

PHOTOGRAMMETRY BRANCH  
COASTAL MAPPING PROGRAM  
PROJECT CM-8711  
COMPLETION REPORT  
CALIFORNIA  
CHANNEL ISLANDS  
TP-01529, TP-01530, TP-01531, TP-01532,  
TP-01533, TP-01534, AND TP-01535

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COASTAL MAPPING PROGRAM

PROJECT CM-8711  
COMPLETION REPORT

CALIFORNIA

CHANNEL ISLANDS

TP-01529, TP-01530, TP-01531, TP-01532  
TP-01533, TP-01534, AND TP-01535

1988

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-8711  
COMPLETION REPORT

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CHANNEL ISLANDS

TP-01529, TP-01530, TP-01531, TP-01532  
TP-01533, TP-01534, AND TP-01535

Clearance and Approval

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

Submitted by,

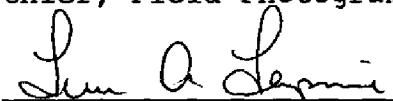


David R. Miller  
Coastal Mapping Unit  
Field Photogrammetry Section

APPROVED:

  
CDR Patrick L. Wehling  
Chief, Field Photogrammetry Section

5/10/93  
Date

  
CAPT Lewis A. Lapine  
Chief, Photogrammetry Branch  
Nautical Charting Division, Office of Geodetic Charting Services

5/12/93  
Date

COMPLETION REPORT  
COASTAL MAPPING PROGRAM PROJECT CM-8711  
CHANNEL ISLANDS  
CALIFORNIA

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## COASTAL MAPPING PROGRAM PROJECT CM-8711

PROJECT SUMMARYINTRODUCTION

Coastal Mapping Program Project CM-8711 Channel Islands, California consists of seven coastal survey maps depicting the shoreline and other cartographic features. The assigned map identifiers for this project were TP-01529 thru TP-01535 and these were mapped at a scale of 1:20,000. All of the maps are based on the North American Datum 1983 (NAD 83) depicted by the Lambert Conformal Conic



## COMPILATION

Compilation is based on aerotriangulation that has met the requirements for National Standards of Map Accuracy and on office interpretation of aerial photographs. Compilation, processing, and dissemination of all applicable amending National Ocean Service (NOS) Photogrammetric Instructions and data is in accordance with Coast and Geodetic Survey (C&GS) Topographic Manual, Part II, and approved sections of the new Coastal Mapping Operation Manual.

The compilation phase was initiated in September 1991 and completed in March 1993 by the Coastal Compilation Unit, field office. The photogrammetric work stations utilized in data acquisition were Wild B-8, SN# 2109 and SN# 2125. Compilation was accomplished through the application of standard aerial compilation techniques.



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

| CHART | EDITION | SCALE    | DATE             |
|-------|---------|----------|------------------|
| 18727 | 10th    | 1:40,000 | December 5, 1987 |
| 18728 | 8th     | 1:40,000 | March 24, 1990   |
| 18729 | 11th    | 1:40,000 | November 2, 1991 |

This project completion report is the authoritative summary for project CM-8711 and is in compliance with Section 14, Project Completion Report of the Photogrammetry Branch Coastal Mapping Program Operations Manual.

DISSEMINATION OF PROJECT DATA AND PRODUCTS

National Archives/Federal Records Center:

Copy of the Project Completion Report  
Brown jacket contents, e.g. field data, Aerotriangulation

Agency Archives:

The original Project Completion Report  
Registration copy of each map

Photogrammetric Electronic Data Library:

Not applicable

Reproduction Branch Aeronautical Charting Division:

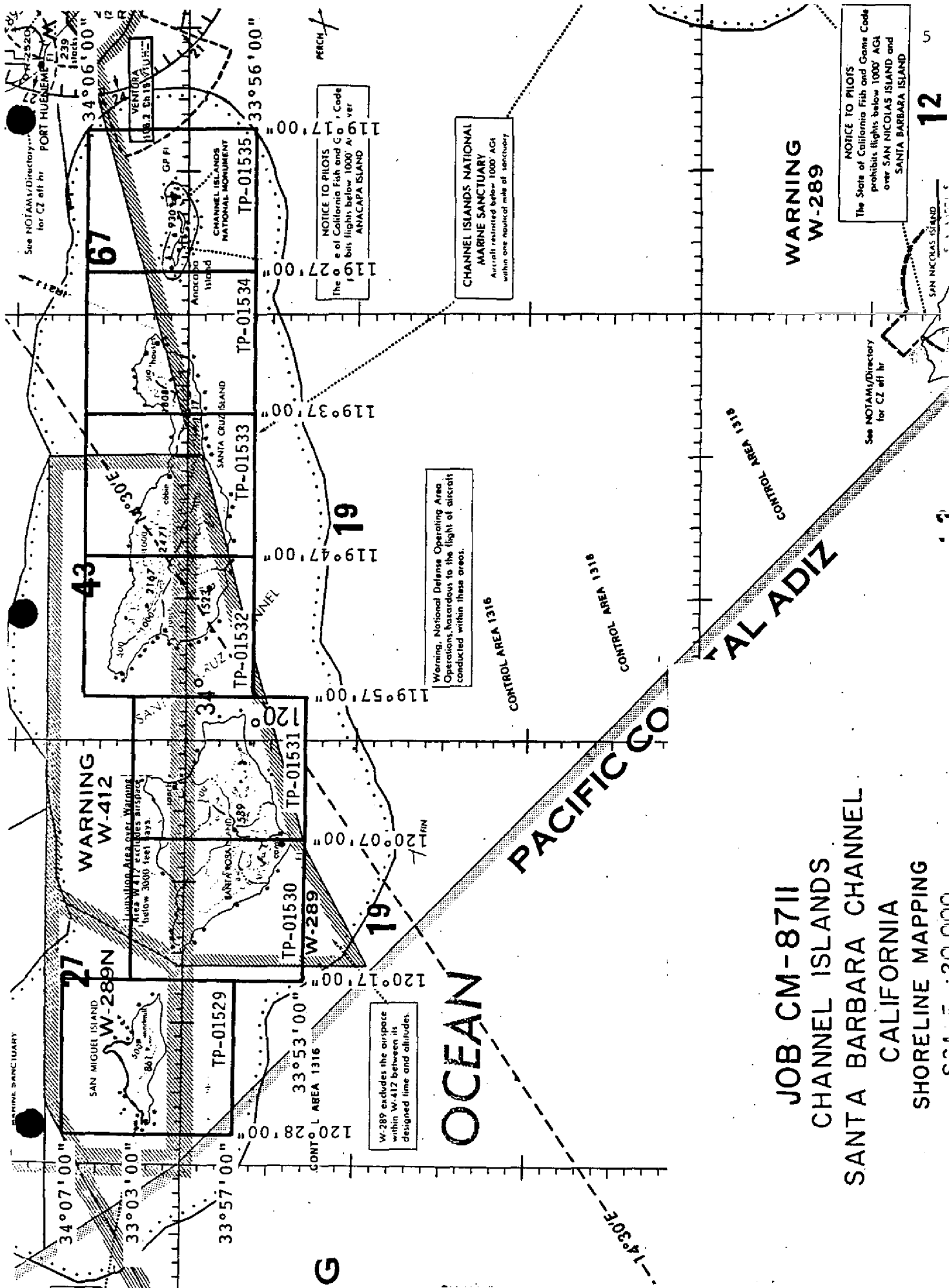
8x reduction negative of each map

Mapping and Charting Branch:

Abbreviated copy of the Project Completion Report  
Chart Maintenance Prints

All final project data and products were forwarded to the Production Control Unit, headquarters office, for registration and dissemination.





**JOB CM-87II**  
**CHANNEL ISLANDS**  
**SANTA BARBARA CHANNEL**  
**CALIFORNIA**  
**SHORELINE MAPPING**

SCALE 1:20,000

**WARNING**  
**W-289**

**NOTICE TO PILOTS**  
 The State of California Fish and Game Code prohibits flights below 1000' AGL over SAN NICOLAS ISLAND and SANTA BARBARA ISLAND.

**CHANNEL ISLANDS NATIONAL MARINE SANCTUARY**  
 Aircraft restricted below 1000' AGL within one nautical mile of sanctuary.

**NOTICE TO PILOTS**  
 The State of California Fish and Game Code prohibits flights below 1000' AGL over ANACAPA ISLAND.

Warning, National Defense Operating Area Operations, hazardous to the flight of aircraft conducted within these areas.

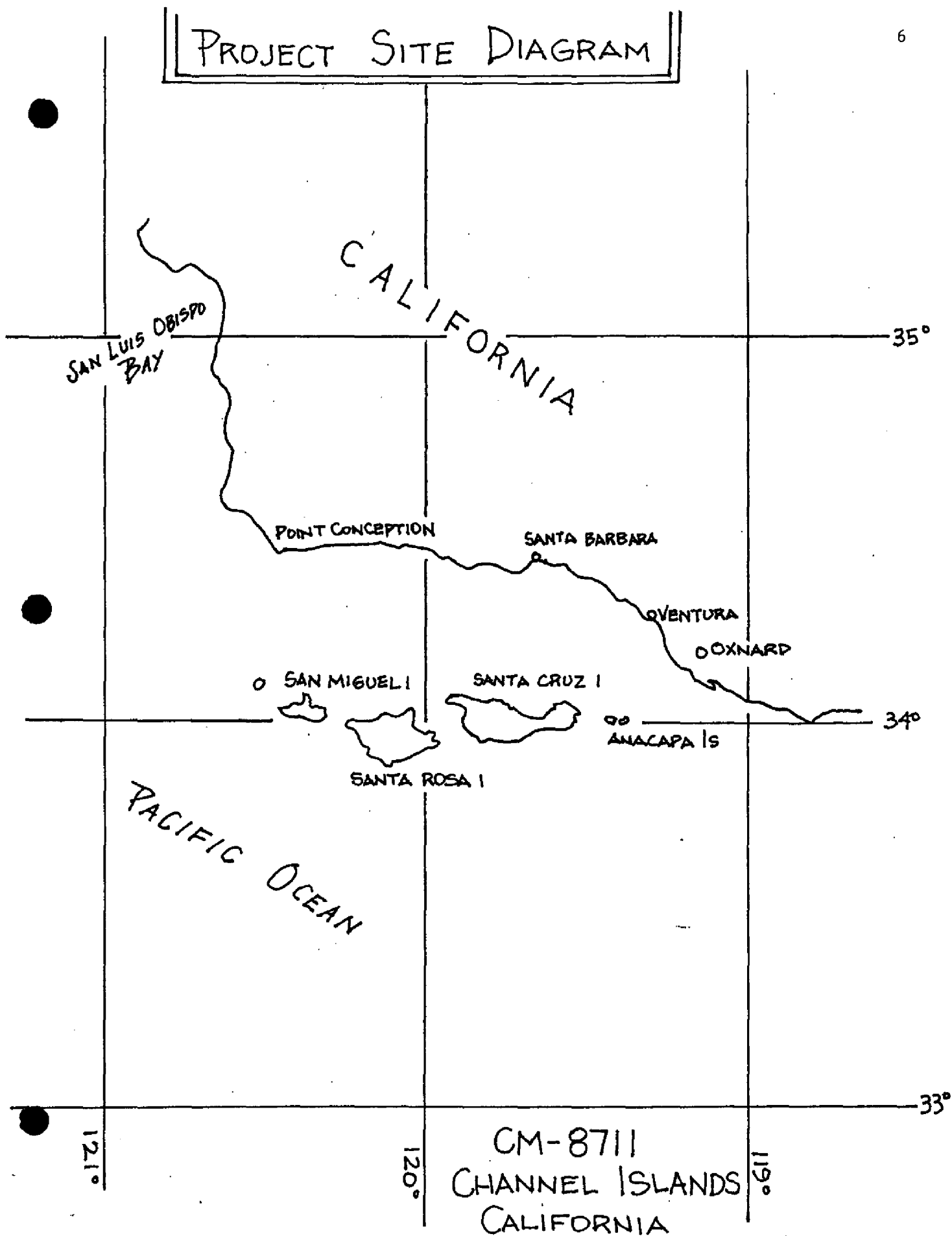
W-289 excludes the airspace within W-412 between its designed line and altitudes.

See NOTAMS/Directory for CZ off hr

See NOTAMS/Directory for CZ off hr

# PROJECT SITE DIAGRAM

6



## PROJECT GEODETIC CONTROL LISTING

PROJECT: CM-8711

GEODETIC DATUM: North American Datum of 1983

The following permanent geodetic control was recovered during photogrammetric operations. Data pertaining to stations is resident in the National Geodetic Survey Division (NGSD) Horizontal Control Databank.

Refer to Nautical Charting Division Standard Digital Data Exchange Format documentation for quality codes (QC) criteria.

| STATION NAME           | QUAD   | LATITUDE<br>LONGITUDE           | QC | DAY/YEAR |
|------------------------|--------|---------------------------------|----|----------|
| GREEN MOUNTAIN<br>1858 | 341202 | 34°02'26.448"<br>120°23'16.985" | 3  | 01/1858  |
| HARBOR 2 1871          | 341202 | 34°03'52.036"<br>120°21'35.072" | 3  | 01/1871  |
| LAMB 1934              | 341202 | 34°01'18.316"<br>120°19'00.091" | 3  | 01/1934  |
| BROCKWAY 1860          | 341202 | 34°00'52.505"<br>120°08'08.024" | 3  | 01/1934  |
| CARR 1934              | 341202 | 34°02'07.056"<br>120°03'26.052" | 3  | 01/1934  |
| BORREGO 1860           | 331201 | 33°54'59.193"<br>120°03'32.952" | 3  | 01/1860  |
| SOUTH POINT 1860       | 331201 | 33°53'54.431"<br>120°07'10.939" | 3  | 01/1860  |
| WEST POINT 1874        | 341193 | 34°03'27.471"<br>119°55'34.593" | 3  | 01/1874  |
| PUNTA DIABLO 1874      | 341193 | 34°03'25.396"<br>119°45'41.751" | 3  | 01/1874  |
| HARBOR 1857            | 341193 | 34°00'53.212"<br>119°40'28.167" | 3  | 01/1857  |
| BOWEN 1934             | 331192 | 33°57'49.551"<br>119°42'59.661" | 3  | 01/1934  |
| SAND MOUND 1934        | 331192 | 33°57'40.218"<br>119°49'03.106" | 3  | 01/1934  |
| ANACAPA 1876           | 341192 | 34°00'29.846"<br>119°23'05.273" | 3  | 01/1876  |

|       |        |                                 |   |         |
|-------|--------|---------------------------------|---|---------|
| SCOOP | 341192 | 34°00'48.686"<br>119°22'01.522" | 3 | 01/1951 |
|-------|--------|---------------------------------|---|---------|

## Remarks:

All geodetic survey operations were performed by the Office of Charting and Geodetic Services personnel in July 1988.

Listing approved by: David R. Miller  
David R. Miller, Coastal Mapping Unit

4/14/93  
Date

## APPENDICES

APPENDIX A  
PROJECT FIELD INSTRUCTIONS



Chief, Photogrammetry Branch  
Atlantic Marine Center

PROJECT INSTRUCTIONS: FIELD - Job CM-8711, Channel Islands,  
Santa Barbara Channel, California, Shoreline Mapping

#### 1.0. PURPOSE

These instructions provide specifications and a schedule for: (1) placing targets on horizontal control stations in advance of aerial photography and (2) furnishing field support to obtain tide-coordinated infrared aerial photography. This project is in support of Marine Chart Branch's request for new shoreline data in order to compile new charts.

#### 2.0. AREA

The area to be mapped is located in California from Anacapa Island to San Miguel Island. Mapping at 1:20,000 scale will cover the shoreline of San Miguel, Santa Rosa, Santa Cruz, and Anacapa Islands.

#### 3.0. PHOTOGRAPHY

3.1. Aerotriangulation photography at 1:50,000 and 1:20,000 scales 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 high water and mean lower low 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 and
- (2) provide ground support needed to obtain tide-coordinated photography. The Chief, Air Photo Mission 2, will be responsible for scheduling photography at the 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. Limit recovery of horizontal control stations to those needed to meet aerotriangulation requirements. Prepare and submit recovery notes for each station for which a search was made.
- 5.4. New control stations, 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.



6.2.2. 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.

#### 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  $\pm .4$  foot and mean lower low water  $\pm .4$  foot.

8.2. Install a tide staff at Prisoners Harbor, Santa Cruz Island, California (941-0971), and make a level connection to existing tidal bench marks for tide-coordinated photography. This staff is to be used only for the duration of the project. All tide-coordinated lines will be flown directly on the staff.

8.3. Periods when the tides are predicted to be in range for mean lower low water and for mean high water occur throughout the months of July and August 1988.

8.4. Staff readings at Prisoners Harbor are required at 15-minute intervals during tide-coordinated photographic flights. Use NOAA Form 77-53, Tides, to record staff observations.

#### 9.0. LEVELING

Make a level connection to the 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 August 1, 1988. 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.

15.0. RECEIPT

Acknowledge receipt of these instructions.

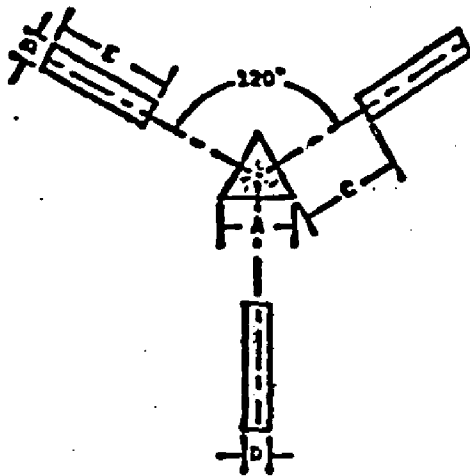
Ray E. Moses  
Director

*Christian Andreasen*  
Christian Andreasen  
Chief, Nautical Charting Division

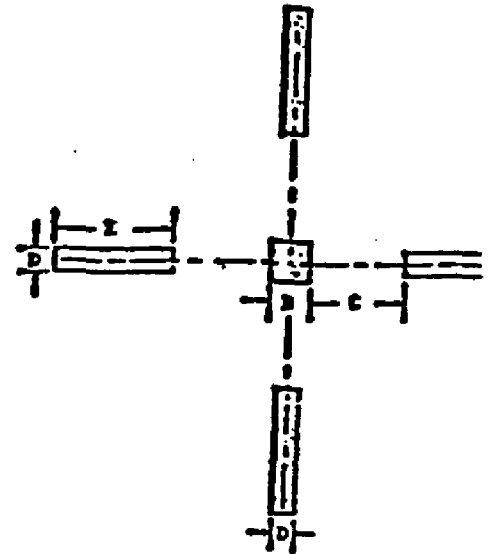
**SPECIFICATIONS FOR PREMARKING CONTROL STATIONS**  
Revised November 23, 1976

14

**ARRAY NO. 1**



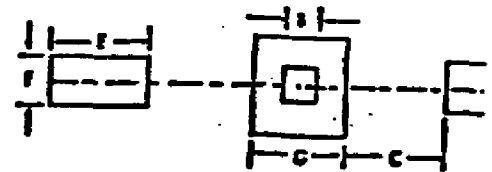
**ARRAY NO. 2**



**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)**

|           | <u>A</u> | <u>B</u> | <u>C</u> | <u>D</u> | <u>E</u> | <u>F</u> | <u>G</u> |
|-----------|----------|----------|----------|----------|----------|----------|----------|
| 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      |

APPENDIX B  
FIELD OPERATIONS REPORT

NATIONAL OCEAN SERVICE

ATLANTIC MARINE CENTER

COASTAL SURVEYS

PROJECT REPORT

CM-8711

ANACAPA ISLAND TO SAN MIGUEL ISLAND

CHANNEL ISLANDS, CALIFORNIA

# 1.0 PURPOSE:

In support of the instructions for project CM-8711, Channel Islands, Santa Barbara Channel, California Shoreline Mapping dated June 14, 1988, place targets on Horizontal Control Stations in advance of bridging and compilation aerial photography, and furnish field support to obtain tide-coordinated infrared aerial photography.

# 2.0 AREA:

The area to be mapped is in California from Anacapa Island to San Miguel Island.

# 3.0 PARTICIPATION:

## PERSONNEL:

PARTY CHIEF: J.E. Dunford

ASSISTANTS: \* J.D. Shea  
A.L. Grimes  
D.R. Miller  
C.M. Saunders

## EQUIPMENT:

1 - Twin engine airplane  
1 - Single engine airplane  
1 - Helicopter  
1 - 38 ft. vessel (NPS)  
1 - 4x4 carryall trucks  
1 - 4x4 Toyota Landcruiser

1 - EDM HP 38108 sn. 405  
1 - Uniranger sn. 054  
4 - MX 350 Radios  
1 - NI2 Level sn. 69222

# 4.0 FIELD ACTIVITY:

## 4.1 FIELD METHODS

Short traverses were used to establish substitute points where they were needed. Descriptions and recovery notes

#### 4.2 CONTROL

The Horizontal Datum for this project was based on the NAD of 1983.

#### 4.3 DISCUSSION OF RESULTS

Nineteen panels were put in place for aerial photography. Panels 2,3,4,6,7,9,10,11,12,13,15,16,18, and 19 were placed directly over the horizontal Stations as noted on the C.S.I. forms. Panels 1,5, and 8 were placed over temporary points and were positioned by short traverses from existing control in the area. Panel 14 was placed over a temporary point and positioned by 3rd. order traverse from horizontal station ROCKY 1933. Panel 17 was also placed over a temporary point and positioned by 3rd. order traverse from horizontal station SUMMIT PEAK 2 1933.

A Tide staff was installed at the Prisoners Harbor Pier on Santa Cruz Island. A level tie from 2 established Tidal Bench Marks was used to establish the tide staff.

All panels were in place on JULY 21, 1988.

#### 5.0 SCHEDULE:

The field party departed Norfolk, Va. to begin field work on JULY 11, 1988. One field party member was sent out a week prior to order supplies and construct the photographic panels. The tide staff and all the panels were in place and ready for photographs to be taken on the above date.

#### 6.0 STATISTICS:

|                                |    |
|--------------------------------|----|
| Number of stations paneled     | 19 |
| Number of stations established | 0  |
| Number of stations recovered   | 29 |

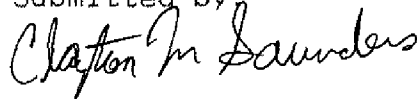


7.0 RECORDS:

All original field data with the exception of the descriptions and recovery notes are being forwarded to Rockville N/CG 2313. The level data for establishing the tide staff will also be forwarded to the above department. The original descriptions and recovery notes will be processed in the MTEN FORMAT to go into the National Geodetic Survey Data Base. A copy of all field data will be kept in the Coastal Surveys Section, MOA 2222.

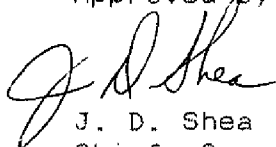
Aug. 8, 1988

Submitted by:



C. M. Saunders

Approved by:



J. D. Shea

Chief, Coastal Surveys Section

| PANEL | STATION                     | LAT            | LON             |
|-------|-----------------------------|----------------|-----------------|
| 1     | ROCK 1934 T.P.1             | 34-01-54.50600 | 120-25-54.65800 |
| 2     | GREEN MOUNTAIN 1858         | 34-02-26.44800 | 120-23-16.98500 |
| 3     | HARBOR 2 1871               | 34-03-52.03600 | 120-21-35.07200 |
| 4     | LAMB 1934                   | 34-01-18.31600 | 120-19-00.09100 |
| 5     | SAND 2 1934 T.P.1           | 33-59-56.53880 | 120-14-01.97000 |
| 6     | BROCKWAY 1860               | 34-00-52.50500 | 120-08-08.02400 |
| 7     | CARR 1934                   | 34-02-07.05600 | 120-03-26.05200 |
| 8     | EAST POINT 2<br>1935 T.P.1  | 33-56-35.46670 | 119-58-32.52700 |
| 9     | BORREGO 1860                | 33-54-59.19000 | 120-03-32.95000 |
| 10    | SOUTH POINT 1860            | 33-53-54.43100 | 120-07-10.93900 |
| 11    | WEST POINT                  | 34-03-27.47060 | 119-55-34.59355 |
| 12    | PUNTA DIABLO                | 34-03-25.39615 | 119-45-41.75111 |
| 13    | HARBOR 1857                 | 34-00-53.21256 | 119-40-28.16727 |
| 14    | ROCKY 1933 T.P.1            | 34-02-10.88370 | 119-31-50.05300 |
| 15    | BOWEN 1934                  | 33-57-49.55104 | 119-42-59.66129 |
| 16    | SAND MOUND 1934             | 33-57-40.21806 | 119-49-03.10586 |
| 17    | SUMMIT PEAK 2<br>1933 T.P.1 | 34-00-47.57550 | 119-26-21.84600 |
| 18    | ANACAPA 1876                | 34-00-29.84600 | 119-23-05.27300 |
| 19    | SCOOP                       | 34-00-48.68605 | 119-22-01.52176 |

APPENDIX C  
AEROTRIANGULATION REPORT

AEROTRIANGULATION REPORT  
CM-8711  
CHANNEL ISLANDS, CALIFORNIA  
JUNE, 1989

AREA COVERED

This project covers the area from San Miguel Island to Anacapa Island including the islands of Santa Rosa and Santa Cruz. The project consists of seven 1:20,000-scale maps; TP-01529 through TP-01535. Refer to DIAGRAM 1 for project site.

METHOD

Seven strips of 1:50,000-scale color photographs and one strip of 1:20,000-scale color photographs were bridged by analytic aerotriangulation methods using a WILD STK comparator (serial # STK-818) and adjusted to ground using the GIANT program. Premarked control stations were used as horizontal control. See DIAGRAM 2 for distribution of control in project area. Common points were transferred between strips linking them to form a stronger control network.

Ratio values were determined for the bridging photographs. See FIGURE A for a listing of those values. A sketch of the photographic coverage is attached to this report in DIAGRAM 3.

The base manuscripts were plotted on the Kongsberg plotter DM1216 (serial # 247160). The positions are in the California State Plane Coordinate System, zone 5 based on NAD 1983. All manuscripts were prepared with a Lambert conformal conic projection. In addition, 10mm ticks depicting NAD 1927 projection intersections were plotted at twice the interval of the NAD 1983 projection intersections.

ADEQUACY OF CONTROL

The control was adequate and meets the National Ocean Service requirements. A listing of closures to control is attached in FIGURE B.

It should be noted that two stations in the project, numbers 46 and 79B of the keyed project diagram, have the exact same name. The station is East Point 2, 1935. The positions for the stations are different but correct unto themselves. Care must be taken to ensure that the proper East Point 2, 1935 station is used with the corresponding control.

Geodesy has been informed of the station name conflict and is taking the necessary steps to rectify the problem.

CM-8711

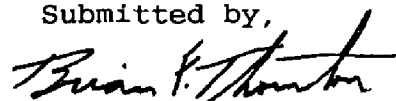
SUPPLEMENTAL DATA

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

PHOTOGRAPHY

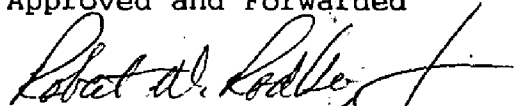
The coverage, overlap, and quality of the photographs were adequate for the aerotriangulation phase of the project.

Submitted by,



Brian F. Thornton

Approved and Forwarded



Robert W. Rodkey, Jr.  
Acting Chief, Aerotriangulation Unit

CM-8711

RATIO VALUES1:50,000 BRIDGING PHOTOGRAPHSRATIO VALUE

|         |                   |      |
|---------|-------------------|------|
| 88 E CN | 9470 through 9473 | 2.52 |
| 88 E CN | 9476 through 9480 | 2.52 |
| 88 E CN | 9482 through 9487 | 2.52 |
| 88 E CN | 9488 through 9493 | 2.52 |
| 88 E CN | 9494 through 9499 | 2.52 |
| 88 E CN | 9500 through 9508 | 2.52 |
| 88 E CN | 9519 through 9528 | 2.52 |

1:20,000 BRIDGING PHOTOGRAPHS

|         |                     |      |
|---------|---------------------|------|
| 88 E CN | 168,169,171,173,175 | 0.99 |
|---------|---------------------|------|

FIGURE A

CM-8711

COMPARISON OF ADJUSTED POSITIONS TO FURNISHED CONTROL POSITIONS

| <u>STATION NAME</u>          | <u>POINT NO.</u> | <u>VALUES IN FEET</u> |          |
|------------------------------|------------------|-----------------------|----------|
|                              |                  | <u>X</u>              | <u>Y</u> |
| △ SCOOP                      | 168100           | 0.1                   | 0.3      |
| △ ANACAPA, 1876              | 169100           | -0.1                  | -0.4     |
| △ SUMMIT PEAK 2 T.P. sub pt. | 175101           | 0.1                   | 0.1      |
| △ ROCK T.P. sub pt.          | 470101           | -0.1                  | -0.1     |
| △ GREEN MTN., 1858           | 471100           | 0.5                   | 0.2      |
| △ HARBOR 2, 1871             | 472100           | -0.3                  | 0.1      |
| △ LAMB, 1934                 | 473100           | 0.1                   | -0.2     |
| △ CARR, 1934                 | 476100           | -1.9                  | 1.0      |
| △ BROCKWAY, 1860             | 478100           | -0.7                  | 1.3      |
| △ SAND 2 T.P. sub pt.        | 480101           | 0.4                   | 0.2      |
| △ EAST PT. 2 T.P. sub pt.    | 489101           | -0.7                  | -2.4     |
| △ BORREGO, 1860              | 490100           | 0.7                   | -0.7     |
| △ SOUTH PT., 1860            | 492100           | 2.2                   | 0.7      |
| △ SAND MOUND, 1934           | 495100           | 1.3                   | -0.6     |
| △ BOWEN, 1934                | 498100           | -1.6                  | -2.2     |
| △ ROCKY T.P. sub pt.         | 520101           | 0.4                   | 0.6      |
| △ HARBOR, 1857               | 523100           | 0.3                   | -0.1     |
| △ PUNTA DIABLO, 1874         | 525100           | -2.1                  | 1.9      |
| △ WEST PT., 1874             | 528100           | 1.7                   | 0.5      |
| ANACAPA LIGHT                | 83A              | 0.5                   | 0.9      |

FIGURE B

△ = POINT HELD IN ADJUSTMENT

JOB CM-8711  
CHANNEL ISLANDS  
CALIFORNIA  
SHORELINE MAPPING  
SCALE 1:20,000

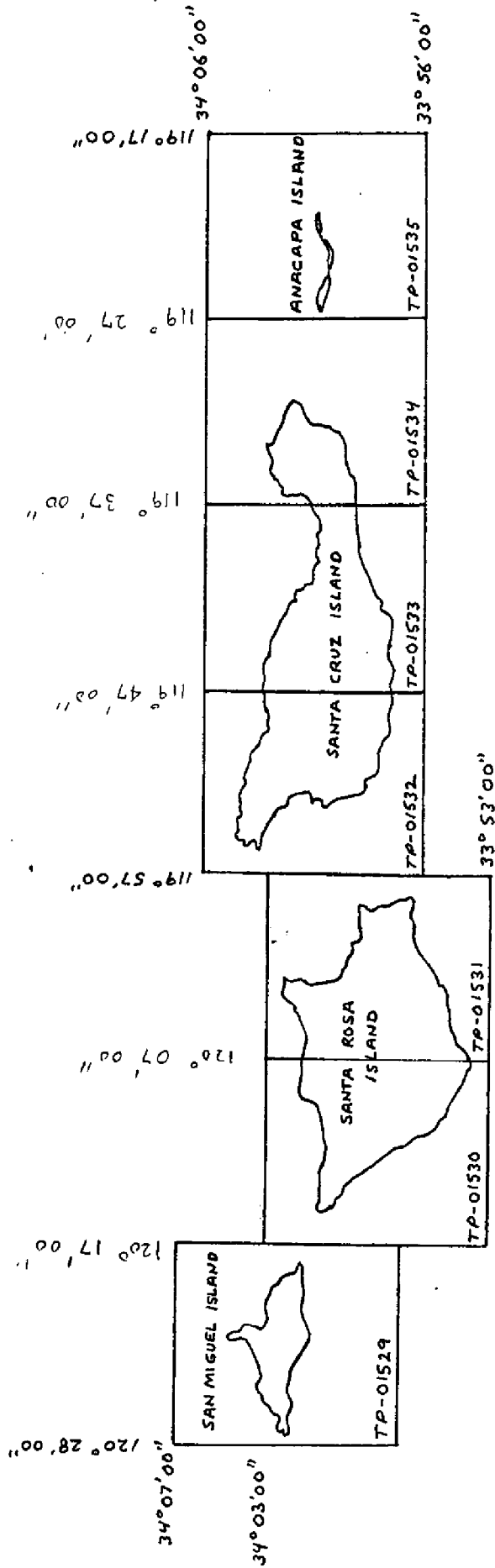


DIAGRAM 1



JOB CM-8711  
 CHANNEL ISLANDS  
 CALIFORNIA  
 SHORELINE MAPPING  
 SCALE 1:20,000

HORIZONTAL CONTROL

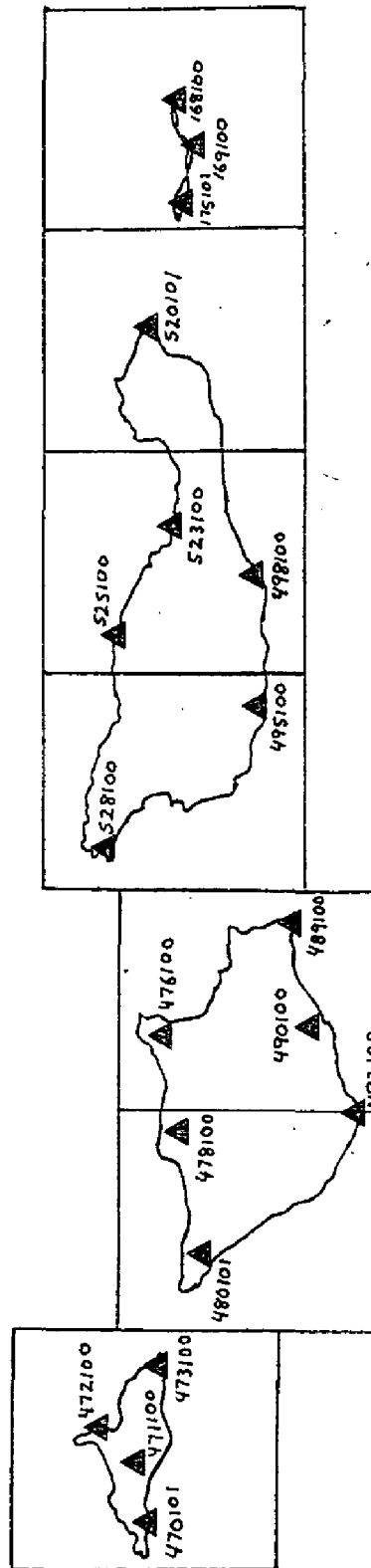


DIAGRAM 2

JOB CM-8711  
 CHANNEL ISLANDS  
 CALIFORNIA  
 SHORELINE MAPPING  
 SCALE 1:20,000

BRIDGING PHOTOGRAPHS  
 (88ECN)

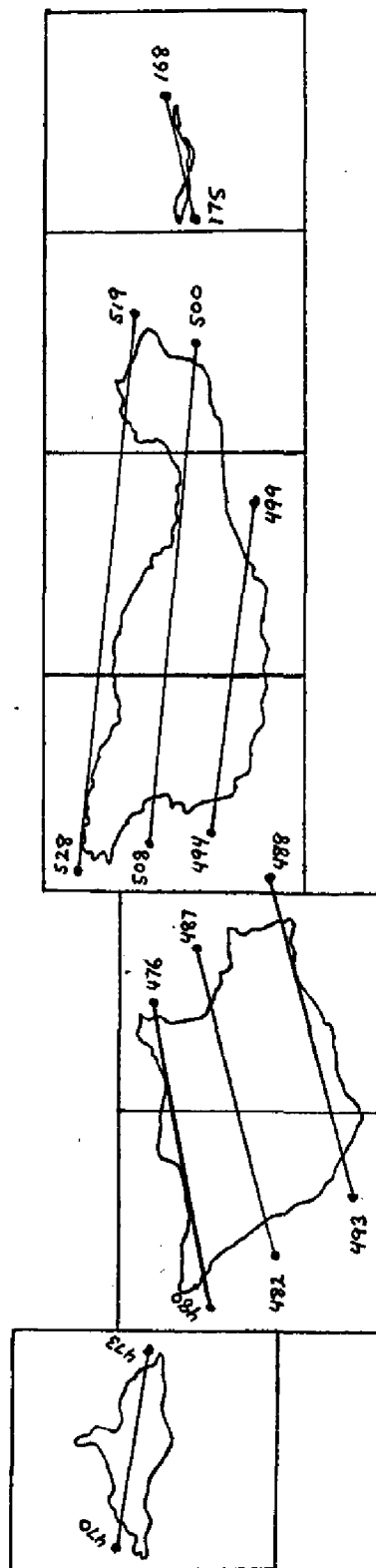


DIAGRAM 3

APPENDIX D  
MAP COMPILATION SOURCES PAGES

## DESCRIPTIVE DATA

CM-8711

TP-01529

MAP SCALE - 1:20,000

## PHOTOGRAPHY

| NUMBER AND TYPE  | DATE    | TIME | SCALE    | STAGE OF TIDE  |
|------------------|---------|------|----------|----------------|
| 88E(CN)9470-9473 | 8/05/88 | 1338 | 1:50,000 | +4.5 FT MLLW   |
|                  |         |      |          | MHW = 4.3 FEET |

PREPARED BY: *David R. Miller*  
DAVID R. MILLER

DATE: 4/8/93

## COMPILATION REMARKS:

The stage of tide was determined using predicted tides at subordinate station Prisoner's Harbor on the main station Los Angeles.

## DESCRIPTIVE DATA

CM-8711

TP-01530

MAP SCALE- 1:20,000

## PHOTOGRAPHY

| NUMBER AND TYPE   | DATE    | TIME | SCALE    | STAGE OF TIDE  |
|-------------------|---------|------|----------|----------------|
| 88E(CN) 9477-9480 | 8/05/88 | 1350 | 1:50,000 | +4.5 FT MLLW   |
| 88E(CN) 9482-9483 | 8/05/88 | 1356 | 1:50,000 | +4.6 FT MLLW   |
| 88E(CN) 9492-9493 | 8/05/88 | 1404 | 1:50,000 | +4.6 FT MLLW   |
|                   |         |      |          | MHW = 4.3 FEET |

PREPARED BY: *David R Miller* DAVID R. MILLER

DATE- 04/09/93

## COMPILATION REMARKS:

The stage of tide was determined using predicted tides at subordinate station Prisoner's Harbor on the main station Los Angeles.

## DESCRIPTIVE DATA

CM-8711

TP-01531

MAP SCALE- 1:20,000

## PHOTOGRAPHY

| NUMBER AND TYPE  | DATE    | TIME | SCALE    | STAGE OF TIDE  |
|------------------|---------|------|----------|----------------|
| 88E(CN)9484-9487 | 8/05/88 | 1356 | 1:50,000 | +4.6 FT MLLW   |
| 88E(CN)9488-9492 | 8/05/88 | 1404 | 1:50,000 | +4.6 FT MLLW   |
|                  |         |      |          | MHW = 4.3 FEET |



PREPARED BY: DAVID R. MILLER

DATE- 04/09/93

## COMPILATION REMARKS:

The stage of tide was determined using predicted tides at subordinate station Prisoner's Harbor on the main station Los Angeles.

## DESCRIPTIVE DATA

CM-8711

TP-01532

MAP SCALE- 1:20,000

## PHOTOGRAPHY

| NUMBER AND TYPE  | DATE    | TIME | SCALE    | STAGE OF TIDE  |
|------------------|---------|------|----------|----------------|
| 88E(CN)9495-9497 | 8/05/88 | 1414 | 1:50,000 | +4.6 FT MLLW   |
| 88E(CN)9525-9528 | 8/05/88 | 1450 | 1:50,000 | +4.8 FT MLLW   |
| 88E(CN)9507-9508 | 8/05/88 | 1425 | 1:50,000 | +4.7 FT MLLW   |
|                  |         |      |          | MHW = 4.3 FEET |



PREPARED BY: DAVID R. MILLER

DATE- 04/09/93

## COMPILATION REMARKS:

The stage of tide was determined using predicted tides at subordinate station Prisoner's Harbor on the main station Los Angeles.

## DESCRIPTIVE DATA

CM-8711

TP-01533

MAP SCALE - 1:20,000

## PHOTOGRAPHY

| NUMBER AND TYPE  | DATE    | TIME | SCALE    | STAGE OF TIDE |
|------------------|---------|------|----------|---------------|
| 88E(CN)9521-9525 | 8/05/88 | 1450 | 1:50,000 | +4.8 FT MLLW  |
| 88E(CN)9496-9499 | 8/05/88 | 1414 | 1:50,000 | +4.6 FT MLLW  |
|                  |         |      |          | MHW = 4.3 FT  |

PREPARED BY: *David R. Miller*  
DAVID R. MILLER

DATE: 4/8/93

## COMPILATION REMARKS:

The stage of tide was determined using predicted tides at subordinate station Prisoner's Harbor on the main station Los Angeles.



## DESCRIPTIVE DATA

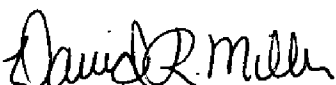
CM-8711

TP-01534

MAP SCALE- 1:20,000

## PHOTOGRAPHY

| NUMBER AND TYPE  | DATE    | TIME | SCALE    | STAGE OF TIDE  |
|------------------|---------|------|----------|----------------|
| 88E(CN)9519-9522 | 8/05/88 | 1450 | 1:50,000 | +4.8 FT MLLW   |
| 88E(CN)9501-9502 | 8/05/88 | 1425 | 1:50,000 | +4.7 FT MLLW   |
|                  |         |      |          | MHW = 4.3 FEET |

PREPARED BY:  DAVID R. MILLER

DATE- 04/09/93

## COMPILATION REMARKS:

The stage of tide was determined using predicted tides at subordinate station Prisoner's Harbor on the main station Los Angeles.

## DESCRIPTIVE DATA

CM-8711

TP-01535

MAP SCALE- 1:20,000

## PHOTOGRAPHY

| NUMBER AND TYPE  | DATE    | TIME | SCALE    | STAGE OF TIDE  |
|------------------|---------|------|----------|----------------|
| 88E(CN)0168-0175 | 8/12/88 | 1308 | 1:20,000 | +3.2 FT MLLW   |
|                  |         |      |          | MHW = 4.3 FEET |



PREPARED BY: DAVID R. MILLER

DATE- 04/09/93

## COMPILATION REMARKS:

The stage of tide was determined using predicted tides at subordinate station Prisoner's Harbor on the main station Los Angeles.

APPENDIX E  
APPROVED GEOGRAPHICAL NAMES

GEOGRAPHIC NAMES  
FINAL NAMES SHEET  
CM-8711 (Channel Islands, California)TP-01529

Adams Cove  
Bat Rock  
Bay Point  
Bennett, Point  
Can Rock  
Cardwell Point  
Castle Rock  
Crook Point  
Cuyler Harbor  
Gull Rock  
Hare Rock  
Harris Point  
Judge Rock  
Judith Rock  
Kid Rock  
March Rock  
Middle Rock  
Nifty Rock  
Pacific Ocean, North  
Prince Island  
San Miguel Island  
San Miguel Passage  
Santa Barbara Channel  
Simonton Cove  
Tyler Bight  
Wilson Rock

TP-01530

Arlington Canyon  
Brockway Point  
Cluster Point  
Dry Canyon  
Pacific Ocean, North  
Sandy Point  
Santa Barbara Channel  
Santa Miguel Passage  
Soledad, Cañada  
South Point  
Tecelote, Cañada  
Verde, Cañada

TP-01531

Beechers Bay  
Lobos, Cañada  
Carrington Point  
Coati Point  
Corral Point  
Cow Canyon  
East Point  
Ford Point  
Johnsons Lee  
Jolla Vieja Canyon  
Northwest Anchorage  
Pacific Ocean, North  
San Augustin Canyon  
Santa Barbara Channel  
Santa Cruz Channel  
Skunk Point  
South Point  
Southeast Anchorage  
Wreck Canyon

TP-01532

Arch Rock  
Arena, Punta  
Black Point  
Cervada, Cañada  
Forney Cove  
Fraser Point  
Gull Island  
Johnston Canyon  
Kinton Point  
Ladys Harbor  
Laguna Harbor  
Malva Real Anchorage  
Morse Point  
Pacific Ocean, North  
Posa Anchorage  
Posa, Cañada  
Profile Point  
Santa Barbara Channel  
Santa Cruz Channel

Santa Cruz Island  
 Sauces, Cañada de los  
 West Point

TP-01533

Alamos Anchorage  
 Albert Anchorage  
 Blue Banks Anchorage  
 Bowen Point  
 Chinese Harbor  
 Coches Prietos Anchorage  
 Diablo Anchorage  
 Diablo Point  
 Frys Harbor  
 Pacific Ocean, North  
 Pelican Bay  
 Platts Harbor  
 Prisoners Harbor  
 Santa Barbara Channel  
 Santa Cruz Island  
 Twin Harbors  
 Valley Anchorage  
 Willows Anchorage

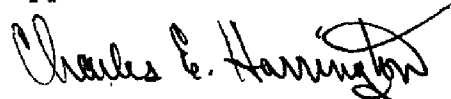
TP-01534

Anacapa Passage  
 Cavern Point  
 Chinese Harbor  
 Coche Point  
 Middle Anchorage  
 Pacific Ocean, North  
 Potato Harbor  
 San Pedro Point  
 Sandstone Point  
 Santa Barbara Channel  
 Santa Cruz Island  
 Scorpion Anchorage  
 Smugglers Cove  
 Yellowbanks Anchorage

TP-01535

Anacapa Island  
 Anacapa Passage  
 Arch Rock  
 Cat Rock  
 East Fish Camp  
 Frenchys Cove  
 Santa Barbara Channel

Approved:



Charles E. Harrington  
 Chief Geographer  
 Nautical Charting Division

APPENDIX F  
CARTOGRAPHIC FEATURES OF CHARTING INTEREST

## CARTOGRAPHIC FEATURES OF CHARTING INTEREST

PROJECT: CM-8711

MAP NUMBER: TP-01530

SCALE: 1:20,000

GEODETTIC DATUM: NORTH AMERICAN DATUM 1983 (NAD83)

The following charted landmarks and nonfloating aids to navigation have been measured and/or confirmed during photogrammetric operations. Refer to Nautical Charting Division Standards Digital Data Exchange Format documentation for quality code (QC) criteria and clarification of cartographic codes (CC).

| <u>FEATURE DESCRIPTION</u> | <u>NCD</u><br><u>CC</u> | <u>GEOGRAPHIC POSITION(°-'-")</u><br><u>LATITUDE</u> | <u>LONGITUDE</u> | <u>QC</u> | <u>DATE OF</u><br><u>LOCATION</u> |
|----------------------------|-------------------------|------------------------------------------------------|------------------|-----------|-----------------------------------|
| SOUTH POINT LIGHT          | 200                     | 33°53'50.60"                                         | 120°07'07.95"    | 7         | 8/5/1988                          |

APPROVED BY:

*David R. Miller*  
\_\_\_\_\_  
FINAL REVIEWER

DATE:

*9/14/93*  
\_\_\_\_\_

## CARTOGRAPHIC FEATURES OF CHARTING INTEREST

PROJECT: CM-8711

MAP NUMBER: TP-01533

SCALE: 1:20,000

GEODETIC DATUM: NORTH AMERICAN DATUM 1983 (NAD83)

The following charted landmarks and nonfloating aids to navigation have been measured and/or confirmed during photogrammetric operations. Refer to Nautical Charting Division Standards Digital Data Exchange Format documentation for quality code (QC) criteria and clarification of cartographic codes (CC).

| <u>FEATURE DESCRIPTION</u> | <u>NCD</u> | <u>GEOGRAPHIC POSITION(°-'-")</u> |                  | <u>QC</u> | <u>DATE OF LOCATION</u> |
|----------------------------|------------|-----------------------------------|------------------|-----------|-------------------------|
|                            | <u>CC</u>  | <u>LATITUDE</u>                   | <u>LONGITUDE</u> |           |                         |
| TANK                       | 086        | 33°59'40.71"                      | 119°38'01.15"    | 7         | 8/5/1988                |
| Tank                       | 993        | 33°59'40.40"                      | 119°37'57.65"    | 7         | 8/5/1988                |
| Tower                      | 993        | 33°59'42.62"                      | 119°38'05.10"    | 7         | 8/5/1988                |
| Tank                       | 993        | 34°00'09.25"                      | 119°39'21.70"    | 7         | 8/5/1988                |



## CARTOGRAPHIC FEATURES OF CHARTING INTEREST

PROJECT: CM-8711

MAP NUMBER: TP-01534

SCALE: 1:20,000

GEODETTIC DATUM: NORTH AMERICAN DATUM 1983 (NAD83)

The following charted landmarks and nonfloating aids to navigation have been measured and/or confirmed during photogrammetric operations. Refer to Nautical Charting Division Standards Digital Data Exchange Format documentation for quality code (QC) criteria and clarification of cartographic codes (CC).

| <u>FEATURE DESCRIPTION</u> | <u>NCD</u><br><u>CC</u> | <u>GEOGRAPHIC POSITION(°-'-")</u><br><u>LATITUDE</u> | <u>LONGITUDE</u> | <u>QC</u> | <u>DATE OF</u><br><u>LOCATION</u> |
|----------------------------|-------------------------|------------------------------------------------------|------------------|-----------|-----------------------------------|
| TANK                       | 086                     | 34°00'21.75"                                         | 119°36'20.25"    | 7         | 8/5/1988                          |

APPROVED BY:

David R. Miller  
FINAL REVIEWER

DATE: 4/14/93

## CARTOGRAPHIC FEATURES OF CHARTING INTEREST

PROJECT: CM-8711

MAP NUMBER: TP-01535

SCALE: 1:20,000

GEODETTIC DATUM: NORTH AMERICAN DATUM 1983 (NAD83)

The following charted landmarks and nonfloating aids to navigation have been measured and/or confirmed during photogrammetric operations. Refer to Nautical Charting Division Standards Digital Data Exchange Format documentation for quality code (QC) criteria and clarification of cartographic codes (CC).

| <u>FEATURE DESCRIPTION</u> | <u>NCD</u> | <u>GEOGRAPHIC POSITION(°-'-")</u> | <u>DATE OF</u>   |           |                 |
|----------------------------|------------|-----------------------------------|------------------|-----------|-----------------|
|                            | <u>CC</u>  | <u>LATITUDE</u>                   | <u>LONGITUDE</u> | <u>QC</u> | <u>LOCATION</u> |
| ANACAPA LIGHT              | 200        | 34°00'56.827"                     | 119°21'34.293"   | 4         | 8/5/1988        |

APPROVED BY:

  
FINAL REVIEWER

DATE: 4/14/93

APPENDIX G  
MEMORANDUMS



40  
**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**

NATIONAL OCEAN SERVICE  
OFFICE OF CHARTING AND GEODETIC SERVICES  
ROCKVILLE, MARYLAND 20852  
November 30, 1988

MEMORANDUM FOR:

The Record

FROM:

*James D. McNamara*  
James D. McNamara  
Coastal Planning Unit  
Photogrammetry Branch, NCD

SUBJECT:

Review and wrap-up Job CM-8711, Channel Islands, Santa Barbara Channel, San Miguel, Santa Rosa, Santa Cruz, and Anacapa, Islands, California, Shoreline Mapping

This shoreline mapping project was scheduled for summer of 1988. The Atlantic Marine Center (AMC) photo field party began the work on this project in early July and the photo panels were in place before the end of July. The PROJECT INSTRUCTIONS : FIELD, dated June 14, 1988 specified the photo panel to be in place by August 1, 1988. This project was planned in support of a request by the Marine Chart Branch to provide new mapping of the area. The copies of the Control Station Identification Cards were received in the Rockville Office before the arrival of the bridging photography.

On August 5, 1988, Air Photo Mission 2 (APM-2) started securing photography of the job site. The bridging photography was secured with color negative film, and was reviewed on August 15, 1988. All of the photo panels were observed to be in place and were discernable on the photography. The compilation photography was originally planned to be 1:30,000 scale. The requirement for the National Park Service was coverage of the park area at 1:12,000 scale with color negative film. This requirement negated the requirement for 1:30,000 scale compilation photography. There was two lines of 1:30,000 scale color negative photography secured over those areas not included in the park. The compilation photography was completed on August 13, 1988

The mean lower-low water (MLLW) black and white infrared (B&W IR) photography was not secured, as well as the Mean High Water B&W IR photography due to the lack of suitable weather and tide windows. The compilation photography was secured on August 6, 12, and 13th, and the initial review indicated the coverage and endlap was good.

The additional requirement of the National Park Service was to provide complete coverage of the park area using Color Infrared film. On August 7, 1988, the mission secured 11 of the 14 lines with this emulsion. Upon review of the developed film,



the exposure was deemed very poor and the infrared response was bad. The decision was made to re-fly the entire project area with the color infrared film, on August 13 and 14, 1988 the reflights were accomplished. The mission departed the area in the attempt to secure the bridging photography on CM-8701, Columbia River, Pasco to Richland, Washington. The two rolls of color infrared film, ECR-2 and ECR-3 were developed and reviewed by this Unit. ECR-2 was determined to still have rather poor infrared response. ECR-3 was of fair exposure and infrared response, but there was camera failure in the middle of the roll. The imagery was lost, from exposure number 0688 to the end of the roll. The overall quality of the bridging and compilation photography was good and it appears that there should be no significant problems with this data.

The data set for this project will include the bridging and compilation photography secured with color negative photography. No black and white infrared photography was secured at the MHW and MLLW. The field report was prepared at AMC. The NAD 27 offset data was computed and the data was placed on a magnetic tape. A final decision to return to the area to attempt to secure the B&W IR photography has not been made.