

# Maryland Historical Trust State Historic Sites Inventory Form

MARYLAND INVENTORY OF  
HISTORIC PROPERTIES

Survey No. M29-53

Magi No.

DOE  yes  no

## 1. Name (indicate preferred name)

historic Instrument House, David Taylor Model Basin

and/or common Building #106, Naval Surface Warfare Center Carderock Division

## 2. Location

street & number 9500 MacArthur Blvd.  not for publication

city, town Bethesda  N/A vicinity of congressional district 8th

state Maryland county Montgomery

## 3. Classification

Category	Ownership	Status	Present Use
<input checked="" type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input type="checkbox"/> occupied	<input type="checkbox"/> agriculture <input type="checkbox"/> museum
<input checked="" type="checkbox"/> building(s)	<input type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial <input type="checkbox"/> park
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input checked="" type="checkbox"/> work in progress	<input type="checkbox"/> educational <input type="checkbox"/> private residence
<input type="checkbox"/> site	<b>Public Acquisition</b>	<b>Accessible</b>	<input type="checkbox"/> entertainment <input type="checkbox"/> religious
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input type="checkbox"/> government <input type="checkbox"/> scientific
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial <input type="checkbox"/> transportation
	<input checked="" type="checkbox"/> not applicable	<input type="checkbox"/> no	<input checked="" type="checkbox"/> military <input type="checkbox"/> other:

## 4. Owner of Property (give names and mailing addresses of all owners)

name United States Navy

street & number 9500 MacArthur Blvd. telephone no.: 301-227-1896

city, town Bethesda state and zip code Maryland, 20817

## 5. Location of Legal Description

courthouse, registry of deeds, etc. Land Records Office liber

street & number Montgomery County Courthouse folio

city, town Rockville state Maryland

## 6. Representation in Existing Historical Surveys

title NSWC-CD Historic and Archeological Resources Protection Plan

date 1/97  federal  state  county  local

pository for survey records Maryland Historical Trust

city, town Crownsville state Maryland

# 7. Description

Survey No. M29-53

<b>Condition</b>		<b>Check one</b>	<b>Check one</b>
<input type="checkbox"/> excellent	<input type="checkbox"/> deteriorated	<input type="checkbox"/> unaltered	<input checked="" type="checkbox"/> original site
<input checked="" type="checkbox"/> good	<input type="checkbox"/> ruins	<input checked="" type="checkbox"/> altered	<input type="checkbox"/> moved    date of move _____
<input type="checkbox"/> fair	<input type="checkbox"/> unexposed		

Prepare both a summary paragraph and a general description of the resource and its various elements as it exists today.

SEE CONTINUATION SHEET

# 8. Significance

Survey No. M29-53

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> architecture	<input type="checkbox"/> education	<input checked="" type="checkbox"/> military	<input type="checkbox"/> social/
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input checked="" type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> humanitarian
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> theater
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> transportation
		<input type="checkbox"/> invention		<input type="checkbox"/> other (specify)

### Specific dates

### Builder/Architect

check: Applicable Criteria:  A  B  C  D  
and/or

Applicable Exception:  A  B  C  D  E  F  G

Level of Significance:  national  state  local

Prepare both a summary paragraph of significance and a general statement of history and support.

SEE CONTINUATION SHEET

(SEE M:29-47 AND M:29-52 FOR ADDITIONAL INFORMATION)



M:29-53

Instrument House  
NSWCCD  
Carderock, Maryland  
Section 7.1

## Summary Description

### Instrument House (Building #106)

The Instrument House is a one-story poured concrete building that terminates in a flat, built-up roof defined by parapet walls. A metal ventilator protrudes from the roof. The structure adopts a rectangular footprint and is partially bermed into the side of a hill; the north elevation fully is exposed. The north elevation exhibits a single entry well that contains a replacement metal door unit.

The interior of the instrument house exhibits an open rectangular plan with an exposed concrete floor. The walls are finished with wood paneling. The building includes electrical outlets and is illuminated by florescent ceiling units. All original equipment associated with the test pond has been removed and the building is currently unoccupied. A concrete stairway located at the east-end of the building provides access to the concrete test pond deck.

Building 106 is associated with the explosives test pond complex. The structure is oriented directly north of a 12' deep, pentagonal, concrete, explosives test pond. In 1943, the instrument house (Building 106) and the test pond (Facility 134) were constructed to augment experiments performed in an adjacent research pit (Facility 105). The primary use of the test pond was to perform underwater tests on mines and other explosive devices, such as small charges of TNT, to simulate the effects of underwater blasts. Building 106 served as a storage facility for instruments used in explosives testing.

The test pond complex is located at the Naval Surface Warfare Center Naval Surface Warfare Center Carderock Division (NSWCCD) which occupies a 183.6 acre tract of land in the Potomac River Valley, in Carderock, Maryland. NSWCCD is located approximately 12 miles northwest of Washington, D.C., along the northern bank of the Potomac River. The installation is bordered to the south by the Clara Barton Parkway and to the north and east by MacArthur Boulevard. The installation comprises 116 buildings and structures. Of these 116 built resources, forty-four buildings, including Building 106, have been identified as contributing resources to the NSWCCD Historic District.

*ms*

M:29-53

Instrument House  
NSWCCD  
Carderock, Maryland  
Section 7.2

Research laboratories, administration facilities, and operations and utility structures are the main components of the installation. The overall facility achieves architectural unity through its integrated layout and building design. At the center of the installation is an interconnected complex that includes an administration building, a shop building, a laboratory and the David Taylor Model Basin. The Model Basin was listed in the National Register of Historic Places in 1985 (Allison 1984).

The majority of buildings and facilities added to the installation after the initial construction of the model basin complex were the direct result of research programs assigned to the installation. Areas of research undertaken at the installation involved *underwater explosive testing*, aeronautical research, and hydrodynamical research.

## Significance

The Instrument House is a contributing element to the Naval Surface Warfare Center Carderock Division (NSWCCD) Historic District (MIHP # 29-52). The building is associated with the explosives test pond, a testing facility designed to perform underwater tests on mine and other explosive devices. The instrument house originally stored equipment for underwater testing. The building is currently vacant. Proposed modifications will add a second story to the existing structure.

The NSWCCD Historic District possesses the qualities of exceptional importance defined under National Register Criterion Consideration G within the historic context of Military research, design, testing, and evaluation. In addition, NSWCCD is associated with events that have made a significant contribution to the broad patterns of military technology (Criterion A). The resources also represent an intact collection of RDT&E buildings and facilities (Criterion C). In 1938, the David Taylor Model Basin became the primary site for the research, development, and testing of models of ships and other vehicles for the U.S. Navy. As the center for naval research, design, testing, and evaluation (RDT&E), NSWCCD played a critical role in the design and development of the modern navy. The research facilities at NSWCCD have provided the U.S. Navy with accurate cost effective data of air and sea vehicle performance, and have made possible evaluative changes to improve performance, in advance of construction. The NSWCCD historic district is defined by the period of significance beginning in 1938 and extending to 1958.

NSWCCD comprises 117 buildings and facilities, and includes: administration buildings, industrial buildings and research centers. Of the 17 buildings and structures within Carderock, 67 were constructed during the period of significance (1938-1958), and include an underwater explosion laboratory; scaled subsonic, transonic, and supersonic wind tunnels; a circulating water channel; and, the David Taylor Model Basin (listed in the National Register of Historic Places in 1985). Forty-four of these buildings have been identified as contributing elements to the NSWCCD Historic District. The remaining seventy-

three resources do not retain their integrity to convey the period of significance, are not associated with the historic context or were constructed within the last fifty years and do not possess exceptional significance.

Naval Surface Warfare Center Carderock Division and the Underwater Explosives Test Pond.

During World War II, the David Taylor Model Basin was outfitted to undertake tests to seek solutions to specific war-related problems encountered by the fleet. Tests were performed to determine the characteristics of new ship designs, the hydrodynamic characteristics of torpedoes and depth charges, and the effects of structural modifications. While the capabilities of the model basin were expanded during the war, unique testing facilities and equipment also were constructed at NSWCCD. Constructed as a direct result of the programs assigned to the model basin, the new facilities increased the range of naval engineering research and testing able to be performed at the installation (Department of the Navy 1959:5).

In 1941, a research pit for explosion testing was constructed at the installation. This new facility was used primarily to study the deformation of diaphragms due to underwater explosions and the effect of gun-blasts on water-tight doors. It was also used to develop appropriate footwear to protect servicemen from land mines exploding under landing crafts (David Taylor Model Basin History 1959: 5).

In 1943, construction of a pentagonal test pond (Facility 134) and the instrument house (Building 106) allowed for the underwater testing of explosives. The small amount of explosives used in the test pond simulated the effects of full-scale underwater blasts on ships. Able to predict the effect of an underwater explosion, the Navy was able to construct ships and equipment tough enough to survive a wartime environment (Neil 1971:6). During the early post war years the test pond was used to test and predict the effects of nuclear weapons prior to full scale testing (Carlisle 1987: 6-19).

**HISTORIC CONTEXT:**

**MARYLAND COMPREHENSIVE HISTORIC PRESERVATION PLAN DATA**

- Geographic Organization: Piedmont
- Chronological/Development Period: Modern Period (1930-Present)
- Historic Period Theme: Military
- Resource Type:

Category: Building

Historic Environment: Research and Testing Laboratory Complex

Historic Function and Use: Research and Testing Laboratory Complex

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REFERENCES

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Allison, David K

- 1984 David W. Taylor Model Basin, National Register of Historic Places Inventory, Nomination Form. Ms. on file at the Maryland Historical Trust, Crownsville.

Allison, David K, Ben G. Keppel, C. Elizabeth Nowicke

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- 1984a *National Register of Historic Places Nomination 30-by 60-Foot Tunnel, Langley Research Center, Hampton, Virginia*.
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M:29-53  
Instrument House  
NSWCCD  
Carderock, Maryland  
Section 9.2

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#### Archives and Unpublished Material

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National Archives and Records Administration. Record Group 71. General Correspondence, Office of the Secretary of the Navy.

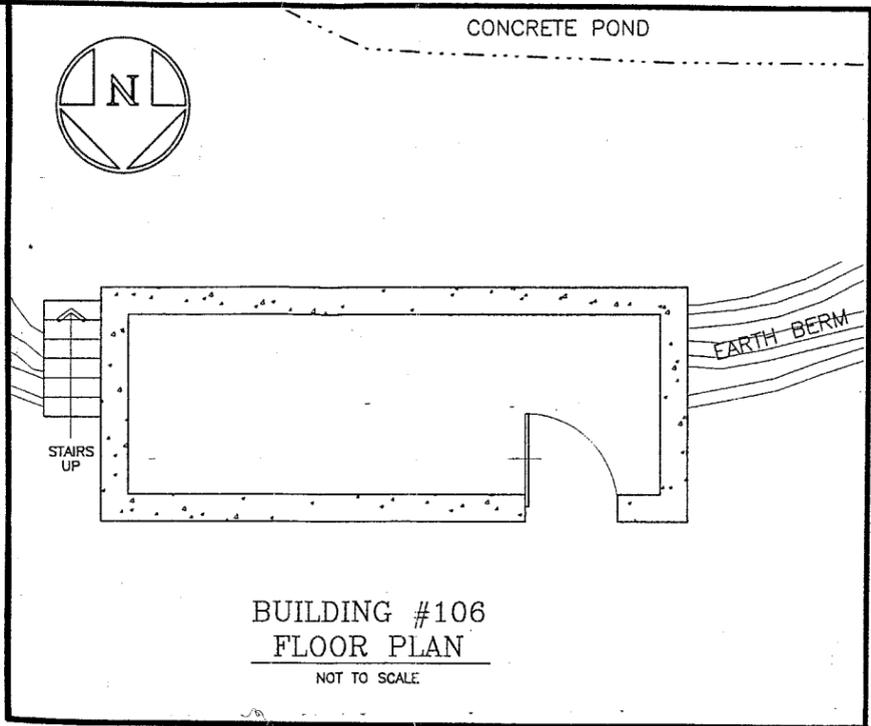
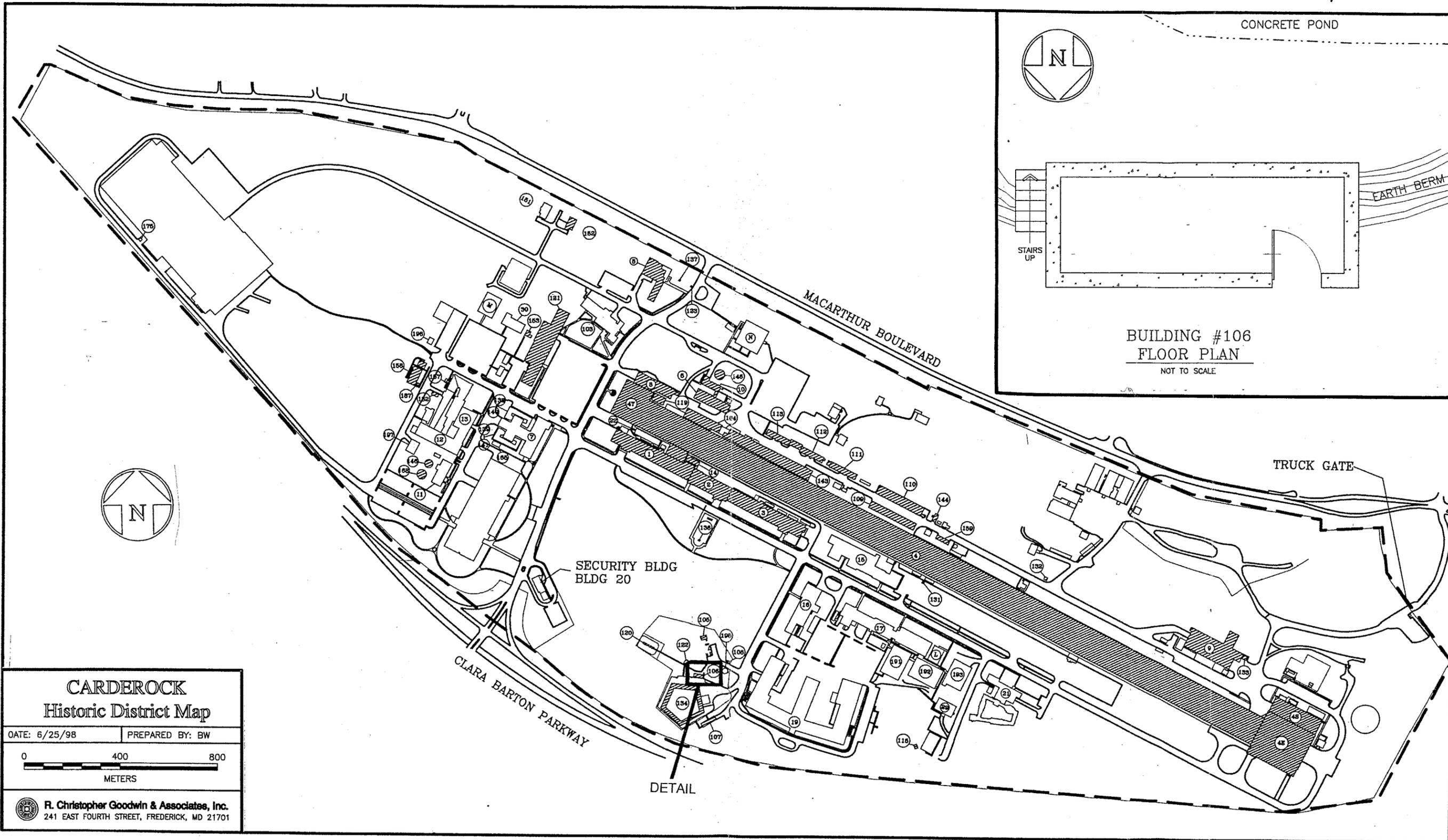
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M:29-53



BUILDING #106  
 FLOOR PLAN  
 NOT TO SCALE

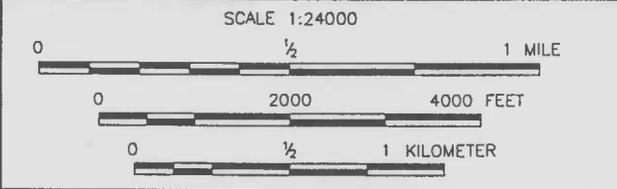
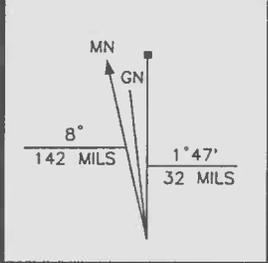
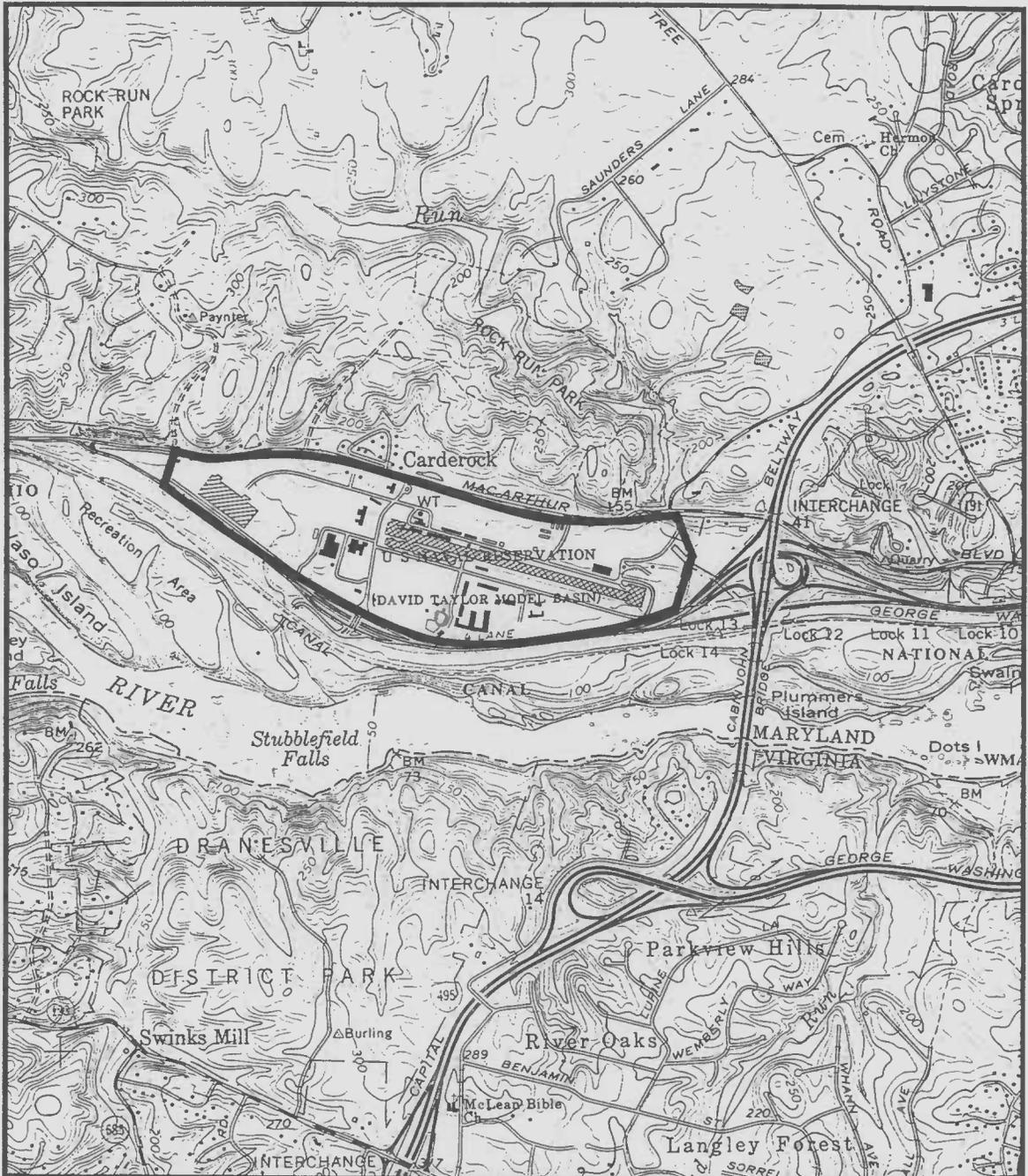
**CARDEROCK**  
 Historic District Map

DATE: 6/25/98      PREPARED BY: BW

0      400      800  
 METERS

**R. Christopher Goodwin & Associates, Inc.**  
 241 EAST FOURTH STREET, FREDERICK, MD 21701

DETAIL



 **R. Christopher Goodwin & Associates, Inc.**  
337 EAST THIRDO STREET, FREDERICK, MO 21701

**INDEX TO PHOTOGRAPHS**

**Instrument House (Building #106)  
Naval Surface Warfare Center Carderock Division Historic District  
Bethesda, Maryland**

Photographer: Elaine Kieman  
R. Christopher Goodwin & Associates, Inc.

- 1 of 5 View south, Instrument House with explosives testing pond in the background.
- 2 of 5 Front elevation of Instrument House facing south.
- 3 of 5 Southwest view, Instrument House.
- 4 of 5 Interior view of Instrument House.
- 5 of 5 North facing view of the test pond deck and the rooftop of the Instrument House.



INSTRUMENT HOUSE (M29-53)

NAVAL SURFACE WARFARE CENTER, CALDWELL DIVISION

MONTGOMERY COUNTY, MD

FLAINE KIERMAN

JULY 7, 1998

VIEW SOUTH

PHOTO 1 OF 5

100 20 40 60 80 100 120 140 160 180 200



INSTRUMENT HOUSE (M29-53)  
NAVAL SURFACE WARFARE CENTER, CAMDEN DIVISION  
MONTGOMERY COUNTY, MD

ELAINE KIGANAN

JULY 7, 1998

VIEW SOUTH, FLAT ELEVATION

2 OF 5

1001 20-20 1000000000 013



INSTRUMENT HOUSE (M29-53)  
NAVAL SURFACE WARFARE CENTER, CARDEROCK DIVISION  
MONTGOMERY COUNTY, MD  
EAGINE KIERNAN  
JULY 7, 1998  
VIEW SOUTHWEST  
Photo 3 of 5

NAVAL SURFACE WARFARE CENTER 015



INSTRUMENT HOUSE (M29-53)  
NAVAL SURFACE WARFARE CENTER CAROLINCKE DIVISION  
MONTGOMERY COUNTY, MD

ELAINE KIBANNAN

JULY 7, 1998

INTERIOR VIEW

PHOTO 4 OF 5

100 200 300 400 500 600 700 800 900



INSTRUMENT HOUSE (M29-53)  
NAVAL SURFACE WARFARE CENTER, CAROLLECK DIVISION  
MONTGOMERY COUNTY, MD  
ELAINE KERRAN

JULY 7, 1998

NORTH FACING VIEW OF TEST POND DECK  
PHOTO 3 OF 5

REF: 26-02-18001-0000 0-3