. Almacen

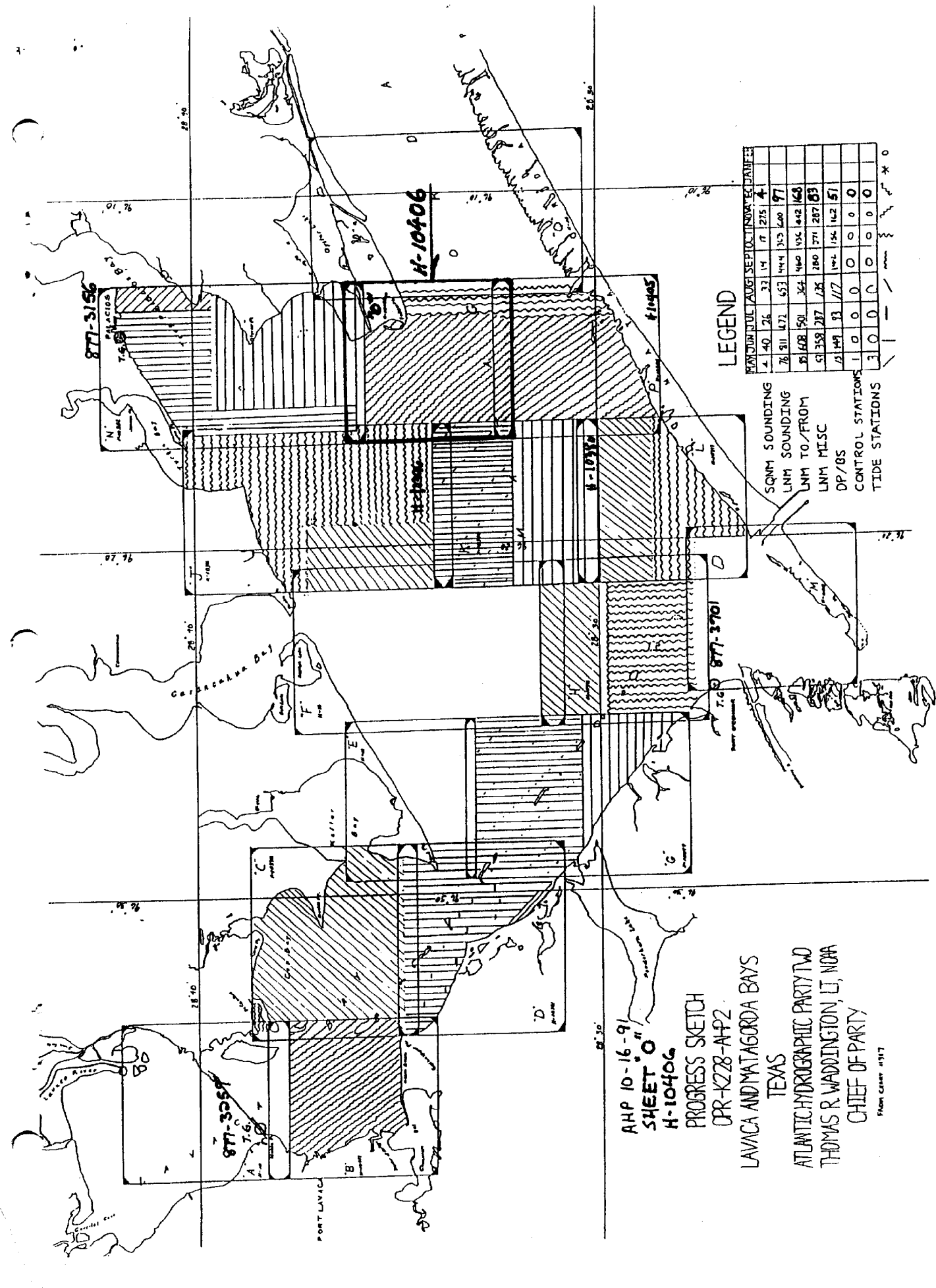
Soundings in Meters

Soundings in ~~fathoms~~ feet at MSL MLLW and Decimeters

REMARKS: Time in UTC. Revisions and marginal notes in black were generated during office processing. Some separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

AWS/SURP ✓ 6/25/93 SJV

*SA 1-6-97
XWW 7/30/99*



LEGEND

PLAN	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
4	40	26	37	14	7	275	4	
76	911	471	653	444	303	600	97	
51	168	50	364	460	106	442	163	
51	358	217	135	280	271	287	83	
12	149	93	177	144	154	162	51	
1	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	

SQNM SOUNDING
 LNM SOUNDING
 LNM TO/FROM
 LNM MISC
 DP/BS
 CONTROL STATIONS
 TIDE STATIONS

AHP 10-16-91
 SHEET 0
 H-10406
 PROGRESS SKETCH
 OPR-K228-APP2
 LAVACA AND MATAGORDA BAYS
 TEXAS
 ATLANTIC HYDROGRAPHIC PARTY TWO
 THOMAS R WASHINGTON, LT, NOAA
 CHIEF OF PARTY
 FROM CHART 1117

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10406
FIELD NO. AHP2-10-16-91
SCALE: 1:10,000
1991-1992
ATLANTIC HYDROGRAPHIC PARTY TWO
CHIEF OF PARTY: Lt. Thomas R. Waddington

A. PROJECT

This survey was conducted in accordance with Hydrographic Project Instructions OPR-K228-AHP2, Matagorda and Lavaca Bays, Texas, dated March 01, 1991 and amended by Change No. 1 dated June 4, 1991, Change No. 2 dated July 11, 1991, and Change No. 3 dated August 15, 1991. ✓

The purpose of project OPR-K228-AHP2 is to provide contemporary hydrography for the maintenance of existing charts. Prior surveys in this area were conducted in 1934-35.

The sheet letter is "O" as specified by the project instructions.

B. AREA SURVEYED - See Eval Rpt, Section 1

The area surveyed for H-10406 covers the east central portion of Matagorda Bay. The survey limits are as follows:

North - Latitude 28°36'37"N
South - Latitude 28°32'17"N
East - Longitude 096°12'25"W
West - Longitude 096°17'00"W ✓

This survey was conducted from October 14, 1991 (DN 287) to January 3, 1992 (DN 003).

C. SURVEY VESSELS

Vessel 0517 (EDP No. 0517) a 21-foot MonArk was the sounding vessel used to collect all survey data. The outboard engine was replaced on this vessel on October 23, 1991, DN 296. Vessel 0519 was used as the second vessel in a two boat chain drag on January 3, 1992, DN 003. There were no other unusual vessel configurations nor problems encountered.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

The Hydrographic Data Acquisition and Processing System (HDAPS) was used to process all hydrographic data for this survey. Version 3.6 of the PC-DAS suite of programs was used for on-line data acquisition on the survey vessel. Listings of version numbers for the various HP-DPS programs used for all data processing are provided in the Appendix VI.* In addition to the HDAPS, the following non-HDAPS computer programs were used:

VELOCITY (IBM PC)	Ver. 1.11 (3/9/90)
MTEN 3 with enhancements (IBM PC)	Ver. 6/88
NADCON (IBM PC)	Ver. 1.01
WORDPERFECT (IBM PC)	Ver. 5.1

E. SONAR EQUIPMENT

Not Applicable.

F. SOUNDING EQUIPMENT

An Innerspace model 448 depth sounder, serial number 187 was used to collect all echo soundings on this survey.

A standard lead line calibrated in meters, serial number 0517, was used during this survey for comparison readings with the echo sounder. A 5 meter long, wooden sounding pole, constructed according to HSG. No. 69, was used to obtain all pole soundings.

No major problems were encountered with the depth sounder used on vessel 0517, except its inability to digitize depths less than 0.5 meter. Due to the many shallow areas throughout this survey, pole soundings were taken in areas less than 0.5 meter deep to verify the shoreline.

Depths on this survey ranged from 0.¹/₂ to 6.⁶/₇ meters.

G. CORRECTIONS TO SOUNDINGS

Soundings were recorded in meters. The Innerspace 448 depth sounder is adjusted for an assumed speed of sound through water of 1500 meters/second. Corrections for the speed of sound through water were computed from data obtained with Odom Hydrographic Systems, Inc. DIGIBAR electronic speed of sound probe serial numbers 154 and 155. Data quality assurance tests were performed prior to each cast. Program "Velocity" version 1.11 was used to compute speed of sound corrections. Copies of the tables and velocity cast data are in the "Separates" to be Included With Survey Data".

The following speed of sound casts were taken during the survey.

<u>Table Applied</u>	<u>Day</u>	<u>Cast Depth Meters</u>	<u>Location NAD 1983</u>	<u>Days Used</u>
	282	3	28°32'00"N 96°16'40"W	not used
1	290	4	28°33'00"N 96°12'45"W	287-291
2	309	4	28°35'50"N 96°16'45"W	309-003
3	325	4	28°30'15"N 96°20'00"W	not used
4	338	6	28°35'48"N 96°34'00"N	not used

Not outside the survey limits.

Not outside the survey limits.

The Innerspace 448 depth sounder is semi-automated and does not need adjustments of the tide and draft and speed of sound. Any required adjustments of the gain and chart speed were made and noted on the echogram. The digitized soundings matched the Innerspace 448 echo sounder's trace to plus or minus 0.1 meter. Any necessary corrections were made during scanning of the echogram.

To expedite the plotting of all pole soundings with the HDAPS, a negative draft correction of 0.3 meter was applied to all pole soundings during scanning of the echograms to negate the draft corrector which is automatically applied by the plotting routine. On vessel 0517, the settlement and squat correction when the pole soundings were taken was always zero. The speed of sound through water correction is zero at these depths. These depths were added to the logged records during editing and then plotted as digitized soundings with the rest of the data.

Weather permitting, lead line comparisons were conducted each day of hydrography to determine an instrument corrector. No instrument error was detected from these comparisons. The lead line comparison form can be found in the ^{*}"Separates to be Included With Survey Data".

A static draft of 0.3 meter was applied to the on-line data. The draft was determined by first measuring the distance from a punch mark on the side of launch 0517, 0.6 meters above the transducer, down to the water surface. This distance was then subtracted from the 0.6 m punch mark height to obtain the static draft.

** Filed with the hydrographic data.*

Settlement and squat measurements for vessel 0517 were performed on October 4, 1990 (DN 277), at the Rockport Beach, Rockport, Texas, using the NOS prescribed level rod method with Zeiss level S/N 08754). Due to the replacement of the outboard engine on vessel 0517 new settlement and squat measurements were performed on October 31, 1991 (DN 304), at Tres Palacios Bay, Palacios, Texas using Zeiss level S/N 08754. Settlement and squat correctors and the static draft corrector were applied on-line through the offset tables. Copies of the field data, the graphs of the settlement and squat correctors vs. RPM, and the offset tables are included in the "Separates to be Included With Survey Data".*

The final field sheet was plotted using predicted tides determined from the Port O'Connor, Texas tide station, number 877-3701, using time and height correctors listed in the project instructions for the east side of Matagorda Bay (+1 hr 0 min time correction and X1.11 range ratio).

The final field sheet was plotted after the HDAPS "Reapply" program had been used to log the proper depth correctors (from the tide table, velocity table, and offset table) to each data record.

Approved tides were requested from the Sea and Lake Levels Branch, N/OMA1212, in a letter dated January 13, 1992. A copy of the letter is included in Appendix V of this report.*

Survey records were scanned by AHP-2 employees in accordance with the Hydrographic Manual. With the digital reading taking precedence over the analog trace, significant peaks and deeps which occurred between selected soundings, missed depths, incorrectly digitized soundings, and the effects of sea and swell action were inserted or corrected, as appropriate, while scanning.

H. CONTROL STATIONS (See EVAL RPT., Section 2)

The horizontal control datum for this project is the North American Datum of 1983. Five stations were used to control this survey. A copy of the HDAPS Control Station Table is included ~~in the Appendix III of~~ this report.

The Coastal Surveys Unit from Norfolk, Virginia used the Global Positioning System (GPS) to establish horizontal control for this project. The horizontal control report titled "Matagorda Bay and Approaches Texas, GPS Survey, R. W. Daniel, Chief of Party. March 1991", was written and submitted by the Coastal Surveys Unit for OPR-K228-AHP.

I. HYDROGRAPHIC POSITION CONTROL

Hydrographic position control was accomplished using the Motorola Mini-Ranger Falcon 484 system which provided accuracy to meet 1:10,000 scale survey requirements. Range/range positioning

with three and four lines of position were used during this project. The following Falcon Mini-Ranger equipment was used:

<u>VESNO</u>	<u>Equipment</u>	<u>S/N</u>	<u>Code</u>
0517	RPU	F0241	
	RT	E2919	
	R/S	C2075	A
	R/S	F3290	E
	R/S	G3572	D
	R/S	F3293	1
	R/S	F3237	8

Baseline calibrations were performed as specified in the Field Procedures Manual on August 28 (DN 240), August 29 (DN 241), September 19 (DN 262), and October 11 (DN 284). The baseline values were incorporated into the survey computer "C-0" table and applied directly to all on-line data. Baseline calibration forms and the "C-0" tables are included in the "Separates to be Included With Survey Data" of this report.* A closing baseline calibration was not performed since the survey was conducted in less than a six month period from the opening baseline.

When using three or four lines of position, the error circle radius (ECR) and the residual values computed by the survey computer provide a critical system check each second. When the ECR is greater than 15 meters (1.5m at the survey scale) or the residuals are greater than 5 meters (0.5m at the survey scale) for more than three minutes, survey operations are suspended in the area until the problem can be resolved. Position data exceeding the 1:10,000 scale specifications were edited.

Periodically, the residual values were greater than 5 meters or error circle radius values were greater than 15 meters, yet the trackline plot showed that the position of the survey vessel was realistic. In those instances, the data were considered adequate and were plotted without smoothing on the final field sheet.

An occasional problem was encountered when an apparently good position plotted un-realistically on the raw trackplot. This problem is attributable to the survey computer's inability to immediately compute an accurate position after an extended period of questionable Falcon data. These positions were rejected, smoothed, or recomputed using the point computation routine.

* Filed with the hydrographic data.

See EVAL
RPT. Sm. 2

J. SHORELINE (See EVAL RPT., Section 2)

Shoreline shown on the final field sheet was transferred by hand from TP-01645. The shoreline manuscript was compiled on NAD 1983 at 1:20,000 scale and was enlarged to 1:10,000 scale for use with this survey.

Shoreline verification was accomplished by comparison of the main scheme hydrography which junctions at shore, detached positions, or by visual inspections. Verified shoreline is shown in black ink on the final field sheet. No changes to the shoreline shown on TP-01645 were noted during this survey. Charted shoreline should be superseded by shoreline from TP-01645. ✓

Field notes are located on the graphic records. No sounding volumes or notebooks were used. A complete list of all detached positions by day, generated through the HDAPS Detached Position Editor is included in the accordion file. It lists the feature or item number, and position.

K. CROSSLINES

A total of 39.0 linear nautical miles of crosslines were run on H-10406 which equals 12% of the main scheme hydrography. Cross line soundings agree to within 0.8² meter of the main scheme soundings *after application of approved tides.* ✓

L. JUNCTIONS

This survey junctions with H-10382, sheet "N" (1991) to the north, with H-10380, sheet "K" (1991) and H-10396, sheet "J" (1991) to the west, and with H-10405, sheet "P" (1991) to the south. This survey will also junction with H-10414, sheet "Q" to the east, scheduled to be completed in April 1992. See EVAL RPT. Sec. 5

Junction soundings between the present survey and H-10396 are good with differences 0.4² meter* or less. Junction soundings between this survey and H-10382 agree well, with soundings within 0.4² meter*. This survey and H-10380 also junction well with sounding agreement within 0.4² meter*. This survey and H-10405 sounding agreement is excellent, with differences 0.2 meter or less. These differences are attributable to the use of different vessels and the predicted tide anomalies in this area. See the comments made in section R, "Miscellaneous", of this report about these predicted tide anomalies. * *after application of actual tides.*

M. COMPARISON WITH PRIOR SURVEYS

This survey was compared with prior survey H-5866 (1934-35) 1:20,000.

Only AWOIS item number 5485 originates from the prior survey. All AWOIS items are discussed completely on item investigation reports found in the "Separates to be Included With Survey Data". (Attached to this report) ✓

H-5866 agrees well with this survey, with current soundings generally within 0.3³ meter of prior survey soundings. The only significant changes are the depths over Halfmoon Reef, which have increased significantly. Depths on the prior survey were as shallow as 0.5 foot; least depths* over Halfmoon Reef on the current survey were 1.7³ meters corrected by ^{depths} predicted tides. These differences are discussed further in section "N" of this report. This general trend can be explained by the gradual erosion of the reef.* (Depth range from 1.3 to 2.0 meters, corrected for approved tides) See EVAL RPT Sec. 6

There are only slight shoreline changes in the area between Hotel Point and Palacios Point. The T-map is correct in this area. See EVAL RPT, Sec 2

N. COMPARISON WITH THE CHART (See EVAL RPT, Sec 7.)

Comparisons were made with the following charts of the area:

<u>Chart No.</u>	<u>Edition</u>	<u>Edition Date</u>
11316	33rd	January 19, 1991
11317	20th	March 23, 1991
11319	22nd	February 10, 1990

 ✓

In addition to the item originating from a prior survey, nine AWOIS items, numbers 5420, 5421, 5422, 5423, 5424, 5486, 5495, 5498, and 5499, from other sources were addressed on this survey. These are discussed on the item investigation report forms found in the "Separates to be Included With Survey Data". (Attached to this report)

No dangers to navigation were identified on this survey. Concur.

General sounding comparison results are the same as those discussed in section M "Comparison with Prior Surveys" of this report. Concur.

All charted and discovered shoal areas within the limits of the survey were developed by running reduced line spacing splits of the main scheme, except for shoals in the active spoil area. The present soundings are adequate to supersede charted soundings within the common areas. Concur. ✓

Discrepancies with the chart are as follows:

A platform charted at latitude 28° 36' 12.5"N, longitude 096° 16' 36.0"W (position scaled from chart 11317) was investigated on Dec. 10, 1991, DN 344, by a 50 meter radius chain drag using 50 feet of line and 60 feet of chain and nothing was found. The hydrographer recommends removing the platform symbol from charts 11316 and 11317. *CONCUR.*

A discontinued spoil area charted in the vicinity of latitude 28° 32' 30"N, longitude 096° 13' 30"W and northwest portions of the adjacent active spoil areas which were reported discontinued by the U.S. Army Corps of Engineers, Area Engineer, were developed with hydrography at no greater than fifty-meter line spacing, perpendicular to the main scheme. These soundings agree well with the soundings outside of the limits of the discontinued spoil area. The hydrographer recommends that the present survey soundings be charted and the discontinued spoil area limits and label be removed from charts 11316, 11317, and 11319. A chartlet marking the active spoil areas in the Intracoastal Waterway south of Palacios Point submitted by Mr. Johnny Rozsypal, Area Engineer, Fort Point Area Office, Galveston, TX (Tel. No. 409-765-8828) is included in ~~the Appendix VI.~~ *See ENCL. PPT. Sec. 7* The limits of the adjacent active spoil areas should be corrected to agree with the chartlet and the present survey soundings in the discontinued sections of the active spoil areas should be charted.

Three small shoals, listed in the table below, were found while running main scheme hydrography for this survey.

Latitude(N)	Longitude(W)	Least Depth in D.O.W.*	Charted Depth in S.A.O.S.**
28° 35' 12"	096° 15' 55"	2.8m in 3.7m	10' (3.0m)
28° 36' 03"	096° 15' 25"	2.8m in 3.8m	9' (2.7m)
28° 35' 28"	096° 14' 48"	2.7m in 3.2m	7'-9' (2.1-2.7m)

*D.O.W.-Depth of Water (immediate area) **S.A.O.S.-Surrounding Area of Shoal (general area)

All of these shoals were developed by running 25-meter splits of the main scheme to better delineate the extent of the shoals and to find the least depth. The hydrographer believes that all of these shoals were created by the drilling companies dumping shell to provide a solid foundation for drilling rigs. This technique is used on soft mud bottoms. Representative soundings from these shoals should be charted. These shoals were not considered dangers to navigation because the least depths agreed well with depths currently charted in these areas, as shown in the table above. *CONCUR.*

The Palacios Channel is marked with only one line of fixed aids along the east side of the channel. A fixed aids line, an

approximate center line, and an approximate west side channel line were run. Main scheme lines crossing the channel were also run. The channel is scheduled to be dredged in the near future per conversation with Mr. Frank Garcia, Corps of Engineers (Tel. No. 409-766-3954). The soundings obtained by this survey are consistent with or deeper than the charted controlling depths found on charts 11316 and 11317. *CONCUR.* ✓

The portion of the Intracoastal Waterway which falls within this survey is marked with only one line of buoys along the east side of the channel. A buoy line, a range center line, and an approximate west side channel line were run. Main scheme lines crossing the channel were also run. The soundings obtained by this survey are consistent with or deeper than the charted project depth found on charts 11316, 11317, and 11319. *CONCUR* ✓

The charted depths on Halfmoon Reef are as much as 1.6⁵ meters shoaler than the current survey depths. The charted three foot (approximately one meter) depth curve would no longer exist due to the deepening of this reef. One charted 0.5 foot sounding and all charted one foot soundings in this area were developed with 25 meter splits to the main scheme to disprove these shoal soundings; no indications of spikes or further shoaling were found. The current survey indicates the length of the charted shoal is correct, but its width and height have diminished. The hydrographer recommends charting the current soundings in this area. *CONCUR.*

A one foot sounding charted 1000 meters NE of Hotel Point at latitude 28° 36' 35"N, longitude 096° 13' 40"W, was investigated with 50 meter splits in both directions and no indication of a shoal was found. The hydrographer recommends removal of this sounding from the chart. *CONCUR.*

A charted uncovering shoal in the vicinity of latitude 28° 35' 40"N, longitude 096° 14 05"W, was not found during main scheme hydrography. Additionally, 50 meter splits perpendicular to the main scheme were also run, and again no shoaling was evident. The hydrographer recommends removal of this shoal from the chart. *CONCUR.*

O. ADEQUACY OF SURVEY

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

P. AIDS TO NAVIGATION

Seven (including Halfmoon Reef Light 2 and Palacios Channel Light 26)
There are ~~five~~ fixed aids to navigation in the survey area. One is located along the Palacios Channel and four in the Palacios Point dump. All fixed aids to navigation were located by detached

positions taken on days 287 and 290. These fixed aids were compared to the U. S. Coast Guard Light List, Volume IV, 1991. These fixed aids were found as described in the light list and are serving their intended purposes. No positions were listed in the light list for these aids. Disagreements between the charted positions and the survey positions were found (see listing below). Chief Gary Heater, Aids to Navigation Team, Port O'Connor, Texas (Tel. No. 512-983-4313) informed the hydrographer that in October 1989 a change to most aids to navigation in the Palacios channel occurred. Locations and numbers were changed and some new aids were added. The old structures were completely removed by the U.S.C.G. ✓

Chief Heater also informed the hydrographer that the fixed aids in the Palacios Point dump had been destroyed during the previous year and were relocated. The U. S. Coast Guard vessel ANVIL performed a thorough bottom drag of the area searching for the pile remains, but found nothing. The survey positions of the relocated aids were reported to Chief Gary Heater, via a copy of a portion of section P of this Descriptive Report identified as "Advance Information Subject to Office Review". The hydrographer recommends charting these fixed aids to navigation at the survey positions and deleting the currently charted structures. *CONCAT.* ✓

<u>Daybeacon</u>	<u>Survey Position</u>	<u>Dist. to Charted Pos.</u>	<u>Pos. No.</u>	<u>Light List #</u>
28	28° 36' 30.0"N ✓ 096° 16' 27.8"W ✓	100 m E	26	34683
1	28° 33' 26.1"N ✓ 096° 12' 45.7"W ✓	170 m SE	225	34480
2	28° 33' 34.0"N ✓ 096° 12' 39.9"W ✓	150 m SE	224	34485 ✓
3	28° 33' 33.5"N ✓ 096° 13' 00.2"W ✓	50 m NW	222	34490
4	28° 33' 41.3"N ✓ 096° 12' 54.7"W ✓	30 m NW	223	34495

These surveyed positions to be charted, were reported on NOAA form 76-40, using the hydrographic detached position. A copy of the form is included in Appendix II of this report. *(Attached to this report.)*

7 **

There are 6 floating aids to navigation in the survey area, all located along the Intracoastal Waterway. None of the charted positions agree with the survey positions for the floating aids. The disagreements between the charted and survey positions are shown in the table below. Chief Gary Heater, Aids to Navigation ✓

* Filed with the hydrographic data.
 ** "WRAA" plots approximately one nautical mile south of Palacios Point.

Team, Port O'Connor, Texas (Tel. No. 512-983-4313) informed the hydrographer that these buoys are constantly being destroyed and that they had been replaced and repositioned during the previous year. These buoys were found as described in the U. S. Coast Guard Light List, Volume IV, 1991 and are serving their intended purposes. Only one position is listed in the light list (buoy "33") and it does not agree with the survey position. Buoy "37" was located by detached position on sheet "P", H-10405, OPR-K228-AHP2-91. This buoy was later found to be off the limits of sheet "P" and is plotted on this survey using the position data obtained by launch 0519 for survey H-10405. The hydrographer recommends that the floating aids to navigation shown in the table below, be re-charted at the survey positions. These positions are listed on the "Carto" program table printouts, stored in the cahier for H-10406. Field records regarding buoy "37" were retained as part of H-10405. ✓

<u>BUOY</u>	<u>Dist to Charted Pos.</u>	<u>L.L. No.</u>
"WR4A"		
GC 27	220 m SW	34500
GC 29	225 m SW	34505
GC 31	230 m SW	34510
GC 33	335 m SW	34515
GC 35	410 m SW	34520
GC 37 (Sec H-10405)	450 m SW	34525

A wreck marked by a temporary lighted buoy, "WR4A", was located by detached position number 1689 on DN 330 at latitude 28°34'25.2"N, longitude 096°13'56.1"W. Discussion with Chief Gary Heater revealed that this wreck is a 35 foot fishing vessel with the stern exposed and was originally reported in Local Notice to Mariners number 2591 dated June 18, 1991. The Coast Guard has sent wreck hazard file number 11091 to the U.S. Army Corp of Engineers and requested that this wreck be removed. The hydrographer recommends the buoy be charted until the Coast Guard reports the removal of this wreck in the Local Notice to Mariners. *Concur.* ✓

There are no submarine cables, overhead cables, bridges, ferry routes, or overhead pipelines within the limits of this survey. See EVAL RPT, Sec 7(d)

There are no apparent submerged pipelines within the survey area. No submerged pipeline signs were found. Mr. Alan Taylor, Pipeline Technologist, Dow Pipeline Co., informed the hydrographer that all their pipelines are buried under the bottom. The hydrographer recommends that the "caution" note remain as charted. See EVAL RPT Sec. 7f

No landmarks are located within the survey area. *Concur.* ✓

Q. STATISTICS

<u>Description</u>	<u>517</u>
Total Number of Positions	2255
Total Linear Nautical Miles of Hydrography	284.6
Square Nautical Miles of Hydrography	15
Days of Production	20
Detached Positions	14
Bottom Samples	51
Tide Stations	3
Velocity Casts	5
Duplicated Positions	9

R. MISCELLANEOUS

No significant current conditions were observed while conducting this survey. ✓

Fifty-one bottom samples were taken and submitted to the Smithsonian Institution on October 22, 1991, as directed in section 6.7 of the project instructions. Bottom sample positions are plotted on the overlay and are listed on the Oceanographic Log Sheet-M, NOAA Form 75-44, which may be found in the*"Separates to be Included With Survey Data". ✓

There were predicted tide anomalies caused by wind conditions observed during this survey. These caused depths on adjacent sounding lines to differ. Application of actual tide heights will resolve these differences. *Application of approved tides improved comparison in most areas of the survey.* ✓

Position numbers were duplicated nine times during this survey. When an on-line "system crash" occurs no position number is assigned at the end of that line. When survey operations are resumed the beginning fix number is sometimes duplicated. ✓

All chain drag data was track plotted on page sized sheets* and included with the AWOIS item investigation forms to show the area covered by the chain drag. All chain drag data has been checked and edited for bad positional data and labeled "NOT FOR SMOOTH PLOT." ✓

The ASSIGN FIX program was used to assign position numbers to the beginning or ending of a line as needed. ✓

* Filed with the hydrographic data.

S. RECOMMENDATIONS

Specific recommendations concerning this survey are made in sections "J", "N", and "P" of this report. No inadequacies, additional work, nor further investigations were identified after field work was completed. ✓

T. REFERRAL TO REPORTS

<u>Title</u>	<u>Transmittal Information</u>
Descriptive Report to Accompany Survey H-10380	Pacific Hydrographic Section N/CG245 Seattle, WA, (1991)
Descriptive Report to Accompany Survey H-10382	Pacific Hydrographic Section N/CG245 Seattle, WA, (1991)
Descriptive Report to Accompany Survey H-10396	Pacific Hydrographic Section N/CG245 Seattle, WA, (1991)
Descriptive Report to Accompany Survey H-10405	Pacific Hydrographic Section N/CG245 Seattle, WA, (1991)
Horizontal Control Report for OPR-K228-AHP2	Field Photogrammetry Section Norfolk, VA (N/CG23322)(1991) ✓
Chart Sales Agent Report for OPR-K228-AHP2	Chart Distribution Branch (N/CG33) Rockville, MD (1992)
User Evaluation Report OPR-K228-AHP2	Atlantic Hydrographic Section (N/CG244) Norfolk, VA (1992)
Chart Inspection Report OPR-K228-AHP2	Atlantic Hydrographic Section (N/CG244) Norfolk, VA (1992)
Coast Pilot Report	Pacific Hydrographic Section N/CG245 Seattle, WA (1992)

Submitted by: Mark J. McMann, Launch Hydrographer-in-Charge

CONTROL STATIONS as of 14 Oct 1991

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name
001	F	028:39:08.751	096:33:48.617	0	250	0.0	0.0		05/08/91	ALCOA 1990
002	F	028:40:17.831	096:38:14.547	0	250	0.0	0.0		05/08/91	BLUF 1990
003	F	028:39:44.601	096:34:56.482	0	250	0.0	0.0		05/08/91	CAUS 1990
004	F	028:34:59.694	096:36:29.910	0	250	0.0	0.0		05/08/91	CHOC 1990
005	F	028:33:23.435	096:31:27.214	0	250	0.0	0.0		05/08/91	INDI 1990
006	F	028:30:25.466	096:28:47.523	0	250	0.0	0.0		05/08/91	IOLA 1990
007	F	028:41:53.224	096:34:34.009	0	250	0.0	0.0		05/08/91	LAVACA RIVER LIGHT 3
008	F	028:34:07.669	096:33:55.899	0	250	0.0	0.0		05/08/91	MAGNOLIA 1934
009	F	028:35:58.914	096:34:14.621	0	250	0.0	0.0		05/08/91	MATAGORDA SHIP CH RNG C FRT LT
010	F	028:36:35.747	096:35:07.085	0	250	0.0	0.0		05/08/91	MATAGORDA SHIP CH RNG C R LT
011	F	028:35:46.233	096:34:02.389	0	250	0.0	0.0		05/08/91	MATAGORDA SHIP CH RNG D FRT LT
012	F	028:35:26.693	096:34:02.932	0	250	0.0	0.0		05/08/91	MATAGORDA SHIP CH RNG D R LT
013	F	028:38:45.466	096:33:40.337	0	250	0.0	0.0		05/08/91	MITCHELL 2 1956
014	F	028:38:23.410	096:36:38.092	0	250	0.0	0.0		05/08/91	NOLE 1990
015	F	028:39:26.181	096:35:09.366	0	250	0.0	0.0		05/08/91	PIER PK 1990
016	F	028:36:57.750	096:30:48.191	0	250	0.0	0.0		05/08/91	RHOD 1990
017	F	028:34:12.754	096:29:19.105	0	250	0.0	0.0		05/08/91	SAND 1990
018	F	028:43:17.941	096:36:36.066	0	250	0.0	0.0		05/08/91	VEDO 1990
019	F	028:38:37.047	096:33:47.871	0	250	0.0	0.0		05/08/91	ZEPP 1989
020	F	028:26:10.961	096:20:01.576	0	250	0.0	0.0		05/08/91	TEMP 01
021	F	028:27:39.775	096:17:46.171	0	250	0.0	0.0		05/08/91	USGOOD 2 1906
022	F	028:35:28.457	096:11:22.074	0	250	0.0	0.0		05/08/91	LAKE 2 1906
023	F	028:40:34.424	096:16:14.008	0	250	0.0	0.0		05/08/91	TURT 1991 ✓
024	F	028:36:26.852	096:24:20.045	0	250	0.0	0.0		05/08/91	DUNG 1991
025	F	028:35:13.034	096:26:49.244	0	250	0.0	0.0		05/08/91	VACA 1991
026	F	028:23:56.881	096:24:25.772	0	250	0.0	0.0		05/08/91	RUIN 1991
027	F	028:32:20.570	096:18:44.040	0	250	0.0	0.0		05/08/91	PLAT PK 1991
028	F	028:41:52.040	096:12:37.978	0	250	0.0	0.0		05/08/91	PALA 1991
029	F	028:38:33.081	096:14:06.706	0	250	0.0	0.0		05/08/91	INDY 1991
030	F	028:35:08.621	096:17:11.587	0	250	0.0	0.0		05/08/91	CHAN PK 1991 ✓
031	F	028:34:45.981	096:13:33.884	0	250	0.0	0.0		05/08/91	EROD 1991 ✓
032	F	028:36:02.270	096:14:05.710	0	250	0.0	0.0		05/08/91	BULL 1991
033	F	028:26:58.572	096:24:12.880	0	250	0.0	0.0		05/08/91	EARL 1991
034	F	028:27:04.927	096:24:15.671	0	250	0.0	0.0		05/08/91	3701 E 1989
035	F	028:26:44.591	096:23:42.325	0	250	0.0	0.0		05/08/91	IW MB PORT D CONNOR LT 2
036	F	028:27:29.804	096:21:39.302	0	250	0.0	0.0		05/08/91	MATAGORDA SHIP CH N DREDGE LT
037	F	028:27:15.806	096:21:29.031	0	250	0.0	0.0		05/08/91	MATAGORDA SHIP CH S DREDGE LT
038	F	028:26:50.318	096:25:20.875	0	250	0.0	0.0		05/08/91	PORT D CONNOR MUN TANK
039	F	028:28:50.457	096:17:17.626	0	250	0.0	0.0		05/08/91	MATAGORDA BAY RANGE L REAR LT
040	F	028:28:23.778	096:18:36.611	0	250	0.0	0.0		05/08/91	MATAGORDA BAY RANGE L FRONT LT
041	F	028:27:50.191	096:19:46.085	0	250	0.0	0.0		05/08/91	MATAGORDA BAY RANGE K FRONT LT
042	F	028:27:02.189	096:21:02.812	0	250	0.0	0.0		05/08/91	MATAGORDA BAY RANGE K REAR LT
043	F	028:27:01.247	096:21:11.033	0	250	0.0	0.0		05/08/91	MATAGORDA BAY RANGE A REAR LT
044	F	028:26:33.966	096:20:41.967	0	250	0.0	0.0		05/08/91	MATAGORDA BAY RANGE A FRONT LT
045	F	028:26:27.482	096:26:34.785	0	250	0.0	0.0		05/08/91	PORT D CONNOR CABLE TV MAST
046	F	028:25:18.494	096:19:05.925	0	250	0.0	0.0		05/08/91	MATAGORDA BAY RANGE B REAR LT
047	F	028:25:50.351	096:20:07.985	0	250	0.0	0.0		05/08/91	MATA 1934
048	F	028:25:40.634	096:19:37.260	0	250	0.0	0.0		05/08/91	MATAGORDA BAY RANGE B FRONT LT
049	F	028:29:45.812	096:15:16.338	0	250	0.0	0.0		05/08/91	MATAGORDA BAY RANGE H REAR LT 1991 ✓
050	F	028:38:33.045	096:19:19.991	0	250	0.0	0.0		05/08/91	TRULL SAT 1989 ✓
051	F	028:43:28.301	096:15:09.749	0	250	0.0	0.0		05/08/91	PALAPORT
052	F	028:28:36.298	096:15:07.070	0	250	0.0	0.0		05/08/91	SMYTH SAT
053	F	028:30:56.831	096:10:21.410	0	250	0.0	0.0		05/08/91	POE 1934
054	F	028:39:16.001	096:13:41.524	0	250	0.0	0.0		05/24/91	COGN 1991

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

TO BE CHARTED
 TO BE REVISED
 TO BE DELETED

REPORTING UNIT
(Field Party, Ship or Office)

STATE

LOCALITY

DATE

- ORIGINATING ACTIVITY
- HYDROGRAPHIC PARTY
 - GEODETIC PARTY
 - PHOTO FIELD PARTY
 - COMPILATION ACTIVITY
 - FINAL REVIEWER
 - QUALITY CONTROL & REVIEW GRP.
 - COAST PILOT BRANCH

(See reverse for responsible personnel)

The following objects HAVE HAVE NOT been inspected from seaward to determine their value as landmarks.
OPR PROJECT NO. K228-AHP2 SURVEY NUMBER. H-10406 DATUM NAD 1983

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses.)	LATITUDE		LONGITUDE		METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED
		° /	'	° /	'	OFFICE	FIELD	
Daybeacon	Palacios Channel Daybeacon 28 (U.S.C.G. 1991 L.L. #34683)	28	36	96	16		Hydrographic Detached Pos	11316 11317
Daybeacon	Palacios Pt. Dump Dbn 1 (U.S.C.G. 1991 L.L. #34480)	28	33	96	12		Hydrographic Detached Pos	11316 11317 11319
Daybeacon	Palacios Pt. Dump Dbn 2 (U.S.C.G. 1991 L.L. #34485)	28	33	96	12		Hydrographic Detached Pos	11317 11316 11319
Daybeacon	Palacios Pt. Dump Dbn 3 (U.S.C.G. 1991 L.L. #34490)	28	33	96	13		Hydrographic Detached Pos	11316 11317 11319
Daybeacon	Palacios Pt. Dump Dbn 4 (U.S.C.G. 1991 L.L. #34495)	28	33	96	12		Hydrographic Detached Pos	11316 11317 11319

prev ref
L-118(92)

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	Mark J. McMann
POSITIONS DETERMINED AND/OR VERIFIED	Brian A. Link
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'
(Consult Photogrammetric Instructions No. 64.)

OFFICE	FIELD (Cont'd)
<p>I. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75</p>	<p>B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982</p>
<p>FIELD</p> <p>I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection</p> <p>A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75</p> <p>*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</p>	<p>II. TRIANGULATION STATION RECOVERED When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75</p> <p>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75</p> <p>**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</p>

AWOIS NO: 5420,5421

Item Description: SUNKEN BARGE

Source: CL1533/75--USPS

AWOIS Position: Lat - 28° 36' 00.98"N, Lon - 96° 15' 00.88"W

Required Investigation: VS, BD, DI, SD - 500m radius.

Charts Affected: 11316, 11317

INVESTIGATION

Date(s)/DN(s): 7-16-91 / 197 (OPR-K228-AHP2, H-10382)

Position Numbers: 2828 - 2829 Launch Number: 0517

Investigation Used: Visual Inspection, Local Knowledge

Position Determined By: Falcon Multiple LOP

Investigation Summary: These items were resolved as part of survey H-10382 from OPR-K228-AHP2-90; however item 5421 falls within the limits of this survey (H-10406). A visual inspection of the area revealed a line of sunken barges in ruins adjacent to a gas platform, apparently placed in that location to serve as a mooring facility for vessels serving the gas platform. Due to the highly questionable quality of the reported USPS positions, and abundant local knowledge (i.e., Jimmie Smith, the Palacios harbor master [512-972-5556], and numerous shrimpers) that no other barges or wrecks ever existed in this area, we concluded that the surveyed platform and barges are actually the features originally reported by the USPS. This conclusion was supported by Steve Verry of the HSB Operations Section (N/CG241) in a phone conversation shortly after the investigation was conducted. Detached positions were taken on the SW and NE corners of the row of barges and depicted in H-10382.

CHARTING RECOMMENDATION

The Hydrographer recommends deleting the submerged wreck PA charted at the AWOIS Position listed above. *Concur. Chart item as depicted*

Recommended Position: $\left\{ \begin{array}{l} \text{SW } 28^{\circ} 36' 35.59'' \text{N}; 96^{\circ} 14' 57.76'' \text{W} \\ \text{NE } 28^{\circ} 36' 37.58'' \text{N}; 96^{\circ} 14' 56.16'' \text{W} \end{array} \right.$ on survey H-10382.

Recommended Least Depth:

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5422

Item Description: Visible wood pile

Source: CL1533/75--USPS

AWOIS Position: Lat - 28° 35' 18.98"N, Lon - 96° 14' 25.88"W

Required Investigation: VS, BD, DI, SD - 100m radius.

Charts Affected: 11316, 11317

INVESTIGATION

Date(s)/DN(s): 12-06-91 / 340, 12-10-91 / 344

Position Numbers: 2168-2219

Launch Number: 0517

Investigation Used: BD

Position Determined By: Falcon Multiple LOP

Investigation Summary: A 100 meter radius chain drag was conducted at no greater than 10 meter line spacing, with 50 feet of tow line and 60 feet of chain between the trawl doors. The full area was covered and nothing was hung.

CHARTING RECOMMENDATION

The Hydrographer recommends removal of the pile PA note and the symbol from the chart. *Concur.*

Recommended Position:

Recommended Least Depth:

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5423

Item Description: Dolphin

Source: CL1655/75--COE;

AWOIS Position: Lat - 28° ⁵38' ⁸30.97"N, Lon - 96° ³19' ⁵⁸21.89"W

Required Investigation: VS, BD, DI, SD 50m radius

Charts Affected: 11316, 11317

INVESTIGATION

Date(s)/DN(s): 10-14-91 / 287

Position Numbers: 19

Launch Number: 0517

Investigation Used: VS

Position Determined By: Falcon Multiple LOP

Investigation Summary: A dolphin in poor conditions was located by detached position at the recommended position shown below.

CHARTING RECOMMENDATION

The Hydrographer recommends charting the dolphin at the recommended position below. *Concur.*

Recommended Position: Lat - 028/35/31.8 Lon - 096/13/58.0^{8 6}

Recommended Least Depth: Feature bares 3.1 meters (corrected for predicted tides) ^{at MHW.} (3.1 meters = 10-ft.) corrected for actual tides

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5424

Item Description: Pile, rep

Source: UNKNOWN

AWOIS Position: Lat - 28° 34' 56.98"N, Lon - 96° 14' 54.88"W

Required Investigation: VS, BD, DI 150m radius

Charts Affected: 11316, 11317

INVESTIGATION

Date(s)/DN(s): 12-06-91 / 340

Position Numbers: 2104-2165

Launch Number: 0517

Investigation Used: BD

Position Determined By: Falcon Multiple LOP

Investigation Summary: A 150 meter radius chain drag at no greater than 10 meter line spacing, using 50 feet of tow line and 60 feet of chain between the trawl doors was performed. The full area was covered and nothing was hung.

CHARTING RECOMMENDATION

The Hydrographer recommends removing the charted Pile Rep note and symbol from the chart. *Concur.*

Recommended Position:

Recommended Least Depth:

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5485

Item Description: Pipe, *subm*

Source: CL1533/75--USPS

AWOIS Position: Lat - 28° 34' 23.98"N, / Lon - 96° 13' 55.88"W ✓

Required Investigation: BD,DI,SD 25m radius

Charts Affected: 11316, 11317, 11319

INVESTIGATION

Date(s)/DN(s): 11-26-91 / 330

Position Numbers: 1690

Launch Number: 0517

Investigation Used: DI

Position Determined By: Falcon Multiple LOP

Investigation Summary: This item was resolved with AWOIS #5486.
See investigation for AWOIS #5486 for recommendations.

CHARTING RECOMMENDATION

The Hydrographer recommends removing the charted ^{Subm} pipe from the chart. *Concur,*

Recommended Position:

Recommended Least Depth:

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5486

Item Description: Pipe, Subm

Source: UNKNOWN

AWOIS Position: Lat - 28° 34' 24.98"N, Lon - 96° 13' 57.88"W

Required Investigation: BD, DI, SD 100m radius

Charts Affected: 11316, 11317, 11319

INVESTIGATION

Date(s)/DN(s): 11-26-91 / 330

Position Numbers: 1690

Launch Number: 0517

Investigation Used: DI

Position Determined By: Falcon Multiple LOP

Investigation Summary: The search radius for this AWOIS item covers the position and search radius for AWOIS item #5485 so these items were resolved simultaneously. A diver 100 meter radius circle search was conducted with one diver holding the center of the search line and another diver swimming the end of the line in a circle. Water depths were less than 2 meters, bottom was hard sand and shell, and visibility was 1 meter. Nothing was found.

CHARTING RECOMMENDATION

The Hydrographer recommends removing the submerged pipes label and symbols from the chart. *Concur.*

Recommended Position:

Recommended Least Depth:

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5495, 5498, 5499

Item Description: Submerged Piles

Source: BP88630-11/73, COE

AWOIS Position: 5495> lat. 28°33'09.98"N, lon. 096°12'40.88"W
5498> lat. 28°33'23.98"N, lon. 096°12'25.88"W
5499> lat. 28°32'49.99"N, lon. 096°12'48.88"W

Required Investigation: VS, BD, DI, SD

Charts Affected: 11316, 11317, 11319

INVESTIGATION

Date(s)/DN(s): 1-03-92 / 003

Position Numbers: 2242 - 2255

Launch Number: 0517

Investigation Used: BD

Position Determined By: Falcon Multiple LOP

Investigation Summary: On DN 003 a two boat chain drag was conducted with 0517 as the primary vessel and 0519 as the secondary vessel. The drag consisted of 195 feet of chain attached to a 50 foot length of line from the stern of each boat. Both vessels acquired on-line survey data during the search. Launch 0519 always steered reference lines 50 meters to port of 0517. The trackline plot for 0517 is included to show area of coverage. A data disk and echogram for 0519 are contained in the cahier for DN 003. The drag was performed parallel to the channel northeastward to the east edge of the required search area for the items. A ten meter overlap between lines was used to obtain 100% bottom coverage. Nothing was found.

CHARTING RECOMMENDATION

The Hydrographer recommends removing the submerged piles (total of ten symbols) and related notations from the chart. *Concur,*

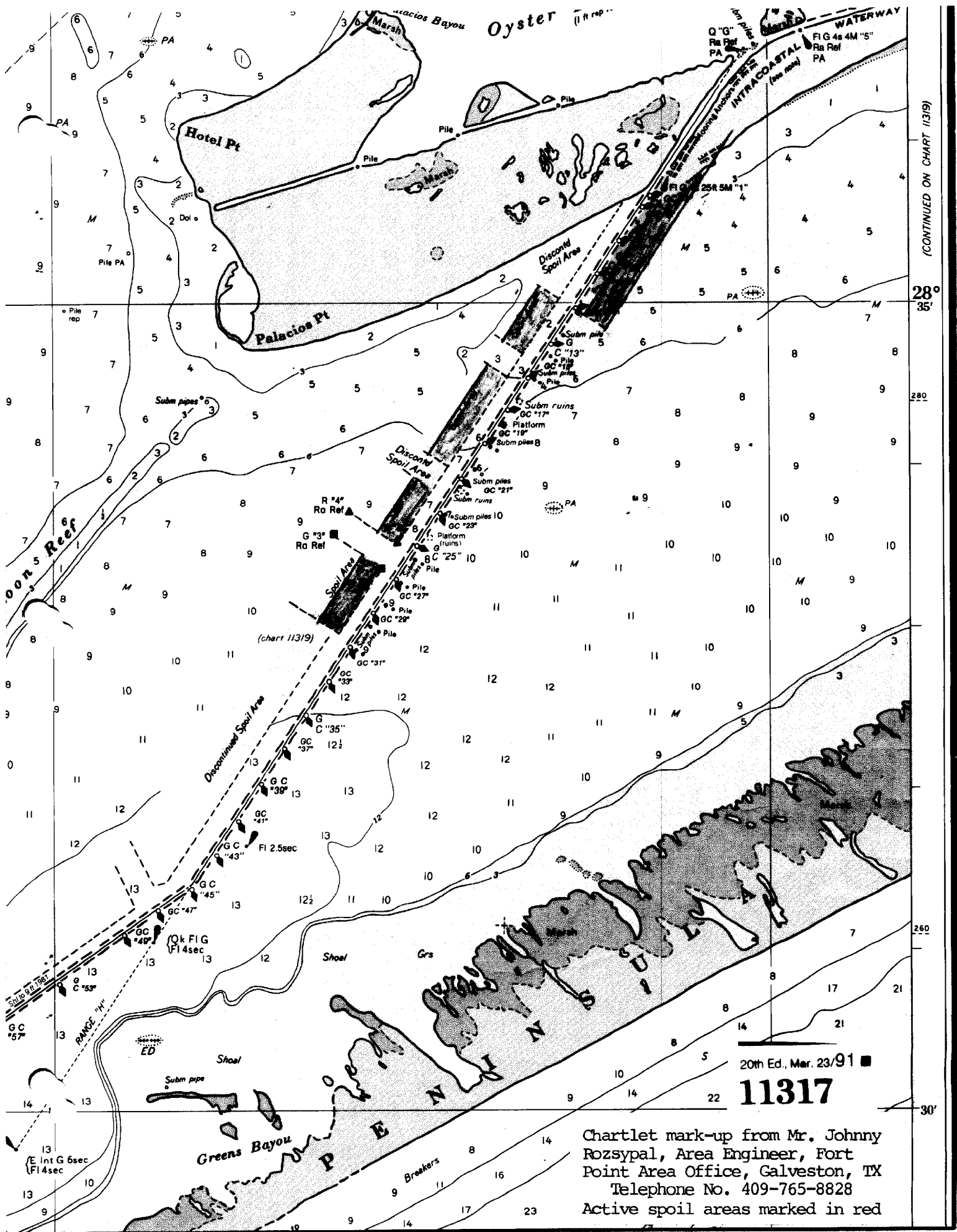
Recommended Position:

Recommended Least Depth:

COMPILATION NOTES

Chart

Applied As



(CONTINUED ON CHART 11319)

28° 35'

280

260

30'

20th Ed., Mar. 23/91

11317

Chartlet mark-up from Mr. Johnny Rozsypal, Area Engineer, Fort Point Area Office, Galveston, TX
 Telephone No. 409-765-8828
 Active spoil areas marked in red

APPROVAL SHEET

BASIC HYDROGRAPHIC SURVEY
OPR-K228-AHP2
AHP2-10-16-91
H-10406
1991-92

This basic hydrographic survey was conducted in accordance with the project instructions for OPR-K228-AHP2, the hydrographic manual, the hydrographic survey guidelines, and the field procedures manual. The survey data and reports were completed under frequent supervision. All boat sheets and final field sheets were reviewed in their entirety and all supporting records were also checked.

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

Thomas R. Waddington

Lt. Thomas R. Waddington
Chief, Atlantic Hydrographic Party Two



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Rockville, Maryland 20852

ORIGINAL

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: March 26, 1992

MARINE CENTER: Pacific

OPR: K228

HYDROGRAPHIC SHEET: H-10406

LOCALITY: Matagorda Bay, Halfmoon Reef, TX

TIME PERIOD: October 14, 1991 - January 3, 1992

TIDE STATIONS USED: 877 3156 Palacios, TX
Lat. 28° 41.8'N Lon. 96° 13.9'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 3.43 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.0 foot

REMARKS: RECOMMENDED ZONING

Times are direct, and apply a X0.84 range ratio to all heights on Palacios, TX.

NOTE: Hourly heights are tabulated on Central Standard Time.


CHIEF, DATUMS SECTION



GEOGRAPHIC NAMES

H-10406

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND McNALLY ATLAS	U.S. LIGHT LIST			
✓ HALFMOON REEF	X	X								1	
✓ HOTEL POINT	X							X		2	
✓ INTRACOASTAL WATERWAY	X							X		3	
✓ MATAGORDA BAY	X	X						X		4	
✓ PALACIOS CHANNEL	X									5	
✓ PALACIOS POINT	X	X						X		6	
✓ TEXAS (TITLE)	X									7	
										8	
										9	
										10	
										11	
										12	
										13	
										14	
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										19	
										20	
										21	
										22	
										23	
										24	
										25	

Approved:

Charles E. Huntington
Chief Geographer - N/CG2x5

MAR 16 1992

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT
SMOOTH SHEET		1	SMOOTH OVERLAYS: POS., ARC, EXCESS		7
DESCRIPTIVE REPORT		1	FIELD SHEETS AND OTHER OVERLAYS		4
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS
ACCORDION FILES	1				
ENVELOPES					
VOLUMES					
CAHIERS					
BOXES					

SHORELINE DATA
 SHORELINE MAPS (List):
 PHOTOBATHYMETRIC MAPS (List):
 NOTES TO THE HYDROGRAPHER (List):
 SPECIAL REPORTS (List):
 NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES
 The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET			2212
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	45.0		45.0
VERIFICATION OF SOUNDINGS	60.5		60.5
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	32.0		32.0
COMPARISON WITH PRIOR SURVEYS AND CHARTS		11.0	11.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		16.5	16.5
GEOGRAPHIC NAMES			
OTHER' Digitizing			
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS		
	137.5	27.5	

Pre-processing Examination by Lt. J. Griffin	Beginning Date 2/3/92	Ending Date 2/3/92
Verification of Field Data by I. Almacen	Time (Hours) 137.5	Ending Date 1/20/93
Verification Check by J. Green, B. Olmstead	Time (Hours) 55.0	Ending Date 2/26/93
Evaluation and Analysis by I. Almacen	Time (Hours) 27.5	Ending Date 2/26/93
Inspection by B. Olmstead	Time (Hours) 6	Ending Date 3/31/93

**EVALUATION REPORT
H-10406**

1. INTRODUCTION

Survey H-10406 is a basic hydrographic survey accomplished by the Atlantic Hydrographic Party 2 under the following Project Instructions.

OPR-K228-AHP2, dated March 1, 1991
CHANGE NO. 1, dated June 4, 1991
CHANGE NO. 2, dated July 11, 1991
CHANGE NO. 3, dated August 15, 1991

This survey was conducted in Texas, on the eastern portion of Matagorda Bay, southwest of Palacios Point, covering the area of Halfmoon Reef and vicinity. The survey area extends from latitude 28/32/17N to latitude 28/36/37N and stretches from longitude 96/12/24W to longitude 96/17/00W. The foreshore areas consist of shallow and muddy beaches. The bottom is generally made up of sand and mud mixed with broken shells. Depths range from 0.1 to 6.6 meters.

Predicted tides for Port O'Connor, Texas, gage 877-3701, were used for the reduction of soundings during field processing. Approved hourly heights zoned from Palacios, Texas, gage 877-3156, were used during office processing.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. NAD 83 is used as the horizontal datum for plotting and position computation. The electronic control correctors are adequate. The TRA values were changed based on the correctors obtained from the updated offset tables 2 and 3. Sound velocity table 2 was extended to 7.1 meters in depth to provide correctors for deeper soundings. An accompanying computer printout contains the parameters and the correctors.

A digital file has been generated for this survey as required by the specifications contained in Hydrographic Survey Guideline No. 52, Standard Digital Data Exchange Format, April 15, 1986. Certain descriptive information, however, may not be in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for a complete depiction of the survey data.

2. CONTROL AND SHORELINE

Sections H and I of the hydrographer's report contain adequate discussions of horizontal control and hydrographic positioning. Additional detailed information on horizontal control is contain in the following reports.

Field Report, Matagorda Bay, Texas and vicinity, Third-Order, Class I Traverse, AMC Coastal Surveys Unit, January 23, 1989;

Project Report, Matagorda Bay and Vicinity, Texas, GPS Hydrographic Support Survey, March 4 to March 20, 1991.

In addition to the above horizontal control reports, refer to the memoranda, Third-Order NAVAID positions for OPR-K228-AHP dated July 23, 1992 and October 21, 1992 (copies filed with the survey records), for position information of various aids to navigation around

Matagorda Bay and Lavaca Bay, Texas. The computed geographic positions for these aids submitted by the Atlantic field party have been reviewed at the Hydrographic Surveys Branch in Rockville and found to have met or exceeded the accuracy requirements for conventional Third-Order Class I specifications.

Positions of horizontal control stations used during hydrography are 1989 and 1991 field values based on NAD 83. These values were used during office processing for the computation of positions. The smooth sheet and accompanying overlays are annotated with NAD 27 adjustment ticks based on values determined with the NGS program, NADCON. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude: 0.987 seconds (30.380 meters)
Longitude: 0.889 seconds (24.151 meters)

The year of establishment of control stations shown on the smooth sheet originates with the NGS listing and the previously referenced horizontal control reports.

In some instances during the survey, the maximum allowable limits of error circle radius (ECR) and residual values of fixes have been exceeded or have angles of intersection less than 30 degrees or more than 150 degrees. However, the soundings located by these fixes were found consistent with the surrounding areas and are considered acceptable. None of these survey positions are used to locate dangers to navigation.

The following shoreline map applies to this survey.

	<u>Photo Date</u>	<u>Class</u>	<u>Scale</u>
TP-01645	Feb/Mar 1989	III	1:20,000

No significant changes to the shoreline shown on TP-01645 which covers the area around Hotel Point and Palacios Point, were found during this survey. However, significant changes to the presently charted shoreline were noted around the area off Palacios Point. The charted crescent shaped strip of land stretching out of the point forming a small shallow cove is now connected to the mainland at its northern end. The presently charted shoreline should be updated to depict the latest shoreline configuration of the area.

3. HYDROGRAPHY

Hydrography is adequate to:

- a. delineate the bottom configuration, determine least depths, and draw the standard depth curves;
- b. reveal there are no significant discrepancies or anomalies requiring further investigation; and
- c. show the survey was properly controlled and soundings are correctly plotted.

The hydrographer was apparently unable to define the zero depth curve due to shallowness of the area which prevented an approach by boat.

Supplemental 4.0 and 4.5-meter brown depth curves were drawn along Palacios Channel and the Intracoastal Waterway respectively, to show the present configuration of the channels.

Brown curves were also used to show some significant shoal soundings that could not be delineated by standard depth curves.

4. CONDITION OF SURVEY

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the Field Procedures Manual, March 1991 Edition.

5. JUNCTIONS

Survey H-10406 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10380	1991	1:10,000	West
H-10382	1991	1:10,000	North
H-10396	1991	1:10,000	West
H-10405	1991	1:10,000	South
H-10414	1992	1:10,000	East

The junctions with surveys H-10382, H-10396 and H-10414 are complete. Some significant features and soundings within the adjoining areas were transferred from these surveys to delineate depth curves and to portray shoaler information. Survey H-10414 is still in the office processing stage and a junction comparison was made using a preliminary sounding plot.

The junctions with surveys H-10380 and H-10405 have not been formally completed because these surveys were previously processed and forwarded for charting. However, comparison with the office copies of these surveys shows satisfactory agreement with the present survey.

6. COMPARISON WITH PRIOR SURVEYS

H-5866(1934-35), 1:20,000

Survey H-5866 provides the basic coverage of the entire area of Halfmoon Reef and vicinity. Comparison with this prior survey is considered satisfactory. The present soundings are generally deeper by about 0.3 meter than the prior survey except in the area of Halfmoon Reef where the present soundings are deeper by 1.5 meters as a result of the gradual erosion of the area over the years.

Significant shoreline changes since the prior survey are most notable around the area off Palacios Point. Here, the processes of accretion and erosion since 1934-35 have caused a crescent shaped strip of land and shallow cove to no longer exist. The shallow cove is now portrayed on the present survey as a large pond behind the mean high water line. The strip of land once projecting northwest of Palacios Point is now covered by general depths of 0.6 to 0.8 meter.

Shoreline changes east of Palacios Point and Hotel Point reflect erosion and accretion respectively. Differences generally range from 50 to 100 meters. Palacios Channel and the Intracoastal Waterway system around Matagorda Bay did not exist during the 1934-35 survey. The present survey soundings are 1.0 to 2.3 meters (3-7 ft.) deeper within these channel areas.

AWOIS item 5485 is the only item originating from this prior survey. The disposition of this item is adequately discussed in the hydrographer's report.

Survey H-10406 is adequate to supersede the prior survey within the common area.

7. COMPARISON WITH CHART

Chart 11317, 20th edition, dated March 23, 1991; scale 1:50,000
Chart 11317, 21th edition, dated July 4, 1992; scale 1:50,000
Chart 11319, 22nd edition, dated February 10, 1990; scale 1:40,000.
Chart 11319, 23rd edition, dated November 30, 1991; scale 1:40,000.

The 1992 chart edition of 11317 reflects similar information except for a newly charted visible wreck (see Eval.Rpt., section 7d) and shoreline changes in the vicinity of Palacios Point.

a. Hydrography

The charted hydrography originates mostly with prior survey H-5866 and the rest from miscellaneous sources which requires no further discussion.

The northwest portions of the presently charted active spoil area in the vicinity of latitude 28/33/15N, longitude 96/13/00W and latitude 28/33/45N, longitude 96/12/30W, were reported discontinued by the Corps of Engineers. A chartlet received from Mr. J. Rozsypal of the Corps of Engineers indicating the updated active spoil area limits is attached to this report.

Survey H-10406 is adequate to supersede charted hydrography within the common area.

b. AWOIS

A total of ten (10) AWOIS items fall within the survey area. With the exception of AWOIS item 5485, (H-5866), the remaining nine items originate with miscellaneous sources. Discussion and disposition of each of these items are included in the hydrographer's report.

c. Controlling Depths

Palacios Channel and the Intracoastal Waterway are federally maintained channels located within the area of this survey. The depths found along these channels are consistent with or deeper than their charted controlling depths.

d. Aids to Navigation

The following aids to navigation are located within the area of this survey. These aids were found to be in good condition and adequately serve their intended purpose.

<u>Aid Name</u>	<u>Lt.List#</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>
Daybeacon 1	34480	28/33/26.1	96/12/45.7
Daybeacon 2	34485	28/33/34.0	96/12/39.9
Daybeacon 3	34490	28/33/33.5	96/13/00.2
Daybeacon 4	34495	28/33/41.3	96/12/54.7
Buoy 27	34500	28/33/23.7	96/12/32.2
Buoy 29	34505	28/33/11.3	96/12/41.5
Buoy 31	34510	28/32/58.5	96/12/50.8
Buoy 33	34515	28/32/48.8	96/12/58.0
Buoy 35	34520	28/32/38.1	96/13/06.0
Buoy 37	34525	28/32/28.0	96/13/14.0
Half Moon Reef Lt.2	34547	28/32/20.56	96/15/30.86

Palacios Ch.Lt.26	34680	28/35/55.7	96/16/47.0
Palacios Ch.Dbn.28	34683	28/36/30.0	96/16/27.8
Buoy WR4A(Temp)		28/33/51.3	96/13/22.6

Half Moon Reef Light 2 was located by GPS. The above listed geographic position for this aid was based on the unadjusted GPS field position.

Palacios Channel Light 26 and Buoy 37 were located on surveys H-10396 and H-10405 respectively. These aids being situated within the junction limits of this survey, were carried forward onto the smooth sheet.

The visible wreck and buoy depicted on chart 11319, 23rd edition, November 30, 1991 at latitude 28/33/^{51.3}~~47~~N, longitude 96/13/^{22.6}~~12~~W, should be retained at the location shown on the smooth sheet. The visible wreck was not portrayed on the final field sheet but was defined positionally by a temporary lighted buoy, "WR4A". A note has been added to the smooth sheet to clarify this situation. The Coast Guard has already notified the Corps of Engineers concerning the removal of this feature. This temporary buoy should be charted and retained until the wreck is completely removed from this location.

According to the Coast Guard, most of the previously charted fixed aids along Palacios Channel were moved to new locations and new aids were added in October 1989. Floating aids to navigation located along the Intracoastal Waterway have often been destroyed, replaced and repositioned during the past several years.

See section P of the hydrographer's report for additional information concerning the above listed aids to navigation.

e. Geographic Names

Names appearing on the smooth sheet and in the survey title have been approved by the Chief Geographer.

f. Dangers to Navigation

There were no reports of dangers to navigation generated during the field and or office processing.

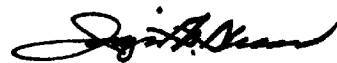
There are no overhead cables, overhead pipelines, bridges or ferry routes noted by the hydrographer during this survey. However, Mr. Alan Taylor of Dow Pipeline Company informed the hydrographer concerning the company maintained submerged pipelines located within the survey area. It is therefore recommended that the "Caution" note pertaining to existing submarine cables and pipelines in the area be retained as charted.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10406 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is a good hydrographic survey and no additional field work is required.



Isagani A. Almacén
Cartographer

APPROVAL SHEET
H-10406

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disproval of charted data. The digital data have been completed and all revisions and processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts have been made and are included with the survey records. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

for Bruce A. Olmstead
for Dennis J. Hill Date: April 12, 1993
Chief, Hydrographic Processing Unit
Pacific Hydrographic 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.

Douglas G. Hennick
Douglas G. Hennick Date: 4/13/93
Commander Douglas G. Hennick, NOAA
Chief, Pacific Hydrographic Section

Final Approval

Approved:

J. Austin Yeager
J. Austin Yeager Date: 9/28/93
Rear Admiral, NOAA
Director, Coast and Geodetic Survey

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Rockville, Maryland

Hydrographic Index No. 90 C

