PHOTOGRAMMETRY BRANCH
COASTAL MAPPING PROGRAM
PROJECT CM-8715
COMPLETION REPORT
TEXAS
MATAGORDA BAY AND VICINITY
TP-01642 THRU TP-01651

Agency Vault - ORIGINAL

PHOTOGRAMMETRY BRANCH

COASTAL MAPPING PROGRAM

PROJECT CM-8715

COMPLETION REPORT

TEXAS

MATAGORDA BAY AND VICINITY

TP-01642, TP-01643, TP-01644, TP-01645, TP-01646
TP-01647, TP-01648, TP-01649, TP-01650, TP-01651

1989

UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
NAUTICAL CHARTING DIVISION

PHOTOGRAMMETRY BRANCH

COASTAL MAPPING PROGRAM

PROJECT CM-8715

TP-01642, TP-01643, TP-01644, TP-01645, TP-01646
TP-01647, TP-01648, TP-01649, TP-01650, TP-01651

Clearance and Approval

This report summarizes the photogrammetric operations related to project completion and is submitted for approval. The maps, associated project data and report meet the requirements and standards of the Photogrammetry Branch Coastal Mapping Program. Clearance for project registration is requested.

Submitted by,

Lowell O. Neterer Jr.
Field Photogrammetry Section

APPROVED:

Fidel T. Smith, CAPT. NOAA
Chief, Field Photogrammetry Section

1/11/91
Date

for Lewis A. Lapine, CDR, NOAA
Chief, Photogrammetry Branch
Nautical Charting Division
Office of Geodetic and Charting Services

5/1/91
Date

AGENCY VAULT-ORIGINAL REPORT

COMPLETION REPORT

COASTAL MAPPING PROGRAM PROJECT CM-8715

TEXAS

MATAGORDA BAY AND VICINITY

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COASTAL MAPPING PROGRAM PROJECT CM-8715

PROJECT SUMMARY

INTRODUCTION

Project CM-8715 Matagorda Bay and Vicinity, Texas consists of ten maps, TP-01642 thru TP-01651, at 1:20,000 scale. All maps are based on the North American Datum 1983 (NAD 1983) depicted by Lambert Conformal Conic Projection (full line) and the offset tick for the North American Datum 1927 (NAD 1927).

This project extends from latitude 28°17'00" north to latitude 28°53'00" and longitude 95°58'00" west to longitude 96°41'00" encompassing Matagorda Bay and Vicinity.

PLANNING

This project was planned in support of the Nautical Charting Program. It was determined that ten 1:20,000 scale maps were needed to meet the project's requirements.

Planning included the selection of twentyone horizontal control stations to control nine strips of color photography: Eight strips of color photography at 1:50,000 scale and one strip of color photography at 1:30,000 scale.

FIELD OPERATIONS

Refer to the Project Field Instructions - Appendix A and the Field Premarking Report - Appendix B of this Completion Report.

The cameras used for the acquisition of photography to meet the requirements for this project were:

Wild RC - 10Z (focal length 153.15 millimeters), serial number Z-1391

Wild RC-10B (focal length 152.74 millimeters), serial number B-1777

AEROTRIANGULATION

Refer to the Aerotriangulation Report included in Appendix C of this Completion Report.

COMPILATION

No Project Instructions were received with the project materials.

Compilation was accomplished at the Atlantic Marine Center in accordance with the Coast an Geodetic Survey Topographic Manual, Part II, and applicable amending National Ocean Service Photogrammetric Instructions and approved Sections of the Coastal

Mapping Program Operations Manual, from January 1990 through April 1990.

The Wild B-8 Stereoscopic plotting instruments B8-2109 and B8-2125 were used to compile the maps by analog methods.

Ratioed black and white infrared tide coordinated mean lower low water photography was used to graphically compile the mean lower low water line where it could be practically delineated.

The two flight lines of tide coordinated mean high water contact black and white infrared photographs were used in the interpretation of the mean high water line. The color models were set on the B-8 stereo plotter for delineation of all details except the low water line.

The mean lower water photographs listed on map TP-01642, TP-01643, TP-01650 and TP-01651 are dated March 7, 1989. The flight records and verbal instructions from the Rockville office indicate the actual date is March 8, 1989 which was used. This is the date listed in each of the reports affected by this error.

Refer to the Map Compilation Source page included in Appendix E for the number, type, data, and scale of the photographs used for each map.

The maps and descriptive notes were smooth drafted. The project indexes and formats were applied with wax-backed stick up.

The selection of Geographic Names came from the United States Geological Surveys quadrangles and National Ocean Service Nautical Charts. These were submitted to the Chief Geographer of the Nautical Charting Division and were approved.

Refer to Appendix E for geographic names listing.

FINAL REVIEW

The final review of this project began in October 1990 and was completed in December 1990.

Included with the appendices is the approved listing of discrete point data for application in the nautical charting program.

This project is in compliance with the Coast and Geodetic Survey Topographic Manual, Part II and applicable amending National Ocean Service Photogrammetric Instructions and the approved sections of the Coastal Mapping Programs Operations Manual and meets the requirements for National Standards of Map Accuracy.

A comparison was made between the maps and the following National Ocean Service Charts:

CHART	EDITION	DATED	SCALE
11315	22nd	March 24, 1990	1:40,000
11316	32nd	January 14, 1990	1:80,000
11317	19th	January 20, 1990	1:50,000
11319	22nd	February 10, 1990	1:40,000

The comparisons showed several shoreline changes which are noted on the appropriate Chart Maintenance Prints.

DISSEMINATION OF PROJECT DATA AND PRODUCTS

National Archives/Federal Records Center
- Copy of Project Completion Report
- Brown Jacket contents (e.g. field data, Aerotriangulation Records)

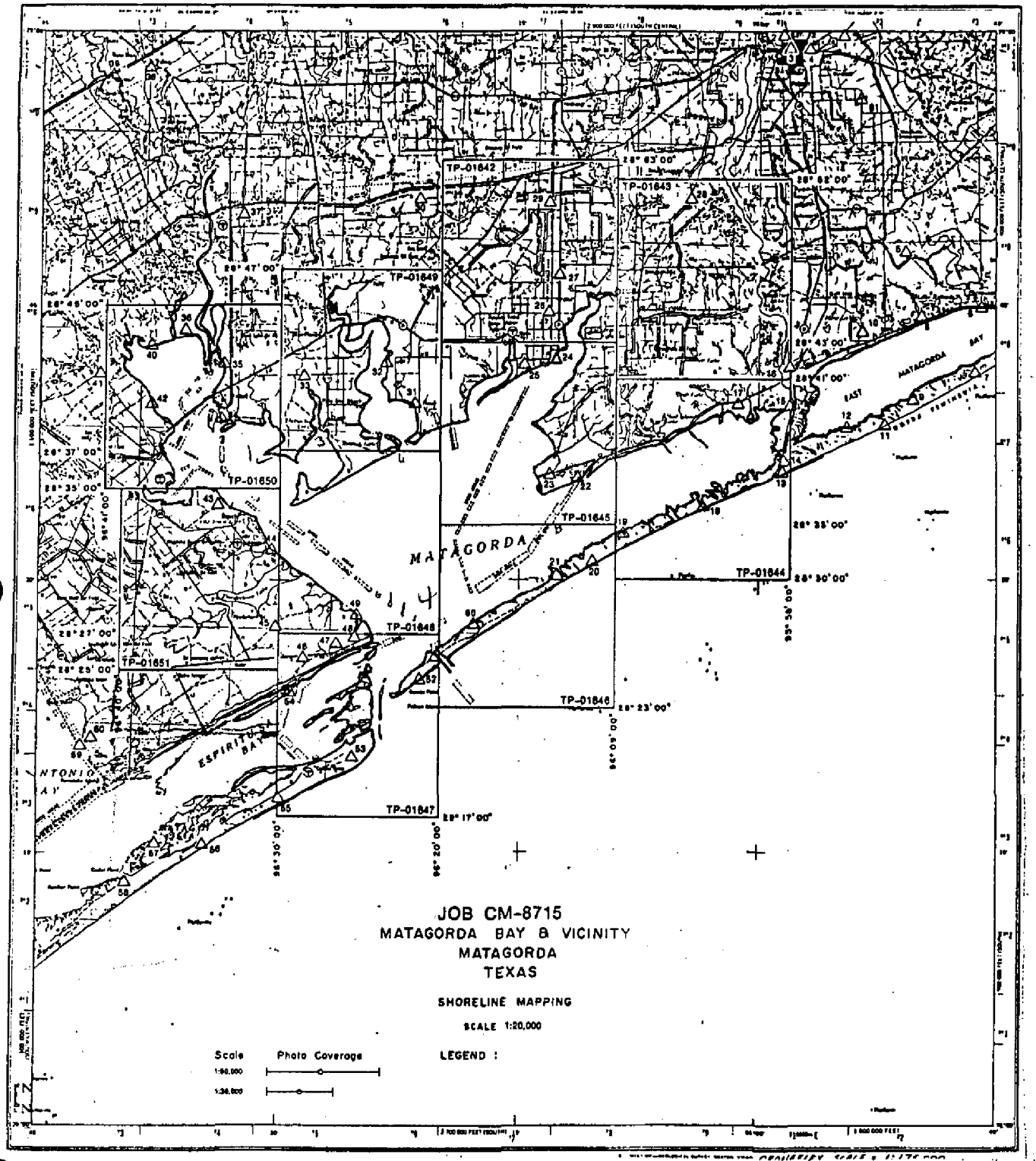
Agency Archives
- The original Project Completion Report
- Registration Copy of each map

Photogrammetric Electronic Data Library
- Not Applicable

Reproduction Branch, Aeronautical Charting Division,
- 8X reduction negative of each map

Mapping and Charting Branch
- Abbreviated copy of the Project Completion Report
- Chart Maintenance Prints

Hydrographic Surveys Branch
- Notes to Hydrographer Prints
- Copies of Cartographic Features of Charting Interest Forms


TP-01642
TP-01643
TP-01649
TP-01650
TP-01645
TP-01644
TP-01648
TP-01651
TP-01646
TP-01647
MATAGORDA BAY
EAST MATAGORDA BAY
ESPIRITU SANTO BAY
28° 47' 00"
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28° 27' 00"
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28° 23' 00"
28° 17' 00"
28° 43' 00"
28° 41' 00"
28° 33' 00"
28° 30' 00"
96° 30' 00"
96° 20' 00"
95° 56' 00"
JOB CM-8715
MATAGORDA BAY B VICINITY
MATAGORDA
TEXAS
SHORELINE MAPPING
SCALE 1:20,000
Scale
Photo Coverage
LEGEND :

GEODETIC STATIONS
CM-8715

The geodetic control indicated was recovered and/or used during photogrammetric operations. These stations will be represented on the appropriate maps from this project.

GEOGRAPHICAL POSITION			GEODETIC
LONGITUDE	LATITUDE		STATION
-955208.685	283827.979		ROW 2
-960341.633	283403.257		MAVERICK
-955838.551	283553.999		IDOL 2
-961021.410	283056.831		POE 1934
-961507.070	282836.298		SMYTH SAT 1989
-962007.986	282550.351		MATA 1934
-963006.317	281808.117		LADY 1934
-960104.952	283942.247		DOG SAT 1989
-955330.122	284316.189		MORGAN SAT 1989
-961919.991	283833.045		TRULL SAT 1989
-961509.749	284329.301		PALAPORT
-955339.331	285615.716		STEINMEYER
-962023.856	285032.932		COW SAT
-963317.535	284403.367		JONES SAT
-963355.900	283407.670		MAGNOLIA
-963340.338	283845.467		MITCHELL 2
-962520.875	282650.319	*	PORT OCONNOR MUN. TANK
-962634.785	282627.482	*	PORT OCONNOR CABLE TV MAST
-962907.683	282544.037		J 592
-962526.632	282016.407		MATAGORDA
-961122.075	283528.458		LAKE 2 1906
-960421.834	285058.909		CLAPPER 2 1976
-964054.311	283909.368		LAVAPORT 1987

* Landmark feature dipicted on NOS nautical chart.

APPENDICES

APPENDIX A

PROJECT FIELD INSTRUCTIONS

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

Chief, Photogrammetry Branch
Atlantic Marine Center

PROJECT INSTRUCTIONS: FIELD - Job CM-8715, Matagorda Bay and Vicinity, Texas, Shoreline Mapping

1.0. PURPOSE

These instructions provide specifications and a schedule for providing field survey support of Job CM-8715. This project is in support of a Hydrographic Survey Branch's request (OPR-K228-HFP) for new shoreline data of this area.

2.0. AREA

The area to be mapped is located on the Intracoastal Waterway in South Texas. Mapping at 1:20,000 scale will cover the shoreline of Matagorda Bay, Lavaca Bay, and Tres Palacios Bay and adjacent bays and waterways, and the shoreline of the Gulf of Mexico.

3.0. PHOTOGRAPHY

3.1. Aerotriangulation photography at 1:50,000 and 1:30,000-scale and supplemental compilation photography at 1:30,000-scale will be obtained using color negative film. Also, 1:50,000-scale black-and-white infrared photography that is tide coordinated will be obtained at mean lower low water and mean high water.

3.2. If target configuration and placement necessitate it, target identification photography may be obtained at 1:15,000 scale and may be flown at less than optimum photographic conditions. The chief of the photo field party will consult with the chief of the air photo mission to determine if this requirement exists.

4.0. ASSIGNMENT

You are assigned all field operations required to:
(1) place targets on horizontal control stations,

(2) provide ground support needed to obtain tide-coordinated photography, (3) locate or verify that all navigation range lights in the hydrographic project area are positioned in accordance with Third-Order, Class 1 Specifications or better, (4) provide a Third-Order, Class 1 position for the navigation aids specified by the U.S. Coast Guard. (5) verify all published landmarks and determine their suitability to be photogrammetrically positioned, and (6) provide any additional geodetic control support required for planned hydrographic surveys. The Chief, Air Photo Mission 1, will be responsible for scheduling photography at required times, based on tide staff observations furnished by radio.

5.0. HORIZONTAL CONTROL

5.1. The horizontal datum for this project is NAD 83.

5.2. Horizontal control requirements for aerotriangulation have been furnished as part of the field data.

5.3. Horizontal control requirements for hydrographic surveys will be furnished by N/CG24 by January 10, 1989.

5.4. Limit recovery of horizontal control stations to those needed to meet the requirements of this project. Prepare and submit recovery notes for each station for which a search was made.

5.5. New control stations and range lights, where needed, shall be established by triangulation, trilateration, traverse, satellite positioning, or a combination of the four methods, in accordance with Third-Order, Class I specifications provided in Standards and Specifications for Geodetic Control Networks, dated September 1984.

5.5. New stations will be monumented if they are required for future work in the area needing geodetic control.

5.6. Notify N/CG2313 if recovery of existing control does not meet aerotriangulation requirements. An alternative will be selected, if possible, to avoid establishing new control.

6.0. PREMARKING OF CONTROL

6.1. As soon as possible after all control stations have been paneled, the field party will forward to N/CG2313, by overnight express service, the 7 1/2' quads and a copy of the CSI card when the quad does not adequately depict the target location. These quads will depict the station location, panel array used, and the panel number. This will

assist in the film quality review, target identification, and help expedite the results to the field unit.

6.1.1. Wing panels will be used with all targets in accordance with established specifications but may be modified to conform with local terrain conditions.

6.2. Aerotriangulation Control

6.2.1. Panel each station selected to meet horizontal control requirements in accordance with specifications given on the attached sheet for 1:50,000-scale and 1:30,000-scale photography.

6.2.2. Use panel array No. 1 for targets with a normal background; it may be modified, as necessary, to conform with local terrain conditions. Any deviation from given panel and spacing dimensions should be indicated on the large-scale sketch on NOAA Form 76-53, Control Station Identification Card.

6.2.3. Panel array No. 3 shall be used in areas where the background offers poor contrast to the center panel, such as on sandy terrain.

6.2.4. The distance given for dimension "C" may be increased, but not decreased.

6.2.5. Panel substitute stations wherever shadows or relief displacement will obscure the specified control stations. Monumented stations (reference marks, azimuth marks) are preferred substitute stations.

6.2.6. Substitute stations will be positioned to the specifications stated in Photogrammetric Instruction No. 22, Revised September 30, 1965, section 4.02.2.

6.2.7. In cases where the target might be subject to vandalism, select two photoidentifiable objects. Observe directions and distances to them from the home station and record with sketch and description on separate NOAA form 76-53.

6.3. Hydrographic Control Sites

6.3.1. Evaluate the existing horizontal geodetic control scheme within the hydrographic project area, and develop any additional control required for the planned hydrographic survey.

6.3.2. Establish each hydrographic control station by field methods in accordance with Hydrographic Manual. Mark each point selected in a permanent fashion to ensure future recovery by the hydrographer.

7.0. CONTROL STATION IDENTIFICATION CARD

Prepare and submit a NOAA form 76-53 for each paneled station. Observe Photogrammetric Instruction No. 22, Revised September 30, 1965, except as follows:

a. Record distances and directions in the usual manner to the center of the station panel of all targets used as substitutes for horizontal control stations.

b. In the space provided for the sketch of Substitute Station A, make a large-scale sketch for the immediate vicinity showing the array used.

c. In the space provided for a sketch of Substitute Station B, make a smaller scale sketch that shows the relationship of the target to the surrounding terrain. Include one or more salient features to assist office personnel in locating the target on the photographs.

d. Indicate on suitable chart bases the approximate locations of all targets placed.

8.0. TIDE OBSERVATIONS AND RECORDS FOR TIDE-COORDINATED PHOTOGRAPHY

8.1. Tide-coordinated photography will be flown when the stage of tide is mean high water (MHW) $\pm$ .3 feet and mean lower low water (MLLW) $\pm$ .3 feet. Use NOAA Form 77-53, Tides, to record tide staff observations at 15-minute intervals during tide-coordinated photographic flights.

8.2. The existing staff at Bob Hall Pier, Corpus Christi, Texas (877-5351) will be monitored in conjunction with flight lines 50-8 and 30-1 on MHW and MLLW. These lines will be flown directly on the staff. Tidal datums and predictions will be furnished.

8.3. There is little historical tide data in the areas of the remaining flight lines. Immediately upon arrival in the project area, install two tide gages and staffs and make a

level connection to existing tidal bench marks. The first tide station will be in the vicinity of Port O'Conner, Texas (877-3701), the other station will be in the vicinity of Port Lavaca, Texas (877-3259). Observe these stations simultaneously for a period of 72 hours and transmit this data via overnight express service to N/CG2313 for analysis and zoning by OMA/123. The datums for these two staffs will be determined from the analyzed initial data and provided as soon as they are available. These stations will be operated continuously for a minimum of thirty days. These stations will be monitored in conjunction with "inside" flight lines for MLLW only.

8.4. Periods when the tides are predicted to be in range for MLLW occur throughout the months of January, February, and March, 1989.

9.0. LEVELING

Make a level connection to each tide staff from at least two tidal bench marks. Use NOAA Form 76-77, Leveling Record--Tide Station, to record leveling data.

10.0. SCHEDULE

All stations shall be premarked and ready for photography by February 4, 1989. If premarking is not completed by this date, inform N/CG2313 so this information can be relayed to the air photo mission.

11.0. REPORT

A field operations report covering all pertinent field work performed is required upon completion of the field phase of this project.

12.0. RECORDS

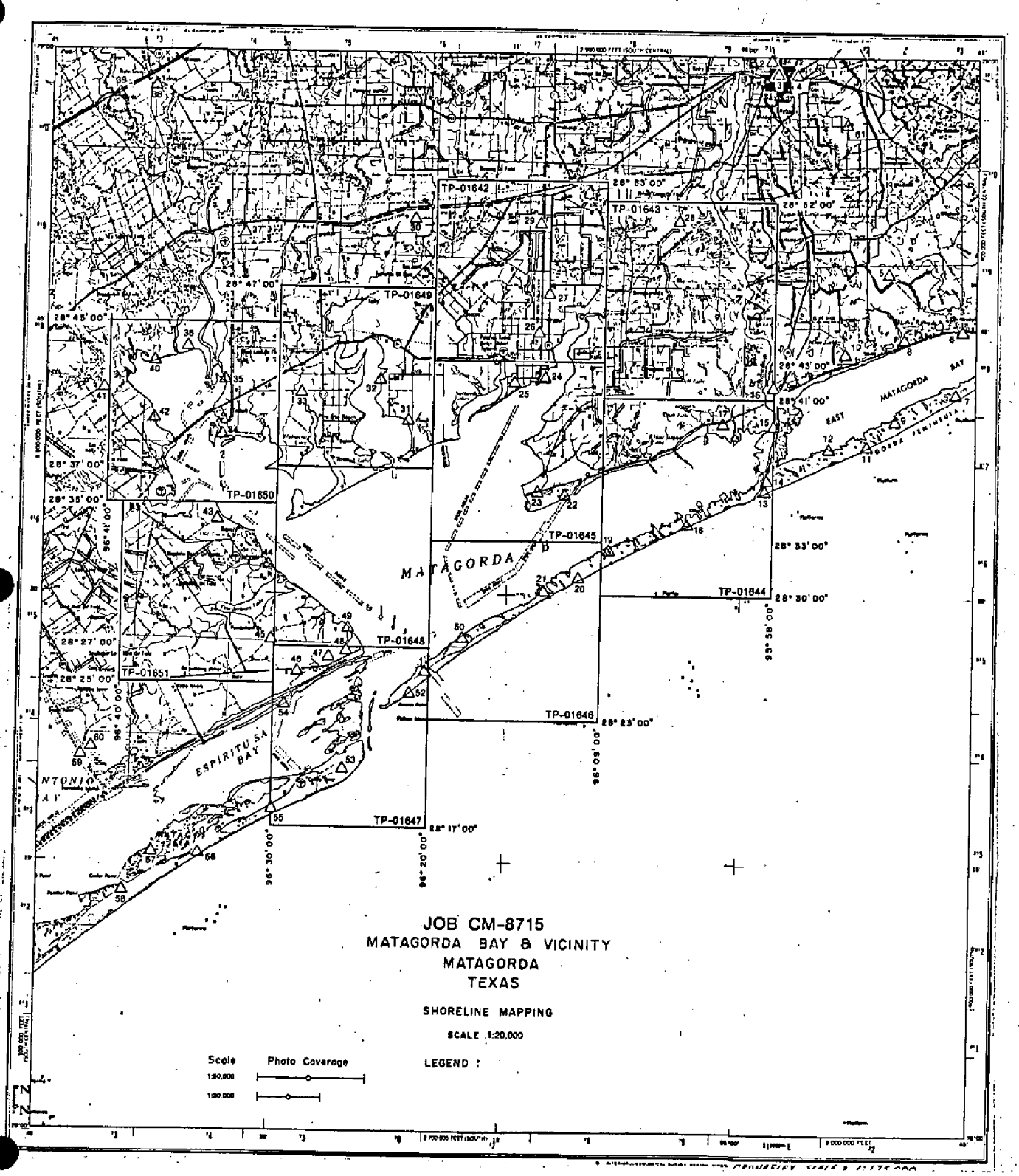
All field records will be sent through N/MOA2222 for review prior to being forwarded to N/CG2313.

13.0. MODIFICATIONS OF INSTRUCTIONS

If changes in procedures and methods seem advisable, please make appropriate recommendations to this office.

14.0. COSTS

All costs incurred on this assignment shall be charged to Task 8K6C01.


TP-01642
TP-01643
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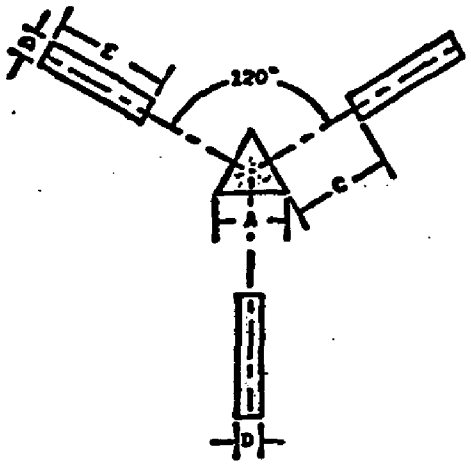
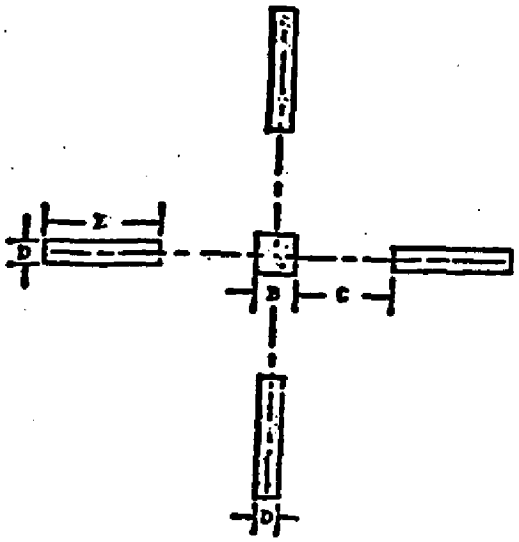
28° 27' 00"
28° 25' 00"
28° 23' 00"
28° 17' 00"
96° 41' 00"
96° 40' 00"
96° 30' 00"
96° 20' 00"
95° 58' 00"
96° 09' 00"
JOB CM-8715
MATAGORDA BAY & VICINITY
MATAGORDA
TEXAS
SHORELINE MAPPING
SCALE 1:20,000
Scale
Photo Coverage
LEGEND :

SPECIFICATIONS FOR PREMARKING CONTROL STATIONS
Revised November 23, 1976

ARRAY NO. 1



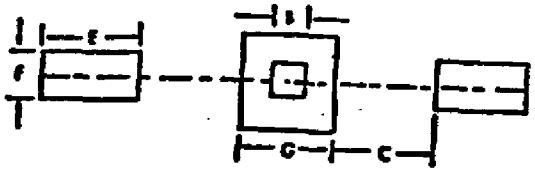
ARRAY NO. 2



NOTE:

1. The dimensions and centering of center panel over station or substitute station are critical.
2. Panel array No. 1 is preferred but No. 2 is acceptable.
3. Array No. 3 - for contrast in very light colored areas. The border surrounding center panel and the recognition panels shall be black.
4. Chief of party will select array that makes best application of field conditions and is authorized to adjust or omit one of the recognition panels if terrain is not suitable for placement of entire array.

ARRAY NO. 3



Photography Scale	PANEL AND SPACING DIMENSIONS (IN METERS) A	B	C	D	E	F	G
1:10:000	0.5	0.3	1.3	0.2	0.9	0.9	1.5
1:20,000	1.1	0.7	2.6	0.4	1.8	0.9	1.9
1:30,000	1.6	1.0	3.9	0.5	2.7	0.9	2.2
1:40,000	2.2	1.3	5.2	0.7	3.6	0.9	2.5
1:50,000	3.2	2.0	7.8	1.1	5.4	1.8	3.8
1:60,000	3.8	2.3	9.1	1.3	6.3	1.8	4.1
1:70,000	4.4	2.6	10.4	1.4	7.2	1.8	4.4
1:80,000	5.0	3.0	11.7	1.5	8.0	1.8	4.8
1:100,000	6.4	4.0	18.2	2.2	10.8	3.6	7.6

15.0. RECEIPT

Acknowledge receipt of these instructions.

Christian Andreasen

Ray E. Moses
Director
Atlantic Marine Center

Christian Andreasen
Chief, Nautical Charting Division
Charting and Geodetic Services

APPENDIX B

FIELD OPERATIONS REPORT

NATIONAL OCEAN SERVICE

Atlantic Marine Center

Coastal Surveys

Project Report

Shoreline Mapping - Photoidentification

CM-8715

MATAGORDA BAY AND SURROUNDING AREA, TEXAS

1989

1.0 PURPOSE:

This project was accomplished to provide targets for horizontal control stations required for aerotriangulation according to PROJECT INSTRUCTIONS: FIELD - Job CM-8715, Matagorda Bay and Vicinity, Texas, dated January 12, 1989.

2.0 AREA:

Shoreline and waterways mapping will cover the shoreline of Matagorda Bay, Lavaca Bay, and Tres Palacious Bay and adjacent bays and waterways, and the shoreline of the Gulf of Mexico.

3.0 PARTICIPATION:

3.1 Personnel:

Party Chief	R. DeCroix
	C. Middleton
	R. Zepp
	J. Harrington
	L. Neterer

3.2 Equipment:

3-4x4 Carry-all Trucks
2- Wild T-2 Theodolites
1- EDMI HP-3810B
6- MX 350 Radios
3-MX 1502 Satellite Receivers

4.0 FIELD ACTIVITY:

4.1 FIELD METHODS:

Twenty one (21)targets were located for aerotriangulation photography. Recovery notes were submitted for each horizontal control station used on this project.

4.2 CONTROL:

The North American Datum of 1983 was the controlling horizontal datum.

4.3 DISCUSSION OF RESULTS:

Panels were located using the following methods:

Panel # 1 1:30,000 panel was placed direct over station ROW 2.

LAT 28-38-27.97904 LON 95-52-08.68450

Panel # 2 1:30,000 panel was placed directly over station MAVERICK

LAT 28-34-03.25749 LON 96-03-41.63298

Panel # 2A 1:30,000 panel was placed directly over station IDOL 2.

LAT 28-35-53.99915 LON 95-58-38.55103

Panel #3 1:30,000 panel was placed directly over station POE 1934.

LAT 28-30-56.83103 LON 96-10-21.41005

Panel #3A 1:30,000 panel was placed directly over Doppler station SMYTH SAT which was located from stations COW-SAT and JONES-SAT.

LAT 28-28-36.298 LON 96-15-07.070

Panel #4 1:30,000 panel was placed directly over station MATA 1934.

LAT 28-25-50.35102 LON 96-20-07.98574

Panel #5 1:50,000 panel located through a reverse solar to station MATAGORDA LIGHTHOUSE 1906.

LAT 28-20-15.31066 LON 96-25-27.75613

Panel # 6 1:50,000 panel set directly over station LADY 1934.

LAT 28-18-08.11669 LON 96-30-06.31723

Panel # 7 1:50,000 panel offset traverse from station LAKE 2 1906.

LAT 28-35-29.39866 LON 96-11-17.76673

Panel # 8 1:50,000 panel placed directly over Doppler station DOG-SAT.

LAT 28-39-42.247 LON 96-01-04.952

Panel # 9 1:50,000 panel placed directly over Doppler station MORGAN-SAT.

LAT 28-43-16.189 LON 95-53-30.122

Panel # 10 1:50,00 panel offset traverse from station MITCHELL 2

LAT 28-38-44.99265 LON 96-33-39.26511

Panel # 11 1:50,000 panel set directly over Doppler station TRULL-SAT

LAT 28-38-33.045 LON 96-19-19.991

Panel # 12 1:50,000 panel set directly over station PALAPORT at the Palacious Airport.

LAT 28-43-28.30134 LON 96-15-09.749

Panel # 13 1:50,000 panel reverse solar to station CLAPPER 2 1976.

LAT 28-50-56.61175 LON 96-04-21.36236

Panel # 14 1:50,000 panel set directly over station STEINMYER 1931.

LAT 28-56-15.71653 LON 95-53-39.33117

Panel # 15 1:50,000 panel set directly over Doppler station COW-SAT.

LAT 28-50-32.932 LON 96-20-23.856

Panel # 16 1:50,000 panel set directly over Doppler station JONES-SAT.

LAT 28-44-03.367 LON 96-33-17.535

Panel # 17 1:50,000 panel set directly over station LAVAPORT AZ MK at the Calhoun County Airport.

LAT 28-39-30.33240 LON 96-41-07.48344

Panel # 18 1:50,000 panel set directly over station MAGNOLIA.

LAT 28-34-07.66989 LON 96-33-55.89957

Panel # 19 1:50,000 panel offset traverse from station J592.

LAT 28-25-44.48094 LON 96-29-05.79640

4.4 CONDITIONS EFFECTING WORK:

The weather caused considerable delays to the completion of this project. Conditions from freezing rain to torrential rain were the rule instead of the exception. Winds out of the north caused the bays to drop below MLLW several times. A rough estimate of the time lost due to inclement weather would be two weeks.

The area of MATAGORDA Peninsula was inaccessible by boat due to low water. Equipment would have had to be hand-carried in from at least one half mile of the shoreline. As it was, an All-Terrain vehicle had to be driven fourteen miles along the shoreline to the area of Panels 2 and 3. This was after an effort at driving 4-wheel drive vehicles from the southwest end of the peninsula was aborted due to sand and high water along the Gulf of Mexico side of the area.

Two additional panels(2A and 3A) were set on the peninsula with the aid of the All-Terrain vehicles.

5.0 SCHEDULE:

The field party departed from Norfolk, Virginia on January 23, 1989 and returned on or about March 13, 1989.

6.0 STATISTICS:

Number of targets	21
Number of stations recovered	15
Number of stations established	6
Number of Bench Marks Recovered	5
Number of Bench Marks set	5

7.0 RECORDS:

All original records will be forwarded to Rockville, Md. N/CG2313. A copy of all field data and this report will be maintained at Atlantic Marine Center's Coastal Surveys Unit, N/MOA2222.

March 21, 1989
Submitted by:
Robert DeCroix
Robert DeCroix

Approved:
Jim D. Shea
Chief, Coastal Surveys

APPENDIX C

AEROTRIANGULATION REPORT

AEROTRIANGULATION REPORT
CM-8715
MATAGORDA BAY, TEXAS

AREA COVERED

This project covers the area from LAVACA BAY over to TRES PALACIOS BAY including MATAGORDA, CHOCOLATE, COX, KELLER, CARANCAHUA, and TURTLE BAYS. There are ten 1:20,000 scale maps covering the project area; TP-01642 through TP-01651.

METHOD

Eight strips of 1:50,000-scale color photographs and one strip of 1:30,000-scale color photographs were bridged by analytic aerotriangulation methods and adjusted to ground using the General Integrated Analytical Triangulation Program (GIANT). Pre-marked control stations were used as horizontal control. In addition, office identified geodetic intersection stations were used as supplemental control. The photographs were measured using both Wild STK comparators (serial #'s STK-818, STK-820), and Photogrammetric Work Station 1 (IDPF/PWS1, serial # 1001). Common points were transferred between strips which linked them forming a strong control network. Refer to DIAGRAM 1 for distribution of control.

Ratio values were determined for the color bridging photographs and the infrared MHW and MLLW which were exposed at both 1:50,000 and 1:30,000 scales. Refer to LISTING A for computed values, and DIAGRAMS 2A and 2B for a sketch of the infrared photo coverage.

The manuscripts were plotted using the Kongsberg plotter DM1216(serial # 247160). All maps were prepared with the Lambert conformal conic projection based on NAD83. In addition, 10mm ticks depicting NAD27 projection intersections were plotted at twice the interval of NAD83 projection intersections. The positions of the plotted points are in the Texas State Plane Coordinate System, south central zone, and based on NAD83

ADEQUACY OF CONTROL

It was noted in the recovery descriptive text for station RAIL, that the station had been "disturbed". This office did not include station RAIL with the other recovered control stations for plotting because of its unreliability.

ADEQUACY OF CONTROL (cont.)

An error in listing the GP for station PALAPORT 1987 has resulted in its' erroneous position to be duplicated numerous times throughout the printed material associated with this project. The correct position for PALAPORT 1987 (panel #12) is:

GP 28-43-29.30134
96-15-09.74900

X= 2848920.802
Y= 13457823.204

The placement and density of control were adequate for executing the aerotriangulation process. The fit of aerotriangulated coordinates to ground coordinates meets the NOS requirements for the aerotriangulation phase of this project. Refer to LISTING B for a tabulation of fit to control.

SUPPLEMENTAL DATA

USGS topographic quadrangles were used to obtain vertical control for bridging. NOS nautical charts were used to locate fixed aids to navigation and landmarks.

PHOTOGRAPHY

The coverage, overlap, and quality of the photographs were adequate for the aerotriangulation phase of the project. Refer to DIAGRAM 3 for a sketch of coverage of the bridging photographs.

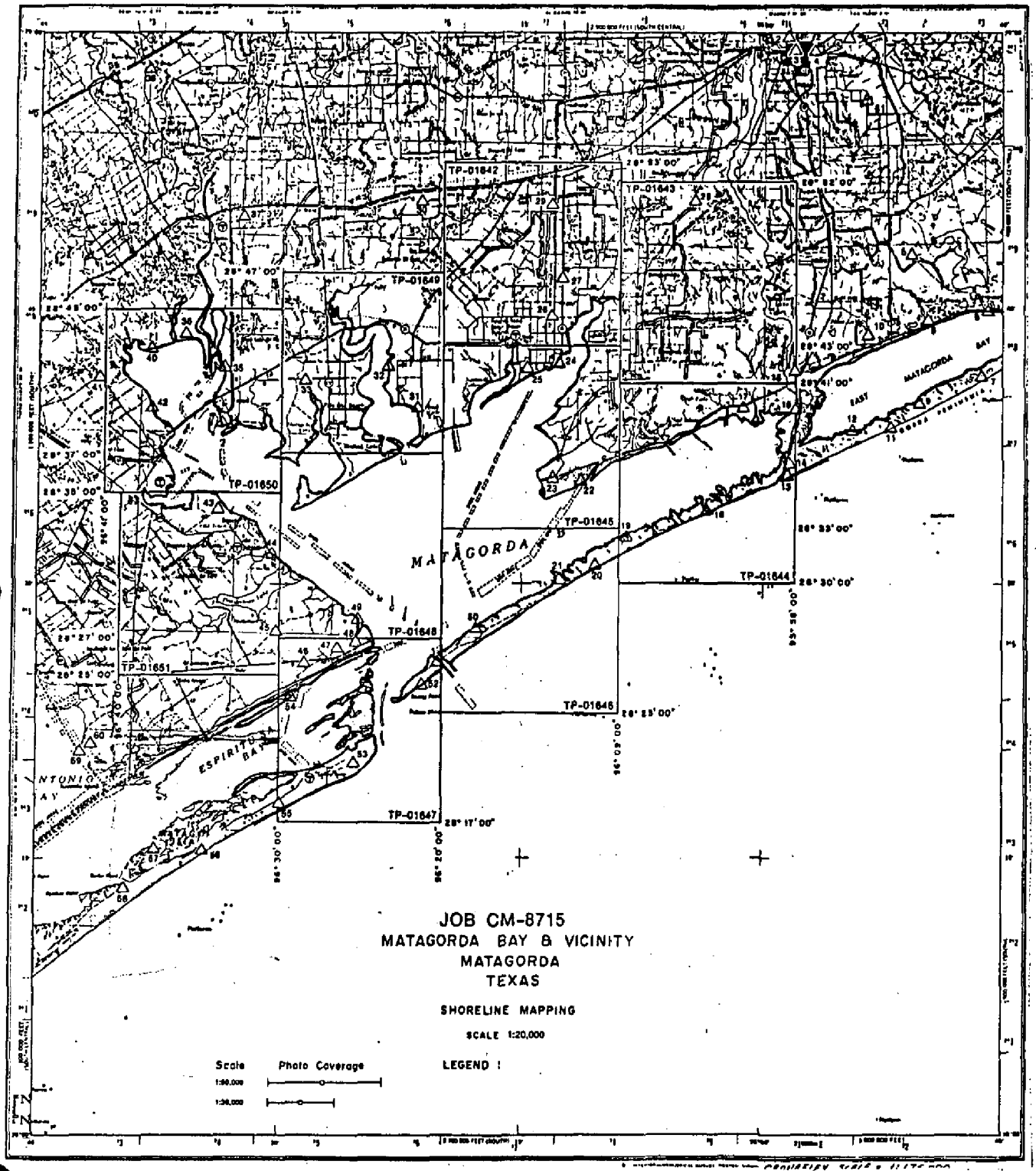
Submitted by:

Lloyd Harrod 10/20/89

Brian Thornton 10/20/89

Approved and Forwarded

Robert W. Rodkey Jr.
Chief, Compilation Section A


TP-01642
TP-01643
TP-01649
TP-01650
TP-01645
TP-01644
TP-01648
TP-01651
TP-01646
TP-01647
MATAGORDA BAY
EAST MATAGORDA BAY
ESPIRITU SANTO BAY
JOB CM-8715
MATAGORDA BAY & VICINITY
MATAGORDA
TEXAS
SHORELINE MAPPING
SCALE 1:20,000
Scale
Photo Coverage
LEGEND :

RATIO VALUES
CM-8715

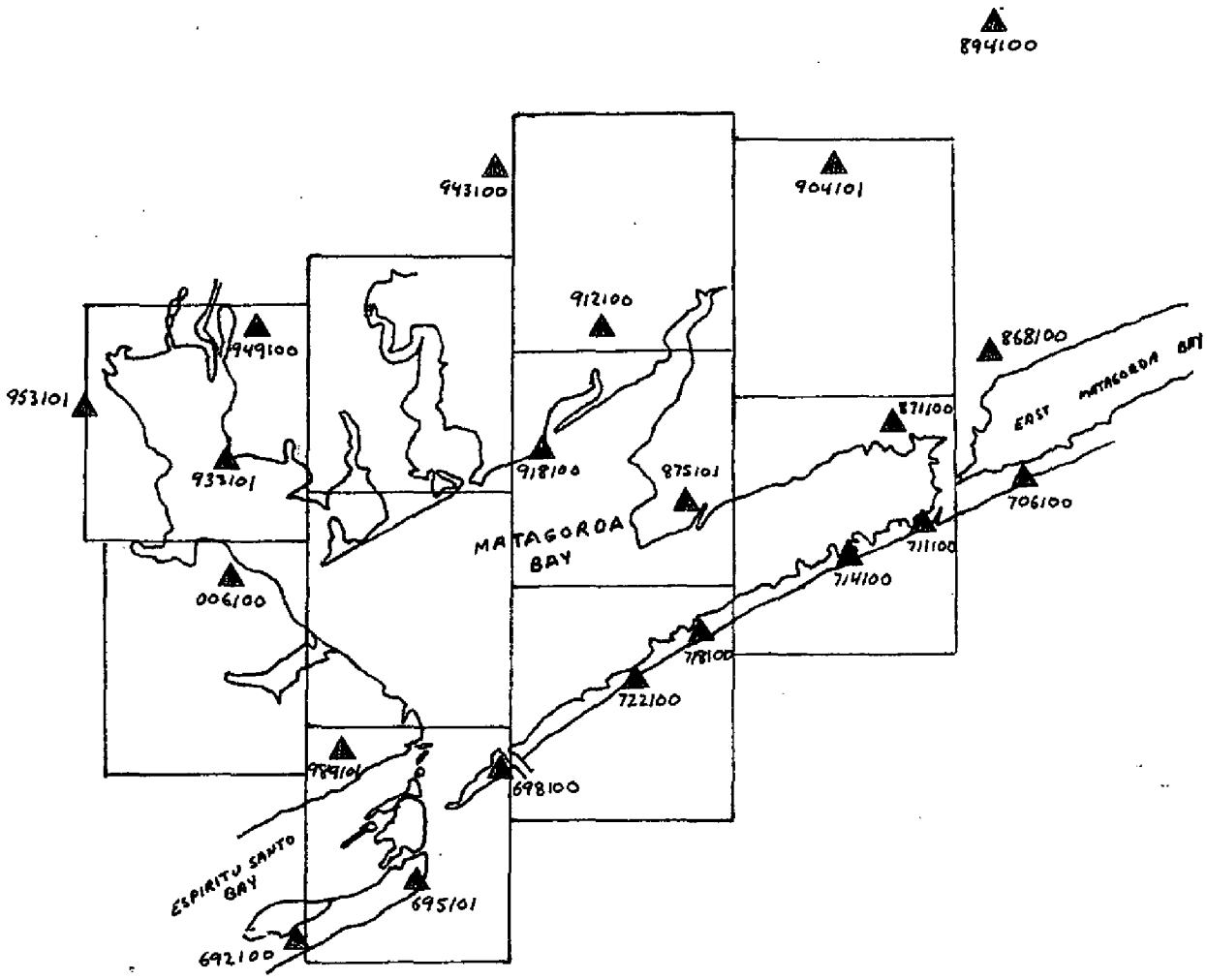
1:50,000 Bridging Photographs	Ratio Value
89 Z (CN) 3692 through 3698	2.45
89 Z (CN) 3867 through 3876	2.44
89 Z (CN) 3878 through 3885	2.44
89 Z (CN) 3894 through 3930 even #'s incl. 3929	2.44
89 Z (CN) 3931 through 3937	2.45
89 Z (CN) 3943 through 3953	2.45
89 Z (CN) 3988 through 3995	2.45
89 Z (CN) 4000 through 4009	2.45
1:30,000 IR MLLW	
89 B (R) 4485 through 4503	1.48
89 B (R) 4681 through 4698	1.50
1:30,000 IR MHW	
89 B (R) 4823 through 4838	1.47
1:50,000 IR MLLW	
89 B (R) 4469 through 4645	2.45
89 B (R) 4639 through 4645	2.49
89 B (R) 4649 through 4652, 4655	2.50
89 B (R) 4661 through 4664	2.48
89 B (R) 4670 through 4676	2.49
89 B (R) 4707 through 4713	2.49
89 B (R) 4723 through 4729	2.49
89 B (R) 4732 through 4741	2.49
89 B (R) 4762 through 4766	2.50
89 B (R) 4781 through 4784	2.49
89 B (R) 4799 through 4805	2.49
1:50,000 IR MHW	
89 B (R) 4809 through 4814	2.50

CM-8715

FIT TO CONTROL

STATION NAME	POINT NO.	VALUES IN FEET X	Y
Port O'Connor cable TV mast	47	-0.5	+1.0
Port O'Connor municipal tank	48	-3.0	+1.1
Magnolia panel #18	6100	-1.8	-2.6
Lady, 1934 panel #6	692100	+1.0	-1.6
Matagorda Lighthouse, 1906	695100	-2.4	+2.1
Matagorda LtHo (sub pt.)panel #5	695101	-0.4	+1.5
Mata, 1934 panel #4	698100	+0.3	+0.4
Row 2 panel #1	706100	-0.7	+0.3
Idol 2 panel #2A	711100	-1.8	-1.2
Maverick panel #2	714100	+1.6	-1.0
Poe, 1934 panel #3	718100	-0.8	0.0
Smyth Sat 1989 panel #3A	722100	+0.8	0.0
Morgan Sat 1989 panel #9	868100	0.0	+0.8
Dog Sat 1989 panel #8	871100	+0.1	+0.4
Lake 2, 1906 (sub pt.) panel #7	875101	+1.2	+0.2
Steinmeyer 1931 panel #14	894100	+0.1	+0.3
Clapper 2, 1976 panel #13	904101	+1.0	-0.5
Palaport panel #12	912100	-2.1	0.0
Trull Sat 1989 panel #11	918100	-0.9	-0.7
Mitchell 2 (sub pt.) panel #10	933101	-0.8	+0.2
Cow Sat panel #15	943100	-0.7	+1.5
Jones Sat panel #16	949100	+3.2	+0.3
Lavaport Az Mk panel #17	953101	+1.0	+1.5
J592 (sub pt.) panel #19	989101	-0.4	0.0

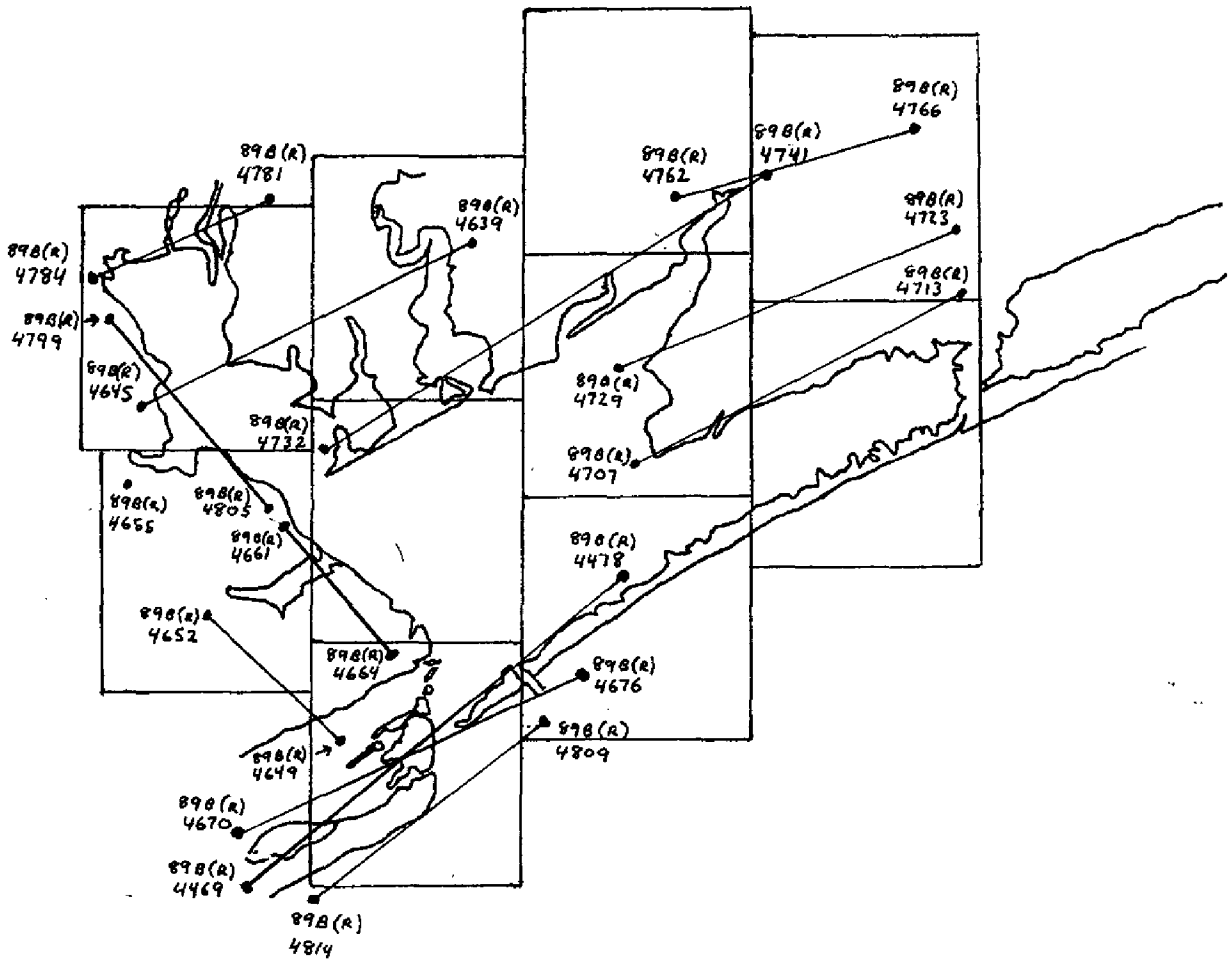
LISTING B



JOB CM-8715
MATAGORDA BAY & VICINITY
MATAGORDA
TEXAS

HORIZONTAL CONTROL

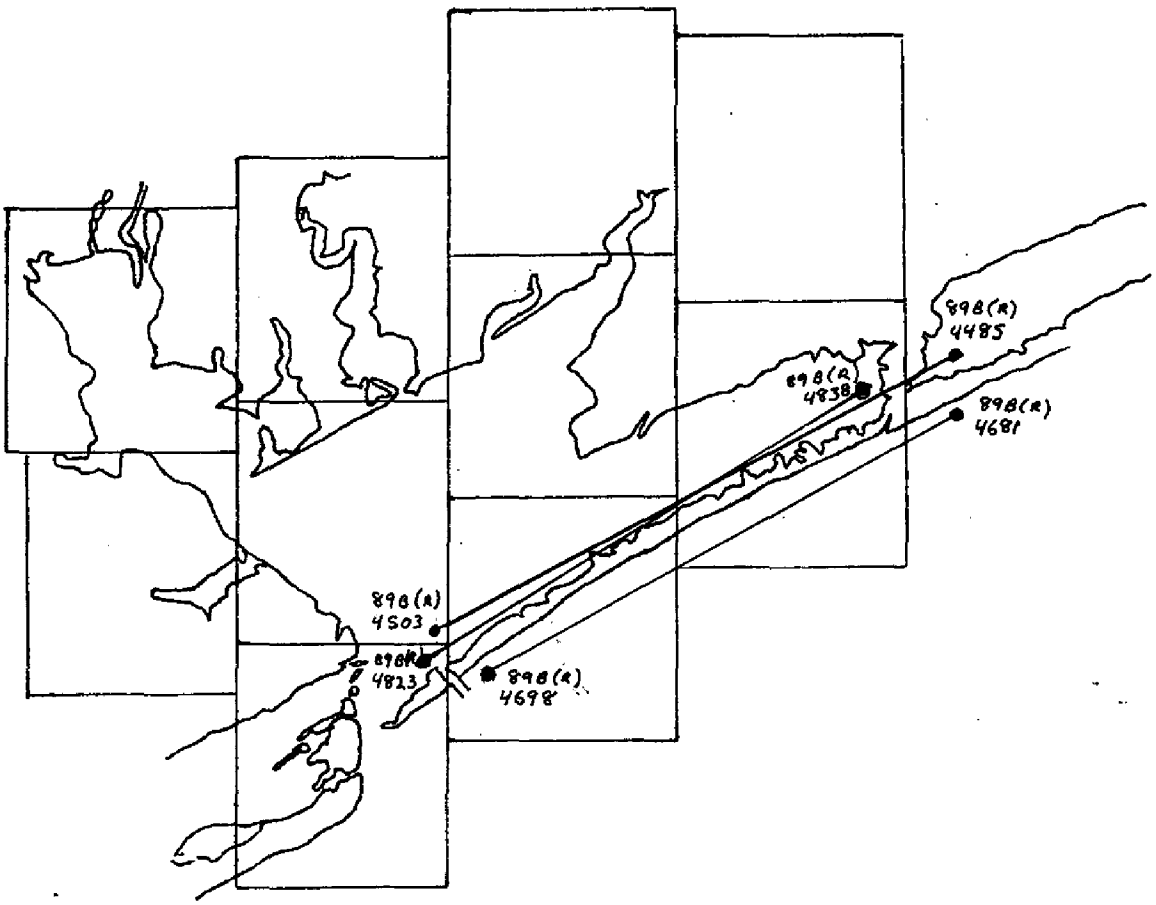
DIAGRAM 1



JOB CM-8715
MATAGORDA BAY & VICINITY
MATAGORDA
TEXAS

1:50,000 INFRARED PHOTOGRAPHY

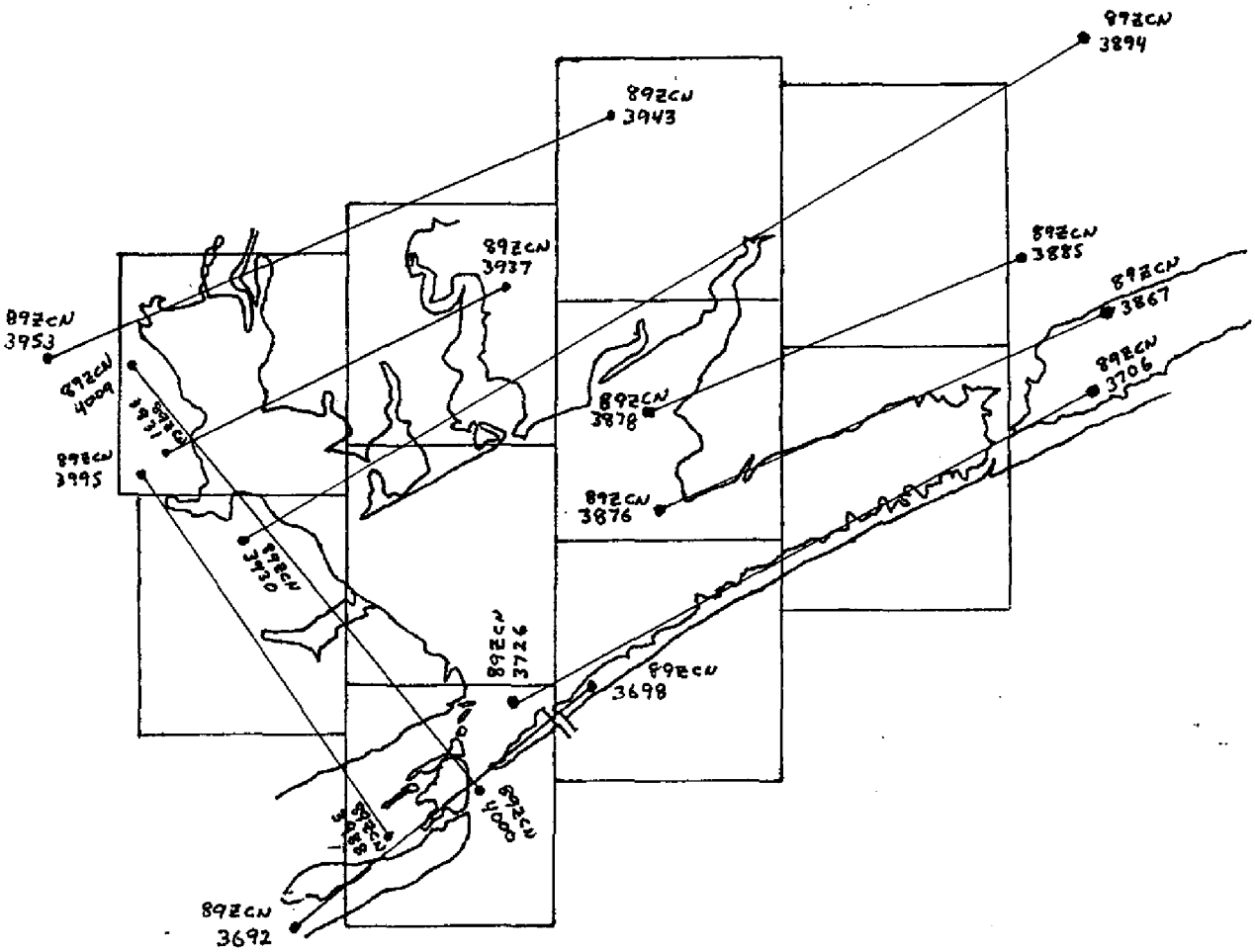
DIAGRAM 2A



JOB CM-8715
MATAGORDA BAY & VICINITY
MATAGORDA
TEXAS

1:30,000 INFRARED PHOTOGRAPHY

DIAGRAM 2B



JOB CM-8715
MATAGORDA BAY & VICINITY
MATAGORDA
TEXAS

BRIDGING PHOTOGRAPHS

DIAGRAM 3

APPENDIX D

MAP COMPILATION SOURCE PAGES

DESCRIPTIVE DATA

CM-8715

TP-01642

MAP SCALE-1:20,000

PHOTOGRAPHY

NUMBER AND DATE	DATE	TIME	SCALE	STAGE OF TIDE
89Z(CN)3908-3914	2-23-89	1057	1:50,000	Diurnal
89ZB(R)4737-4741	3-08-89	1204	1:50,000	-0.26 ft MLLW
*89B(R)4762	3-08-89	1225	1:50,000	-0.28 ft MLLW
MEAN TIDE RANGE = Diurnal				

REVIEWER: Fay Mauldin **DATE:** 4-17-90

COMPILATION REMARKS:

The water level for the MLLW infrared photography was based on staff readings for the tide staff at Port O'Connor. No height or time corrections were required. The bay areas are subject to meteorological conditions and are considered non-tidal. For this reason, there is no MLLW line shown in the bay areas. All times are referenced to Central Standard Time.

*These MLLW infrared photographs are dated 3-7-89. According to all of the records and headquarters, the photographs were actually flown on 3-08-89. This 3-08-89 date is used in all reports.

DESCRIPTIVE DATA

CM-8715

TP-01643

MAP SCALE - 1:20,000

PHOTOGRAPHY

NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE
89Z(CN)3882-3885	2-23-89	1036	1:50,000	Diurnal
89Z(CN)3869-3870	2-23-89	1020	1:50,000	Diurnal
89Z(CN)3900, 3902	2-23-89	1056	1:50,000	Diurnal
89Z(CN)3906, 3908	2-23-89	1056	1:50,000	Diurnal
89B(R) 4711, 4713	3-08-89	1137	1:50,000	-0.21 ft MLLW
*89B(R) 4766	3-08-89	1225	1:50,000	-0.28 ft MLLW
89B(R) 4741	3-08-89	1204	1:50,000	-0.26 ft MLLW
89B(R) 4723	3-08-89	1149	1:50,000	-0.24 ft MLLW
MEAN TIDE RANGE = Diurnal				

REVIEWER: Fay Mauldin DATE: 4-02-90

COMPILATION REMARKS:

The water level for the MLLW infrared photography was based on staff readings for the tide staff at Port O'Connor. No height or time corrections were required. All times are referenced to Central Standard Time. The bay areas are subject to meteorological conditions and are considered non-tidal. For this reason, there is no MLLW line shown in the bay areas.

*These MLLW infrared photographs are dated 3-07-89. According to all of the records and headquarters, the photographs were actually flown on 3-08-89. This 3-08-89 date is used in all reports.

DESCRIPTIVE DATA

CM-8715

TP-01644

MAP SCALE - 1:20,000

PHOTOGRAPHY

NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE
89Z(CN)3710-3718	2-22-89	1057	1:30,000	Diurnal
89Z(CN)3869-3874	2-23-89	1021	1:50,000	Diurnal
89B(R) 4831-4837	3-10-89	1530	1:30,000	-0.16 ft MHW
89B(R)4489-4495	2-22-89	1057	1:30,000	-0.01 ft MLLW
89B(R)4709-4713	3-08-89	1137	1:50,000	-0.21 ft MLLW
			MEAN TIDE RANGE= Diurnal	

REVIEWER: Charles Blood DATE: 5-16-90

COMPILATION REMARKS:

The Gulf Coast shoreline is represented as compiled by photo interpretation of the color compilation photography and graphically revised to agree with the MHW infrared photography.

The water level for the infrared photography was based on tide staff readings at Port O'Connor and Port Lavaca for the bay areas and the staff of Bob Hall Pier for the Gulf of Mexico. Tidal corrections are not required. Time is referenced to Central Standard Time. The bay areas are subject to meteorological conditions and are considered non-tidal. For this reason, there is no MLLW line shown in the bay areas.

DESCRIPTIVE DATA

CM-8715

TP-01645

MAP SCALE-1:20,000

PHOTOGRAPHY

NUMBER AND DATE	DATE	TIME	SCALE	STAGE OF TIDE
89Z(CN)3873-3876	2-23-89	1021	1:50,000	Diurnal
89Z(CN)3878-3879	2-23-89	1036	1:50,000	Diurnal
89Z(CN)3910-3918	2-23-89	1057	1:50,000	Diurnal
89B(R)4707-4709	3-08-89	1037	1:50,000	-0.21 ft MLLW
89B(R)4728-4729	3-08-89	1149	1:50,000	-0.24 ft MLLW
89B(R)4737-4739	3-08-89	1204	1:50,000	-0.26 ft MLLW
			MEAN TIDE	RANGE = Diurnal

REVIEWER: Fay Mauldin **DATE:** 3-21-90

COMPILATION REMARKS:

The water level for the MLLW infrared photography was based on staff readings for the tide staff at Port O'Connor. No heights or time corrections were required. The bay areas are subject to meteorological conditions and are considered non-tidal. For this reason, there is no MLLW line shown in the bay areas. All times are referenced to Central Standard Time.

DESCRIPTIVE DATA

CM-8715

TP-01646

MAP SCALE-1:20,000

PHOTOGRAPHY

NUMBER AND DATE	DATE	TIME	SCALE	STAGE OF TIDE
89Z(CN)3717-3726	2-22-89	1057	1:30,000	Diurnal
89B(R)4823-4831	3-10-89	1530	1:30,000	-0.16 ft MHW
89B(R)4495-4503	2-22-89	1057	1:30,000	-0.01 ft MLLW
			MEAN TIDE RANGE= Diurnal	

REVIEWER: Charles Blood **DATE:** 4-06-90

COMPILATION REMARKS:

The gulf coast shoreline is represented as compiled by photo interpretation of the color compilation photography and graphically revised to agree with the MHW infrared photography.

The water level for the infrared photography was based on tide staff readings at Port O'Connor and Port Lavaca for the bay areas and the staff at Bob Hall Pier for the Gulf of Mexico. Tidal corrections are not required. The bay areas are subject to meteorological conditions and are considered non-tidal. For this reason, there is no MLLW line shown in the bay area. Time is referenced to Central Standard Time.

The water level for the MLLW infrared photography was based on staff readings for the tide staff at Port O'Connor. No heights or time corrections were required. The bay areas are subject to meteorological conditions and are considered non-tidal. For this reason, there is no MLLW line shown in the bay areas. All times are referenced to Central Standard Time.

DESCRIPTIVE DATA

CM-8715

TP-01647

MAP SCALE-1:20,000

PHOTOGRAPHY

NUMBER AND DATE	DATE	TIME	SCALE	STAGE OF TIDE
89Z(CN)3693-3698	2-22-89	1023	1:50,000	Diurnal
89Z(CN)4001-4002	2-23-89	1243	1:50,000	Diurnal
89Z(CN)3988-3989	2-23-89	1216	1:50,000	Diurnal
89B(R)4671,4673, 4675	2-26-89	1048	1:50,000	-0.21 ft MLLW
89B(R)4649	2-26-89	1022	1:50,000	+0.08 ft MLW
89B(R)4663	2-26-89	1032	1:50,000	-0.21 ft MLLW
89B(R)4809,4811, 4813	3-10-89	1458	1:50,000	-0.21 ft MHW
				MEAN TIDE RANGE= Diurnal

REVIEWER: Fay Mauldin **DATE:** 2-26-90

COMPILATION REMARKS:

The water level for the infrared photography was based on staff readings for the tide staffs at Port O'Connor and Port Lavaca for the bay area and the staff at Bob Hall Pier for the Gulf of Mexico. No height or time corrections were required. The bay areas are subject to meteorological conditions and are considered non-tidal. For this reason, there is no MLLW line shown in the bay areas. All times are referenced to Central Standard Time.

A junction was made with CM-8208, TP-01194, on Matagorda Island. The MHW line on the Gulf of Mexico does not junction adequately due to the six year difference in the photography and shifting sand on the beach. An adequate junction was made with the interior detail.

The gulf coast shoreline is represented as compiled by photo interpretation of the color compilation photography and graphically revised to agree with the MHW infrared photography.

DESCRIPTIVE DATA

CM-8715

TP-01648

MAP SCALE-1:20,000

PHOTOGRAPHY

NUMBER AND DATE	DATE	TIME	SCALE	STAGE OF TIDE
89Z(CN)4001-4004	2-23-89	1243	1:50,000	Diurnal
89Z(CN)3922-3926	2-23-89	1057	1:50,000	Diurnal
89B(R)4733	3-08-89	1204	1:50,000	-0.26 ft MLLW
89B(R)4661,4663	2-26-89	1032	1:50,000	-0.21 ft MLLW
			MEAN TIDE RANGE = Diurnal	

REVIEWER: Fay Mauldin **DATE:** 3-12-90

COMPILATION REMARKS:

The water level for the MLLW infrared photography was based on staff readings for the tide staff at Port O'Connor. No height or time corrections were required. The bay areas are subject to meteorological conditions and are considered non-tidal. For this reason, there is no MLLW line shown in the bay areas. All times are referenced to Central Standard Time.

DESCRIPTIVE DATA

CM-8715

TP-01649

MAP SCALE-1:20,000

PHOTOGRAPHY

NUMBER AND DATE	DATE	TIME	SCALE	STAGE OF TIDE
*89Z(CN)3918-3924	2-23-89	1055	1:50,000	Diurnal
89Z(CN)3934-3937	2-23-89	1120	1:50,000	Diurnal
89Z(CN)3946-3947	2-23-89	1135	1:50,000	Diurnal
89B(R)4640-4642	2-26-89	1005	1:50,000	-0.09 ft MLLW
89B(R)4733-4735	3-08-89	1202	1:50,000	-0.26 ft MLLW
			MEAN TIDE RANGE=Diurnal	

REVIEWER: Fay Mauldin **DATE:** 3-15-90

COMPILATION REMARKS:

The water level for the MLLW infrared photography was based on staff readings for the tide staffs at Port Lavaca and Port O'Connor. No Height or time corrections were required. The bay areas are subject to meteorological conditions and are considered non-tidal. For this reason, there is no MLLW line shown in the bay areas. All times are referenced to Central Standard Time. There is no MLLW infrared photograph coverage north of latitude $28^{0}45.3'$.

*even number photographs only

DESCRIPTIVE DATA

CM-8715

TP-01650

MAP SCALE-1:20,000

PHOTOGRAPHY

NUMBER AND DATE	DATE	TIME	SCALE	STAGE OF TIDE
89Z(CN)3931-3934	2-23-89	1119	1:50,000	Diurnal
89Z(CN)3949-3952	2-23-89	1137	1:50,000	Diurnal
*89B(R)4800,4802	3-08-89	1314	1:50,000	-0.31 ft MLLW
*89B(R)4781,4783	3-08-89	1240	1:50,000	-0.31 ft MLLW
89B(R)4643-4544	2-26-89	1003	1:50,000	-0.09 ft MLLW
			MEAN TIDE RANGE= Diurnal	

REVIEWER: Fay Mauldin **DATE:** 2-08-90

COMPILATION REMARKS:

The water level for the MLLW infrared photography was based on staff readings for the tide staffs at the Port O'Connor and Port Lavaca. No heights or time corrections were required. The bay areas are subject to meteorological conditions and are considered non-tidal. For this reason, there is no MLLW line show in the bay areas. All times are referenced to Central Standard Time.

*These MLLW infrared photographs are dated 3-07-89. According to all of the records and headquarters, the photographs were actually flown on 3-08-89. This 3-08-89 date is used in all of the reports.

DESCRIPTIVE DATA

CM-8715

TP-01651

MAP SCALE-1:20,000

PHOTOGRAPHY

NUMBER AND DATE	DATE	TIME	SCALE	STAGE OF TIDE
89Z(CN)3991-3992	2-23-89	1215	1:50,000	Diurnal
89Z(CN)3994-3995	2-23-89	1215	1:50,000	Diurnal
89Z(CN)4003-4006	2-23-89	1245	1:50,000	Diurnal
89B(R)4661-4663	2-26-89	1032	1:50,000	-0.21 ft MLLW
89B(R)4652-4655	2-26-89	1022	1:50,000	-0.19 ft MLLW
*89B(R)4802-4804	3-8-89	1314	1:50,000	-0.31 ft MLLW
			MEAN TIDE RANGE =	Diurnal

REVIEWER: Fay Mauldin **DATE:** 2-16-90

COMPILATION REMARKS:

The water level for the MLLW infrared photography was based on staff readings for the tide staff at Port O'Connor and Port Lavaca. No height or time correction were required. All times are referenced to Central Standard Time. The bay areas are subject to meteorological conditions and are considered non-tidal. For this reason, there is no MLLW line shown in the bay areas.

*The MLLW infrared photographs are dated 3-07-89. According to all of the records and headquarters, the photographs were actually flown 3-08-89. This 3-08-89 date is used in all of the reports.

APPENDIX E

APPROVED GEOGRAPHIC NAMES

GEOGRAPHIC NAMES

FINAL NAME SHEET

CM-8715 (Matagorda Bay and Vicinity, Texas)

TP-01642

Cashs Creek
Collegeport
Horn Creek
Palacios
Palacios Municipal Airport
Pelican Slough
Pepper Hill
Reed Creek
Tres Palacios Bay
Tres Palacios River
Turtle Bay
Turtle Creek

TP-01643

Baxter Island
Colorado River
Dick Island
Donaldson Lake
Gillett Lake
Johnsons Timber Slough
Little Robbins Slough
Matagorda
Middle Branch
Port of Bay City
Robbins Slough
Selkirk Island
Tres Palacios Oaks (locale)
Tres Palacios River
West Branch Colorado River
Wild Cow Island
Wilson Creek

TP-01644

Baxter Island
Big Bayou
Colorado River
Crab Bayou
Crab Lake
Culver Cut
Dog Island
Dog Island Reef
Forked Bayou
Freshwater Lake
Gold Bayou
Hooper Bayou
Intracoastal Waterway
Long Bayou
Mad Island Bayou
Mad Island Lake
Mad Island Reef
Mad Island Slough
Matagorda Bay
Matagorda Peninsula
Maverick Bayou
McNabb Island
Mexico, Gulf of
Middle Channel
Middle Branch
Phillips Bayou
Rattlesnake Island
Shell Island Reef
Spanish Lake
Tiger Island
Tiger Island Channel

TP-01645

Buttermilk Slough
Camp Hulen
Coon Island
Coon Island Bay
Grassy Point
Hotel Point
Intracoastal Waterway
Jensen Point
Matagorda Bay
Oliver Point
Oyster Lake
Palacios
Palacios Bayou
Palacios Point
Pelican Slough
Sartwelle Lakes
Shell Beach
Tres Palacios Bay
Turtle Bay
Turtle Point
Well Point

TP-01646

Fence Bayou
Greens Bayou
Hilberts Bayou
Matagorda Bay
Matagorda Club Airfield
Matagorda Peninsula
Mexico, Gulf of

TP-01647

Barroom Bay
Bayucos Island
Bayucos Point
Big Bayou
Big Pocket (bay)
Bill Days Reef
Blackberry Island
Boggy Bayou
Cavallo, Pass
Decros Point
Dewberry Island
Espiritu Santo Bay
Everett Reef
Farwell Island
Fish Pond
Fishermans Cut
Grass Island
Intracoastal Waterway
Lighthouse Cove
Little Marys Cut
Mailboat Channel
Matagorda Bay
Matagorda Island
Matagorda Peninsula
Mexico, Gulf of
Mitchells Cut
Mule Slough
Port O'Connor
Pringle Lake
Saluria Bayou
Saluria Islands
Shoalwater Bay
Teller Point
Vanderveer Island
Whitakers Bayou

TP-01648

Big Dam Bayou
Boggy Bayou
Broad Bayou
Huckleberry Bayou
Indianola Island
Keller Bay
LaSalle Bayou
Lavaca Bay
Matagorda Bay
Mud Point
Port O'Connor
Powderhorn Bayou
Powderhorn Lake
Redfish Lake
Rupert Point
Sand Point

TP-01649

Carancahua
Carancahua Bay
Carancahua Pass
Cox Bay
East Carancahua Creek
El Campo Club
El Campo Club Community
Fivemile Branch
Keller Bay
Keller Creek
Matagorda Bay
Olivia
Port Alto
Redfish Lake
Salt Lake
Schicke Point
Weedhaven
West Carancahua Creek

TP-01650

Alamo Beach
Bennett Point
Catfish Bayou
Chocolate Bay
Comfort, Point
Cox Bay
Cox Point
Gallinipper Point
Garcitas Cove
Garcitas Creek
Huisache Cove
Huisache Creek
Lavaca Bay
Lavaca River

Little Chocolate Bayou
Lynn Bayou
Noble Point
Placedo Creek
Point Comfort and Northern (RY)
Point Comfort (locale)
Port Lavaca
Refuge, Harbor of
Rhodes Point
Sixmile Creek
Smugglers Bayou
Swan Lake
Venado Lakes

TP-01651

Alamo Beach
Blind Bayou
Chocolate Bay
Chocolate Bayou
Coloma Creek
Gallinipper Point
Indianola Island
Indian Point
Lavaca Bay
Magnolia Beach (locale)
Matagorda Bay
Mud Lake
Old Town Lake
Powderhorn Lake
Tanner Airport

Approved:

Charles E. Harrington

Charles E. Harrington
Chief Geographer
Nautical Charting Division

APPENDIX F

CARTOGRAPHIC FEATURES OF CHARTING INTEREST

FIXED AIDS TO NAVIGATION

PROJECT: Photogrammetric Survey CM-8715, Matagorda Bay and Vicinity, Matagorda, Texas

NOS NAUTICAL CHART COVERAGE: Charts 11313, 11315, through 11317, and 11319 depict areas common to this photogrammetric survey.

GEODETIC DATUM: NAD 1983

Features indicated have been identified and measured during aerotriangulation from aerial photography taken 2/22/89 and 2/23/89. Refer to Nautical Charting Division Standard Digital Exchange Format documentation for quality code (QC) and clarification of cartographic codes (CC). Reference data used to assign feature descriptions are (1) the USCG Light List Vol. IV, 1989 and (2) NOS nautical chart 11317, 18th edition, dated 5/21/88.

NCD QC	GEOGRAPHICAL POSITION LONGITUDE	LATITUDE	NCD CC	FEATURE DESCRIPTION
MATAGORDA BAY (Chart 11317) - Matagorda Ship Channel:				
4	-962110.996	282701.248	209	-RGE "A" R LT
4	-961937.262	282540.622	208	-RGE "B" F LT
4	-962050.201	282628.677	200	-LT 17
4	-962121.523	282650.969	200	-LT 19
4	-962128.928	282715.764	209	-ENT S SIDE DRDG RGE R LT
4	-962139.212	282729.791	209	-ENT N SIDE DRDG RGE R LT
4	-963012.365	283311.610	200	-LT 52
4	-963356.031	283750.551	200	-LT 76
4	-963347.150	283824.092	200	-LT 79
4	-963343.417	283818.197	200	-LT 80
4	-963330.287	283834.526	200	-LT 83
4	-963327.777	283829.385	200	-LT 84
4	-963311.899	283831.895	200	-LT 88
4	-963353.111	283803.110	200	-LT 78
4	-963401.149	283804.973	200	-LT 77
4	-963401.496	283747.283	200	-LT 75
4	-963357.009	283718.673	200	-LT 74
4	-963402.397	283546.213	208	-RGE "D" F LT
4	-963414.624	283558.866	208	-RGE "C" F LT
4	-963507.083	283635.733	209	-RGE "C" R LT
4	-963355.583	283941.703	209	-RGE "E" R LT
4	-963356.270	283918.637	208	-RGE "E" F LT
4	-963331.655	283532.355	200	-LT 64
4	-963336.147	283528.485	200	-LT 63
4	-963259.877	283509.404	200	-LT 62

4	-963302.988	283505.055	200	-LT 61
4	-963227.503	283446.908	200	-LT 60
4	-963230.747	283442.538	200	-LT 59
4	-963157.687	283425.860	200	-LT 58
4	-963202.034	283422.546	200	-LT 57
4	-963152.504	283406.519	200	EXXON PIPELINE W LT
4	-963147.785	283410.100	200	EXXON PIPELINE LT "A"
4	-963139.324	283421.334	200	EXXON PIPELINE E LT
4	-963123.728	283402.069	200	-LT 56
4	-963049.268	283337.662	200	-LT 54
4	-963052.614	283333.920	200	-LT 53
4	-962935.925	283246.085	200	-LT 50
4	-962938.908	283241.886	200	-LT 49
4	-962909.935	283221.285	200	-LT 47
4	-962906.957	283225.771	200	-LT 48
4	-963019.974	283309.055	200	ALCOA PIPELINE MARKER LT "A"
4	-963014.548	283313.905	200	ALCOA PIPELINE MARKER LT "B"

MATAGORDA BAY (Chart 11317) - Point Comfort Inner Channel:

4	-963416.086	283942.183	209	-RGE "A" R LT
4	-963411.841	283936.043	208	-RGE "A" F LT
4	-963405.109	283931.387	200	-LT 8
4	-963353.919	283904.366	200	-LT 7
4	-963404.200	283842.314	208	-RGE "B" F LT
4	-963402.840	283836.934	200	-LT 5
4	-963401.061	283829.547	200	-LT 3
4	-963354.882	283828.640	200	-LT 4

MATAGORDA BAY (Chart 11317)
Lavaca Bay - Port Lavaca Channel:

4	-963636.012	283702.431	200	-LT 12
4	-963731.566	283723.867	200	-LEADING LT
4	-963517.363	283621.191	200	-LT 5

MATAGORDA BAY (Chart 11317) - Lavaca Bay - Lavaca River:

4	-963434.104	284153.216	200	-LT 3
4	-963433.772	284121.026	200	-LT 2

MATAGORDA BAY (Chart 11317) - Matagorda Bay:

~~4~~	~~-961918.197~~	~~283823.995~~	~~200~~	~~TEXAS PARK AND WILDLIFE JETTY LT~~

Removed from listing
Lowell O. Watcher

INTRACOASTAL WATERWAY - MATAGORDA BAY (Chart 11317) - Palacios Channel:

4	-961332.686	284146.546	200	-LT 50

INTRACOASTAL WATERWAY - MATAGORDA BAY (Chart 11317)
Freeport - Port O'Connor - Matagorda Bay:

4	-961836.562	282823.753	208	-RGE "L" F LT
4	-961717.644	282850.425	209	-RGE "L" R LT
4	-962102.783	282702.195	209	-RGE "K" R LT
4	-962339.037	282637.262	200	PORT O'CONNOR LT 1
4	-962342.358	282644.662	200	PORT O'CONNOR LT 2

INTRACOASTAL WATERWAY - ESPIRITU SANTO BAY TO CARLOS BAY
Port O'Connor - Corpus Christi - Espiritu Santo Bay Ferry Channel I:

4	-962843.009	282434.674	200	-LT 1

LANDMARK FEATURES

PROJECT: Photogrammetric Survey CM-8715, Matagorda Bay and Vicinity, Matagorda, Texas

NOS NAUTICAL CHART COVERAGE: Charts 11313, 11315, through 11317, and 11319 depict areas common to this photogrammetric survey.

GEODETIC DATUM: NAD 1983

Features indicated have been identified and measured during the photogrammetric operations from aerial photography. The date of the source photography is February 1989. Refer to Nautical Charting Division Standard Digital Exchange Format documentation for quality code (QC) and clarification of cartographic codes (CC). Objects assigned carto code "993" are uncharted features and are features of possible landmark value.

NCD QC	GEOGRAPHICAL POSITION LONGITUDE	LATITUDE	NCD CC	FEATURE DESCRIPTION
4	-962645.284	282558.545	993	Tower (PORT O'CONNOR)
4	-955236.883	284319.728	086	MICRO TOWER (OLD GULF)
4	-955642.195	284209.336	993	R Tower (MATAGORDA)
4	-955830.818	284100.360	086	TRAFFIC SIGNAL (MATAGORDA)
4	-960804.070	283714.433	086	TANK (E OF OYSTER LAKE)
4	-960802.724	283714.782	993	Tank (OYSTER LAKE)
4	-960300.662	284742.917	993	Tank (AT POWER PLANT)
4	-960253.916	284742.732	993	Tank (AT POWER PLANT)
4	-961322.088	284245.870	086	TANK (PLACIOS)
4	-961308.601	284308.408	993	Tank (PLACIOS)
4	-961241.691	284231.569	993	Micro Twr (PLACIOS)
4	-962247.967	283958.496	993	Tank (SOUTH OF CARANCAHUA)
4	-963707.855	283550.080	086	TV TOWER (HARBOR OF REFUGE)

	4	-963341.939	283935.921	086	TANK (PT. COMFORT)
	4	-963323.162	284049.396	086	TANK (PT. COMFORT)
	4	-963244.999	283848.276	993	Stack (PT. COMFORT)
	4	-963324.496	283902.198	086	TANK (PT COMFORT)
	4	-963757.674	283655.034	086	TANK (PORT LAVACA)
	4	-963824.059	283547.523	086	TANK (PORT LAVACA)
	3	-962520.875	282650.319	086	* PORT OCONNOR MUN. TANK
	3	-962634.785	282627.482	993	* PORT OCONNOR CABLE TV MAST

* GEODETIC STATION

CARTOGRAPHIC FEATURES OF CHARTING INTEREST

COASTAL MAPPING PROJECT: CM-8715 MATAGORDA BAY AND VICINITY

NOS CHARTS AFFECTED: 11315, 11316, 11317, 11319

GEODETIC DATUM: NAD 1983

The following charted cartographic features and newly identified cartographic features of possible landmark value have been identified and measured during photogrammetric operations. Refer to Nautical Charting Division Standard Digital Data Exchange Format documentation for quality code (QC) criteria and clarification of cartographic codes (CC). Please note that cartographic code 993 is a photogrammetric source code for cartographic features of possible landmark value.

FEATURE DESCRIPTION	NCD C.C.	GEOGRAPHIC POSITION LATITUDE	LONGITUDE	NCD Q.C.	DATE OF LOCATION
Matagorda Light	086	28°20'16.407"	96°25'26.632"	3	053/1989
Matagorda Ship Channel Entrance Light	200	28°25'18.90 "	96°19'06.08 "	7	053/1989
Range B Rear Light	209	28°25'18.90 "	96°19'06.08 "	7	053/1989
Light 11	200	28°25'34.45 "	96°19'46.35 "	7	053/1989
Matagorda Ship Channel Light 20	200	28°26'54.50 "	96°21'17.50 "	7	053/1989
Matagorda Bay Leading Light G	200	28°36'34.00 "	96°10'09.90 "	7	054/1989
Matagorda Bay Light 1	200	28°35'48.30 "	96°10'40.90 "	7	054/1989
Matagorda Bay Range H Rear Light	209	28°29'45.80 "	96°15'16.55 "	7	053/1989
Palacios Channel Light 2	200	28°29'18.00 "	96°17'43.50 "	7	053/1989
Palacios Channel Light 36	200	28°38'58.60 "	96°15'05.60 "	7	054/1989
Palacios Channel Light 40	200	28°39'53.80 "	96°14'35.20 "	7	054/1989
Palacios Channel Light 44	200	28°40'51.20 "	96°14'03.50 "	7	054/1989
Range K Front Light	208	28°27'50.25 "	96°19'46.10 "	7	053/1989
Flagpole	086	28°41'56.50 "	96°12'57.50 "	7	054/1989
Ruins	086	28°23'57.10 "	96°24'25.30 "	7	053/1989
Radio Tower	993	28°40'24.90 "	96°27'05.60 "	7	054/1989
Tank	993	28°43'56.40 "	96°33'19.10 "	7	054/1989
Monument	086	28°31'38.80 "	96°30'31.30 "	7	054/1989

Listing approved by: Lowell O. Neterer Jr. — Jan 10, 1991

Lowell O. Neterer Jr.
FINAL REVIEWER

DATE

APPENDIX G

MEMORANDUMS

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

April 27, 1989

MEMORANDUM FOR: The Record

FROM: James D. McNamara
Coastal Planning Unit
Photogrammetry Branch, NCD

SUBJECT: Summary and review of the Planning, Field, and Photographic phase of Job CM-8715, Matagorda Bay and Vicinity, Texas, Shoreline Mapping

This shoreline mapping project was scheduled for field operations late January, February, and early March 1989. The Atlantic Marine Center (AMC) photo field party under the direction of Robert De Croix, began the work on this project in late January 1989, and the photo panels were in place in early February. There was some minor difficulty accessing the area for photo panels number two (2) and three (3). These two photo panels were to be set on Matagorda Peninsula which can only be accessed by boat. Travel to this area was impassible due to extremely low tides and extensive marsh and mud flats. Photo panel #2 was relocated to the north shore of the Colorado River, which is accessible by vehicle for the above reason. Photo panel #3 was also relocated to the southwest at the end of a road on the peninsula. A subsequent evaluation of the control scheme on the Matagorda Peninsula indicated there would be too many air bases between the control stations. Two additional photo panels were established between the newly established photo panel number 2 and 3, when weather and other conditions were more suitable. Due to extremely poor weather and the other noted problem the panels were slightly delayed being placed. This did not affect thesecuring of the photography. The PROJECT INSTRUCTIONS: FIELD, dated January 12, 1989 specified the photo panels to be in place by February 4, 1989. This project was planned in support of the Nautical Charting Program, and a planned Hydrographic Survey (OPR-K228-HFP). The copies of the Control Station Identification Cards and the marked U.S.G.S. 7 1/2' quads were received in the Rockville Office before the arrival of the bridging photography.

On February 2, 1989, Air Photo Mission 1 (APM-1) departed Washington Dulles Airport to commence the photographic phase of this project. On February 22 and 23, 1989, APM-1 secured the bridging photography with color negative film. These rolls of film were reviewed on February 28 and March 1, 1989. The review of the targets indicated all of the photo panels were in place and visible on the required lines of bridging photography. The coverage, endlap, and target review was satisfactory for all of the bridging photography.

On February 23, and March 5, 1989, the photo mission secured the supplemental color negative photography. The lines of supplemental photography were flown at 1:30,000 scale with color negative film. A review of all of the supplemental photography indicated there is adequate coverage, endlap, and sidelap.

The black and white infrared (B&W IR) mean lower low water (MLLW) photography was secured on February 22, 1989, on the outside (Gulf of Mexico) lines 50-8 and 30-1 based on the Bob Hall Pier staff, no time or height correctors were required. Only the B&W IR MLLW photography was secured for the inside or backbay portion of the project. This area of the project has a small range of tide and the historical tide data was inadequate to develop the tidal datum. Two tide stations were installed, one at Port O'Conner and the other at Port Lavaca. These stations were ran simultaneously with the control station and a comparative analysis was made and a very preliminary datum was established.

Flight lines 50-1, 50-2, 50-3, 50-7, and a portion of 50-6 B&W IR MLLW photography were secured directly on the Port O'Conner staff, no time or height correctors were required. Flight lines 50-4, 50-5, 50-6, and the other end of 50-6 B&W IR MLLW photography were secured directly on the Port Lavaca staff, no time or height correctors were required.

The B&W IR Mean High Water photography was secured on the Gulf of Mexico shoreline on March 10, 1989. These two lines were secured based on the Bob Hall pier staff directly with no time or height correctors.

The B&W IR photography was reviewed and the coverage and endlap is adequate. NOAA Form 76-15, Photographic Flight Report was reviewed with NOAA Form 77-53, Tides and the B&W IR MLLW photography was secured within the acceptable range.

An additional field requirement was levied with the AMC Photo Field Party due to the nature of this project and subsequent hydrographic survey in the area.

The Project Instructions to the Field specified that all navigation range lights within the project were to be positioned to Third Order Class I horizontal geodetic specifications or the published triangulated position of the range lights was to be verified. The photo field party positioned all range lights with the exception of several private range lights at Port Comfort. A listing of the navigation range lights that were positioned will accompany the field report.

The data set for this project will include: the bridging and the supplemental photography secured with color negative photography, the B&W IR photography that was tide-coordinated at MLLW and MHW, the Field Project Completion Report which was prepared at AMC, the listing of navigation range lights, the tide record books, and the level data. The NAD 27 offset data was computed by NGS and placed on magnetic tape with a hardcopy listing.

May 1, 1990

MEMORANDUM FOR THE RECORD

FROM: Gregory L. Fromm
Manager, Coastal Survey Programs
Photogrammetry Branch

Subject: Fixed Aids to Navigation and Landmark Features, Photogrammetric Survey CM-8715, Matagorda Bay and Vicinity

The attached data will be provided to the appropriate nautical charting office (N/CG2211). The data, which consist of two listings, provides geographical positions for selected charted fixed aids to navigation and landmark features that fall within the survey limits of this project. This information has been determined based on photogrammetric observations and measurements of source aerial photographs during aerotriangulation operations.

Each feature has been assigned a quality code in accordance with the requirements specified in the Nautical Charting Division Standard Digital Data Exchange Format (NCD SDDEF). Source photography used to confirm or establish geographical positions was taken February 1989.

Quality code 3 - Identifies those objects that have published positions and are of a Class I, third-order horizontal quality, as based on the Classification and Standards for Geodetic Control. These features are discernable on the source project photography and their positions have been confirmed photogrammetrically.

Quality code 4 - Identifies those objects that were identified using source aerial photography and measured using analytical aerotriangulation methods. These points have a horizontal accuracy that falls within the restraints of the photogrammetric adjustment of the project area. Based on ninety percent confidence level, the predicted relative accuracy all aerotriangulated positions will be within 2 meters.

This project is still active and any subsequent information that is obtained about the status of these or other navigational aids within the project area will be forwarded to the appropriate nautical charting office.

Attachments (2)
Attachments are the ones in Appendix F Aerotriangulation

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

F/T2

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October 10, 1990

MEMORANDUM FOR: James W. Dailey
Chief, Source Data Unit
Mapping and Charting Branch

FROM: Gregory L. Fromm
Production Requirements Group
Photogrammetry Branch

Subject: Fixed Aids to Navigation and Landmark Features, Photogrammetric Survey CM-8715, Matagorda Bay and Vicinity

The attached data is being provided to complement nautical charting operations. The data, which consist of two listings, provides geographical positions for selected charted fixed aids to navigation and landmark features that fall within the survey limits of this project. This information has been determined based on photogrammetric observations and measurements of source aerial photographs during aerotriangulation operations.

Each feature has been assigned a quality code in accordance with the requirements specified in the Nautical Charting Division Standard Digital Data Exchange Format (NCD SDDEF). Source photography used to confirm or establish geographical positions was taken February 1989.

Quality code 3 - Identifies those objects that have published positions and are of a Class I, third-order horizontal quality, as based on the Classification and Standards for Geodetic Control. These features are discernable on the source project photography and their positions have been confirmed photogrammetrically.

Quality code 4 - Identifies those objects that were identified using source aerial photography and measured using analytical aerotriangulation methods. These points have a horizontal accuracy that falls within the restraints of the photogrammetric adjustment of the project area. Based on ninety percent confidence level, the predicted relative accuracy all aerotriangulated positions will be within 2 meters.

This project is still active and any subsequent information that is obtained about the status of these or other navigational aids within the project area will be provided to your office.

Attachments (2)

Attachments are the ones in Appendix F Aerotriangulation

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

October 12, 1990

MEMORANDUM FOR: Lt. Commander Maureen R. Kenny
Chief, Operations Section
Hydrographic Surveys Branch

FROM: Gregory L. Fromm
Production Requirements Group
Photogrammetry Branch

Subject: Fixed Aids to Navigation and Landmark Features, Photogrammetric Survey CM-8715, Matagorda Bay and Vicinity

The attached data provides geographical positions for selected charted fixed aids to navigation and landmark features that fall within the survey limits of this project. This information has been determined based on photogrammetric observations and measurements of source aerial photographs during aerotriangulation operations. A listing of geodetic stations that were recovered and/or used during photogrammetric operations is also included.

Each feature has been assigned a quality code in accordance with the requirements specified in the Nautical Charting Division Standard Digital Data Exchange Format (NCD SDDEF). Source photography used to confirm or establish geographical positions was taken February 1989.

Quality code 3 - Identifies those objects that have published positions and are of a Class I, third-order horizontal quality, as based on the Classification and Standards for Geodetic Control. These features are discernable on the source project photography their positions have been confirmed photogrammetrically.

Quality code 4 - Identifies those objects that were identified using source aerial photography and measured using analytical aerotriangulation methods. These points have a horizontal accuracy that falls within the restraints of the photogrammetric adjustment of the project area. Based on ninety percent confidence level, the predicted relative accuracy all aerotriangulated positions will be within 2 meters.

This project is still active and any subsequent information that is obtained about the status of these or other navigational aids within the project area will be provided to your office.

Attachments (3)

Attachments are the ones in Appendix F Aerotriangulation

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
Norfolk, Virginia 23510-1114

December 10, 1990

MEMORANDUM FOR: THE RECORD

FROM: Lowell O. Neterer, Jr.
Lowell O. Neterer, Jr.,
Final Reviewer
Atlantic Marine Center

SUBJECT: Fixed Aids to Navigation and Landmark Features, Found during Mapping Stage of Photogrammetric Survey CM-8715, Matagorda Bay and Vicinity

The attached data provides additional geographic positions of charted fixed aids to navigation and landmark features previously submitted and designated as Chart Letter L987(90).

Attachment is the listng included in Appendix F compilation LONeterer