**NOAA FORM 76–35**

**(5–80)**

**U.S. DEPARTMENT OF COMMERCE**

**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**

**NATIONAL OCEAN SURVEY**

---

**DESCRIPTIVE REPORT**

THIS MAP EDITION WILL NOT BE FIELD EDITED

<table>
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<tr>
<td>TP-01302</td>
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<table>
<thead>
<tr>
<th>Job No.</th>
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<tbody>
<tr>
<td>CM-8317</td>
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**Map Classification**

CLASS III FINAL

**Type of Survey**

SHORELINE MANUSCRIPT

---

**LOCALITY**

**State**

HAWAII

**General Locality**

BARBERS POINT TO MAKAPUU POINT

**Locality**

MAUNALUA BAY

---

1986 TO 19

---

REGISTERED IN ARCHIVES

---

DATE
# Photogrammetric Office

Coastal Mapping Unit, Atlantic Marine Center
Norfolk, VA

**Officer-In-Charge**

C. Dale North, Jr.

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## Descriptive Report - Data Record

### 1. Office

- **Aerotriangulation**: April 3, 1987
- **Compilation**: October 2, 1987

### 2. Field

- **Control**: May 17, 1987

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## Datum

### 1. Horizontal:

- 1927 North American

### 2. Vertical:

- Mean High-Water

### 3. Map Projection

- Transverse Mercator Projection

### 4. Grid(s)

- Hawaii

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## History of Office Operations

### 1. Aerotriangulation

- **Method**: Analytic

### 2. Control and Bridge Points

- **Method**: Königsburg Plotter

### 3. Stereoscopic Instrument

- **Compilation Instrument**: Wild B-8
- **Scale**: 1:5,000

### 4. Manuscript Delineation

- **Method**: Smooth Drafted
- **Scale**: 1:5,000

### 5. Office Inspection Prior to Field

- **Final Review**: R. Kravitz
- **Jan 1988**

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## Map Edition

- **Job**: CM 8317
- **Survey TP**: 01302
- **Map Class**: Final

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**NOAA Form 76-36A**

**U.S. Dept. of Commerce**

**National Oceanic and Atmospheric Admin.**

**Supersedes Form C&GS 181 Series**

*U.S. G.P.O. 1972-769382/582 REG.#6*
**COMPILED PHOTOGRAPHY**

**CAMERA(S)**

Wild RC10(B) (B=152.21mm)

**TIDE STAGE REFERENCE**

- [x] Predicted Tides
- [ ] Reference Station Records
- [ ] Tide Controlled Photography

**TYPES OF PHOTOGRAPHY LEGEND**

- (C) Color
- (P) Panchromatic
- (I) Infrared

**TIME REFERENCE**

- Zone 7th
- Hawaii Aleutian
- 150°W

<table>
<thead>
<tr>
<th>NUMBER AND TYPE</th>
<th>DATE</th>
<th>TIME</th>
<th>SCALE</th>
<th>STAGE OF TIDE</th>
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<td>86B(C) C072-C076</td>
<td>03/09/86</td>
<td>03:01</td>
<td>1:15,000</td>
<td>1.2 ft above MLLW</td>
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<td>03:09</td>
<td>1:15,000</td>
<td>1.2 ft above MLLW</td>
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**REMARKS**

Station of tide for all photographs was based on reference station records for the staff at Honolulu, Hawaii.

**SOURCE OF MEAN HIGH-WATER LINE**

The mean high water line was compiled from office interpretation of the above listed compilation bridging photographs using stereo instrument methods.

**SOURCE OF MEAN LOW-WATER OR MEAN LOWER LOW-WATER LINE**

There was no mean lower low-water line compiled on this map.

**CONTEMPORARY HYDROGRAPHIC SURVEYS**

(List only those surveys that are sources for photogrammetric survey information.)

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**FINAL JUNCTIONS**

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<th>SOUTH</th>
<th>WEST</th>
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<tr>
<td>No survey</td>
<td>TP-01300 1:10,000</td>
<td>No survey</td>
<td>TP-01299 1:10,000</td>
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</table>

**REMARKS**
1. **Field Operation**  
   **Operation** | **Name** | **Date**  
   --- | --- | ---  
   1. Chief of Field Party | J. Fredrick | Nov 1986  
   2. Horizontal Control | M. McEwen | Nov 1986  
   3. Vertical Control | NA | NA  
   4. Landmarks and Aids to Navigation | NA | NA  

5. Geographic Names:  
   | Status | Method |  
   --- | --- | ---  
   Complete | Specific Names Only | No Investigation  

6. Photo Inspection:  
   | Clarification of Details | Surveyed or Identified |  
   --- | --- | ---  
   NA | NA | NA  

II. Source Data  
1. Horizontal Control Identified  
   Photo identified: None  
   **Station Name:** NIV WATERTANK, 1963  
   **Photo Number:** 86B(C)074  

3. Photo Numbers (Clarification of details): None  

4. Landmarks and Aids to Navigation Identified: None  

5. Geographic Names:  
   | Report | None |  
   --- | --- | ---  
   None | None | None  

6. Boundary and Limits:  
   | Report | None |  
   --- | --- | ---  
   None | None | None  

7. Supplemental Maps and Plans: None  

8. Other Field Records (Sketch books, etc. DO NOT list date submitted to the Geodesy Division):  
   1. Form CGS 152  
   1. Form 76-86  
   2. Forms 76-52  
   3. Forms 76-91
NOAA FORM 76-36D
T-01302
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

RECORD OF SURVEY USE

I. MANUSCRIPT COPIES

<table>
<thead>
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<th>Manuscript Forwarded</th>
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II. LANDMARKS AND AIDS TO NAVIGATION

1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

<table>
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<th>Chart Letter Number Assigned</th>
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<th>Remarks</th>
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<tr>
<td>1</td>
<td></td>
<td>May 1987</td>
<td>Charted landmarks and aids to navigation form</td>
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2. REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED:

3. REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED:

III. FEDERAL RECORDS CENTER DATA

1. (X) BRIDGING PHOTOGRAPHS; (X) DUPLICATE BRIDGING REPORT; (X) COMPUTER READOUTS.
2. (X) CONTROL STATION IDENTIFICATION CARDS; □ FORM NO. 567 SUBMITTED BY FIELD PARTIES.
3. □ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.
   ACCOUNT FOR EXCEPTIONS:

4. □ DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED:

IV. SURVEY EDITIONS (This section shall be completed each time a new map edition is registered)

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NOAA FORM 76-36D
SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT

TP-01302

This 1:5,000 scale map is one of eight maps in Project CM-8317, Barbers Point to Makapuu Point, Oahu, Hawaii. The project extends from longitude 157° 37' 30" to longitude 158° 10' 00" along the southern coastline of the island of Oahu.

Photographic coverage was provided in March 1986 with color film at 1:30,000 scale using a Wild RC 8 "B" camera (focal length 152.21 millimeters).

Field work prior to compilation was accomplished during November 1986. It consisted of photoidentification of the horizontal control stations to satisfy aerotriangulation requirements.

Analytic aerotriangulation was performed at the Washington Science Center in April 1987.

Compilation was performed at the Atlantic Marine Center, from office interpretation of the 1:30,000 scale color photography in January 1988.

Final review was accomplished at the Atlantic Marine Center in March 1988. A Chart Maintenance Print for the Marine Chart Branch and Notes to the Hydrographer Print for the Hydrographic Branch were prepared and forwarded.

This map is to be registered as a Class III, Final Map.

The original base manuscript and all pertinent data were forwarded to the Washington Science Center for final registration.
21. AREA COVERED

This shoreline mapping project covers the southern part of the island of Oahu, Hawaii, from Barbers Pt. to Makapuu Pt. There are five sheets at 1:10,000 scale and three sheets at 1:5,000 scale that cover the job area. The sheets are numbered TP-01295 through TP-01302.

22. METHOD

Two strips of 1:30,000-scale photographs: 86-B-C052 to C063, 86-B-C092 to C100, and two strips of 1:15,000-scale photographs: 86-B-C113 to C122, 86-B-C131 to C141 were bridged by analytical aerotriangulation methods and adjusted to ground using photo-identified field control. Office identified intersection stations were used as checks.

Compilation points were placed on four additional strips of photographs not used for bridging:

<table>
<thead>
<tr>
<th>Strip</th>
<th>Scale</th>
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<tbody>
<tr>
<td>86-A-C002 to C004</td>
<td>1:30,000 scale</td>
</tr>
<tr>
<td>86-B-C103 to C105</td>
<td>1:30,000 scale</td>
</tr>
<tr>
<td>86-B-C072 to C077</td>
<td>1:15,000 scale</td>
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<tr>
<td>86-B-C084 to C086</td>
<td>1:15,000 scale</td>
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</tbody>
</table>

Tie points were used to ensure adequate junctions of all strips and were used as supplemental control.

Ratio values were determined for the bridging, and where needed, compilation photographs.

A magnetic tape was generated for plotting base manuscripts on the Kongsburg plotter. Bridged points were based on the Hawaiian Islands, Zone 3 Coordinate System and referenced to the Transverse Mercator projection.

Two each of the eight base manuscripts have been ruled as per Aerotriangulation Instructions.
23. **ADEQUACY OF CONTROL**

The control for this project is adequate for the job and meets the National Ocean Service's requirements. A listing of closures to control is attached.

24. **SUPPLEMENTAL DATA**

USGS topographic quadrangles were used to obtain vertical control for bridging.

25. **PHOTOGRAPHY**

The coverage, overlap, and quality of the photographs were adequate for the job.

Submitted by:

[Signature]

Brian Thornton

Approved and Forwarded:

[Signature]

Don O. Norman
Chief, Aerotriangulation Unit
FIT TO CONTROL

△ Control point held in adjustment
□ Tie point held in adjustment

STRIP #30-1

<table>
<thead>
<tr>
<th>STATION NAME</th>
<th>POINT NO.</th>
<th>X</th>
<th>Y</th>
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<td>Barbers Pt. Lighthouse New, 1933</td>
<td>52100</td>
<td>-0.9</td>
<td>-1.6</td>
</tr>
</tbody>
</table>
△ Barbers Pt. Lighthouse Sub Pt. 1A                                            | 52101     | -1.0  | 0.6   |
△ State Survey 9-3, 1969 Sub Pt. 1B                                            | 53101     | 1.1   | -1.1  |
△ Barbers Pt. NAS Base Control Twr. Beacon                                   | 226110    | -2.2  | 0.2   |
△ 30188, 1973 Sub Pt. 2A                                                      | 193101    | -4.6  | -5.2  |
△ 30188, 1973 Sub Pt. 2B                                                      | 193102    | -1.1  | -1.7  |
△ Ft. Kamehameha Flagstaff, 1925                                               | 166100    | 2.0   | 1.0   |
△ Ft. Kamehameha Flagstaff Sub Pt. 3A                                          | 166101    | 1.3   | 3.4   |
△ Pearl Harbor Water Tank B, 1925                                              | 188110    | -1.4  | -0.2  |
△ Pearl Harbor Escape Training Tower                                          | 181110    | -0.7  | 4.7   |
△ Honolulu Inter. Airport Control Twr. Beacon '64                             | 158110    | -1.0  | 0     |
△ Honolulu Moanalua Water Tank, 1957                                           | 183110    | -1.7  | 2.2   |
△ Aliamanu Honolulu Board of Water Supply Tank, '69                           | 184110    | -0.7  | -0.7  |
△ State Survey 1-13, 1969 Sub Pt. 4A                                          | 149101    | 1.7   | 0.4   |
△ State Survey 1-13, 1969 Sub Pt. 4B                                          | 149102    | -2.0  | -1.6  |

STRIP #30-2

△ State Survey 3-5, 1969 Sub Pt. 7A                                           | 75101     | 2.8   | -2.0  |
△ Diamond Head Lighthouse, 1925                                                | 76100     | 3.8   | -8.5  |
△ Honolulu Sac. Heart Acad. Cross                                              | 89110     | -3.0  | 1.7   |
△ Tie from Strip #15-1                                                         | 140801    | -3.2  | 2.5   |
△ Tie from Strip #15-1                                                         | 140802    | -2.0  | 2.5   |
△ Tie from Strip #15-1                                                         | 140803    | -1.8  | 2.6   |
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<td>Sub Pt. 8A</td>
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<td>NIU Water Tank, 1963</td>
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<td><strong>Kuapa, 1928 Sub Pt. 9A</strong></td>
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<td>Kuapa, 1928 Sub Pt. 9B</td>
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<tr>
<td><strong>Makapuu Pt. 1872 RM3 Sub Pt. 10A</strong></td>
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<td>Makapuu Pt. 1872 RM3</td>
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RATIO VALUES
CM-8317

1:30,000-scale color bridging photographs:

86-B-C052 to C063 Ratio 3.118
86-B-C092 to C100 Ratio 3.132

1:15,000-scale color bridging photographs:

86-B-C131 to C141 Ratio 3.112
86-B-C113 to C122 Ratio 3.104

1:30,000-scale color compilation photographs:

86-A-C002 to C004 Ratio 3.100

1:15,000-scale color compilation photographs:

86-B-C072 to C077 Ratio 3.100
86-B-C084 to C086 Ratio 3.100
<table>
<thead>
<tr>
<th>STATION NAME</th>
<th>SOURCE OF INFORMATION (INDEX)</th>
<th>AEROTRIANGULATION POINT NUMBER</th>
<th>COORDINATES IN FEET</th>
<th>ZONE</th>
<th>GEOGRAPHIC POSITION</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIU WATER TANK, 1963</td>
<td>Quad 211573 Sta 1070</td>
<td>57100</td>
<td>x=</td>
<td>3</td>
<td>ϕ 21° 17' 12.731&quot;</td>
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<td></td>
<td></td>
<td></td>
<td>y=</td>
<td></td>
<td>λ 157° 44' 02.501&quot;</td>
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<tr>
<td>KULIOUOU, 1928</td>
<td>Quad 211573 Sta 1069</td>
<td>57</td>
<td>x=</td>
<td>3</td>
<td>ϕ 21° 17' 11.830&quot;</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>y=</td>
<td></td>
<td>λ 157° 44' 02.703&quot;</td>
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</table>
31. **DELINEATION:**

Delineation was accomplished using Wild B-8 stereo instrument compilation methods. Instrument compilation was used to delineate shoreline, alongshore, and interior detail based upon office interpretation of the 1:15,000 scale bridging/compilation color photographs.

All photographs used to compile this map are listed on NOAA form 76-36B. The photography was adequate. There were no mean lower low water infrared photographs for this project.

32. **CONTROL:**

The horizontal control was adequate. Refer to the Aerotriangulation Report, dated April 1987.

33. **SUPPLEMENTAL DATA:**

None.

34. **CONTOURS AND DRAINAGE:**

Contours are not applicable to this project. Drainage was compiled from office interpretation of the photographs.

35. **SHORELINE AND ALONGSHORE DETAILS:**

The mean high water line was compiled from office interpretation of the bridging/compilation photographs. The shoreline compiled was the visible line of contact between land features and the water surface at the time of photography.

There was no mean lower low water line compiled on this map.

36. **OFFSHORE DETAILS:**

Offshore detail was compiled by instrument methods using the 1:15,000 scale bridging/compilation color photographs as described in item #31.
37. **LANDMARKS AND AIDS:**

   There are no charted landmarks and twenty-two charted aids to navigation within the limits of this map. Among these, one aid was located/verified photogrammetrically.

38. **CONTROL FOR FUTURE SURVEYS:**

   None.

39. **JUNCTIONS:**

   Refer to the Data Record Form 76-36B, item 5, of the Descriptive Report.

40. **HORIZONTAL AND VERTICAL ACCURACY:**

   See item #32.

46. **COMPARISON WITH EXISTING MAPS:**

   A comparison was made with the following U.S. Geological Survey Quadrangle:

   Koko Head, Hawaii; dated 1983; scale 1:24,000

47. **COMPARISON WITH NAUTICAL CHARTS:**

   A comparison was made with the following National Ocean Service charts:

   19013; 13th edition; dated February 12, 1983; scale 1:675,000
   19357; 17th edition; dated October 15, 1983; scale 1:80,000
   19358; 16th edition; dated October 20, 1984; scale 1:20,000
ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY:

None.

ITEMS TO BE CARRIED FORWARD:

None.

Submitted by:

Albert L. Grimes III
Cartographic Technician
December 1, 1987

Approved:

James L. Byrd, Jr.
Chief, Coastal Mapping Unit
GEOGRAPHIC NAMES

FINAL NAME SHEET

CM-8317 (Oahu, Hawaii)

TP-01302

Kawaihoa Point
Koko Head
Kuapa Pond
Kui Channel
Kuliouou
Maunalua Bay
Niu Valley (locality)

Oahu
Pacific Ocean
Paiko Peninsula
Portlock

Approved:

Charles E. Harrington
Chief Geographer
Nautical Charting Division
61. GENERAL STATEMENT

See Summary included with this Descriptive Report.

The Office Instructions were executed as indicated in paragraph 2.1 with reference to the Old Hawaiian horizontal datum. Reference to the horizontal North American Datum 1927 in paragraphs 4.5 and 4.6 of the Aerotriangulation Instructions and paragraphs 2.6 and 5.2.3 of the Office Instructions were inapplicable and were ignored.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS:

Not applicable.

63. COMPARISON WITH MAPS OF OTHER AGENCIES:

A comparison was made with the following USGS quadrangle:

KOKO HEAD, HAWAII, dated 1983, scale 1:24,000

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:

There are no contemporary hydrographic surveys within the limits of this map.

65. COMPARISON WITH NAUTICAL CHARTS:

A comparison was made with the following nautical charts:

19013, 13th edition, dated February 12, 1983, scale 1:675,000
19357, 17th edition, dated October 15, 1983, scale 1:80,000
19358, 16th edition, dated October 20, 1984, scale 1:20,000.
66. ADEQUACY OF RESULTS AND FUTURE SURVEYS:

This map complies with the Project Instructions and meets the requirements for National Standards of Map Accuracy.

Submitted by:

Lowell O. Neterer, Jr.
Final Reviewer
March 21, 1989

Approved for Forwarding:

Billy H. Barnes
Chief, Quality Assurance Group

Approved:

Chief, Photogrammetric Production Section  Chief, Photogrammetry Branch
CARTOGRAPHIC FEATURES OF POSSIBLE LANDMARK VALUE LISTING

PROJECT: CM-8317

MAP NUMBER (Scale); Locality: TP-01302; 1:5,000; Barbers Point to Makapuu Point, Oahu, Hawaii

GEODEalic DATUM: Old Hawaiian Datum

The following cartographic features have been identified as being of possible landmark value. These features 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).

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<thead>
<tr>
<th>FEATURE DESCRIPTION</th>
<th>NCD</th>
<th>GEOGRAPHIC POSITION -'-''</th>
<th>NCD</th>
<th>DATE OF</th>
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<tr>
<td>MAUNALUA BAY LIGHT</td>
<td>200</td>
<td>21 16 27.611 157 43 08.206</td>
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</table>

Listing approved by: [Signature]

FINAL REVIEWER

DATE: April 13, 1985
# Nautical Chart Division

## Record of Application to Charts

File with descriptive report of survey no.

### Instructions

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

<table>
<thead>
<tr>
<th>CHART</th>
<th>DATE</th>
<th>CARTOGRAPHER</th>
<th>REMARKS</th>
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### Empty Rows

- Empty rows to accommodate additional entries.

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*Form C&GS-9352 (3-86-93)*