

**Maryland Historical Trust  
Determination of Eligibility Form**

Property Name: Building 107, Test Pond Filter House Inventory Number: M: 29-52-29  
 Address: 9500 MacArthur Boulevard Historic District: Yes  No  
 City: West Bethesda Zip Code: 20817 County: Montgomery  
 USGS Quadrangle(s): Falls Church  
 Property Owner: United States Navy Tax Account ID Number: \_\_\_\_\_  
 Tax Map Parcel Number(s): \_\_\_\_\_ Tax Map Number: \_\_\_\_\_  
 Project: Contract N40080-07-D-0311, Delivery Order 26 (Section 110 Survey) Agency: NAVFAC Washington  
 Agency Prepared By: The Louis Berger Group, Inc.  
 Preparer's Name: Patti Kuhn Date Prepared: 10/26/2011  
 Documentation Is Presented In: 2011 Integrated Cultural Resources Management Plan, 2011 MIHP Form  
 Preparer's Eligibility Recommendation:  Eligibility Recommended \_\_\_\_\_ Eligibility Not Recommended  
 Criteria:  A  B  C  D Considerations:  A  B  C  D  E  F  G  
*Complete if the property is a contributing or non-contributing resource to a NR district/property:*  
 Name of the District/Property: Naval Surface Warfare Center Carderock Division  
 Inventory Number: M: 29-52 Eligible:  Yes Listed:  Yes  
 Site Visit by MHT Staff:  Yes  No Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Description of Property and Justification: (Please attach map and photo)**

In 2006 The Louis Berger Group, Inc. Updated the ICRMP for NSF Carderock. In October-November 2005 Buildings 16 and 18 were re-evaluated and found to be eligible for the National Register as contributing elements in the historic district. This evaluation also recommended that the period of significance for the historic district (originally 1938 to 1958) warranted expansion to 1970, marking the completion of the Anechoic Test facility and the close of the 20 "Golden Years of Research" at DTMB (Bowers 2005).

Building 107 is recommended as contributing to the NSWCCD Historic District.

See paper MIHP form for more information.

**MARYLAND HISTORICAL TRUST REVIEW**

Eligibility Recommended:  Eligibility Not Recommended: \_\_\_\_\_  
 Criteria:  A  B  C  D Considerations:  A  B  C  D  E  F  G  
 MHT Comments:  
 \_\_\_\_\_ Amanda Apple *AA* Thursday, June 26, 2014  
 Reviewer, Office of Preservation Services Date  
 \_\_\_\_\_ Peter Kurtze Thursday, June 26, 2014  
 Reviewer, National Register Program Date

Building 107, Test Pond Filter House  
NSF Carderock Historic District  
MIHP # M:29-52 -Z9  
Montgomery County  
West Bethesda  
1946  
Public

Building 107 is located in the south portion of the 183.6-acre Naval Support Facility (NSF) Carderock, formerly known as the Naval Surface Warfare Center Carderock Division (NSWCCD). Located approximately 12 miles northwest of Washington, D.C., near Bethesda, Maryland, NSF Carderock is situated north of the Potomac River and is bordered by the Clara Barton Parkway to the south and MacArthur Boulevard to the north and east. The installation is composed of 123 buildings and structures that function as research laboratories, administration facilities, and operations and utility structures. At the center of the installation is the David Taylor Model Basin (DTMB) (Buildings 1-4), a group of interconnected buildings that include a model basin, an administration building, a shop building, and a laboratory. The DTMB was listed in the NRHP in 1985 (M: 29-47). In 1996 the NSF Carderock Historic District was determined eligible for the NRHP, and 44 of the 116 built resources were recognized as contributing resources. Building 107 is a contributing resource in the NSF Carderock Historic District.

Building 107 stands on the east side of the Pentagonal Test Pond (Facility 134) near the south boundary of NSF Carderock. An asphalt driveway leads west from the road to the building. Building 107, the Test Pond Filter House, was constructed in 1946 as a support structure for the Pentagonal Test Pond. It is a small, utilitarian structure with a rectangular footprint. The one-story building is constructed of poured concrete and is capped with a flat roof. It is fenestrated by a flush double-leaf and single-leaf metal door and two-light metal-sash awning windows. The building holds pump and filter machinery for the Pentagonal Test Pond.

# Maryland Historical Trust Maryland Inventory of Historic Properties Form

Inventory No. M: 29-52 - 29

## 1. Name of Property (indicate preferred name)

historic Test Pond Filter House  
other Building 107, Test Pond Filter House (preferred)

## 2. Location

street and number Naval Support Facility Carderock, 9500 MacArthur Blvd. \_\_\_ not for publication  
city, town West Bethesda \_\_\_ vicinity  
county Montgomery

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

name United States Navy  
street and number 9500 MacArthur Blvd. telephone  
city, town West Bethesda state MD zip code 20817

## 4. Location of Legal Description

courthouse, registry of deeds, etc. Montgomery County Courthouse liber folio  
city, town Rockville tax map tax parcel tax ID number

## 5. Primary Location of Additional Data

- Contributing Resource in National Register District  
 Contributing Resource in Local Historic District  
 Determined Eligible for the National Register/Maryland Register  
 Determined Ineligible for the National Register/Maryland Register  
 Recorded by HABS/HAER  
 Historic Structure Report or Research Report at MHT  
 Other: Contributing Resource in National Register-Eligible Historic District

## 6. Classification

Category	Ownership	Current Function	Resource Count
<input type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input type="checkbox"/> agriculture	Contributing Noncontributing
<input checked="" type="checkbox"/> building(s)	<input type="checkbox"/> private	<input type="checkbox"/> commerce/trade	<u>1</u> <input type="checkbox"/> buildings
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input checked="" type="checkbox"/> defense	<input type="checkbox"/> sites
<input type="checkbox"/> site		<input type="checkbox"/> domestic	<input type="checkbox"/> structures
<input type="checkbox"/> object		<input type="checkbox"/> education	<input type="checkbox"/> objects
		<input type="checkbox"/> funerary	<u>1</u> <input type="checkbox"/> Total
		<input checked="" type="checkbox"/> government	
		<input type="checkbox"/> health care	
		<input type="checkbox"/> industry	
		<input type="checkbox"/> landscape	
		<input type="checkbox"/> recreation/culture	
		<input type="checkbox"/> religion	
		<input type="checkbox"/> social	
		<input type="checkbox"/> transportation	
		<input type="checkbox"/> work in progress	
		<input type="checkbox"/> unknown	
		<input type="checkbox"/> vacant/not in use	
		<input type="checkbox"/> other:	
			<b>Number of Contributing Resources previously listed in the Inventory</b>

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## 7. Description

Inventory No. M: 29-52 - 29

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### Condition

excellent       deteriorated  
 good             ruins  
 fair               altered

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

Building 107 is located in the south portion of the 183.6-acre Naval Support Facility (NSF) Carderock, formerly the Naval Surface Warfare Center Carderock Division (NSWCCD). Located approximately 12 miles northwest of Washington, D.C., near Bethesda, Maryland, NSF Carderock is situated north of the Potomac River and is bordered by the Clara Barton Parkway to the south and MacArthur Boulevard to the north and east. The installation is composed of 123 buildings and structures that function as research laboratories, administration facilities, and operations and utility structures. At the center of the installation is the David Taylor Model Basin (DTMB) (Buildings 1-4), a group of interconnected buildings that include a model basin, an administration building, a shop building, and a laboratory. The DTMB was listed in the National Register of Historic Places in 1985 (M: 29-47). In 1996 the NSF Carderock Historic District was determined eligible for the National Register and 44 of the 116 built resources were recognized as contributing resources. Building 107 is a contributing resource in the NSF Carderock Historic District.

Building 107 stands on the east side of the Pentagonal Test Pond (Facility 134) near the south boundary of NSF Carderock. An asphalt driveway leads west from the road to the building. Building 107, the Test Pond Filter House, was constructed in 1946 as a support structure for the Pentagonal Test Pond. It is a small, utilitarian structure with a rectangular footprint that measures 64 feet long and 17 feet wide with 1,088 square feet of space (INFADS 2011). The one-story building sits on a solid concrete foundation and is constructed of poured concrete. It is capped with a flat roof with metal coping. The main (east) elevation is pierced by a flush double-leaf and single-leaf metal door. The south elevation has three two-light metal-sash awning windows. The building holds pump and filter machinery for the Pentagonal Test Pond.

## 8. Significance

Inventory No. M: 29-52 -29

Period	Areas of Significance	Check and justify below		
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> health/medicine	<input type="checkbox"/> performing arts
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> archeology	<input type="checkbox"/> education	<input type="checkbox"/> industry	<input type="checkbox"/> philosophy
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> architecture	<input type="checkbox"/> engineering	<input type="checkbox"/> invention	<input type="checkbox"/> politics/government
<input checked="" type="checkbox"/> 1900-1999	<input type="checkbox"/> art	<input type="checkbox"/> entertainment/ recreation	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 2000-	<input type="checkbox"/> commerce	<input type="checkbox"/> ethnic heritage	<input type="checkbox"/> law	<input type="checkbox"/> science
	<input type="checkbox"/> communications	<input type="checkbox"/> exploration/ settlement	<input type="checkbox"/> literature	<input type="checkbox"/> social history
	<input type="checkbox"/> community planning		<input type="checkbox"/> maritime history	<input type="checkbox"/> transportation
	<input type="checkbox"/> conservation		<input checked="" type="checkbox"/> military	<input type="checkbox"/> other: _____

<b>Specific dates</b>	1938-1970	<b>Architect/Builder</b>	U.S. Navy, Bureau of Yards and Docks
<b>Construction dates</b>	1946		

Evaluation for:

National Register

Maryland Register

not evaluated

Prepare a one-paragraph summary statement of significance addressing applicable criteria, followed by a narrative discussion of the history of the resource and its context. (For compliance projects, complete evaluation on a DOE Form – see manual.)

### Summary

In 1985 the DTMB and associated buildings (Buildings 1-4) were listed in the National Register. The campus of buildings created at Carderock from 1938 to 1958 was determined eligible for the National Register as the Naval Surface Warfare Center Carderock Division Historic District (NSWCCD) in 1996. The determination of eligibility stated that NSF Carderock possesses the qualities of exceptional significance under Criterion G "within the historic context of military research, design, testing, and evaluation." It also stated that NSF Carderock meets Criteria A for its events that have made a significant contribution to military technology and Criterion C for its intact collection of RDT&E buildings and facilities. The period of significance for the historic district was determined as beginning in 1938 when the model basin was constructed and ending in 1958, the end date of physical model testing and the official mission change to include computer research and testing. In 1996, 116 resources were recorded at NSF Carderock and 44 were determined as contributing to the historic district (Melhuish 1996).

In 2006 Berger updated the ICRMP for NSF Carderock. In October-November 2005 Buildings 16 and 18 were re-evaluated and found to be eligible for the National Register as contributing elements in the historic district. This evaluation also recommended that the period of significance for the historic district (originally 1938 to 1958) warranted expansion to 1970, marking the completion of the Anechoic Test facility and the close of the 20 "Golden Years of Research" at DTMB (Bowers 2005).

Building 107, the Test Pond Filter Building, is considered a contributing element in the National Register-eligible NSF Carderock Historic District.

### Historic Context

#### *The David Taylor Model Basin (1937 to 1952)*

The United States Navy constructed its first laboratory for studying ship construction and technology in 1898 at the Washington Navy Yard. The United States Experimental Model Basin, as it was called, was built under the auspices of Rear Adm. David Watson Taylor. Initial research involved a basin and a carriage that towed wooden ship models. In 1912, as the Navy moved toward aeronautical endeavors, the facility explored wind tunnel technology. The Navy's first wind tunnel was operational by 1914. The Navy soon outgrew these facilities as ship and aircraft testing evolved and no space at the Navy Yard was available for expansion.

In May 1936 Congress appropriated \$3.5 million for land acquisition and construction of a new facility. The site at Carderock was chosen for its location near Washington, D.C., and the Navy headquarters, its access to the Potomac River in order to fill the basins, and its bedrock foundation that would support the massive testing mechanisms. In addition, the site was large enough for a 100 percent expansion in 50 years (Carlisle 1998:140).

# Maryland Historical Trust

## Maryland Inventory of Historic Properties Form

Inventory No. M: 29-52 -24

Name  
Continuation Sheet

Number 8 Page 1

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Construction started at the Carderock campus on September 8, 1937, and it was dedicated on November 4, 1939 (Carlisle 1998:145). It was named the David Taylor Model Basin in honor of Rear Adm. David Watson Taylor. Commander Ben Moreell is credited with the design of the new basin. The initial buildings constructed on the campus included an interconnecting administration building, shop, and laboratory building (Nos. 1, 2, and 3) arranged in a linear pattern. These support buildings reflect the influence of the streamlined Art Moderne style favored by the federal government during the 1940s. The model basin was constructed parallel to the three structures and housed a deep water basin, a shallow water and turning basin, and a high speed basin. The main entrance to the interconnecting office buildings, shop, and lab was designed to face south, toward the Potomac River. A large, grassy "meadow" fronted the centered main entrance of Building 2 and extended south toward the river. This vast south lawn added to the open and campus-like feeling of the facility but also allowed for future expansion. In 1985 the DTMB and associated buildings were listed in the National Register.

The primary mission of the DTMB, as defined by Congress, was to investigate and determine the most suitable and desirable shapes and forms for naval vessels and aircraft (Melhuish 1996). During its first year of operation, the DTMB was mostly involved in design work, but at the outset of World War II, activities at the DTMB were focused on war-related topics. Research became a major directive, and new facilities and staff were added to support research activities. New facilities added to the installation included a research pit for explosion testing (1941), wind tunnels and associated buildings (1942), a pentagonal test pond to test underwater explosives (1943), the Circulating Water Channel to test the angles and drag of submerged towed devices (1942), and two supersonic wind tunnels that had been dismantled in Germany and installed at Carderock (1946) (Melhuish 1996).

During this rapid expansion, careful consideration was given to the overall physical planning and growth of the installation. Under the direction of Capt. H.S. Howard, the installation grew with the addition of 47 acres in 1943 and 55 acres in 1946. Howard wrote in 1945, "Having in mind the architecture of the main building, I visualize something in the nature of a college campus or graduate school grown up around and in front of the main building. A row of buildings might well grow to the east and to the west of the main building toward the south but the central area should be kept free of building so that eventually a U-shaped group is formed with the open end toward the Highway" (Carlisle 1998:192). The campus of buildings created at Carderock during this period was determined eligible for the National Register as the Naval Surface Warfare Center Carderock Division Historic District in 1996.

### *The "Golden Age of Research" (1952 to 1970)*

Expansion of the aerodynamics facilities at Carderock after World War II coincided with a "drastic realignment" of mission that inaugurated a "Golden Age of Research" at DTMB (McCarthy 1993:30, 34). In 1952 the Navy established the Applied Mathematics Department at Carderock and introduced computer-based research, beginning with a Universal Automatic Computer in 1953 and the Livermore Atomic Research Computer in 1960. The basin itself was also improved after World War II: construction began on a new 36-inch water tunnel in 1955 and on a maneuvering basin and a large rotating arm basin (under one roof and called the Maneuvering and Seakeeping [MASK] facility) in 1956. The MASK facility was ready for calibration and use in 1961, and the water tunnel was completed the following year (Brownell 1962:2-3).

Facilities at Carderock expanded again in 1964 with the Acoustics and Vibration Laboratory, which brought together scientists and engineers from several other departments to play a lead Navy role in measurement and diagnosis of full-scale radiated noise signatures from ships and submarines, which was an area of inquiry of paramount importance to the Navy's submarine warfare programs (McCarthy 1993:32). Four years later the Structural Mechanics department obtained a major new facility featuring five high-pressure deep submergence tanks for testing the hulls of underwater vehicles and a test bed for stressing large model ship structures under loads up to 250,000 pounds. On March 31, 1967, the Marine Engineering Laboratory at Annapolis and the Carderock facilities were merged to form the David Taylor Naval Ship Research and Development Center.

# Maryland Historical Trust

## Maryland Inventory of Historic Properties Form

Inventory No. M: 29-52 -24

Name  
**Continuation Sheet**

Number 8 Page 2

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By 1970 the acoustics department had significantly expanded its capabilities with the addition of acoustic ranges off Washington and California, plus, at Carderock, completion of an Anechoic Data Analysis Center and an anechoic flow facility consisting of a subsonic wind tunnel equipped with an anechoic chamber. That same year the Systems Development Department was created "with the intention of providing a total ship systems, hardware-oriented focus" (McCarthy 1993:32-36). The "Golden Age" of research at DTMB came to an end in the 1970s, as funding declined and the staff was reduced from 3,122 to 2,482 (McCarthy 1993:33).

### *NSF Carderock (1971 to present)*

When funding resumed under the Reagan Administration (1981 to 1989) in the 1980s, it was on a very different basis, as most of the Center's annual budget was contracted to private industry. The Center was increasingly involved in both design and hardware demonstration phases of vehicle development, and there was much less support for "fundamental research, exploratory development, and advanced development investigations" (McCarthy 1993:37, 40). NSF Carderock was established in January 1992 under the U.S. Navy's Laboratory Consolidation Plan. The division was formed by the merger of DTMB and the Naval Ship Systems Engineering Station, Philadelphia.

### *Building 107, Test Pond Filter House*

Building 107 (Test Pond Filter House) was erected in 1946 to support the Pentagonal Test Pond. The Navy constructed the building as the result of increased research at the test pond. It cost \$161,638 to build in 1946 (INFADS 2011).

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## 9. Major Bibliographical References

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Inventory No. M: 29-52 - Z4

See continuation sheet.

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## 10. Geographical Data

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Acreage of surveyed property less than 0.5 acres  
Acreage of historical setting less than 0.5 acres  
Quadrangle name Falls Church Quadrangle scale: 1:24000

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### Verbal boundary description and justification

The boundary of the property is the footprint of Building 107 within NSF Carderock located in West Bethesda.

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## 11. Form Prepared by

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name/title	Patti Kuhn, Architectural Historian		
organization	The Louis Berger Group, Inc.	date	4/4/2011
street & number	1250 23 <sup>rd</sup> Street, NW	telephone	202-303-2665
city or town	Washington	state	DC

The Maryland Inventory of Historic Properties was officially created by an Act of the Maryland Legislature to be found in the Annotated Code of Maryland, Article 41, Section 181 KA, 1974 supplement.

The survey and inventory are being prepared for information and record purposes only and do not constitute any infringement of individual property rights.

return to: Maryland Historical Trust  
Maryland Department of Planning  
100 Community Place  
Crownsville, MD 21032-2023  
410-514-7600

# Maryland Historical Trust

## Maryland Inventory of Historic Properties Form

Inventory No. M: 29-52 - 24

Name  
**Continuation Sheet**

Number 9 Page 1

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Bowers, Martha H.

2005 Maryland Inventory of Historic Property Forms for Buildings 16 and 18, NSWCCD. Prepared for the United States Navy by The Louis Berger Group, Inc., Morristown, New Jersey. On file. Maryland Historical Trust. Crownsville.

Brownell, W.F.

1962 *Two New Hydromechanics Research Facilities at the David Taylor Model Basin.* Hydromechanics Laboratory Research and Development Report No. 1690. Department of the Navy, David Taylor Model Basin, Carderock, Maryland.

Carlisle, Rodney

1987 *Where the Fleet Begins: A History of the David Taylor Research Center.* Prepared for the David Taylor Naval Ship R & D Center, Carderock, Maryland, by History Associates Incorporated.

Internet Navy Facilities Assets Data Store [INFADS]

2011 Various property records. Naval Facilities Engineering Command [NAVFAC] Washington.

McCarthy, Justin H.

1993 David Taylor Research Center. In *A Half-Century of Marine Technology, 1943-1993*, edited by H. Benford and W.A. Fox. Society of North American Mechanical Engineers, Jersey City, New Jersey.

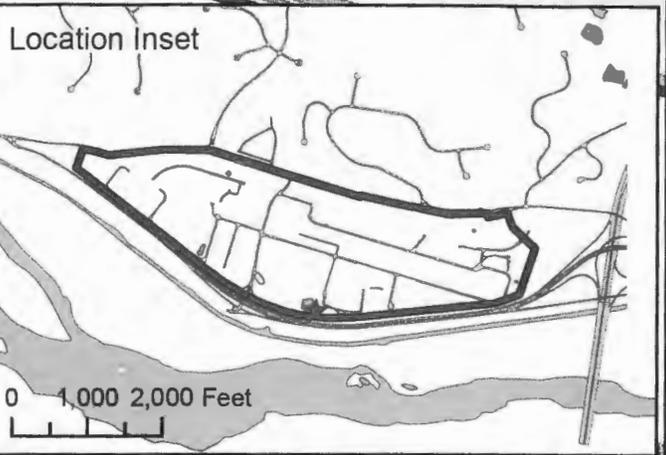
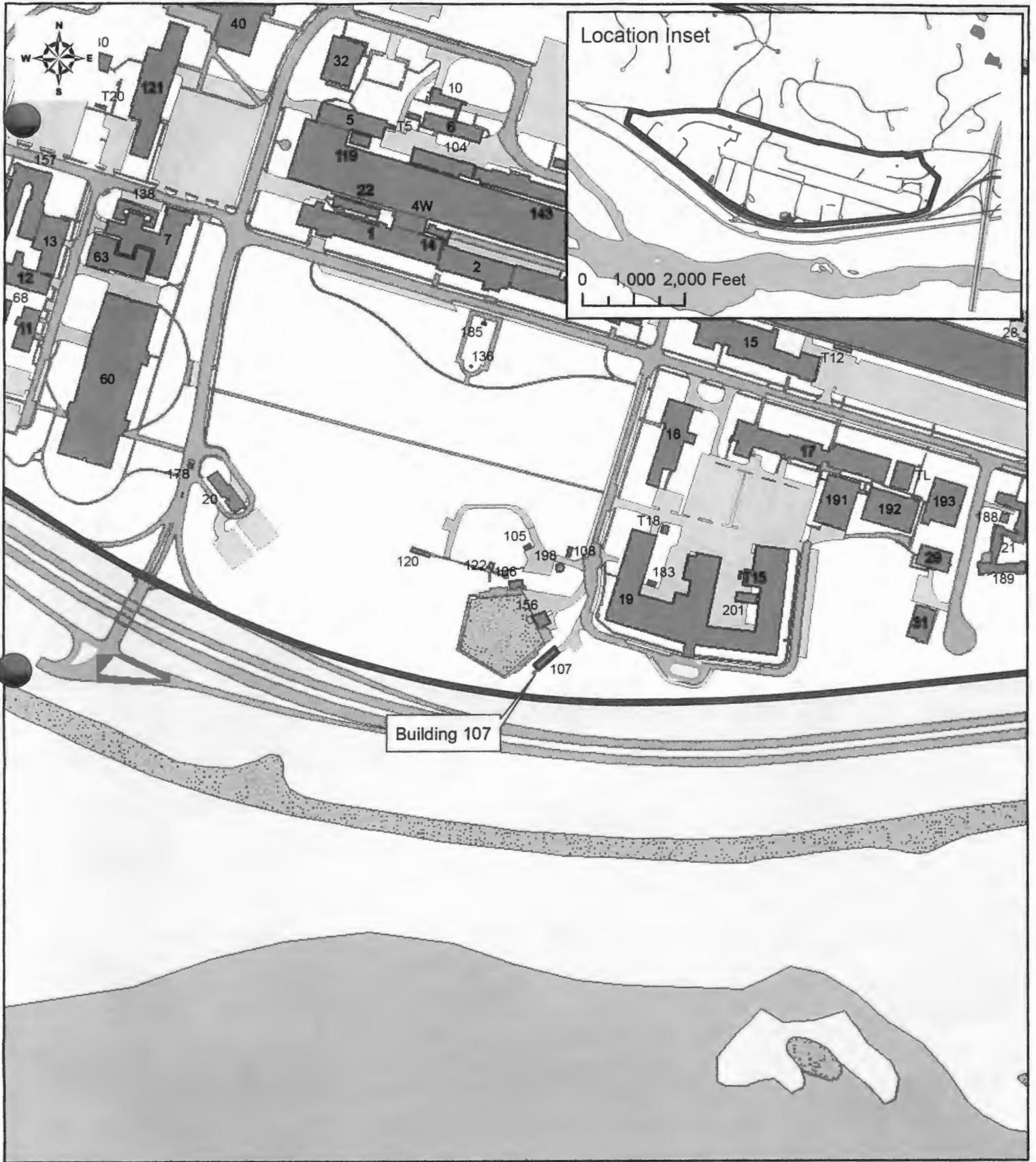
Melhuish, Geoffrey E.

1996 *Historical and Architectural Documentation of the Naval Surface Warfare Center Carderock Division, Maryland: Draft.* Prepared for Engineering Field Activity-Chesapeake, Washington, D.C., by R. Christopher Goodwin and Associates, Inc.



 Historic District  
 500 0 500 Feet

Naval Support Facility, Carderock  
 NSWCCD Historic District (MIHP No. M:29-52) 29  
 Building Number 107



Building 107

Structures
   
 Historic District
   
 100 0 100 Feet

Naval Support Facility, Carderock  
 NSWCCD Historic District (MIHP No. M:29-52) z4

Building Number 107



M: 29-52-29

NSWCCD HISTORIC DISTRICT (NSF CARDEROCK)

BLDG 107. TEST POND FILTER BUILDING

MONTGOMERY COUNTY, MD

LOUIS BERGER GROUP

4/2010

MDSHPO

NORTHEAST ELEVATION, LOOKING WEST

PHOTO 1 OF 2



M: 29-52-29

NSWCCD HISTORIC DISTRICT (NSF CARDEROCK)

BLDG 107. TEST POND FILTER BUILDING

MONTGOMERY COUNTY, MD

LOUIS BERGER GROUP

4/2010

MDSHPO

SOUTHEAST ELEVATION, LOOKING NORTHWEST

PHOTO 2 OF 2