10330

Diagram No. 1286-2

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. AHP-10-5-90

Registery No. H-10330

LOCALITY

State Texas

General Locality Corpus Christi Bay

Sublocality Alta Vista Reef

1990

CHIEF OF PARTY
LCDR V.D. Ross

LIBRARY & ARCHIVES

DATE August 16, 1991

☆U.S. GOV. PRINTING OFFICE: 1985—566-054

10330

EC/G

CHT
11309
11311

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

H-10330

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.

APH 10-5-90

State Texas

General locality Corpus Christi Bay

Locality Alta Vista Reef

Scale 1:10,000 Date of survey Mar 14 - Apr. 17, 1990

Instructions dated September 14, 1989 Project No. OPR-K229-AHP2

Vessel Atlantic Hydrographic Party - 2

Chief of party LCDR V. Dale Ross

Surveyed by Ms. Maria Mangual-Ortiz

Soundings taken by echo sounder, hand lead, pole Raytheon DE-719-C/with Odom Digitrace

Graphic record scaled by MMO. JJC

Graphic record checked by MMO

Evaluation by: ~~Protracted by~~ R.N. Mihailov Automated plot by PHS Xynetics Plotter

Verification by R.N. Mihailov

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

REMARKS: Time meridian used was UTC. Least depths were with lead line. The sheet letter is designated as "W". Revisions and marginal notes in black were generated during office processing. Some separates are filed with hydrographic data.

AWOIS/SURF ✓ 9/16/91 SJV

SCI-30-97
KWW: 9/16/91

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978-665-010-1174

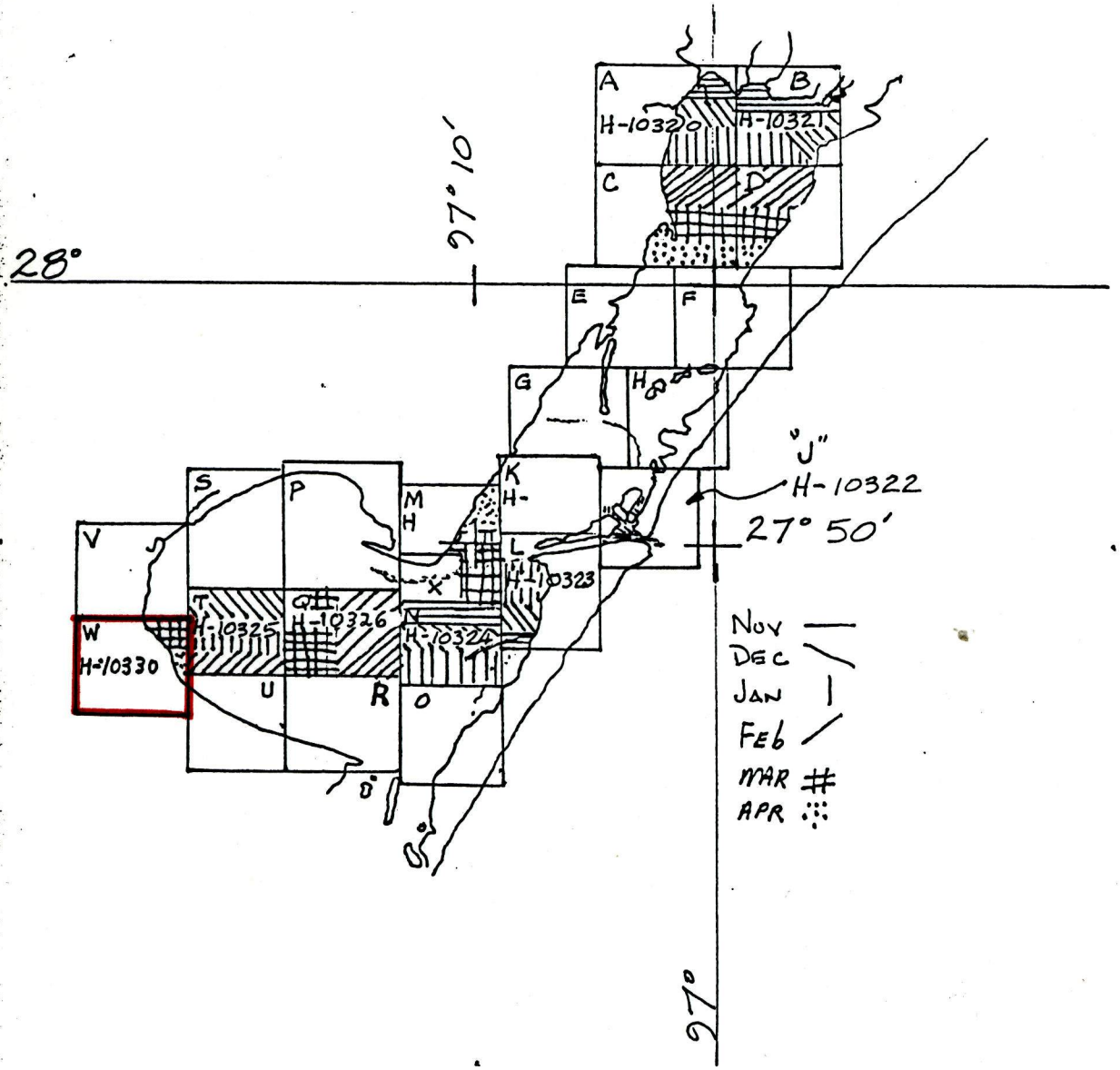
Progress Sketch

OPR-K229-AHP2-89
Corpus Christi
Texas

Atlantic Hydrographic Party Two
V. Dale Ross
Lieutenant Commander, NOAA
Chief of Party

LEGEND

	OCT	NOV	DEC	JAN	FEB	MAR	APR
SQ NMi SDG	0	13	13	21	21	27	8
LNMi SDG	0	309	712	674	495	528	176
LNMi TO/FRM	0	258	422	527	326	342	183
LNMi MISC	0	129	259	350	293	248	183
DP/BS	0	88	177	455	107	190	290
TIDE STA	6	0	0	0	0	0	0
CONTROL	18	0	0	0	5	4	0



DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10330
(Field No. AHP-10-5-90)
Scale:1:10,000
1990
Atlantic Hydrographic Party Two
Chief of Party: Lt. Cdr. V. Dale Ross, NOAA

A. PROJECT

This survey was conducted in accordance with Hydrographic Project Instructions OPR-K229-AHP2, Corpus Christi and Aransas Bays, Texas, dated September 14, 1989, Change No. 1 dated October 19, 1989, and Change No. 2 dated January 10, 1990.

This survey is designated as sheet "W" in the project instructions.

The purpose of this project is to provide contemporary hydrography for the maintenance of existing nautical charts of the Corpus Christi Bay and the construction of a new nautical chart for the new naval base at Ingleside, Texas.

B. AREA SURVEYED

The area surveyed for H-10330 is the southwest portion of Corpus Christi Bay, Texas, from the Alta Vista Reef to shore bounded by the following limits:

North - 27°46'47"N
South - 27°43'44"N
East - 097°21'11"W
West - Corpus Christi Shore

This survey was conducted from March 14, 1990 (day 073) to April 17, 1990 (day 107). Additional work was also conducted, see report that follows.

The bottom is composed of mostly broken shell and fine brown sand.

Depths in this survey range from one to ~~fifteen~~ fourteen feet.

C. SOUNDING VESSEL

Vessels 770 (EDP No. 770), and 519 (EDP No. 519), 21-foot MonArks, were used to collect all survey data. There were no unusual vessel configurations nor problems encountered.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

The following Raytheon Fathometers (Model DE-719-C), with Odom Hydrographic Systems, Inc. Digitraces, were used on vessels 770 and 519 during the survey:

VESSEL	S/N	Days
770	5881-42B	074 - 094/90
519	8652	116 - 117/90

No major problems were encountered with the fathometers used on vessels 770 and 519.

When using the Raytheon Model DE-719-C fathometers, calibration checks were made frequently on each day of hydrography. The Digitrace readings were closely monitored for agreement with the fathogram trace. The digitized soundings matched the fathometer's trace to plus or minus 0.1 foot. Any necessary corrections were done during scanning of the fathograms. Any required adjustments of the tide and draft, speed of sound, sensitivity, and chart speed were made and noted on the fathogram. Any departures from the initial zero were corrected during scanning of the fathogram.

The Raytheon DE-719-C Fathometers were adjusted for an assumed speed of sound through water of 4800 feet/second. Corrections for the speed of sound through water were computed from data obtained with an Applied Microsystems Laboratory, Inc. (AML) speed of sound profiler (S/N 03003). NOS Program "Velocity" was used for the speed of sound correction computations. Copies of casts forms can be found in the separates of this report.*

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

Table Applied	Type	Day	Depth	Location NAD 1983	Days
11	AML	075	14 meters	27°48'35"N 097°18'00"W	074-082
12	AML	085	11.6 meters	27°48'40"N 097°20'00"W	085-087
13	AML	094	13 meters	27°48'30"N 097°19'20"W	092-094
14	AML	117	15.4 meters	27°48'37"N 097°19'22"W	116-117

* Filed with hydrographic data

A data quality assurance test (DQA) was performed prior to each speed of sound cast to assure proper working condition of the probe. Speed of sound tables are included in the separates of this report. *

Weather permitting, lead line comparisons were conducted on each day of hydrography to determine an instrument corrector and check the static draft. No instrument corrections were applied to the soundings on the final field sheets. Lead line comparison forms can be found in the separates of this report. *

Settlement and squat measurements for vessels 770 and 519 were performed on November 29, 1989 (DN 333) and November 13, 1989, respectively, at Redfish Bay Terminal, using the NOS prescribed level rod method (Zeiss Level S/N 08765). Settlement and squat correctors and the static draft corrector of 1.1 feet 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. *

A problem was encountered with the speed of the boat monitored by the ~~Texas Microsystems~~ HDAPS COMPUTER on vessels 770 and 519. The listings show unrealistic speeds made good, up to 15 m/sec, in some sections of this survey. The corrector applied through the offset table due to the wrong speed creates a maximum error of 0.2 foot shoaler. These data are considered acceptable. This problem can be corrected by creating a "dummy" offset table with the corrector for 2500 rpm as the maximum corrector listed for 2500 rpm or higher, and apply this "dummy" table through the draft correction table while plotting. This was not done in the field since the final field sheet had been plotted before this trick was discovered.

settlement and squat applied during office processing according to vessel rpm

The final field sheets and rough sheets were plotted using predicted tides using the reference station and correctors designated in the project instructions. Approved tides were requested from the Sea and Lake Levels Branch, N/OMA1212, in a letter dated May 5, 1990. Copies of the field tide level note, request for approved tide levels, and HDAPS tide tables are included with the separates. *

Survey records were scanned by AHP-2 employees. Significant peaks and deeps which occurred between selected soundings, missed depths, incorrectly digitized soundings, and the effects of sea and swell action were corrected while scanning the echograms.

E. HYDROGRAPHIC SHEETS

All field sheets were produced by AHP-2 with the HDAPS on the Bruning ZETA 824 plotter at a scale of 1:10,000. The following sheets have been submitted:

* Filed with hydrographic data

Sheet	Quantity
Boat Sheet	1
Edited Trackline Sheet	1
Edited Trackline Overlay Sheet	1
Rough Sounding Sheet	1
Rough Sounding Overlay Sheet	1
Final Field Sheet	1
Final Field Sheet Overlay	1

The final field sheet contains main scheme hydrography, all applicable crosslines, and splits. The final field sheet overlay shows correctors detached positions, additional development lines, and bottom applied to samples. All soundings on the final field sheet are corrected smooth for draft, predicted tides, settlement and squat, and the speed sheet data of sound through water, except for the hand plotted least depth and heights on detached positions.

Survey sheets, fathograms, listings, descriptive report, separates, detached positions record book, micro floppy disks and 32-track tape have been submitted to the Pacific Hydrographic Section, N/CG245, Seattle, Washington.

F. CONTROL STATIONS

The horizontal control datum for this project is the North American Datum of 1983.

Three monumented control stations (station 038, 039, and 040), and three fixed aids to navigation (stations 045, 046, and 063) were used to control this survey. The station list is included in the separates of this report.

Station number 063 was assigned to two different stations within the area of this project --station "Warehouse 1989" at latitude 27°52'23.387"N, longitude 097°09'34.837"W, not used by this survey, and station "C C Bay Spoil Bank Lt A 1990" at latitude 27°44'01.556"N, longitude 097°16'32.909"W, which was used by this survey.

The name of station "C C Bay Spoil Bank Lt A 1990" was charted incorrectly, and consequently the name submitted with our third-order, class I position was also incorrect. It is listed in the Light List, Volume IV, 1990, Light List No. 27730, as "Corpus Christi Bay Spoil Bank Light". Telephone conversations with Chief Hernandez, U. S. Coast Guard, Corpus Christi Aids to Navigation Team, confirmed the name of this light to be as listed on the light list. Seaward inspection was performed by this hydrographer when setting-up station 063. A white diamond-shaped dayboard with an orange reflective border labeled "DANGER SPOIL BANK", and a white light was observed.

Chief Warrant Officer Eduardo Anastacio, of the U. S. Coast Guard, Corpus Christi Aids to Navigation Team, informed me of their plan to remove "Corpus Christi Bay Spoil Bank Light", since they feel it is no longer needed. He will wait until we can provide him with a complete depth coverage of the discontinued spoil area covered by Sheet H-10326 (1990) and Sheet "R" not yet started. H-10365

All control stations used on this survey were either existing stations or stations set by the Coastal Surveys Unit except for control station 063, which was located by field party personnel. Copy of the NOAA Form 76-40 submitted to N/CG245, is included in the separates of this report. All stations were established using third order, class I traverse and intersection methods. The horizontal control report was written within the Coastal Surveys Unit and was forwarded to the Atlantic Hydrographic section in Norfolk, Virginia. This station is located beyond sheet limits

G. HYDROGRAPHIC POSITION CONTROL

1. Survey Methods

Hydrographic position control was accomplished using the Mini-Ranger Motorola Falcon 484 system which provided accuracy to meet 1:10,000 scale survey requirements. Range/range positioning using two, three, or four stations simultaneously was used during this project, except for day 073 where an Electronic Distance Measurement, S/N 1723A00712, was use for range/azimuth detached positions during shoreline verification operations. During range/range operations a survey network was set up to allow four reference stations to be accessed simultaneously by the HDAPS.

The following Falcon Mini-Ranger equipment was used:

VESSEL	Equipment	S/N
0770	RPU	E0257
	R/T	E2957
	R/S	E2926
	R/S	F3217
	R/S	F3244
	R/S	C2059

The same RPU (E0257) and R/T (E2957) used on vessel 770 was installed on vessel 519 on day 114.

Positions which had erratic lines of position, indicated by high residuals (over 5 meters), high error circle radii (over 15 meters), and angles of intersection higher than 150 degrees or lower than 30 degrees on the "raw" listing were "smoothed" during processing. Positions were "smoothed" by dead reckoning between two accurate positions. If more than seven consecutive positions had high residuals, high error circle radii, or angles of intersection outside the 30 to 150 degree margin with an erratic track plot, the data were rejected and later rerun. Occasionally, the residual values were greater than 5 meters and the angle of intersection was outside the 30 to 150 degree margin, yet the trackline plot showed that the position of the survey vessel was accurate. In those instances, the data were considered adequate and were plotted without smoothing on the final field sheet. Point computation was used if possible when high residuals occurred at the first or last position of a line.

Another occasional problem encountered was when a good residual and error circle radius appeared on the "raw" listing, but the easting or northing of the position was off by thousands of meters. These positions were rejected or smoothed following the standards mentioned above. This problem is attributed to the excessive amount of interference encountered from the large steel gas gathering stations found in the Corpus Christi Bay area.

2. Critical System Checks

Critical system checks were performed by visually observing the error circle radii and residual values on the Comflex screen in the survey vessels. The "DUMP ALPHA" and "DUMP GRAPHICS" functions are not available with COMFLEX so no hard copy of these checks are possible. However, the data identification listing serves as the record of the quality of the positional data.

Fixed point system checks were performed after Mini-Ranger reference stations were established on shore stations or after relocating Mini-Ranger reference stations. These system checks occurred on day 074/1990. All fixed point checks values were less than 5 meters, which is within the required limits specified in the field procedures manual. Results of these fixed point checks are included in the separates of this report.*

3. Mini-Ranger Falcon Calibrations

Baseline calibrations were performed as specified in the field procedures manual. The baseline values were incorporated into the Texas Microsystems "C-O" table and applied directly to all "on-line" data. Baseline calibration forms and the "C-O" tables are included in the separates of this report.*

A closing baseline calibration was not performed since the survey was conducted in less than a six month period.

* filed with hydrographic data

H. SHORELINE

Shoreline details shown on the final field sheet were manually transferred from TP-01615 and TP-01616. The shoreline manuscripts were compiled at 1:20,000 scale and photographically enlarged to 1:10,000 scale.

Shoreline verification was accomplished by comparison of the main scheme hydrography which junctions at shore, and by visual inspections.

The shoreline in this survey area agrees very well with TP-01615 and TP-01616, except for one small shore change noticed northeast of latitude 27°45'36"N, longitude 097°22'38"W, where the existing bulkhead was destroyed and the currents have eroded the shore. See picture taken with position 1078 on day 117. The bulkhead ruins lie partially awash in line with the preexisting shoreline. This change is shown on the final field sheet in broken red lines and broken black lines marking the foul area. Verified shoreline is shown in black ink on the final field sheet. shoreline dashed red on smooth sheet

Most shoreline details were verified by detached positions since local land owners informed me that hurricanes had completely destroyed many piers and some have been rebuilt. Some detached positions on features that agreed well with the shoreline manuscript were rejected since nothing different was found on those features, and were transferred to the final field sheet in black ink at the position from the shoreline manuscript. New piers, ruins, breakwaters, groins and changes to existing features were protrayed in red ink, except for new piles and piles in ruin which were shown in black ink. Two reference numbers were used to indicate minor differences from the shoreline manuscript. The reference numbers are labeled on the final field sheet overlay with a series of 3000 numbers and an "R" ~~suf~~pre fix designation. R3000 and R3001 changes to piers and ruins are shown on the smooth sheet in red ink

A large percent of the bulkheads, seawalls, or natural shore is being protected with rip rap, which in most cases extends offshore approximately 10-20 feet. This hydrographer described her findings on the fathogram at the ending and beginning of main scheme lines. Some additional comments were made on the boat sheet during visual shoreline verification.

I. CROSSLINES

A total of 11 linear nautical miles of crosslines were run on H-10330 which equals 15% of the linear nautical miles of hydrography. Crossline soundings agree to within one foot of the main scheme soundings.

J. JUNCTIONS

This sheet junctions with H-10325, sheet "T" (1989-1990) to the northeast. Junctions with sheet "V" to the north, and sheet "U" to the southeast have not been started at this time. V = 10362 (1990-91) U = 10361 (1990-91)

Junction soundings between the present survey and the junction survey agree well. Depths agree to within 2 feet. These sheets are in meters

K. COMPARISON WITH PIOR SURVEYS

This survey was compared with the following prior surveys:

H-5612	(1934)	1:10,000
H-5694	(1934-35)	1:20,000
T-9182	(1951)	1:20,000
T-9183	(1951)	1:20,000
T-9187	(1951)	1:20,000
T-12502	(1965)	1:10,000

Most of the sounding comparisons were done with H-5612, since only a very small section of this survey area at the south edge falls on H-5694. Generally, depths within the survey area have remained within 1-2 feet since 1934, except near shore where the present survey soundings are deeper by 3-5 feet. The 6-foot depth curve has shifted 100-150 meters closer to shore, except for two areas in the vicinity of latitude 27°46'00"N, longitude 097°22'39"W, and latitude 27°45'12"N, longitude 097°22'21"W, where this curve has remained fairly close. However, this shift might be reduced when smooth tides are applied, since practically every day that we ran sounding lines the water level was considerably high. Shift of 6-foot curve still exists

An area with 4½-foot soundings on H-5612 at latitude 27°45'35"N, longitude 097°21'31"W, in the Alta Vista Reef was not found. Depths from the current survey are generally 8 feet. This area and the rest of the shoal area was developed by running 50-meter splits of the main scheme and 50-meter lines perpendicular to the main scheme. The entire shoal area is generally deeper by 1-2 feet with some soundings being 3 feet deeper and up to 4 feet deeper. This can be attributed to the many hurricanes passing through this area. Two 6-foot shoals also along the Alta Vista Reef at latitude 27°46'22"N, longitude 097°21'54"W, and latitude 27°46'47"N, longitude 097°22'10"W, were 1-2 feet deeper on the current survey. The first area was also thoroughly developed. The second area was only split 50-meter of the main scheme since most of this shoal area falls on the survey area of sheet "V" and it will be developed when this sheet is done. The present survey soundings are adequate to supersede these soundings. CONCUR

Sheet "V" = H-10362

Another area where soundings are deeper than H-5612 is approximately 200-meters offshore along the shoreline north of latitude 027°46'27"N, longitude 097°23'12"W, where the present survey shows 13-1/4 feet soundings in 7-9 feet of water. This was caused by the major developments in the shoreline north of latitude 27°46'18"N, longitude 097°23'21"W since 1934. Telephone conversations with Mr. Phillip Boehk, Design Engineer, Corpus Christi Engineering Department, informed me that they built a seawall offshore and the area was hydraulicly filled by borrowing sediment from the bottom nearby. This confirms the deeper depths found in this area. Other developments found in this area were as follows: privately owned slips were built inside the protected area; buildings were built on part of the filled terrain behind the protected area; and the rest of the filled area was done by the city to extend Cole Park, consisting of a solid concrete seawall with a sloping terrain, a nice concrete Cole Park public fishing pier, and two small beach areas. These changes have been updated on T-1615 and agree well with the present survey.

shoreline changes are considerable

The piles in ruins shown on H-5612 in the vicinity of latitude 27°44'27"N, longitude 097°22'02", seem to be the same pier ruins reported in AWOIS 4795 of unknown source. These pier ruins were located during an investigation of AWOIS 4795. See the AWOIS 4795 report included with ~~the separates of~~ this report for information on findings.

A small section of the shoreline of this survey area at the north end falls in prior T-12502 and T-9182. The 7 groins shown on these priors in the vicinity of latitude 27°46'30"N, longitude 097°23'30"W, do not exist any longer. The area where these 7 groins were placed is the same filled area mentioned in paragraph 1 of page 9 of this report. This change has been updated on T-1615 and agrees well with the present survey.

A concrete slip shown on T-12502 and T-9182 at latitude 27°46'14"N, longitude 097°23'09"W, which originated with T-9182 is no longer there. Nothing but shallow water, 1-2 feet, was seen or found during visual check of the shore or during main scheme hydrography. The hydrographer does not feel these findings merit the charted symbol. The hydrographer recommends the charted foul area be removed from charts 11309 and 11311 since it is not marking any features different from the surrounding area. CONCUR

A light at the entrance of a protected area shown on T-12502 at latitude 27°46'13"N, longitude 097°21'26"W is no longer there and it has been removed from the chart. - CONCUR

The shoreline on T-9187 agrees well with the present survey. The piers, groins, and pier ruins have changed a lot due to the many hurricanes passing through this area. Local information from various home owners along the shore indicate that many of the previous piers and groins were completely destroyed and some were rebuilt in the same place. These piers, groins, and pier ruins which are presently charted and were not found during main scheme hydrography or visual shoreline verification will be investigated futher at a later date.

additional work addresses these features See Awois items 4793 thru 4798 for a discussion of these features. and ✓

The area on T-9183 that falls in this survey area does not have any soundings nor shoreline to compare.

With consideration for the above statements, the present survey is adequate to supersede the prior surveys within the common areas. Do not concur, additional work required.

L. COMPARISON WITH THE CHART See Evaluation Report Section 7

Comparisons were made with the following largest scale charts covering the present survey area:

Chart No.	Edition	Edition Date
11309	29th	November 15, 1986
11311	15th	September 13, 1986

There are ~~thirteen~~ fourteen AWOIS items within the limits of the present survey. Only three AWOIS items (AWOIS No. 4760, 4795, and 4798) were completed at this time. See the AWOIS reports included with the seperates attached to this report for findings on these AWOIS items. ✓

In general, the soundings from this survey compared to within 2 feet of the charted depths. See section K for a discussion of areas with larger disagreements.

✓

The following discrepancies were noted:

The charted piers and piers ruins which are not AWOIS items and are not found in T-01615 and T-01616 were not seen or found during shoreline verification or normal sounding operations and need further investigation which will be done at a later date. ✓
See Additional Work report attached to this report.

See section K for comments and recommendations on a charted concrete slip at latitude 27°46'14"N, longitude 097°2~~1~~3'09"W. ✓

New piers, groins, breakwaters, and pier ruins found during shoreline verification are discussed in section H. Changes to piers and ruins are shown on the smooth sheet in red ink. ✓

There are no newly found, unreported dangers to navigation in the present survey area.

All shoal areas within the limits of the survey were developed by running 50-meter splits of the main scheme and 50-meter lines perpendicular to the main scheme, except for a 6-foot shoal which fell at the edge of the north survey limit. See section K for comments and recommendations on these shoal areas.

The present soundings are adequate to supersede charted soundings within the common areas. Concur.

M. ADEQUACY OF SURVEY

This survey is a complete basic hydrographic survey and is adequate to supersede all prior surveys within the common areas. With the addition of the work accomplished from OCT. 11 - NOV. 6, 1990 this survey is complete.

N. AIDS TO NAVIGATION

There are no landmarks, floating aids nor non-floating aids to navigation in this survey area.

No submarine cables and pipelines, overhead cables, bridges, ferry routes, nor overhead pipelines are within the survey area.

O. STATISTICS

Description	Vessel 770	Vessel 519	Total
Total Number of Positions	1030	51	1081
Total Lineal Nautical Miles of Hydrography	116	-	116
Square Nautical Miles of Hydrography	3.3	-	3.3
Days of Production	10	2	12
Bottom Samples	17	2	19
Tide Stations	-	-	3
Speed of Sound Casts	-	-	4
Detached Positions	24	21	45

P. MISCELLANEOUS

All positions listed in this report are based on the North American Datum of 1983 (NAD 83).

The hydrographer suspects that the wood pile in ruins found at latitude 27°44'15"N, longitude 097°21'48"W, on day 117, position 1054, and another wood pile in good condition at latitude 27°44'16"N, longitude 097°21'46"W, on day 116, position 1040, are part of the pier ruins of AWOIS item 4796. This AWOIS item will be investigated further at a later date. See additional work included with this report for a further discussion of AWOIS item 4796

The hydrographer also suspects that the 3 wood piles in ruins found at latitude 27°45'30"N, longitude 097°22'33"W, on day 094, position 1031, and the pier ruins found at latitude 27°45'28"N, longitude 097°22'35"W, on day 117, position 1074, are part of the pier ruins of AWOIS item 4790. This AWOIS item will be investigated further at a later date. See additional work included in this report for a further discussion of AWOIS item 4790

There were predicted tide anomalies observed during this survey causing depths on adjacent sounding lines to differ by one foot. There were high winds during this survey which caused extremely low or high water from day to day. The hydrographer believes that when smooth tides are applied this problem will be resolved. Resolved with application of smooth tides

Three position numbers were duplicated. While on line the data acquiring program looses count and ends up with one position number short causing the processing system to duplicate the first position number of the next line. They are listed in the Abstract of Positions found in the separates of this report. * Problem resolved during office processing. ✓

Nineteen bottom samples were taken and submitted to the Smithsonian Institution on May 2, 1990, 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 of this report. * ✓

No anomalous currents were observed in the survey area. ✓

Q. RECOMMENDATIONS

Eleven ~~Ten~~ AWOIS items and one suspicious fathogram trace were not fully resolved during normal sounding operations and shoreline verification. Severe weather conditions and time restrictions did not permit further investigations of these items. These items will be resolved by AHP-2 in the near future. The results will be forwarded under seperate cover. See additional work report for a further discussions of these items.

* Filed with the survey data

R. AUTOMATED DATA PROCESSING

The HDAPS, currently in use, consists of the following system components: A Hewlett Packard (HP) 9000 Model 300 computer, an HP 9153B Disk Drive with a hard disk storage capacity of 20 Mbytes, an HP 7959B hard disk with a storage capacity of 300 Mbytes, an HP 98785A Color Monitor, a Bruning ZETA 824 plotter, an HP Ruggedwriter 480 printer, and an HP Model 9145 tape drive. On the 21-foot MonArks is an IBM PC compatible system, using the Navitronic's Hyflex 1000 as the interface between the computer and the hydrographic sensors. Data are acquired and stored on vessel 770, using a Texas Microsystems. Data are written to 3.5 inch double sided micro-floppy diskettes. A Navitronic Path Guidance Unit (PGU) functions both as a remote steering display for the coxswain and as a remote control for the HDAPS. The office and launch systems are not compatible. The Oswego "Lif" utility program must be used to convert the raw data collected on-line to Hewlett-Packard format.

In addition to the HDAPS, the following non-HDAPS computer programs were used:

	Version	Date
VELOCITY - Velocity Computations (IBM PC)	1.0 extended	9/89
MTEN3 with enhancements Geodetic Computations (IBM PC)		6/88
WORDPERFECT - Descriptive Report (IBM PC)	5.0	6/88
VOLKSWRITER(R) DELUXE Rel 2.0 - Position Abstract (IBM PC)		1983

S. REFERRAL TO REPORTS

Title	Transmittal Information
Descriptive Report to Accompany Survey H-10325	Pacific Hydrographic Section N/CG245 Seattle, WA, 1990
~~Horizontal Control Report for OPR K229 AHP2~~ Geodetic Control Report for CM-8716 & Geodetic Control Survey Job-HC-9901	Field Photogrammetry Section N/CG23322 Norfolk, VA, 1990
Chart Sales Agent Report	Chart Distribution Branch N/CG33 Rockville, MD, 1990

Title	Transmittal Information
User Evaluation Report	Atlantic Hydrographic Section N/CG244 Norfolk, VA, 1990
Chart Inspection Report	Atlantic Hydrographic Section N/CG244 Norfolk, VA, 1990
Coast Pilot Report	Pacific Hydrographic Section N/CG245 Seattle, WA, 1990

Submitted by:

Maria Mangual-Ortiz

Maria Mangual-Ortiz
Surveying Technician, Atlantic Hydrographic Party Two

CHART NO. 11309 & 11311 AWOIS ITEM NO. 4760

ITEM DESCRIPTION: 8 ft REP

SOURCE: CL1250/82--CPR5--11311

INVEST. DATE:	DAY:	TIME:	VESSEL:
4/2/90 & 4/4/90	092 094	2257-2306 1607-1703	770

Chief of Party: LCDR V. Dale Ross

REFERENCE: OPR K229-AHP-2, AHP-10-5-90, H-10330 POSITION: 909-910, 913-914, 990-991, 1002-1003, & 1009-1016

DEPTH: 8 feet

CORRECTORS APPLIED: Predicted Tides _X_ Velocity _X_ Draft _X_

GEODETIC POSITION:		LATITUDE N	LONGITUDE W
CHARTED:	NAD 83	27°46'46.03"	097°23'31.97"
OBSERVED:	NAD 83	27°46'46"	097°23'32"

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION:

The area was developed by running 50-meter splits of the main scheme and 50-meter lines perpendicular to the main scheme.

CHARTING RECOMMENDATIONS:

The charted 8 feet should remain as charted. LATITUDE LONGITUDE
Do not concur 6foot sounding found at 27/46/41.40 N, 97/23/29.02 W
Delete 8 foot rep 1982 note and chart note 6 foot 1990

COMPILATION USE

CHART: APPLIED AS:

CHART NO. 11309 AWOIS ITEM NO. 4795

ITEM DESCRIPTION: PIER RUINS

SOURCE: UNKNOWN SOURCE

INVEST. DATE: 4/27/90 DAY: 117 TIME: 151248 UTC VESSEL: 519

Chief of Party: LCDR V. Dale Ross

REFERENCE: OPR K229-AHP-2, AHP-10-5-90, H-10330 POSITION: 1050

LEAST DEPTH: 3.5 feet

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___

GEODETIC POSITION:		LATITUDE N	LONGITUDE W
CHARTED:	NAD 83	27°44'27.03"	097°22'02.97"
OBSERVED:	NAD 83	27°44'27.18"	097°22'01.97"

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION:

Fathogram search, visual search, and hydrographer walked the area 30 meters search. Two lines of square concrete pier footings were found. They extend from shore, parallel to the pier south of this position, and end at the T-head of this pier. They sit approx. 3 feet from pier to approx. 20 feet from the pier. Local fisherman said they uncover at low tide.

CHARTING RECOMMENDATIONS:

Pier ruins should be charted all along the existing pier at the position surveyed. Retain pier ruins as charted, add new pier as shown on TP-01616 and smooth sheet.

COMPILATION USE

CHART: APPLIED AS:

CHART NO. 11309 AWOIS ITEM NO. 4798

ITEM DESCRIPTION: 5 PIER RUINS

SOURCE: UNKNOWN SOURCE

INVEST. DATE: 4/27/90 DAY: 117 TIME: 160306 VESSEL: 519

Chief of Party: LCDR V. Dale Ross

REFERENCE: OPR K229-AHP-2, AHP-10-5-90, H-10330 POSITION: 1056

LEAST DEPTH:

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___

GEODETIC POSITION:		LATITUDE N	LONGITUDE W
CHARTED:	NAD 83	27°44'01.03"	097°21'28.97"
OBSERVED:	NAD 83	27°44'01.0"	097°21'28.9"

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION:

Fathogram search, visual search, and diver walked a 20 meters swath on both sides for extent of piers and nothing was found.

CHARTING RECOMMENDATIONS:

These pier ruins should be removed from the chart - concur

COMPILATION USE

CHART: APPLIED AS:

APPROVAL SHEET

BASIC HYDROGRAPHIC SURVEY
OPR-K229-AHP2
AHP-10-5-89
H-10330
1990

This basic hydrographic survey was conducted in accordance with the project instructions for OPR-K229-AHP2, the hydrographic manual, the hydrographic survey guidelines, and the field procedures manual. The survey data and reports were completed under daily surpervision. 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.

V. Dale Ross
LT. CDR., NOAA
Chief, Atlantic Hydrographic Party Two

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H-10330

HYDROGRAPHIC TITLE SHEET

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

FIELD NO.

AHP 10-5-90

State: Texas

General locality: Corpus Christi Bay

Locality: Two Miles East of Alta Vista Reef

Scale: 1:10,000 Date of survey: Oct. 11 - Nov. 6, 1990

Instructions dated: September 14, 1989 Project No.: OPR-K229 - AHP2

Vessel: Launch 520, Atlantic Hydrographic Party - 2

Chief of party: LCDR V. Dale Ross

Surveyed by: Ms. Maria Mangual-Ortiz

Soundings taken by echo sounder, hand lead, pole: Raytheon DE-719-C/with Odom Digitrace, and Innerspace echo sounder

Graphic record scaled by: MMO, LM

Graphic record checked by: MMO

Evaluated by: R.N. Mihailov Automated plot by: PHS Xynetics Plotter

~~Protracted by:~~

Verification by: R.N. Mihailov

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

REMARKS: Time meridian used was UTC. The sheet letter is designated as "W". This additional work completed the basic hydrographic survey H-10330, AHP-10-5-90, Sheet "W". Revisions and marginal notes in black were generated during office processing. Some separates are filed with the hydrographic data.

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978-665-010-1174

ADDITIONAL WORK
DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10330
(Field No. AHP-10-5-90)
Scale:1:10,000
1990
Atlantic Hydrographic Party Two
Chief of Party: Lt. Cdr. V. Dale Ross, NOAA

A. PROJECT

This additional work was conducted in accordance with Hydrographic Project Instructions OPR-K229-AHP2, Corpus Christi and Aransas Bays, Texas, dated September 14, 1990. Change No 1 dated Oct 19, 1989 and change No. 2 dated January 10, 1990.

The survey area of this additional work is designated as sheet "W" in the project instructions.

The purpose of this additional work is to complete the item investigations not resolved during the winter of 1989 and spring of 1990 season.

B. AREA SURVEYED

The additional work is in the area surveyed for H-10330 which is the southwest portion of Corpus Christi Bay, Texas, from the Alta Vista Reef to shore bounded by the following limits:

North - 27°46'46"N
South - 27°43'44"N
East - 097°21'11"W
West - Corpus Christi Shore

The AWOIS items and other item investigations were conducted from October 11, 1990 (day 284) to November 6, 1990 (day 310).

C. SOUNDING VESSEL

Vessel 520 (EDP No. 520), a 21-foot MonArk, was the only sounding vessel used during the item investigations. There were no unusual vessel configurations nor problems encountered.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

The HDAPS, currently in use, consists of the following system components: A Hewlett Packard (HP) 9000 Model 300 computer, an HP 9153B Disk Drive with a hard disk storage capacity of 20 Mbytes, an HP 7959B hard disk with a storage capacity of 300 Mbytes, an HP 98785A Color Monitor, a Bruning ZETA 824 plotter, an HP Ruggedwriter 480 printer, and an HP Model 9145 tape drive. On the 21-foot MonArks is an IBM PC compatible system, using the Navitronic's Hyflex 1000 as the interface between the computer and the hydrographic sensors. Data are acquired and stored on vessel 520 using a Comflex 1030 NX. Data are written to 3.5-inch double sided micro-floppy diskettes. A Navitronic Path Guidance Unit (PGU) functions both as a remote steering display for the coxswain and as a remote control for the HDAPS. The office and launch systems are not compatible. The Oswego "Lif" utility program must be used to convert the raw data collected on-line to Hewlett-Packard format.

In addition to the HDAPS, the following non-HDAPS computer programs were used:

	Version	Date
VELOCITY - Velocity Computations (IBM PC)	1.01	1/90
MTEN3 with enhancements Geodetic Computations (IBM PC)		6/88
WORDPERFECT - Descriptive Report (IBM PC)	5.0	6/88
VOLKSWRITER(R) DELUXE Rel 2.0 - (IBM PC)		1983

E. SONAR EQUIPMENT

side scan
No sonar equipment was used during this survey.

F. SOUNDING EQUIPMENT

The following Raytheon Fathometer (Model DE-719-C), with Odom Hydrographic Systems, Inc. Digitrace and Innerspace echo sounder, were used on vessel 520 during the item investigations:

S/N	Day
(DE-719-C) 3947	284 - 289
(Innerspace) 187	310

No major problems were encountered with the fathometer and echo sounder used on vessel 520.

G. CORRECTIONS TO SOUNDINGS

When using the Raytheon Model DE-719-C fathometer, calibration checks were made frequently on day 284 and 289. The Digitrace readings were closely monitored for agreement with the fathogram trace. The digitized soundings matched the fathometer's trace to plus or minus 0.1 meter. Any necessary corrections were done during scanning of the fathogram. Any required adjustments of the tide and draft, speed of sound, sensitivity, and chart speed were made and noted on the fathogram. Any departures from the initial zero were corrected during scanning of the fathogram.

The Innerspace echo sounder is totally automated and does not need adjustments. The digitized soundings matched the Innerspace echo sounder's trace to plus or minus 0.1 meter.

Soundings were recorded in meters using the Raytheon DE-719-C Fathometer and the Innerspace echo sounder. The Raytheon DE-719-C Fathometer and the Innerspace echo sounder are 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 an Applied Microsystems Laboratory, Inc. (AML) speed of sound profiler (S/N 03003). NOS Program "Velocity" was used for the speed of sound correction computations. Copies of velocity cast forms can be found in the separates of this report. *

* filed with hydrographic data

H. CONTROL STATIONS

The horizontal control datum for this project is the North American Datum of 1983.

Two monumented control stations (stations 039 and 059), and four fixed aids to navigation (stations 045, 046, 049 and 063) were used to control this additional work. The station list is included in the seperates to this report.

Station number 063 was assigned to two different stations within the area of this project --station "Warehouse 1989" at latitude 27°52'23.387"N, longitude 097°09'34.837"W, not used by this survey, and station "C C Bay Spoil Bank Lt A 1990" at latitude 27°44'01.556"N, longitude 097°16'32.909"W, which was used by this survey.

The name of station "C C Bay Spoil Bank Lt A 1990" was charted incorrectly, and consequently the name submitted with our third-order, class I position was also incorrect. It is listed in the Light List, Volume IV, 1990, Light List No. 27730, as "Corpus Christi Bay Spoil Bank Light". Telephone conversations with Chief Hernandez, U. S. Coast Guard, Corpus Christi Aids to Navigation Team, confirmed the name of this light to be as listed on the light list. Seaward inspection was performed by this hydrographer when setting-up station 063. A white diamond-shaped dayboard with an orange reflective border labeled "DANGER SPOIL BANK", and a white light was observed. CC Bay Spoil Bank LT. A, 1990 was used for the smooth sheet, light is located beyond sheet limits.

Chief Warrant Officer Eduardo Anastacio, of the U. S. Coast Guard, Corpus Christi Aids to Navigation Team, informed me of their plan to remove "Corpus Christi Bay Spoil Bank Light", since they feel it is no longer needed. He will wait until we can provide him with a complete depth coverage of the discontinued spoil area covered by Sheet H-10326 (1990) and Sheet "R" not yet started. H-10365

All control stations used on this survey were either existing stations or stations set by the Coastal Surveys Unit except for control station 063, which was located by field party personnel. Copy of the NOAA Form 76-40 submitted to N/CG245, is included in the seperates to this report. All stations were established using third order, class I traverse and intersection methods. The horizontal control report was written within the Coastal Surveys Unit and was forwarded to the Atlantic Hydrographic section in Norfolk, Virginia.

I. HYDROGRAPHIC POSITION CONTROL

1. Survey Methods

Hydrographic position control was accomplished using the Mini-Ranger Motorola Falcon 484 system which provided accuracy to meet 1:10,000 scale survey requirements. Range/range positioning using two, three or four stations simultaneously was used during this additional work. A survey network was set up to allow four reference stations to be accessed simultaneously by the HDAPS.

The following Falcon Mini-Ranger equipment was used:

Equipment	S/N
RPU	E0164
R/T	E2960
R/S	E2911
R/S	E2962
R/S	F3242
R/S	F3293
R/S	C2096

Positions which had erratic lines of position, indicated by high residuals (over 5 meters) on the "raw" listing were "smoothed" or recomputed with point computation during processing. Positions were "smoothed" by dead reckoning between two accurate positions. Positions were recomputed with point computation by turning off the problem station or turning on a station with a good distance which was off when the position was recorded.

2. Critical System Checks

Critical system checks were performed by visually observing the error circle radii and residual values on the Comflex screen in the survey vessels. The "DUMP ALPHA" and "DUMP GRAPHICS" functions are not available with COMFLEX so no hard copy of these checks are possible. However, the data identification listing serves as the record of the quality of the positional data.

Fixed point system checks were performed after Mini-Ranger reference stations were established on shore stations or after relocating Mini-Ranger reference stations. These system checks occurred on days 277 and 292. All fixed point checks values were less than 5 meters, which is within the required limits specified in the field procedures manual. Results of these fixed point checks are included in the separates of this report. *

* filed with hydrographic records.

3. Mini-Ranger Falcon Calibrations

Baseline calibrations were performed as specified in the field procedures manual. The baseline values were incorporated into the Comflex 1030 NX "C-O" table and applied directly to all "on-line" data. Baseline calibration forms and the "C-O" table are included in the separates of this report. *

A closing baseline calibration was not performed since the survey was conducted in less than a six month period.

J. SHORELINE

Not applicable.

K. CROSSLINES

Not applicable.

L. JUNCTIONS

Not applicable.

M. COMPARISON WITH PRIOR SURVEYS

Not applicable.

N. COMPARISON WITH THE CHART

The statement "There are thirteen AWOIS items within the limits of the present survey." reported on Section L, Comparison With The Chart, of the Descriptive Report to Accompany H-10330 is incorrect. The position given on the AWOIS listing for AWOIS 4797 is incorrect and plots in the area of sheet "U". While going over the presurvey review markup, it was noticed that AWOIS 4797 was actually circling 6 pier ruins and one pier off the shoreline ~~of sheet~~ on this survey "W". The statement should read "There are fourteen AWOIS items within the limits of the present survey.".

"U" = H-10361
"W" = H-10330

* filed with hydrographic data

The following speed of sound casts were taken during the item investigations:

Table Applied	Day	Depth	Location NAD 1983	Days
16	284	13.5 meters	26°49'00"N 097°13'30"W	284-289
17	302	14.9 meters	27°48'50"N 097°17'30"W	310

A data quality assurance test (DQA) was performed prior to each speed of sound cast to assure proper working condition of the probe. Speed of sound tables are included in the separates of this report. *

Lead line comparisons were conducted on day 284, 289, and 310 to determine an instrument corrector and check the static draft. Instrument corrections are applied via the velocity table. Lead line comparison forms can be found in the separates of this report. *

Settlement and squat measurements for vessel 520 were performed on October 10, 1990 (DN 283), at the T-head, Corpus Christi, using the NOS prescribed level rod method (Zeiss Level S/N 08765). Settlement and squat correctors and the static draft corrector of .36 meter were applied on-line through the offset table. Copies of the field data, the graph of the settlement and squat correctors vs. RPM, and the offset table are included in the separates. *

The final field sheets and rough sheets were plotted using predicted tides using the reference station and correctors designated in the project instructions. Approved tides were requested from the Sea and Lake Levels Branch, N/OMA1212, in a letter dated November 9, 1990. Copies of the field tide note, request for approved tides, and HDAPS tide table are included with the separates of this report. *

Survey records were scanned by AHP-2 employees. Significant peaks and deeps which occurred between selected soundings, missed depths, incorrectly digitized soundings, and the effects of sea and swell action were corrected while scanning the echograms.

* filed with hydrographic data.

I would like to mention at this time that three other positions given on the AWOIS listing were incorrect (AWOIS 4789, 4790, and 4791). AWOIS 4789 plotted well in land giving a wrong impression and confusion that where there were piers before, now there is land as if the area was filled. This confusion was cleared when the mainscheme hydrography verified the shoreline to agree with previous shorelines of this area. AWOIS items 4790 and 4791 plotted well offshore giving the impression that these pier ruins extended offshore an unrealistic distance.

There were eleven AWOIS item investigations not resolved during the winter of 1989 and spring of 1990 season. See the AWOIS reports included with the seperates of this report for findings on these AWOIS items.

A 20-meter swath on both sides of a charted pier ruins, not covered by the AWOIS item listing, at latitude 27°44'25"N, longitude 097°21'56"W, was performed by divers walking the area on day 310, positions 6085 and 6086. Pier ruins were found extending up to position 6085 with a least depth of 0.5 meter, uncorrected. The hydrographer recommends pier ruins be recharted on Chart 11309 as ~~submerged~~ pier ruins up to the surveyed position, latitude 27°44'24"N, longitude 097°21'59"W. -concur-delete charted ruins and chart ruins as shown on smooth sheet

A 20-meter swath on both sides of three charted pier ruins, not coverd by the AWOIS item listing, at latitude 27°45'04"N, longitude 097°22'20"W, latitude 27°45'01"N, longitude 097°22'18"W, and latitude 27°45'35"N, longitude 097°22'31"W, were performed by divers walking the area on day 289, positions 6079 and 6080, and day 310, position 6089, respectively. Nothing was found. The hydrographer recommends these three pier ruins be removed from Chart 11309. concur

A visual and fathometer search was previously performed by the hydrographer on an apparent charted ruins at latitude 27°43'50"N, longitude 097°21'13.8"W, and nothing was found at this location. Rubble, rip rap, protecting the bulkhead inshore of this apparent charted ruins was found with no connection to the apparent ruins. The hydrographer recommends this apparent ruins symbol be removed from Chart 11309. -concur - Delete charted pier ruins, retain adjacent groins as charted.

O. ADEQUACY OF SURVEY

This additional work completes the basic hydrographic survey H-10330 previously submitted and is adequate to supersede all prior surveys within the common areas. concur

P. AIDS TO NAVIGATION

Not applicable.

Q. STATISTICS

Description	Vessel 520
Total Number of Positions	93
Total Lineal Nautical Miles of Hydrography	2.7
Square Nautical Miles of Hydrography	.03
Days of Production	3
Bottom Samples	-
Tide Stations	3
Speed of Sound Casts	2
Detached Positions	20

R. MISCELLANEOUS

All positions listed in this report are based on the North American Datum of 1983 (NAD 83).

A dive investigation was performed on a suspicious fathogram trace at latitude 27°45'22"N, longitude 097°22'00"W, on day 310, position 6084. Two large boulders measuring 2-by 3 meters and approximately 4 meters apart were found at this location with a lead line least depth of 2.6 meters, uncorrected. The hydrographer recommends a submerged rock symbol be charted on Chart 11309 at the surveyed position. For additional information, see Dive Report No. 1 of day 310, included with the separates of this report*. corrected value is 7 feet chart 7 foot obstn as shown on the smooth sheet.

S ~~Q~~. RECOMMENDATIONS

Not applicable.

* filed with hydrographic records.

T 8. REFERRAL TO REPORTS

Title	Transmittal Information
Descriptive Report to Accompany Survey H-10330	Pacific Hydrographic Section N/CG245 Seattle, WA, 1990

Submitted by:

Maria Mangual-Ortiz

Maria Mangual-Ortiz
Surveying Technician, Atlantic Hydrographic Party Two

CHART NO. 11309 & 11311 AWOIS ITEM NO. 4759

ITEM DESCRIPTION: OBSTRUCTION--PROPOSED FISH HAVEN, ARTIFICIAL REEF CONSTRUCTED OF AUTO TIRES, MARKED BY SIGNS.

SOURCE: CL1557/77--COE

INVEST. DATE: 10/11/90 DAY: 284 TIME: 155140-194648 UTC VESSEL: 520

Chief of Party: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-5-90, H-10330 POSITION: 6000-6066

DEPTH/HEIGHT: N/A

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___

GEODETIC POSITION:		LATITUDE N	LONGITUDE W
CHARTED:	NAD 83	27 46'27"	097 23'16"
OBSERVED:		- Not Found -	

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION: A visual and fathometer search was previously performed by the hydrographer and nothing was seen or found. The area was developed to 20-meter spacing (E-W and N-S lines) during the additional work. No significant soundings were found in this area. The area was found to be consistent with other soundings in the adjacent areas with a gradual inshore shoaling. No signs marking this area were found.

CHARTING RECOMMENDATIONS: The "obstruction fish haven" should be removed from the chart. Do not concur. No indication of fish haven found. The requesting agency should be asked if the fish haven is to be effected. UNTill a reply has been received, retain as charted.

COMPILATION USE

CHART: APPLIED AS:

CHART NO. 11309 & 11311 AWOIS ITEM NO. 4761

ITEM DESCRIPTION: OBSTRUCTION--PIER

SOURCE: BP12C110--1983, NANCI

INVEST. DATE: 3/19 & 4/2/90 DAY: 078 & 092 TIME: VESSEL: 770 & 520

Chief of Party: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-5-90, H-10330 POSITION: 140, 141, 220, 934, & 937

DEPTH/HEIGHT: N/A

CORRECTORS APPLIED: Predicted Tides ____ Velocity ____ Draft ____

GEODETIC POSITION:		LATITUDE N	LONGITUDE W
CHARTED:	NAD83	27 46'25"	097 23'16"
OBSERVED:		- As charted and shown on TP-01616 -	

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION: Visual search. This pier is portrayed correctly on TP-01615 and charted correctly on Charts 11309 and 11311. No detached position was taken since this pier agreed well with TP-01616. This pier was further verified by main scheme hydrography breaking and starting at the pier. Furthermore, a 20-meter spacing development was done on day 284, pos. 6000-6066, for AWOIS 4759 around this pier with most of the lines breaking and starting at the pier.

CHARTING RECOMMENDATIONS: Remain as charted at the shoreline manuscript TP-01615 position. - CONCUR

COMPILATION USE

CHART: APPLIED AS:

CHART NO. 11309 AWOIS ITEM NO. 4789

ITEM DESCRIPTION: OBSTRUCTION--1 PIER & 2 PIER RUINS

SOURCE: UNKNOWN SOURCE

INVEST. DATE: 11/6/90 DAY: 310 TIME: 195513, 195801, & 200101 UTC VESSEL: 520

Chief of Party: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-5-90, H-10330 POSITION: 6090, 6091, & 6092

LEAST DEPTHT: 0.5m, 0.6m, & 0.8m, respectively, uncorrected

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___

GEODETIC POSITION:			LATITUDE N	LONGITUDE W
CHARTED NAD83:	1. Pier ruins		27 45'41"	097 22'39"
	2. Pier		27 45'40"	097 22'39"
	3. Pier ruins		27 45'38"	097 22'37"
OBSERVED NAD83:	1. Pier ruins	Pos. 6090	27 45'41"	097 22'39"
	2. Pier ruins	Pos. 6091	27 45'40"	097 22'39"
	3. Pier ruins	Pos. 6092	27 45'37"	097 22'37"

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION: A 20-meter swath on both sides of all the features covered by this AWOIS item was performed by divers walking the area during this additional work. Pier ruins were found on all three charted positions.

CHARTING RECOMMENDATIONS: Pier ruins (Item No. 1) should remain as charted. The pier (Item No. 2) should be recharted as pier ruins at the charted position. Pier ruins (Item No. 3) should remain as charted up to the observed position.
Item No. 1 - concur Item No. 2 - concur
Item No. 3 - Do not concur, delete charted ruins, and chart ruins as shown on smooth sheet at latitude (N) 27/45/36.0, longitude (W) 97/22/37.94

COMPILATION USE

CHART: APPLIED AS:

CHART NO. 11309 AWOIS ITEM NO. 4790

ITEM DESCRIPTION: OBSTRUCTION--PIER RUINS

SOURCE: UNKNOWN SOURCE

INVEST. DATE: 4/27/90 DAY: 117 TIME: VESSEL: 519

Chief of Party: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-5-90, H-10330 POSITION: 1074

LEAST DEPTH: 3.0 feet, uncorrected

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___

GEODETIC POSITION:		LATITUDE N	LONGITUDE W
CHARTED:	NAD83	27 45'28"	097 22'23"
OBSERVED:	NAD83	27 45'28"	097 22'35"

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION: A visual and fathometer search was previously performed by the hydrographer. Pier ruins were found near shore up to the observed position. A 20-meter swath on both sides of the charted pier ruins was performed by divers walking the area during the additional work on day 289, positions 6067 and 6068. Nothing was found in addition to what was previously found by the hydrographer.

CHARTING RECOMMENDATIONS: Pier ruins should be recharted up to the observed position. ~~concur~~ Delete charted pier ruins

---

COMPILATION USE

CHART: APPLIED AS:

CHART NO. 11309 AWOIS ITEM NO. 4791

ITEM DESCRIPTION: OBSTRUCTION--PIER RUINS

SOURCE: UNKNOWN SOURCE (This charted pier in ruins was portrayed on prior T-09182 as a pier.)

INVEST. DATE: 10/16/90 DAY: 289 TIME: 153401 & 153712 UTC VESSEL: 520

Chief of Party: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-5-90, H-10330 POSITION: 6071 & 6072

DEPTH/HEIGHT: N/A

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___

GEODETIC POSITION:		LATITUDE N	LONGITUDE W
CHARTED:	NAD83	27 45'18"	097 22'25"
OBSERVED:		- As charted and shown on TP-01616 -	

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION: A visual and fathometer search was previously performed by the hydrographer. Pier ruins were found near shore as portrayed on the shoreline manuscript TP-01616. A 20-meter swath on both sides of the charted pier ruins was performed by divers walking the area during the additional work. Nothing was found in addition to what was previously found by the hydrographer.

CHARTING RECOMMENDATIONS: Pier ruins should be charted as portrayed on the shoreline manuscript TP-01616. Delete charted pier ruins - concur

---

COMPILATION USE

CHART: APPLIED AS:

CHART NO. 11309 AWOIS ITEM NO. 4792

ITEM DESCRIPTION: OBSTRUCTION--PIER

SOURCE: UNKNOWN SOURCE

INVEST. DATE: 10/16/90 DAY: 289 TIME: 154454 UTC VESSEL: 520

Chief of Party: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-5-90, H-10330 POSITION: 6073

DEPTH/HEIGHT: N/A

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___

GEODETIC POSITION:		LATITUDE N	LONGITUDE W
CHARTED:	NAD83	27 45'03"	097 22'30"
OBSERVED:		- Not Found -	

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION: A visual and fathometer search was previously performed by the hydrographer and nothing was found. A 50-meter circle search was performed by divers walking the area during the additional work and nothing was found.

CHARTING RECOMMENDATIONS: The pier symbol should be removed from the chart. -concur

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COMPILATION USE

CHART: APPLIED AS:

CHART NO. 11309 AWOIS ITEM NO. 4793

ITEM DESCRIPTION: OBSTRUCTION--PIER RUINS

SOURCE: UNKNOWN SOURCE

INVEST. DATE: 10/16/90 DAY: 289 TIME: 162247 & 162729 UTC VESSEL: 520

Chief of Party: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-5-90, H-10330 POSITION: 6074 & 6075

DEPTH/HEIGHT: N/A

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___

GEODETIC POSITION:		LATITUDE N	LONGITUDE W
CHARTED:	NAD83	27 44'46"	097 22'12"
OBSERVED:		- Not Found -	

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION: A visual and fathometer search was previously performed by the hydrographer and nothing was found. A 20-meter swath on both sides of the charted pier ruins was performed by divers walking the area during the additional work and nothing was found.

CHARTING RECOMMENDATIONS: The pier ruins symbol should be removed from the chart. - CONCUR

COMPILATION USE

CHART: APPLIED AS:

CHART NO. 11309 AWOIS ITEM NO. 4794

ITEM DESCRIPTION: OBSTRUCTION--PIER

SOURCE: UNKNOWN SOURCE

INVEST. DATE: 4/27/90 DAY: 117 TIME: VESSEL: 519

Chief of Party: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-5-90, H-10330 POSITION: 1061

LEAST DEPTH: 2.0 feet, uncorrected

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___

GEODETIC POSITION:		LATITUDE N	LONGITUDE W
CHARTED:	NAD83	27 44'37"	097 22'10"
OBSERVED:		- As charted and shown on TP-01616 -	

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION: A visual and fathometer search was previously performed by the hydrographer. Pier ruins were found near shore and agreed well with the pier ruins portrayed in the shoreline manuscript TP-01616. A 50-meter circle search was performed by divers walking the area during the additional work on day 289, position 6076. Nothing was found in addition to what was previously found by the hydrographer.

CHARTING RECOMMENDATIONS: The charted pier should be replaced with pier ruins as portrayed on the shoreline manuscript TP-01616. CONCUR

COMPILATION USE

CHART: APPLIED AS:

CHART NO. 11309

AWOIS ITEM NO. 4796
(Page 1 of 2)

ITEM DESCRIPTION: OBSTRUCTION--4 PIER RUINS, 2 PIERS (PRESURVEY REVIEW MARKUP CIRCLED 5 PIER RUINS, 2 PIERS)

SOURCE: UNKNOWN SOURCE

INVEST. DATE: 4/26, 4/27 & 10/16/90 DAY: 116, 117 & 289 TIME: Various VESSEL: 519 & 520

Chief of Party: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-5-90, H-10330 POSITION: 1039, 1041, 1043, 1055, & 6081

HEIGHT: 1.0 feet, uncorrected (Position 1055)

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___

GEODETIC POSITION:	LATITUDE N	LONGITUDE W
CHARTED:	- See page 2 of 2 (AWOIS 4796) -	
OBSERVED:	- See page 2 of 2 (AWOIS 4796) -	

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION: A visual and fathometer search throughout the area of this AWOIS was previously performed by the hydrographer. See page 2 of 2 of this report for findings at each feature. A 20-meter swath on both sides of all the pier ruins was performed by divers walking the area during the additional work on day 289, position 6081. Position 6081 was taken only to show the area where this investigation was done. Nothing was found in addition to what was previously found by the hydrographer.

CHARTING RECOMMENDATIONS: Pier ruins (Items No. 1 and 6) should be removed from the chart. The pier (Item No. 2) should be recharted as a T-shape pier at the shoreline manuscript TP-01616 position. Pier ruins (Item No. 3) should be recharted as shown and charted on the shoreline manuscript TP-01616 position. Pier ruins (Item No. 4) should be replaced by a pier as shown and charted in the TP-01616. The pier (Item No. 5) should remain as shown and charted on the TP-01616. Pier ruins (Item No. 7) should be replaced by a T-shape pier at the TP-01616 position. -concur, except chart Item No. 2 and Item No. 7 as shown on smooth sheet.

COMPILATION USE

CHART: APPLIED AS:

AWOIS 4796 (Page 2 of 2)
H-10330

		CHARTED/NAD83 Latitude N	Longitude W	OBSERVED/NAD83 Latitude N	Longitude W
1.	Pier ruins	27 44'22"	097 21'50"	Not found. ✓	
2.	Pier	27 44 24"	097 21'46"	Position 1043 & as charted on TP-01616 and Chart 11309 but is now a T-shape. *	
3.	Pier ruins	27 44'16"	097 21'52"	As charted and shown on TP-01616 (Position 1055 is the SE end of ruins area). concur	
4.	Pier ruins	27 44'22"	097 21'44"	Position 1041 & as charted and shown on TP-01616. (A shorted pier has been built. No pier ruins were found offshore of the pier ruins portrayed by TP-01616.) ✓	
5.	Pier	27 44'21"	097 21'39"	As charted and shown on TP-01616. ✓	
6.	Pier ruins	27 44'20"	097 21'38"	Not found.	
7.	Pier ruins	27 44'12"	097 21'45"	Position 1039 & as charted on TP-01616 but is now a T-shape. (A T-shape pier was built over the charted pier ruins.) * ✓	

* TP-01616 depiction revised to display a "T" extension on piers. Refer to the smooth sheet.

CHART NO. 11309 AWOIS ITEM NO. 4797

ITEM DESCRIPTION: OBSTRUCTION--6 PIER RUINS, 1 PIER

SOURCE: UNKNOWN SOURCE

INVEST. DATE: 4/26 & 10/16/90 DAY: 116 & 289 TIME: VESSEL: 519 & 520

Chief of Party: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-5-90, H-10330 POSITION: 1038 & 6083

DEPTH/HEIGHT: N/A

CORRECTORS APPLIED: Predicted Tides ____ Velocity ____ Draft ____

GEODETIC POSITION:			LATITUDE N	LONGITUDE W
CHARTED NAD83:	1.	Pier ruins	27 44'08"	097 21'39"
	2.	Pier	27 44'10"	097 21'33"
	3.	5-Pier ruins-NE end	27 44'05"	097 21'36"
		SE end	27 44'04"	097 21'32"
OBSERVED NAD83:	1.	Pier ruins	Not found.	
	2.	Pier	Pos. 1038 & as charted on TP-01616 and Chart 11309, but is now a T-shape.	
	3.	5 Pier ruins	As charted and shown on TP-01616. (Four groins awash and partially in ruins. No other ruins were found offshore of the ruins portrayed by TP-01616.)	

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION: A visual and fathometer search throughout the area of this AWOIS item was previously performed by the hydrographer. See findings for each item listed above. A 20-meter swath on both sides of all the pier ruins was performed by divers walking the area during the additional work on day 289, position 6083. Position 6081 was taken only to show the area where this investigation was done. Nothing was found in addition to what was previously found by the hydrographer.

CHARTING RECOMMENDATIONS: Pier ruins (Item No. 1) should be removed from the chart. Pier (Item No. 2) should be recharted as a T-shape pier at the shoreline manuscript TP-01616 position. 5 Pier ruins (Item No. 3) should be replaced with 4 groins in ruins as shown and charted on the shoreline manuscript TP-01616. Item No. 1 - concur
Item No. 2 - Chart as shown on smooth sheet
Item No. 3 - concur

COMPILATION USE

CHART: APPLIED AS:

CHART NO. 11309 AWOIS ITEM NO. 4799

ITEM DESCRIPTION: OBSTRUCTION--CHARTED "SIGN, PA"

SOURCE: CL364/85--COE PERMIT; PLASTIC PIPE MARKER/"SIGN" NOT MENTIONED

INVEST. DATE: 10/16/90 DAY: 289 TIME: 145307 UTC VESSEL: 520

Chief of Party: LT. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-5-90, H-10330 POSITION: 6070

DEPTH/HEIGHT: N/A

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___

GEODETIC POSITION:		LATITUDE N	LONGITUDE W
CHARTED:	NAD83	27 45'35"	097 22'09"
OBSERVED:		- Not Found -	

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers

METHOD OF ITEM INVESTIGATION: A visual and fathometer search was previously performed by the hydrographer and nothing was seen or found. Two 50-meter circle searches were performed at the observed positions by divers during this additional work and nothing was found. See Dive Report No. 1 of day 289, for additional information on the circle searches.

CHARTING RECOMMENDATIONS: "Sign PA" and pipe symbol should be removed from the chart. Do not concur - 100 meter radius search required. Inadequate investigation, retain at charted position as a subm pile PA.

COMPILATION USE

CHART: APPLIED AS:

CONTROL STATIONS

No.	Latitude	Longitude	Station Name	Cart.
038	27 42'40.782"N	097 18'48.182"W	CALLO 2 1963	250
039	27 43'43.325"N	097 21'08.634"W	SWATNER 1985	139
040	27 44'42.927"N	097 22'21.160"W	DODDRIDGE 1985	250
045	27 48'26.106"N	097 21'52.434"W	CORPUS CHR HARBOR CUT R RNG LT 1989	250
046	27 48'18.064"N	097 16'05.640"W	CORPUS CHR CHAN CUT AW RNG R LT 1989	250
063	27 44'01.556"N	097 16'32.909"W	C C BAY SPOIL BANK LT A 1990	250

ADDITIONAL WORK
CONTROL STATIONS
OPR-K299-AHP2
AHP-10-5-90
H-10330

No.	Latitude	Longitude	Station Name	Cart.
039	27°43'43.325"N	097°21'08.634"W	SWATNER 1985	250
045	27°48'26.106"N	097°21'52.434"W	CORPUS CHR HARBOR CUT R RNG LT 1989	250
046	27°48'18.064"N	097°16'05.640"W	CORPUS CHR CHAN CUT AW RNG R LT 1989	250
049	27°48'20.498"N	097°13'00.008"W	LA QUINTA CHAN OUTER RNG R LT 1989	250
059	27°51'02.658"N	097°21'17.960"W	INDIAN 1989	250
063	27°44'01.556"N	097°16'32.909"W	C C BAY SPOIL BANK LT A 1990	250

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~~

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

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [X] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
AHP-2	TEXAS	CORPUS CHRISTI BAY	4/12/90

The following objects HAVE [X] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-K229-AHP2		H-10325	NAD 1983

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° / //	D.M. Meters	POSITION LONGITUDE ° / //	D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
~~LIGHT~~	~~CORPUS CHRISTI CHANNEL LIGHT "62" LIGHT LIST #27320, VOL. IV, 1990~~	~~27 48~~	~~41.119~~	~~097 18~~	~~06.152~~		~~F-3-6-L 3/23/90~~	~~11309~~
~~LIGHT~~	~~CORPUS CHRISTI CHANNEL LIGHT "67" LIGHT LIST #27325, VOL. IV, 1990~~	~~27 48~~	~~32.588~~	~~097 19~~	~~19.329~~		~~F-3-6-L 3/23/90~~	~~11309~~
LIGHT	CORPUS CHRISTI SPOIL BANK LIGHT (C C BAY SPOIL BANK LT A) LIGHT LIST #27730, VOL. IV, 1990	27 44	01.556	097 16	32.909		F-2-6-L 2/90	11309
	NOTE: FOR INFORMATION COPY ONLY. PREVIOUSLY SUBMITTED WITH H-10325.							

RESPONSIBLE PERSONNEL

TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	Maria Mangual-Ortiz, Surveying Technician	☐ PHOTO FIELD PARTY ☒ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED	James Verlaque, LTJG, NOAA	FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

OFFICE

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

FIELD

I. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

A. Field positions* require entry of method of location and date of field work.

EXAMPLE: F-2-6-L
8-12-75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)

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

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

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.
8-12-75

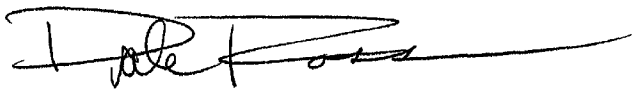
**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

APPROVAL SHEET

BASIC HYDROGRAPHIC SURVEY ADDITIONAL WORK
OPR-K229-AHP2
AHP-10-5-90
H-10330
1990

This additional work was conducted in accordance with the project instructions for OPR-K229-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 and all supporting records were also checked.

This additional work completes the aforementioned basic hydrographic survey for the area described in section B of this report.



V. Dale Ross
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Party Two

ORIGINAL

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: Apr 9, 1991

MARINE CENTER: Pacific

OPR: K229

HYDROGRAPHIC SHEET: H-10330

LOCALITY: Corpus Christi Bay, Alta Vista Reef, TX

TIME PERIOD: October 11 - November 6, 1990

TIDE STATIONS USED: 877-5351 Corpus Christi, T-Head, TX
27°47.8'N 97°23.4'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 2.30 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.6 feet

REMARKS: RECOMMENDED ZONING
Zone direct.

James R. Hubbard
CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

Additional work

ORIGINAL

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: July 9, 1990

MARINE CENTER: Pacific

OPR: K229

HYDROGRAPHIC SHEET: H-10330

LOCALITY: Corpus Christi Bay, Alta Vista Reef, TX

TIME PERIOD: March 14 - April 27, 1990

TIDE STATION USED: 877-5351 Corpus Christi, Lawrence Street T-Head, TX

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 2.32 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.6 feet

REMARKS: RECOMMENDED ZONING
Zone direct.

for Richard A. Cicon

CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10330

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 11309	B ON PREVIOUS SURVEY NO. H-5612	C Chart 11311	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F T-D1615	G RAND MCNALLY ATLAS	H	K U.S. LIGHT LIST	
TEXAS, CORPUS CHRISTI BAY, ALTA VISTA REEF										1
ALTA VISTA REEF	X		X							2
CORPUS CHRISTI	X	X	X							3
CORPUS CHRISTI BAY	X	X	X							4
EMERALD COVE						X				5
TEXAS (TITLE)										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
				Approved:						17
										18
										19
				Chief Geographer						20
				JUL 18 1990						21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H)
(9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER
H-10330

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	4
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	3

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	1					
ENVELOPES						
VOLUMES	1					
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			1027
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	30		30
VERIFICATION OF SOUNDINGS	149		149
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	42		42
COMPARISON WITH PRIOR SURVEYS AND CHARTS		7	7
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		67	67
GEOGRAPHIC NAMES			
OTHER* DIGITIZING			8.5
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	221	74	208

Pre-processing Examination by M. Brown	*Beginning Date* 7/17/90	*Ending Date* 7/17/90
Verification of Field Data by R.N. Mihailov	*Time (Hours)* 8/20/90	*Ending Date* 5/1/91
Verification Check by J.S. Green, B.A. Olmstead	*Time (Hours)* 14	*Ending Date* 7/3/91
Evaluation and Analysis by R.N. Mihailov	*Time (Hours)* 81	*Ending Date* 8/5/91
Inspection by D.J. Hill	*Time (Hours)* 4	*Ending Date* 8/6/91

EVALUATION REPORT

H-10330

1. INTRODUCTION

Survey H-10330 is a basic hydrographic survey accomplished by the NOAA Atlantic Hydrographic Party 2 under the following Project Instructions.

OPR-K229-AHP2, dated September 14, 1989
CHANGE NO. 1, dated December 21, 1989
CHANGE NO. 2, dated January 10, 1990

This survey occurred in Texas and covers the southwest portion of Corpus Christi Bay, including approximately four nautical miles of the shoreline south of the city of Corpus Christi. The survey area extends from latitude 27/43/44N to latitude 27/46/46N and longitude 97/21/11W to the Corpus Christi shoreline. The shoreline consists of sand, dredge spoil areas, ruins, and numerous cultural features. The bottom consists of sand and mud. Depths range from 1 foot to 14 feet.

This survey was initiated in the spring of 1990 and was concluded the following fall. The hydrographer's report is divided into two parts, each addressing one of the two survey periods.

Predicted tides for Galveston Channel, Texas, were used for the reduction of soundings during field processing. Approved hourly heights zoned from Lawrence Street T-Head, Corpus Christi, Texas, gage 877-7351, 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. The TRA, sound velocity and electronic control correctors are adequate. An accompanying computer printout contains the parameters and correctors.

A digital file has been generated for this survey that includes categories of information required to comply with Hydrographic Survey Guideline No. 53, 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 complete information.

2. CONTROL AND SHORELINE

Sections F and G of the early 1990 hydrographer's report and sections H and I of the later report contain adequate discussions of hydrographic control and hydrographic positioning. Additional detailed information on horizontal control is located in the following:

Geodetic Control Report for CM-8716 and
Geodetic Control Survey Job-HC-9901

Positions of horizontal control stations used during hydrography are 1989 field and

published 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 by N/CG121. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude: 1.110 seconds (34.2 meters)
Longitude: 0.971 seconds (26.6 meters)

The year of establishment of control stations shown on the smooth sheet originates with the horizontal control records and published NGS data.

The quality of several positions exceeds limits in terms of error circle radius and residual. A review of the data indicates that there is no significant plotting difference between these fixes and adjacent positions. The review also indicates that the located features or soundings are consistent with surroundings. None of the fixes are used to position dangers to navigation. These fixes are considered acceptable.

The following shoreline maps apply to this survey.

	Photo Date	Class
TP-01615	February 1969	III
TP-01616	February 1969	III

Shoreline drawn on the smooth sheet originates from 1:10,000 scale photographic enlargements of the topographic maps. These shoreline manuscripts are compiled on NAD 1983.

The following shoreline changes are depicted in red on the smooth sheet. These changes are supported by adequate positional information.

Feature	Latitude (North)	Longitude (West)
groin	27/46/06	97/23/06
pier	27/45/53	97/22/53
pier extension	27/45/45	97/22/44
high waterline	27/45/36	97/22/38
pier ruins	27/45/27	97/22/34
pier	27/45/22	97/22/34
pier extension	27/44/33	97/22/10
ruins	27/44/27	97/22/02
pier extension	27/44/28	97/21/45
pier extension	27/44/13	97/21/45
pier extension	27/44/10	97/21/33
groin	27/44/00	97/21/31
groin	27/43/58	97/21/26
groin	27/43/58	97/21/25
groin	27/43/57	97/21/24
groin	27/43/56	97/21/22
breakwater	27/43/54	97/21/20
groin	27/43/52	97/21/19

These features are adequate to supersede the common photogrammetrically delineated shoreline.

The following features were transferred from the field sheet to the smooth sheet in red, without supporting positional information.

Feature	Latitude (North)	Longitude (West)
pier extension	27/43/51	97/21/15
groin	27/43/50	97/21/14

These highwater features are adequate to supersede the common photogrammetrically delineated shoreline.

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.

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, January 1989 Edition (The additional work conforms to the requirements of the Field Procedures Manual, April 1990 Edition).

A NOAA Form 76-40 should have been submitted deleting landmarks as shown on TP-01616, as there are no landmarks applicable to this survey (see section N of the early hydrographer's report).

5. JUNCTIONS

Survey H-10330 junctions with the following surveys.

Survey	Year	Scale	Area
H-10325	1989/90	10,000	northeast
H-10361	1990/91	10,000	southeast
H-10362	1990/91	10,000	north

The junction with survey H-10325 is complete and the soundings are in good agreement.

Surveys H-10361 and H-10362 were accomplished during the 1990-91 field season and have been recently received for processing. These surveys are in a preliminary stage of processing and the junction will be discussed in the reports for these surveys.

6. COMPARISON WITH PRIOR SURVEYS

Survey	Year	Scale
H-5612	(1934)	1:10,000
H-5694	(1934-35)	1:20,000

Survey H-5612 covers the entire area of the present survey, except for a small portion to the south, which is covered by survey H-5694. Extensive cultural development alongshore has occurred since the prior survey was accomplished. In general the six foot deep curve on survey H-10330 has shifted inshore in a uniform manner approximately 100-140 meters, except as noted in section K of the early hydrographer's report. Refer to this section for additional discussions on the differences between the two surveys.

Survey H-5694 overlaps approximately one nautical mile along the southwest corner of survey H-10330. Approximately 61 soundings fall within the limits of survey H-10330. The six foot depth curve on survey H-10330 falls 140 meters inshore from the six foot curve on prior survey H-5694. Shoreline on both surveys agree well, considering the differences in survey methods, technologies and datums. Generally the present survey soundings are one to four feet deeper. The greatest difference (four feet) occurs at latitude 27/44/00N, longitude 97/21/15W (NAD 83).

Survey H-10330 is adequate to supersede surveys H-5612 and H-5694 within the common area.

Survey	Year	Scale
T-9182	(1951)	1:20,000
T-9183	(1951)	1:20,000
T-9187	(1951)	1:20,000
T-12502	(1965)	1:10,000

Shoreline maps T-9182, T-9183, T-9187, and T-12502 cover the entire area of the present survey. The shoreline has changed either through man-made or natural forces. Refer to section K of the early hydrographer's report for discussion on discrepancies between these prior shoreline maps and the present survey.

Survey H-10330 is adequate to supersede these prior shoreline maps as the source for charted hydrography.

There are no AWOIS items originating from the prior surveys applicable to the present survey.

7. COMPARISON WITH CHART

Chart 11309, 29th edition, dated November 15, 1986;
scale 1:40,000 (NAD 27)
Chart 11309, 30th edition, dated December 2, 1989;
scale 1:40,000 (NAD 83)
Chart 11311, 15th edition, dated September 13, 1986;
scale 1:10,000 (NAD 27)
Chart 11311, 16th edition, dated February 17, 1990;
scale 1:10,000 (NAD 83)

The 29th edition and 30th edition of chart 11309 are identical except for being on different datums, some minor revisions to the shoreline and added notations for new aids to navigation.

The 15th edition and 16th edition of chart 11311 are identical except for being on different datums, some minor revisions to the shoreline and added notations for new aids to navigation. Chart 11311 covers this survey north of latitude 27/46/06N.

a. Hydrography

Charted hydrography originates with prior surveys H-5612, H-5694 and miscellaneous sources.

The following features should be retained at the presently charted positions and depicted as listed below:

Feature	Latitude	Longitude	AWOIS Item
Obstn Fish Haven	27/46/27	97/23/16	4759
Subm pile PA	27/45/35	97/22/09	4799

Except for the features listed above, survey H-10330 is adequate to supersede charted hydrography within the common area.

b. AWOIS

Fourteen AWOIS items were assigned for investigation. AWOIS item 4799 was not adequately investigated. The remaining AWOIS items were adequately investigated and discussed by the hydrographer in the Item Investigation Report Forms attached to both hydrographer's reports.

All AWOIS items assigned and addressed in this survey originate with miscellaneous sources.

All AWOIS positions listed in the hydrographer's report have been converted to NAD 83.

c. Controlling Depths

There are no charted channels with controlling depths within the area of this survey.

d. Aids to Navigation

There are no fixed or floating aids located within the area of this survey.

e. Geographic Names

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

f. Dangers to Navigation

No reports of dangers to navigation were generated during the survey or office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10330 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is a good hydrographic survey. Additional field work is recommended to verify or disprove the existence of submerged ruins of the PA sign charted at latitude at 47/45/35N, longitude 97/22/09W (AWOIS 4799).

Robert N. Mihailov
Cartographer

APPROVAL SHEET
H-10330

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.

Dennis J. Hill Date: 8/6/91
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.

Commander Pamela Chelgren-Koterba, NOAA Date: 8/6/91
Chief, Pacific Hydrographic Section

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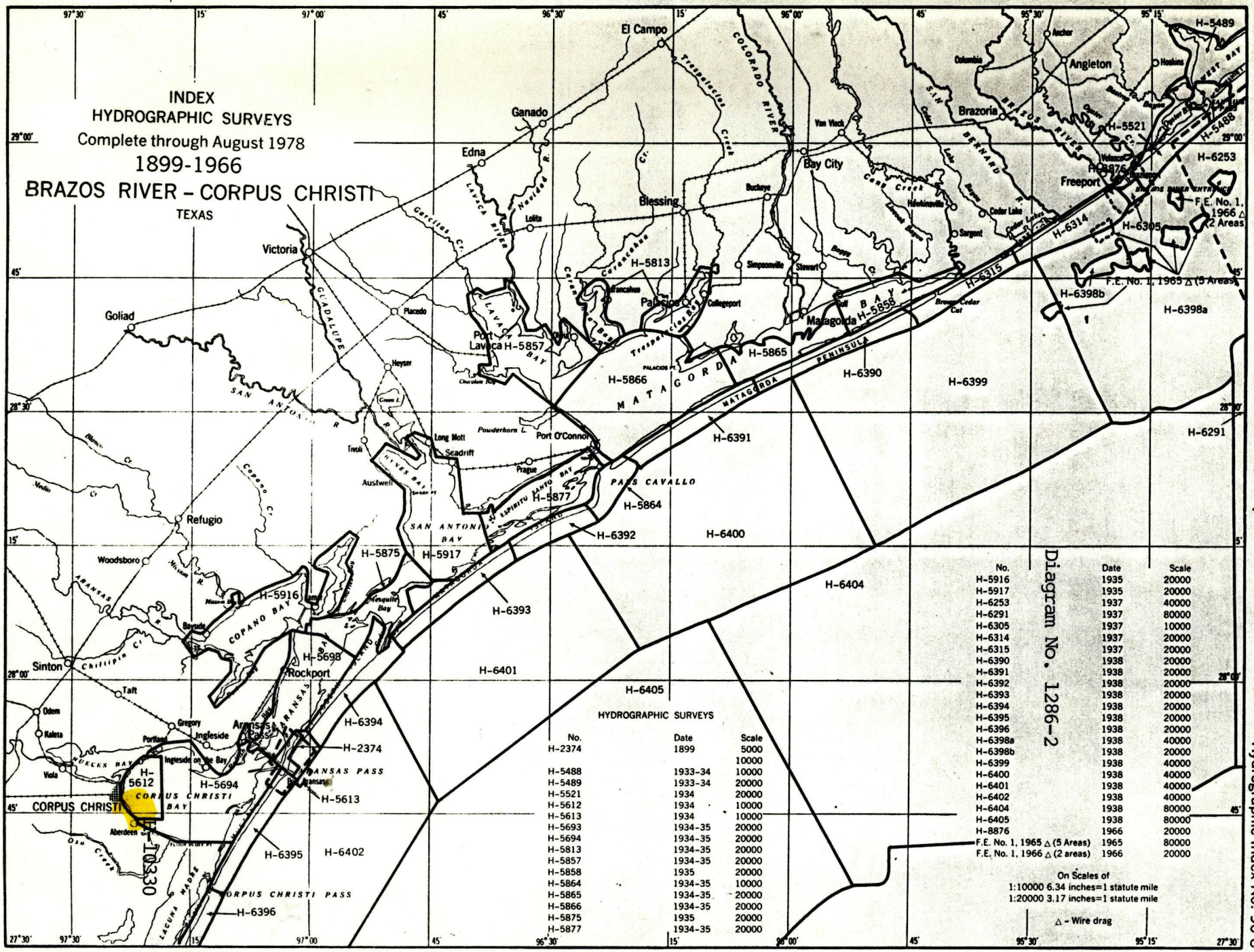
Final Approval

Approved: J. Austin Yeager Date: Aug. 30, 1991
J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey



HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-2374	1899	5000
		10000
H-5488	1933-34	10000
H-5489	1933-34	20000
H-5521	1934	20000
H-5612	1934	10000
H-5613	1934	10000
H-5693	1934-35	20000
H-5694	1934-35	20000
H-5813	1934-35	20000
H-5857	1934-35	20000
H-5858	1935	20000
H-5864	1934-35	10000
H-5865	1934-35	20000
H-5866	1934-35	20000
H-5875	1935	20000
H-5877	1934-35	20000

No.	Date	Scale
H-5916	1935	20000
H-5917	1935	20000
H-6253	1937	40000
H-6291	1937	80000
H-6305	1937	10000
H-6314	1937	20000
H-6315	1937	20000
H-6390	1938	20000
H-6391	1938	20000
H-6392	1938	20000
H-6393	1938	20000
H-6394	1938	20000
H-6395	1938	20000
H-6396	1938	20000
H-6398a	1938	40000
H-6398b	1938	20000
H-6399	1938	40000
H-6400	1938	40000
H-6401	1938	40000
H-6402	1938	40000
H-6404	1938	80000
H-6405	1938	80000
H-8876	1966	20000
F.E. No. 1, 1965 △ (5 Areas)	1965	80000
F.E. No. 1, 1966 △ (2 areas)	1966	20000

On Scales of
1:10000 6.34 inches=1 statute mile
1:20000 3.17 inches=1 statute mile

△ – Wire drag

Diagram No. 1286-2

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

Hydrographic Index No. 90 C

NOAA FORM 75-56
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10330

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
11309	10/22/90	RUSS	~~Full~~ Part Before After Marine Center Approval Signed Via Partial application
			Drawing No. of Sndgs from ~~SB~~ preliminary Sndg Plot.
11307	11/15/90	R.N. Mirador	Full ~~Part~~ Before After Marine Center Approval Signed Via Full application
			Drawing No. Thru 11309, no sndgs. applied
11311	9-18-91	Russ Davis	~~Full~~ Part Before ~~After~~ Marine Center Approval Signed Via Partial application
			Drawing No. of Sndgs from preliminary sounding Plot & 12 foot curve added.
11300	6-11-91	ARMACEN	Full ~~Part Before~~ After Marine Center Approval Signed Via Examined. No
			Drawing No. sndgs. or corrs. applied.
11300	6-10-92	KR. Foster	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 45 Exam - n/c NO Coverage.
11309	7-25-92	L. ARKenai	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 51, Then H-DWG 11311
11311	7-22-92	V.J. Bravenec	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. Fully appld hydro in common area
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.