10361

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-10-16-90

Registery No. H-10361

LOCALITY

State Texas

General Locality Corpus Christi Bay

Sublocality University Heights & Vicinity

19 90-91

CHIEF OF PARTY
LCDR V.D. Ross

LIBRARY & ARCHIVES

DATE July 8, 1992

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

CP-5
11308A
11309

10361

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

H-10361

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 10-16-90

State Texas

General locality Corpus Christi Bay

Locality University Heights and Vicinity

Scale 1:10,000 Date of survey 11/13/90 - 01/16/91

Instructions dated September 14, 1990 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~~ Innerspace 448

Graphic record scaled by MMO, LM, HCR, BDW

Graphic record checked by MMO

Evaluation by: R. Mihailov Automated plot by PHS Xynetics Plotter

Verification by R. Mihailov

Soundings in meters ~~fathoms feet~~ at ~~MLW~~ MLLW and decimeters

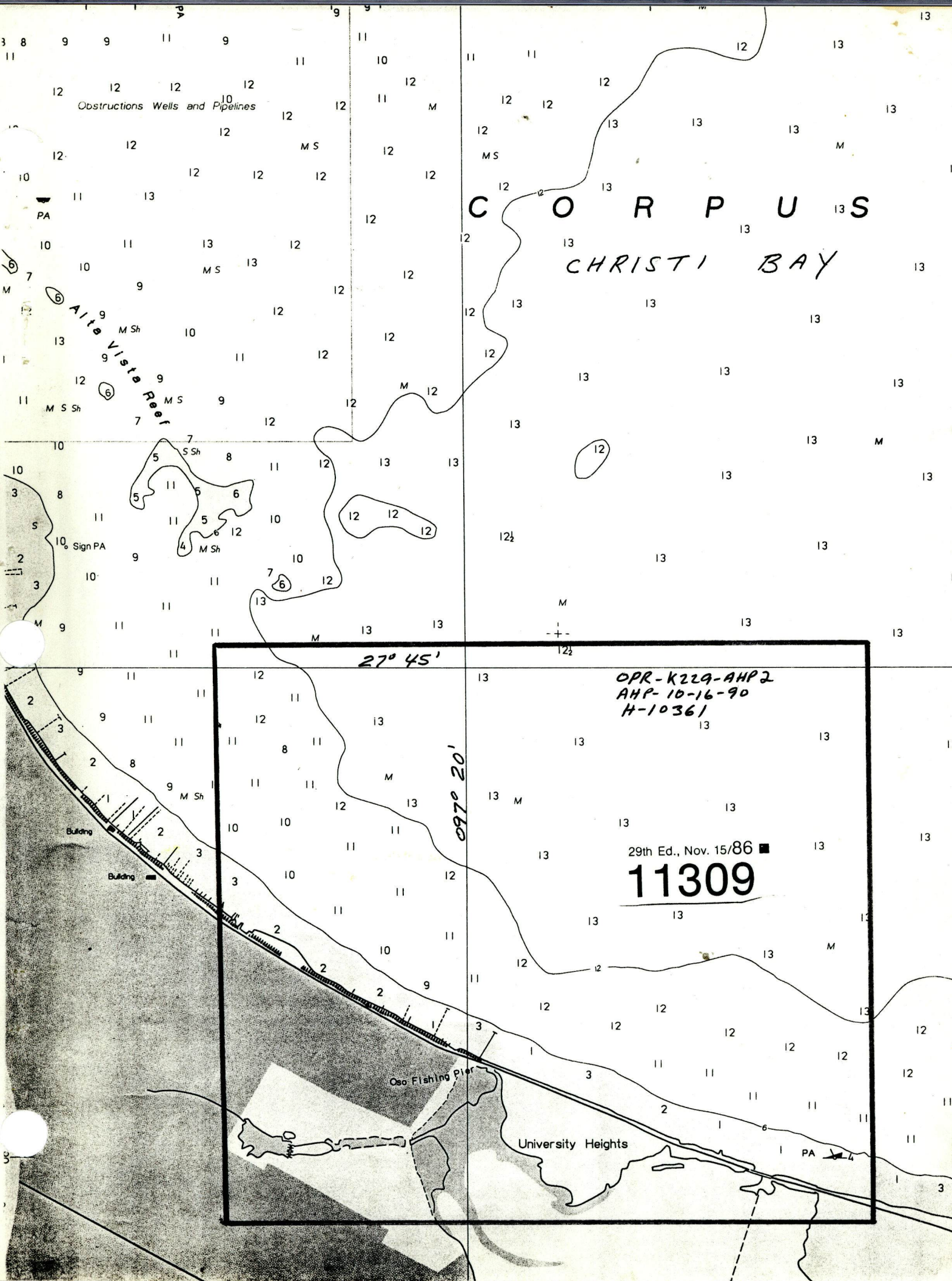
REMARKS: Time meridian used was UTC. The sheet letter is designated as "U". Revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

AWOIS/SURF 7/22/92, SJ

SC 1-28-97

KWW

U.S. GOVERNMENT PRINTING OFFICE: 1986 - 652-007/41215


Obstructions Wells and Pipelines
C O R P U S
CHRISTI BAY
Alta Vista Reef
Sign PA
27° 45'
097° 20'
OPR-K229-AHP2
AHP-10-16-90
H-10361
29th Ed., Nov. 15/86
11309
Building
Building
Oso Fishing Pier
University Heights
PA

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10361
(Field No. AHP-10-16-90)
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, 1990. change 1 dated Feb 12, 1991 was issued after completion of this survey.
This survey is designated as sheet "U" 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 ✓ See Evaluation Report, Section 1

The area surveyed for H-10361 is in the southwest portion of Corpus Christi Bay, Texas, offshore of the University Heights bounded by the following limits:

North - 27°45'06"N
South - Corpus Christi Shore
East - 097°17'51"W
West - 097°21'18"W

This survey was conducted from November 13, 1990 (day 317) to January 16, 1991 (day 016). 2 year survey.

The bottom is composed of mostly gray mud and broken shell.

Depths in this survey range from 0.5 to 5.0 meters.✓

C. SOUNDING VESSEL ✓

Vessel 520 (EDP No. 520), a 21-foot MonArk, was the only sounding vessel used to collect the survey data. There were no unusual vessel configurations nor problems encountered.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Hewlett-Packard HDAPS Programs:

Program	Version	Date
Survey	4.33	5/26/90
Constat	2.02	3/9/90
Postsur	4.14	7/20/90
Printout	2.23	7/12/90
Baseline	1.01	6/15/90
Backup	1.02	3/9/90
Quick	1.01	7/27/90
Conplot	1.02	6/25/90
Diagnostic	2.50	3/9/90
Conpute	2.02	3/9/90
Point	1.20	7/27/90
Install	1.20	3/26/90
Plotall	1.70	7/27/90
Oldpostsur	4.13	4/9/90
Oldconvert	2.33	3/12/90
Loadnew	1.00	7/27/90
Convert	2.34	6/20/90
Filesys	4.55	5/26/90
Oldplotall	1.60	5/26/90
Inverse	1.21	7/27/90
Abst	3.05	5/26/90

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

E. SONAR EQUIPMENT

No sonar equipment was used during this survey.

F. SOUNDING EQUIPMENT ✓

The following Innerspace (Model 448) depth sounder, was used on vessel 520 during the survey:

S/N	Day
187	317 - 016

No major problems were encountered with the depth sounder used on vessel 520, except that it will not digitize less than 0.5 meter. Due to the recurring sand bars from approximately 300 meters offshore into shore, pole soundings were taken in areas with soundings less than 0.5 meter to expeditiously verify the shoreline. Also, a problem was experienced when changing the sounding interval on-line. The Innerspace 448 depth sounder and the Comflex 1030 NX insert the selected soundings differently. The Innerspace 448 depth sounder counts that selected sounding as one of the in-betweens and the Comflex 1030 NX does not. This causes the position numbers to be on a different selected sounding throughout the remainder of the line. The selected soundings and position numbers were corrected while scanning the echograms.

Recurring sandbars are known to exist from approx 300 meters offshore towards shore.

G. CORRECTIONS TO SOUNDINGS

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 done during scanning of the echogram. No problems were encountered with this data during office processing.

To expedite the plotting of all pole soundings with the HDAPS, a negative draft correction of 0.4 meter was applied to all pole soundings during scanning of the echograms to negate the correctors which are automatically applied by the plotting routine. These depths were plotted as digitized soundings along with the data logged by the HDAPS. The hydrographer did not forsee any problems with this action since the speed of sound through water correction is zero at these depths. Moreover, the settlement and squat correction for the boat speed when the pole soundings were taken does not change the rounded draft correction (0.4 meter).

Soundings were recorded in meters using the Innerspace 448 depth sounder. 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 an Odom Hydrographic System, Inc. Digibar

electronic speed of sound probe (S/N 154), and an Applied Microsystems Laboratory, Inc. (AML) speed of sound profiler (S/N 03003). Program "Velocity" was used for the speed of sound correction computations. Copies of cast forms can be found in the separates of this report.*

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

Table Applied	Day	Cast Depth Meters	Location NAD 1983	Days Used
11	319	3.0	27°46'00"N 097°20'00"W	317-318
12	325	3.7	27°45'00"N 097°20'30"W	323-325
13	334	4.7	27°44'45"N 097°18'10"W	335
14	339	4.4	27°44'45"N 097°18'10"W	339
15	346	4.5	27°44'50"N 097°20'45"W	344-345
16	017	3.9	27°45'00"N 097°17'50"W	015-016

A data quality assurance test (DQA) was performed prior to each speed of sound cast to ensure 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. 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 Lawrence St. 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.*

* Filed with the hydrographic records.

A problem was encountered with the speed of the boat monitored by the Comflex 1030 NX on vessel 520. The listings show unrealistic speeds made good varying from 0 m/sec to 10 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 0.01 meter shoaler or 0.08 meter deeper. The hydrographer believes this problem is insignificant for launch 520, since no matter what speed is actually run the total draft correction always rounds to 0.4 meter. This problem has been reported to the Hydrographic Surveys Branch, Rockville, Maryland. These data are considered acceptable.

The final field sheets and rough sheets were plotted with 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 February 4, 1991. Copies of the field tide level note, request for approved tides, 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.

H. CONTROL STATIONS

See Evaluation Report, Section 2 ✓

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

Four monumented control stations (stations 034, 038, 040, and 059), and three fixed aids to navigation (stations 045, 046, and 049) were used to control this survey. The station list is included in ~~the separates of~~ this report.

All control stations used on this survey were either existing stations or stations set by the Coastal Surveys Unit. 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 ✓

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. A survey network was set-up to allow four reference stations to be accessed simultaneously by the HDAPS.

* Filed with the hydrographic records.

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	E2922
R/S	E2890
R/S	E2913
R/S	D2128

The Mini-Ranger remotes with serial numbers F3242 and F3293 malfunctioned. Several checks were performed with no success and the units were shipped for repairs to the Electronic Engineering Branch in Norfolk, Virginia. A new baseline calibration was performed when the replacement units arrived.

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" or recomputed using the point computation routine. Positions were "smoothed" by dead reckoning between two accurate positions. Positions were recomputed with the point computation program by turning-off the station with an erratic range or by turning-on a station with a good range.

If more than six consecutive selected soundings 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, 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. Point computation was used, if possible, when high residuals occurred at the first or last position of a line.

Another occasional problem was encountered when a good residual and error circle radius appeared on the "raw" listing, but the easting or northing of the position was in error by thousands of meters. These positions were rejected, smoothed, or recomputed using the point computation routine following the standards mentioned above. This problem is attributed to the excessive amount of interference encountered from the large steel gas platforms found in the Corpus Christi Bay area. No problems were encountered during office processing.

Critical system checks were performed by visually observing the error circle radii and residual values on the Comflex 1030 NX screen in the survey vessel. The "DUMP ALPHA" and "DUMP GRAPHICS" functions are not available with the Comflex 1030 NX so no listings 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 at shore stations or after relocating Mini-Ranger reference stations. 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.

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" 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.

J. SHORELINE See Evaluation Report, Section 2

Shoreline details shown on the final field sheet were manually transferred from TP-01616. The shoreline manuscripts were compiled at a 1:20,000 scale and photographically enlarged to a 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-01616. Verified shoreline is shown in black ink on the final field sheet.

All shoreline details on the manuscript were verified visually. New piers, pier ruins, fences, groins, foul areas, stakes, and changes to existing features are portrayed in red ink on the final field sheet. New features not related to the shoreline, such as piles and piles in ruins, are shown in black ink.

A "Z-pier" located at latitude 27°42'42"N, longitude 097°18'43"W, position 1138, day 345, is portrayed incorrectly as an "L-pier" on the shoreline manuscript. This change, the new surrounding rock groin on the east side of this "Z-pier", and a public earthen boat ramp with a finger pier on the west side are portrayed in red ink on the final field sheet. See the photograph taken at this site in the separates of this report. Position 1138 delineates the pile offshore (11) of the Z-pier. The Z-pier drawn on the smooth is shown in red.

* Filed with the hydrographic records.

An "L-shaped" area of piles located at latitude 27°43'17"N, longitude 097°20'12"W, position 1019, day 339, is portrayed incorrectly as an obstruction on the shoreline manuscript. This area of piles is shown in black ink on the final field sheet. See the photograph of this site in the separates of this report.*
Shown as L-shaped row of piles (08)

There are fresh water drainage outfalls approximately every 100 meters along the shoreline. Detached positions were not taken since they do not extend out from the shoreline except two drainage outfalls which are used as fish cleaning tables. These positions are at latitude 27°43'44"N, longitude 097°21'01.9"W, and latitude 27°43'37"N, longitude 097°20'52"W, position 1097 and 1098 respectively, day 345. See the photograph of this site in the separates of this report.* Two outfalls (16) are shown on the smooth sheet at the positions listed above.

A large percentage of the seawalls and natural shoreline is being protected with riprap, which in most cases extends offshore approximately 3-6 meters. The hydrographer described her findings on the echogram at the beginning and ending of the main scheme sounding lines. riprap notations have been added to the smooth sheet where warranted.

K. CROSSLINES ✓

A total of 14 linear nautical miles of crosslines were run on H-10361 which equals 11% of the linear nautical miles of hydrography. Crossline soundings agree well except in some areas where they agree to within 0.6 meter of the main scheme soundings. These differences were caused by predicted tide anomalies. See the comments made in section P, "Miscellaneous", of this report about these predicted tide anomalies. No apparent anamolies observed with the application of smooth tides. Crossline soundings agree to within 0.2 meters.

L. JUNCTIONS ✓ See Evaluation Report, Section 5

This sheet junctions with H-10325, sheet "T" (1989-1990) to the north, with H-10330, sheet "W" (1990) to the west, and with H-10365, sheet "R" (1991) to the east.

Junction soundings between the present survey and the junction surveys agree to within seven tenths of a meter. This difference could be partly attributed to the use of different vessels and the predicted tides anomalies in this area. See the comments made in section R, "Miscellaneous", of this report about these predicted tide anomalies.

* Filed with hydrographic records

M. COMPARISON WITH PRIOR SURVEYS ✓ See Evaluation Report, Section 7

This survey was compared with the following prior surveys:

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

Sounding comparisons were made with H-5612 and H-5694. Generally, depths within the survey area have not changed more than 0.7 meter since 1934. However, in the vicinity of latitude 027°43'39"N, longitude 097°21'00"W, offshore of the Swantner Park, soundings are deeper and the shoreline has changed relative to survey H-5694. Telephone conversations with Mr. Phillip Boehk, Design Engineer, Corpus Christi Engineering Department, telephone 512-880-3500, informed the hydrographer that the city built a seawall offshore and the area was hydraulically filled by removing sediment from the bottom nearby. This confirms the shoreline change and deeper depths found in this area. The shoreline change has been updated on T-01616 and agrees well with the present survey. - concur

The shoreline on T-9187 agrees well with the present survey, except for the shoreline in the vicinity of latitude 27°43'39"N, longitude 097°21'00"W. See the discussion on this change in the paragraph above regarding comparisons with H-5612 and H-5694. 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~~ several piers, groins, and pier ruins which are presently charted were not found during main scheme hydrography nor visual shoreline verification and are discussed in section J, "Shoreline", and section N, "Comparison with the Chart", of this report. See comments below

Discussion of existing charted piers, pier ruins, and groins can be found in section N, comparison with chart and the AWOIS investigations attached to this report

With consideration of the above statements, the present survey is adequate to supersede the prior surveys within the common areas.

N. COMPARISON WITH THE CHART ✓

A comparison was made with the following largest scale chart covering the present survey area:

Chart No.	Edition	Edition Date
11309	30th	December 2, 1989 ✓

There are five AWOIS items within the limits of the present survey. See the AWOIS reports included with the separates of this report for findings on these AWOIS items. - Attached to this report.

In general, the soundings from this survey compared to within 0.7 meter of the charted depths.

Only one charted shoal area in the vicinity of latitude 27°44'38"N, longitude 097°20'58"W, exists within the limits of the survey. This shoal area was developed by running 50-meter splits of the main scheme. The least depth found is 3.1 meters and agrees to within 0.7 meter of the charted depth. A 2.8 meter sounding at lat. 27/44/37, long. 97/20/45 plots 400 meters east of the charted 8-foot sounding.

The following discrepancies were noted: Reference discussion of this investigation below.

A visual search of a charted pier, not covered by the AWOIS item listing, at latitude 27°43'15"N, longitude 097°20'08"W, was performed by the hydrographer at low tide on day 339. Depths were 0.3 to 0.6 meter to shore and the bottom was clearly seen. Pier ruins were found extending up to position 964, baring 1.3 meters, corrected for predicted tides. See the photograph taken at this site in the separates of this report. The hydrographer recommends the charted pier be removed from chart 11309, and pier ruins be charted at the surveyed position, latitude 27°43'14"N, longitude 097°20'09"W. - concur - 2 sets of pier ruins (//) shown on the smooth sheet in red.

Visual searches of two charted piers, not coverd by the AWOIS item listing, at latitude 27°43'14"N, longitude 097°20'07"W, and latitude 27°43'13"N, longitude 097°20'06"W, were performed by the hydrographer at low tide on day 339. Depths were 0.3 to 0.6 meter to shore and the bottom was clearly seen. Nothing was found. The hydrographer recommends these two piers be removed from chart 11309. — concur

Other new features and changes to existing features found during shoreline verification are discussed in section J, "Shoreline".

A 2.8 meters shoal was found in the vicinity of latitude 27°44'36"N, longitude 097°20'44"W. The area of the shoal was developed by running 25-meter splits of the main scheme sounding lines and 25-meter lines perpendicular to the main scheme to better delineate the extent of the shoal. This shoal is not considered a danger to navigation since there is a charted 2.4 meter shoal approximately 300 meters west of this shoal. The hydrographer believes that this symmetric shoal probably originated by a drilling company dumping shell to provide a solid foundation in order to set-up a drilling rig. This is done because of the soft mud found in most of the Corpus Christi Bay. The charted depths should be revised with the present survey depths. Least depth of 2.8 meters plotted on the smooth sheet at lat. 27/44/37 long. 97/20/45

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

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

O. ADEQUACY OF SURVEY ✓

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

P. AIDS TO NAVIGATION ✓

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

No submarine cables, submarine pipelines, overhead cables, ferry routes, nor overhead pipelines are located within this survey area. CONCUR

No new landmarks were located within the survey area. Landmarks portrayed on the manuscript were verified by visual inspection. No descrepancies were found with the landmarks portrayed on shoreline manuscript T-01616. There are no landmarks on TP-01616 that fall within the survey area.

There is a fixed bridge within the survey area at latitude 27°42'35"N, longitude 097°18'28"W. The position portrayed on shoreline manuscript T-01616 agrees with the actual position of the bridge. Detached position 1143 on day 016 (skiff clearance only) was taken at a small crossing to the Oso Bay. This crossing is mostly used by local swallow draft boats. This detached position was rejected and was not deemed necessary by the hydrographer since the area under the bridge and extending north-northeast is completely foul with piles from bridge ruins. See positions 1124 and 1125, day 345, taken at the bridge ruins to delineate the foul area. See the photographs taken at this site in the separates of * this report. This area is shown as foul with piles on the smooth sheet. The bridge clearance is limited (4.6 m) to small craft only. Note placed on smooth sheet.

* Filed with hydrographic records.

Q. STATISTICS ✓

Description	Total
Total Number of Positions	~~1159~~ 1053
Total Lineal Nautical Miles of Hydrography	142
Square Nautical Miles of Hydrography	3.3
Days of Production	10
Bottom Samples	30
Tide Stations	3
Speed of Sound Casts	6
Detached Positions	~~33~~ 91

R. MISCELLANEOUS ✓

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

There were predicted tide anomalies observed during this survey causing depths on adjacent sounding lines to differ by 0.5 meter. 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. A specific occasion where this problem can be seen is in a small section of a line, positions 913+1 - 914+5 (day 335), which was rejected and rerun on day 339, positions 967-970. The depths on day 339, positions 967-970, are 0.5 meter shallower throughout the line. No significant anamolies are evident with the application of smooth tides.

Position numbers on days 317 and 318 were edited with the block edit program due to problems encountered with the "F10" positioning control window. Position numbers will not update while the "F10" positioning control window is in use. Due to the excessive amount of microwave interference in this area, the "F10" positioning control window was used more than usual to turn-on and turn-off Mini-Ranger stations. The ASSIGN FIX program was used to assign a position number to the beginning or ending of a line where the position number was rejected. records were rescanned during office processing and no problems were observed.

Six position numbers were duplicated. They are listed in the Abstract of Positions found in the separates of this report. While on-line the data acquiring program loses count of the position number resulting in one less position number thanthere should be. This causes the processing system to duplicate the first position number of the next line. In addition to the "F10" positioning control window, changing the sounding interval on-line also causes duplicated positions. See the comments made under section F, "Sounding Equipment".

Thirty bottom samples were taken and submitted to the Smithsonian Institution on November 29, 1990, as directed in section 6.7 of the project instructions. Bottom sample positions are plotted on the overlay sheet 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.

S. RECOMMENDATIONS

None.

T. REFERRAL TO REPORTS

Title	Transmittal Information
Descriptive Report to Accompany Survey H-10325	Pacific Hydrographic Section N/CG245 Seattle, WA, 1990
Descriptive Report to Accompany Survey H-10330	Pacific Hydrographic Section N/CG245 Seattle, WA, 1990
Descriptive Report to Accompany Survey H-10365	Pacific Hydrographic Section N/CG245 Seattle, WA, 1990
Horizontal Control Report for OPR-K229-AHP2	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
Surveying Technician, Atlantic Hydrographic Party Two

CONTROL STATIONS
OPR-K299-AHP2
AHP-10-16-90
H-10361

No.	Latitude	Longitude	Station Name	Cart.
034	27°41'41.796"N ✓	097°11'01.545"W ✓	FLAT 2 1989	250
038	27°42'40.782"N ✓	097°18'48.182"W ✓	CALLO 2 1963	250
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
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

CHART NO.: 11309 AWOIS ITEM NO.: 4800

ITEM DESCRIPTION: Obstruction/Pier

SOURCE: Unknown

CHIEF OF PARTY: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-16-90, H-10361

INVEST. DATE: 12/11/90 DAY NO.: 345

TIME: 173409 UTC VESSEL: 520

HEIGHT: .2 meter POSITION: 1106

CORRECTORS APPLIED: Predicted Tides _X_ Velocity ___ Draft ___
Settlement and Squat ___

GEODETIC POSITION:	DATUM	LATITUDE N	LONGITUDE W
CHARTED:	NAD83	27°43'29"	097°20'36"
OBSERVED:	NAD83	27°43'29"	097°20'36"

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers _X_
R/AZ, T-2 and Mini-Rangers ___

METHOD OF ITEM INVESTIGATION: The area was visually searched at low tide. Depths were .3 to .6 meter to shore and the bottom was clearly seen. A pile in ruins was found at the offshore end of the charted pier. No other piles or pier ruins were found from this pile to shore.

CHARTING RECOMMENDATIONS: Replace charted pier with a pile symbol at the surveyed position. - concur, pile (O²) shown on smooth sheet.
Remove charted pier and chart a pile (O²)

COMPILATION USE

CHART: APPLIED AS:

CHART NO.: 11309

AWOIS ITEM NO.: 4801

ITEM DESCRIPTION: 2 Piers, 1 Pier ruin

SOURCE: Unknown

CHIEF OF PARTY: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-16-90, H-10361

INVEST. DATE: 12/5/90 DAY NO.: 339

TIME: 231103, 231512, 225951, & 224657 UTC VESSEL: 520

HEIGHT: See below POSITION NO.: 1024, 1025, 1022, & 1020

CORRECTORS APPLIED: Predicted Tides _X_ Velocity ___ Draft ___
Settlement and Squat ___

GEODETIC POSITION:

				LATITUDE N	LONGITUDE W
CHARTED:	NAD83	1.	Pier	27°43'24"	097°20'27"
	"	2.	Pier ruins	27°43'24"	097°20'19"
	"	3.	Pier	27°43'21"	097°20'18"
OBSERVED:	NAD83	1.	5 groins	27°43'23"	097°20'28"
	"		to	27°43'23"	097°20'29"
	"	2.	Pier ruins	27°43'23"	097°20'21"
	"	3.	Pier ruins	27°43'19"	097°20'19"

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers _X_
R/AZ, T-2 and Mini-Rangers ___

METHOD OF ITEM INVESTIGATION: A groin was found inshore of the charted pier (Item No. 1) during shoreline verification on day 339, position 1024. Four other groins were found northwest of this groin closely spaced. Position 1025, day 339 was taken on the most northwest groin. The hydrographer believes that the pier ruins found during shoreline verification on day 339, position 1022, baring .8 meter, approximately 40 meters northwest of the charted pier ruins (Item No. 2) are part of the charted pier ruins (Item No. 2). Pier ruins were found during shoreline verification on day 339, position 1020, baring 0.5 meter, in the area of the charted pier (Item No. 3). Visual and fathometer searches offshore of the items found and throughout the area of this AWOIS item were performed by the hydrographer at low tide on day 345, positions 1109-1110, 1111-1112, & 1113-1114. Depths were .3 to .6 meter to shore and the bottom was clearly seen. No other pier ruins were seen or found throughout the area. See pictures taken at these sites included with the separates of this report.

5 groins are shown on smooth sheet.

continued on next page

CHARTING RECOMMENDATIONS: Charted pier (Item No. 1) should be removed from the chart and replaced with 2 groins up to positions 1024 and 1025, with three other groins approximately equally spaced between these two groins. Charted pier ruins (Item No. 2) should be removed from the chart and replaced with pier ruins at the observed position. Charted pier (Item No. 3) should be replaced with pier ruins up to the observed position.

COMPILATION USE

CHART: APPLIED AS:

Item 1 - concur, remove pier and chart 5 groins as depicted on smooth sheet.

Item 2 - concur, remove charted ruins and chart ruins at survey position as shown on the smooth sheet.

Item 3 - concur, remove pier and chart ruins at survey position as shown on smooth sheet.

CHART NO.: 11309 AWOIS ITEM NO.: 4802

ITEM DESCRIPTION: Pier ruin

SOURCE: Unknown

CHIEF OF PARTY: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-16-90, H-10361

INVEST. DATE: 12/5/90 DAY NO.: 339

TIME: 183056 UTC VESSEL: 520

HEIGHT: 1.3 meters POSITION NO.: 965

CORRECTORS APPLIED: Predicted Tides _X_ Velocity ___ Draft ___
Settlement and Squat ___

GEODETIC POSITION:	DATUM	LATITUDE N	LONGITUDE W
CHARTED:	NAD83	27°43'23"	097°20'08"
OBSERVED:	NAD83	27°43'15"	097°20'09"

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers _X_
R/AZ, T-2 and Mini-Rangers ___

METHOD OF ITEM INVESTIGATION: This area was visually searched at low tide by the hydrographer, pos. 1115-1117, day 345. Bottom was clearly seen. Nothing was seen or found. A 20-meter swath on both sides of the charted pier ruins was performed on day 015, pos. 1141, by divers walking the area and nothing was found. This additional search was performed due to the deeper water found at the offshore end of the charted pier ruins. The hydrographer believes that the pier ruins found on day 339, pos. 965, which is approximately 50 meters southeast of the charted pier ruins is probably part of this charted pier ruins. See picture taken at this site included with the separates of this report.

CHARTING RECOMMENDATIONS: Charted pier ruins should be removed from the chart. Pier ruins should be charted up to the observed position. — concur, remove pier ruins, and add ruins at the survey position lat. 27/43/15, long. 97/20/09 as shown on the smooth sheet.

COMPILATION USE

CHART: APPLIED AS:

CHART NO.: 11309 AWOIS ITEM NO.: 4803

ITEM DESCRIPTION: Pier

SOURCE: Unknown

CHIEF OF PARTY: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-16-90, H-10361

INVEST. DATE: 12/11/90 & 1/15/91 DAY NO.: 345 & 015

TIME: 190307-190525 & 163222 UTC VESSEL: 520

DEPTH/HEIGHT: N/A POSITION NO.: 1119-1121 & 1140

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___
Settlement and Squat ___

GEODETIC POSITION:	DATUM	LATITUDE N	LONGITUDE W
CHARTED:	NAD83	27°43'15"	097°19'52"
OBSERVED:	NAD83	- As portrayed on TP-01616 -	

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers _X_
R/AZ, T-2 and Mini-Rangers ___

METHOD OF ITEM INVESTIGATION: The area of the charted Oso fishing T-pier was visually searched at low tide by the hydrographer, pos. 1119-1121, day 345. Bottom was clearly seen. Nothing was seen or found. A 20-meter swath on both sides of the charted Oso fishing T-pier was performed on day 015, pos 1140, by divers walking the area and nothing was found. This additional search was performed due to the deeper water found at the offshore end of the charted Oso fishing T-pier. The present Oso fishing T-pier found in this area agrees well with the T-pier portrayed on the shoreline manuscript TP-01616, which is approximately 70 meters northwest of the charted Oso fishing T-pier. The hydrographer believes these two T-piers are the same T-piers, which apparently was charted incorrectly. The owner of the present Oso fishing T-pier, Mr. Jack Maddux, 1684 Ocean Drive, Corpus Christi, TX, Telephone 512-991-9986, informed the hydrographer that there has never been any other pier southeast of the present Oso fishing T-pier. He also said that the last time this T-pier was destroyed by a hurricane, he rebuilt the pier no more than 2-2.4 meters northwest of the pier ruins and one section shorter, which he reported to the U. S. Corps of Engineers. The U. S. Corps of Engineers informed Mr. Maddux, that there was no problem with that change. No pier ruins were found southeast or northwest of the present Oso fishing T-pier as portrayed on TP-01616. The position of the present Oso fishing T-pier was verified visually and by main scheme hydrography breaking and starting at the pier, positions 65 and 66 of day 317, and positions 613 and 614 of day 323.

CHARTING RECOMMENDATIONS: Replace charted Oso fishing T-pier with the Oso fishing T-pier portrayed on the shoreline manuscript TP-01616. - CONCUR. This pier is portrayed correctly on the SMOOTH sheet.

COMPILATION USE

CHART: APPLIED AS:

CHART NO.: 11309 AWOIS ITEM NO.: 4804

ITEM DESCRIPTION: Vis. Wk PA (Wk is wooden F/V with 10 ft. of bow out of water.

SOURCE: CL1245/73--USPS

CHIEF OF PARTY: Lt. Cdr. V. Dale Ross

REFERENCE: OPR-K229-AHP2, AHP-10-16-90, H-10361

INVEST. DATE: 1/16/91 DAY NO.: 016

TIME: 235842 UTC VESSEL: 520

DEPTH/HEIGHT: N/A POSITION NO.: 1142

CORRECTORS APPLIED: Predicted Tides ___ Velocity ___ Draft ___ Settlement and Squat ___

GEODETIC POSITION:	DATUM	LATITUDE N	LONGITUDE W
CHARTED:	NAD83	27°42'40"	097°18'04"
OBSERVED:	NAD83	- Not Found -	

POSITION DETERMINED BY: Multiple LOP, Mini-Rangers _X_
R/AZ, T-2 and Mini-Rangers ___

METHOD OF ITEM INVESTIGATION: A visual and fathometer search was previously performed by the hydrographer on day 339 at low tide and nothing was found. A 200-meter circle search was performed at the charted position by divers and nothing was found. See Dive Report No. 1 of day 016, for additional information on the circle search.

CHARTING RECOMMENDATIONS: Visible Wreck PA should be removed from the chart. – concur

---

COMPILATION USE

CHART: APPLIED AS:

Figure 7.2

========== DIVE INVESTIGATION ==========

DIVE # 1 SITE # _____ SHEET # _____

DATE 1/16/91 DN 016 POS. # 1142

OBJECT INVESTIGATING VIS. WK PA (WK IS WOODEN F/V WITH 10 FT. OF BOW OUT OF WATER.) AWOIS # 4804

DIVERS D. ELLIOT & G. PARKER

BOTTOM TIME 40 MIN CENTER WEIGHT 50 #

TYPE OF SEARCH:

OBJECT SEEN IMMEDIATELY

VISUAL SEARCH

CIRCLE SEARCH: SWEEP RADIUS 200 ~~FT~~/M

OTHER SEARCH: FATHOMETER

WATER VISIBILITY 2 ~~FT~~ M

LEAST DEPTH ON OBJECT N/A FT/M TIME N/A UTC

DEPTH OBTAINED BY: LEAD LINE, TAPE, PNEUMATIC GAUGE, OTHER _____

PNEUMATIC GAUGE (3 READINGS) _____FT _____FT _____FT

POSITION INFORMATION R/R R/AZ

~~LEFT~~ STATION 1 STA.# 038 CODE A RATE _____ BLC 4.7 S/S _____

~~RIGHT~~ STATION 2 STA.# 040 CODE B RATE _____ BLC 5.7 S/S _____

~~CHECK~~ STATION 3 STA.# 046 CODE C RATE _____ BLC 5.1 S/S _____

~~AZIMUTH~~ _____ STA.# _____

BOTTOM DESCRIPTION

KELP PRESENT? (TYPE, HEIGHT) NONE

GENERAL TERRAIN FLAT

SPECIFIC FEATURE _____

BOTTOM MATERIAL SAND

DESCRIPTION OF INVESTIGATION AND DIAGRAMS (IF APPLICABLE)

NOTHING FOUND

APPROVAL SHEET

BASIC HYDROGRAPHIC SURVEY
OPR-K229-AHP2
AHP-10-16-90
H-10361
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 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.

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-10361

LOCALITY: Corpus Christi Bay, University Heights, TX

TIME PERIOD: November 13, 1990 - January 17, 1991

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 E. Hubbard

CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10361

Name on Survey	A ON CHART NO. 11309	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
CORPUS CHRISTI	X									1
CORPUS CHRISTI BAY	X									2
OSO FISHING PIER (cultural feature)	X									3
TEXAS (title)	X									4
UNIVERSITY HEIGHTS	X									5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
				Approved:						16
										17
				Charles E. Harrington						18
				Chief Geographer - N/CG2x5						19
				DEC 17 1991						20
										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-10361

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	5
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	2

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			1053
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			

	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	30		
VERIFICATION OF SOUNDINGS	48		
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	35		
COMPARISON WITH PRIOR SURVEYS AND CHARTS		7	
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		35	
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	112	42	

Pre-processing Examination by M. Brown	*Beginning Date* 4/17/91	*Ending Date* 5/1/91
Verification of Field Data by R.N. Mihailov	*Time (Hours)* 112	*Ending Date* 2/14/92
Verification Check by J.S. Green/B. Olmstead	*Time (Hours)* 31	*Ending Date* 5/12/92
Evaluation and Analysis by R. N. Mihailov	*Time (Hours)* 42	*Ending Date* 5/18/92
Inspection by D. Hill	*Time (Hours)* 4	*Ending Date* 6/3/92

EVALUATION REPORT
H-10361

1. INTRODUCTION

Survey H-10361 is a basic hydrographic survey accomplished by the Atlantic Hydrographic Party 2 under the following Project Instructions.

OPR-K229-AHP2, dated September 14, 1990
CHANGE NO. 1, dated February 12, 1991

This survey occurred in Texas and covers the southwest portion of Corpus Christi Bay to include University Heights and vicinity. The survey limits extend from latitude 27/45/06N to the Corpus Christi shoreline, and longitude 97/17/51W to longitude 97/21/18W. The shoreline from University Heights toward Corpus Christi is generally bluff-like consisting of bulkhead and riprap rising 8-10 feet above the highwater line. This area contains numerous groins, pier ruins and the 200 meter long Oso Fishing pier near University Heights. The bottom consists of mud and sand. Depths generally range from 0 meters to 5.0 meters.

Predicted tides for Galveston Channel, Texas, were used for the reduction of soundings during field processing. Approved hourly heights from the Corpus Christi T-Head gage (877-5351), 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 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 complete depiction of survey data.

2. CONTROL AND SHORELINE

Sections H and I in the hydrographer's report, contain adequate discussions of horizontal control and hydrographic positioning. More detailed information on horizontal control is found 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 and 1990 field and published values based on NAD 83. These values were used during office processing. 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: 1.111 seconds (34.2 meters)
Longitude: 0.967 seconds (26.5 meters)

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

The quality of several positions exceeds limits in terms of error circle radius and residual or have angles of intersection less than 30 degrees or more than 150 degrees. A review of the data, however, indicates that none of these fixes are used to position dangers to navigation. The soundings found by these fixes are consistent with surroundings data. These fixes are considered acceptable.

The following shoreline map applies to this survey.

Map Number	Photo date	Class
TP-01616	February 1983	III

Shoreline drawn on the smooth sheet originates from a 1:10,000 scale photographic enlargement of TP-01616. The shoreline map is compiled on NAD 1983.

The following shoreline changes were determined with supporting positional information. The revisions are adequate to supersede the common photogrammetrically delineated shoreline.

Feature	Latitude(N)	Longitude(W)
outfall	27/43/44	97/21/02
outfall	27/43/37	97/20/52
pier	27/43/35	97/20/48
groin	27/43/25	97/20/33
piers ruins	27/43/14	97/20/09
piers	27/42/42	97/18/44

3. HYDROGRAPHY

Except for the delineation of the zero curve, 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, except:

The descriptive report was not signed by the hydrographer.

Pole soundings taken near the shoreline are annotated on the fathograms in feet and subsequently reduced to meters (0.4 meter TRA left in computation).. To correct for static draft, the TRA value of 0.4 meter was subtracted from the pole sounding values and corresponding depths edited in the field printout.

5. JUNCTIONS

Survey H-10361 junctions with the following surveys.

Survey	Year	Scale	Area
H-10325	1989-90	10,000	North
H-10330	1990	10,000	West
H-10365	1991	10,000	East

The junctions with surveys H-10325 and H-10330 have not been formally completed since the surveys were previously processed and forwarded for charting. The junctions were made using copies. These surveys are plotted in feet and survey H-10361 is plotted in meters. Soundings agree to within 0.2 meters, however the depth curves shown on this survey delineate different depths and therefore, do not agree.

The junction with survey H-10365 can not be completed because this survey is in preliminary office processing. The junction comparison will be addressed in the Descriptive Report for survey H-10365.

6. COMPARISON WITH PRIOR SURVEYS

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

Prior surveys H-5612 and H-5694 cover the total common area with the present survey. Comparison with these prior surveys reveals that present depths are generally 0.5 to 1.0 meter deeper. However, the following is noted; two present survey soundings of 2.8 meters (9 feet) were found in the vicinity of latitude 27/44/35N, longitude 97/20/45W, some 400 meters east of several eight foot soundings shown on prior survey H-5612. The presence of 8-9 foot soundings from the present survey as described above, indicates that shoaling has continued to migrate in an easterly direction over the past fifty-six years. In addition, the mean high water line as shown on prior survey H-5694 has generally shifted seaward 50-150 meters between latitude 27/43/47N, longitude 97/21/11W and latitude 27/43/27N, longitude 97/20/36W. Also, between latitude 27/42/35N, longitude 97/18/24W and latitude 27/42/26N, longitude 97/17/49W the mean high water line has eroded landward 20-110 meters as compared to prior survey H-5694. Shoreline changes southeast of University Heights can be largely attributed to frequent storms and constant strong winds that move across the low barren sand beaches. In contrast, shoreline changes northwest of University Heights are attributed to man-made activity.

Survey H-10361 is adequate to supersede prior surveys H-5612 and H-5694 within the common area.

T-9187 (1950) 1:20,000

Shoreline map T-9187 covers the entire area of the present survey. Changes to the shoreline have either been through natural or man-made activities. In general the shoreline agrees well with the present survey except for the areas mentioned in the above comparison.

Survey H-10361 is adequate to supersede prior shoreline map T-9187 for the areas of common coverage.

There are no AWOIS items originating from prior surveys H-5612 and H-5694 and shoreline map T-9187 that apply to the present survey.

7. COMPARISON WITH CHART

Chart	Edition	Date	Scale	Datum
11309	30th	December 2,1989	1:40,000	NAD 83

a. Hydrography

Charted hydrography originates with the prior surveys and prior shoreline map discussed in section 6 of this report and miscellaneous sources.

Survey H-10361 is adequate to supersede charted hydrography within the common area.

b. AWOIS

There are five AWOIS items originating from miscellaneous sources within the area of this survey. These items have been adequately discussed by the hydrographer in Section N and in the item investigation forms attached to the descriptive report.

c. Controlling Depths

There are no channels with controlling depths within the area of survey H-10361.

d. Aids to Navigation

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

There are no charted landmarks or features of landmark value within the limits of this survey.

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

No reports of dangers to navigation were reported by the hydrographer to the USCG, DMAHTC and N/CG222. No dangers to navigation were discovered during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10361 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is a good hydrographic survey. No additional field work is recommended.

R.N. Mihailov

Robert N Mihailov
Cartographer

APPROVAL SHEET
H-10361

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 Hill Date: 6-3-92

Dennis J. Hill
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 Date: 6/5/92

Commander Douglas G. Hennick, NOAA
Chief, Pacific Hydrographic Section

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Final Approval

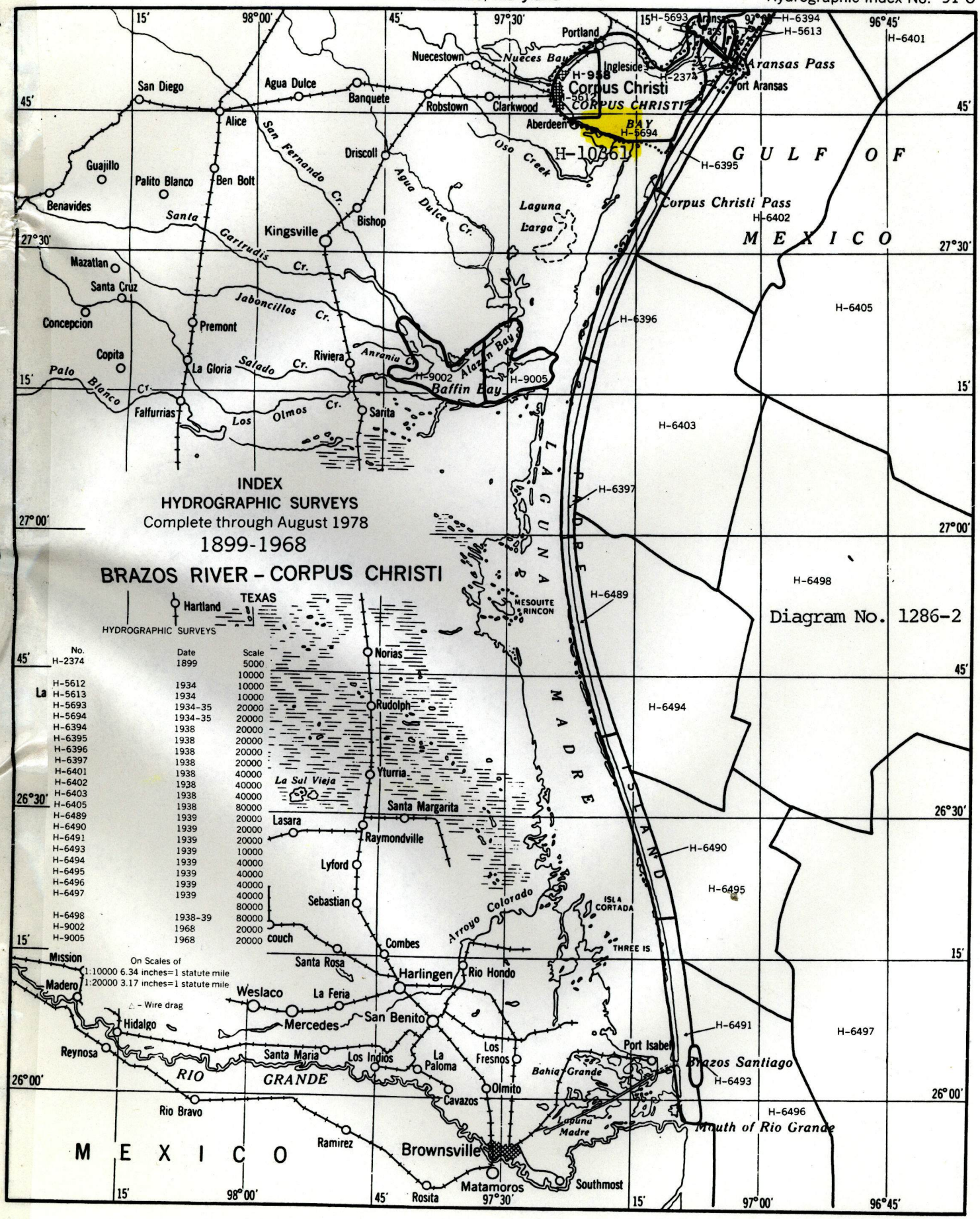
Approved:

for James W. Richards Date: 12-6-94

J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey

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

Hydrographic Index No. 91 C



NOAA FORM 75-96
(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-10361

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	4-26-91	R.N. MIHAILOV	~~Full~~ Part Before ~~After~~ Marine Center Approval Signed Via Partial application of
			Drawing No. sndgs from field sheet.
11300	6-11-91	ALMQUEEN	~~Full~~ Part Before ~~After~~ Marine Center Approval Signed Via Examined. No sndgs.
			Drawing No. or corrns. applied.
11309	6-4-92	Russ Wade	Full ~~Part~~ Before After Marine Center Approval Signed Via Full application of
			Drawing No. sndgs. from smooth sheet
11309	7/28/92	L. ARKENAU	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 51 APPD. Then H-DWG (not signed)
11308	8-24-92	R. Ross	Full ~~Part~~ Before After Marine Center Approval Signed Via
			Drawing No. 17 - Partappd (not signed) thru 11309
11309	9/20/93	L. Ahlman	Full ~~Part~~ Before ~~After~~ Marine Center Approval Signed Via
			Drawing No. 52, APPD No further application necessary
			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.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED