

**Maryland Historical Trust
Determination of Eligibility Form**

Property Name: Building 6, Boiler House and Substation Inventory Number: M: 29-52-24
 Address: 9500 MacArthur Boulevard Historic District: Yes X 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: X Eligibility Recommended Eligibility Not Recommended
 Criteria: X A B X 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: X 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 elevation 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 6 is recommended as contributing to the NSWCCD Historic District.

See paper MIHP form for more information.

MARYLAND HISTORICAL TRUST REVIEW	
Eligibility Recommended: <u>X</u>	Eligibility Not Recommended: <u> </u>
Criteria: <u>X</u> A <u> </u> B <u>X</u> C <u> </u> D	Considerations: <u> </u> A <u> </u> B <u> </u> C <u> </u> D <u> </u> E <u> </u> F <u> </u> G
MHT Comments:	
<u>Amanda Apple</u> <i>AA</i>	<u>Thursday, June 26, 2014</u>
Reviewer, Office of Preservation Services	Date
<u>Peter Kurtze</u>	<u>Thursday, June 26, 2014</u>
Reviewer, National Register Program	Date

Building 6, Boiler House and Substation
NSWCCD Historic District
MIHP # M:29-52 -- 24
Montgomery County
West Bethesda
1939
Public

Building 6 is located in the central portion of the 183.6-acre Naval Support Facility (NSF) Carderock, formerly known as the Naval Surface Warfare Center Carderock Division (NSWCCD). 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 David Taylor Model Basin 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 in the historic district. Building 6 is a contributing resource in the NSF Carderock Historic District.

Building 6 (Boiler House and Substation) stands on the northwest end of the model basin (Building 4). Building 10 is attached to the north elevation of Building 6. A boiler chimney is located along the northwest side of Building 6. Building 6 was built in 1939 and shares many of the design details of Buildings 1-3, the primary buildings of NSF Carderock. Building 6 is two stories high with a one-story rectangular wing attached to the east elevation of the main block (1951). Similar to Buildings 1-3, Building 6 is constructed of poured concrete block and has clean, vertical lines indicative of the Art Deco and Art Moderne styles. The building has a flat parapet roof, and the main block features glass-block windows with tiered concrete surrounds, also characteristic of this style. The foundations of both the main block and the wing have a concrete watertable along the main (south) elevation. The wing, located on the east elevation of the main block, is constructed of poured concrete, is capped with a flat roof, and has multi-light metal-sash windows. Building 6 was built as a boiler house and substation to support Buildings 1-4 and it continues in this capacity today.

7. Description

Inventory No. M: 29-52-24

Condition

excellent deteriorated
 good ruins
 fair altered

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

Building 6 is located in the central 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 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 6 is a contributing resource in the NSF Carderock Historic District.

Building 6 (Boiler House and Substation) stands adjacent to the northwest end of the model basin (Building 4). Building 10 is attached to the north elevation of Building 6. A boiler chimney is located along the northwest side of the building. Built in 1939 along with Buildings 1-4, the main block of Building 6 stands two stories above a solid concrete foundation and is three bays wide. A one-story rectangular wing is attached to the east elevation of the main block and was built concurrently with the main block. Similar to Buildings 1-3, Building 6 is constructed of poured concrete block and has clean, vertical lines indicative of the Art Deco and Art Moderne styles. The building has a flat parapet roof, and the main block features glass-block windows with tiered concrete surrounds, also characteristic of this style. The foundations of both the main block and the wing have a concrete watertable along the main (south) elevation.

The main (south) elevation of the main block is three bays wide and is symmetrically fenestrated with three large inset openings. The openings are flanked by concrete reeded surrounds. The center bay holds the main entrance to the building. It holds a large opening that has been partially enclosed with metal panels with a single-leaf metal door. The upper portion of the center opening holds glass blocks. The entrance is flanked by two large vertical window openings that hold glass blocks. The one-story wing is pierced with 30-light metal-sash windows with concrete sills. The west elevation of the main block has one large opening similar to the openings on the façade and holds a large glass-block window. The rear (north) elevation has three large glass-block windows that have the same detailing as the façade.

The one-story wing was constructed in two phases and serves as an electrical substation. The first section, built in 1939, is attached to the east elevation of the main block and is two bays wide. The exterior walls are covered in poured concrete panels. The south elevation is symmetrically fenestrated by two 25-light metal-sash windows with concrete sills. The windows are inset and have a squared concrete surround. The north elevation is unfenestrated. The second section of the wing was built in 1951 and is attached to the east elevation of the first and is one bay wide and slightly smaller in depth. The south elevation has a large opening that appears to have been partially enclosed with concrete on the lower portion and fitted with a single-leaf metal door. The area above the door holds an 18-light metal-sash window. The north elevation of the second section has one 25-light metal-sash window.

The boiler chimney is approximately 30 feet high and constructed of cast concrete. It is a round chimney stack with four vertical concrete panels that give it a sculptural quality that is in keeping with the style of the boiler house.

8. Significance

Inventory No. M: 29-52-24

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 checked="" 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: _____

Specific dates 1938-1970 **Architect/Builder** U.S. Navy, Bureau of Yards and Docks

Construction dates 1939, 1951 addition

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.)

Significance Summary

In 1985 the DTMB and associated buildings (Buildings 1-4) were listed in the National Register of Historic Places. 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 the 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 built resources were recorded at NSF Carderock and 44 were determined as contributing (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 6 (Boiler House and Substation) was constructed as a support building for the DTMB when the installation was built in 1939. The building is considered a contributing element in the National Register-eligible NSF Carderock Historic District as it was built concurrently with the first buildings constructed on the campus. Although it has a 1951 addition, the building retains a high level of integrity.

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.

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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).

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

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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.

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 6, Boiler House and Substation

Although constructed as a utilitarian support building for Buildings 1-4, Building 6 was designed with details and stylistic features similar to those on the main buildings. The building is characteristic of Art Deco and Art Moderne architecture built by the United States Government during the 1940s. The one-story wing, which holds the electrical substation, was expanded in 1951.

9. Major Bibliographical References

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See continuation sheet.

10. Geographical Data

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

Verbal boundary description and justification

The boundary of the property occupies the footprint of the building within NSF Carderock located in West Bethesda.

11. Form Prepared by

name/title	Patti Kuhn, Architectural Historian		
organization	The Louis Berger Group, Inc.	date	4/4/2011
street & number	1250 23 rd 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

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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

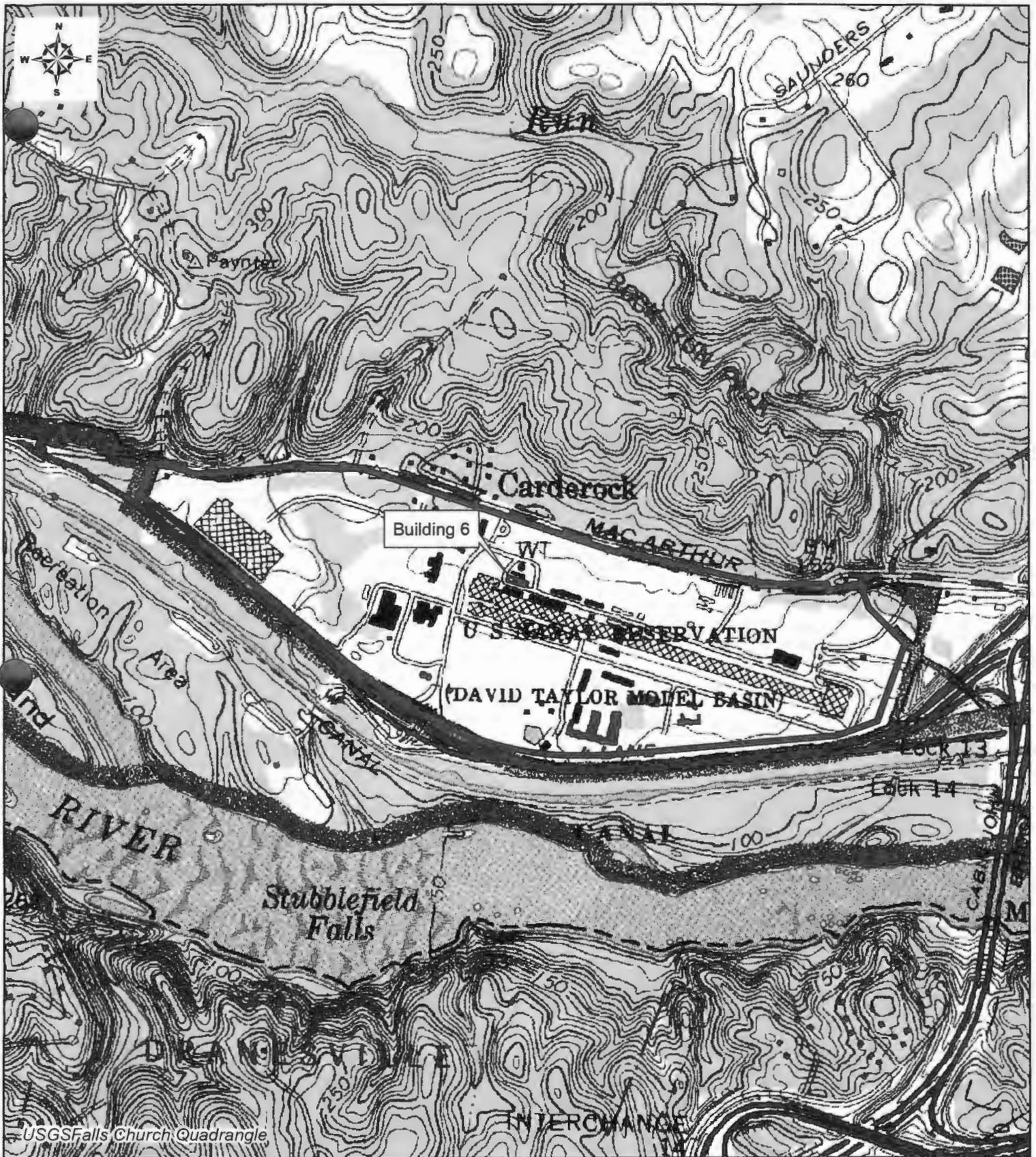
1987 *Where the Fleet Begins: A History of the David Taylor Research Center.* Prepared for the David Taylor Naval Ship R & D Center, Carderock, Maryland, by History Associates Incorporated.

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.

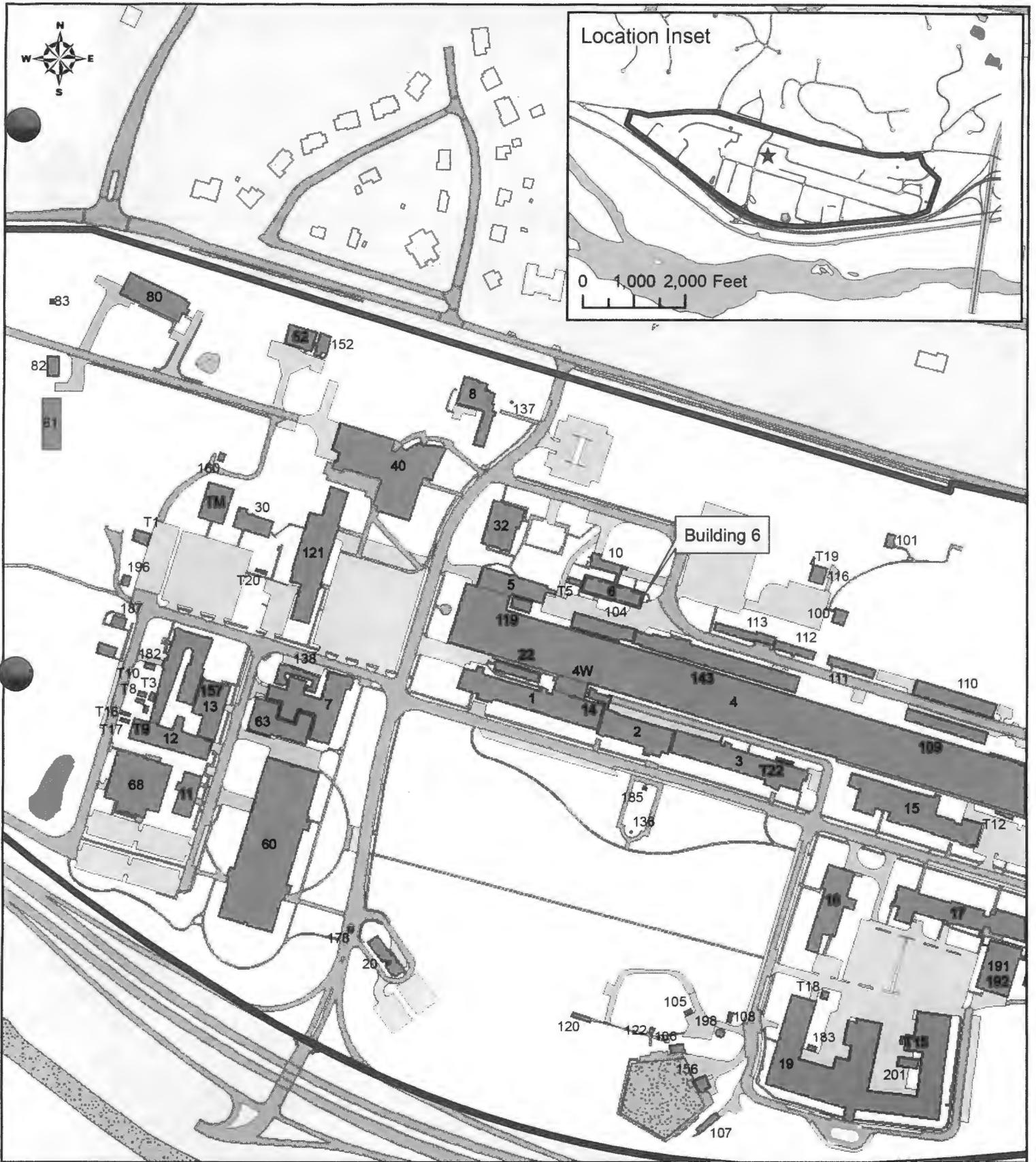
Melhuish, Geoffrey E.

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) 24
 Building Number 6



Naval Support Facility, Carderock
 NSWCCD Historic District (MIHP No. M:29-52)24

Building Number 6

Structures
 Historic District
 100 0 100 Feet



M: 29-52-24

NSWCCO HISTORIC DISTRICT (NSF CARDEROCK)

BLDG 6. BOILER HOUSE

MONTGOMERY COUNTY, MD

LOUIS BERGER GROUP

4/2010

MDSHPO

SOUTH ELEVATION, LOOKING NORTHWEST

PHOTO 1 OF 2



M: 29-52-24

NSWCCD HISTORIC DISTRICT (NSF CARDEROCK)

BLDG 6. BOILER HOUSE

MONTGOMERY COUNTY, MD

LOUIS BERGER GROUP

4/2010

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SOUTH ELEVATION, LOOKING NORTHEAST

PHOTO 2 OF 2