# Maryland Historical Trust
## Determination of Eligibility Form

**Property Name:** Facility 145, Water Tank **Inventory Number:** M: 29-52-31

**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 145 is recommended as contributing to the NSWCCD Historic District.

See paper MIHP form for more information.

**MARYLAND HISTORICAL TRUST REVIEW**

**Eligibility Recommended:** X **Eligibility Not Recommended:** ___

**Criteria:** X A ___ B X C ___ D **Considerations:** ___ A ___ B ___ C ___ D ___ E ___ F ___ G

**MHT Comments:**

Amanda Apple — Thursday, June 26, 2014

**Reviewer, Office of Preservation Services** — **Date**

Peter Kurtze — Thursday, June 26, 2014

**Reviewer, National Register Program** — **Date**



201204174

Facility 145, Water Tank
NSF Carderock Historic District
MIHP # M:29-52-31
Montgomery County
West Bethesda
1948
Public

Facility 145 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 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. Facility 145 is a contributing resource in the NSF Carderock Historic District.

Facility 145, a water tank, stands on the north side of Building 10. Built in 1948, this elevated water tank is supported by six metal legs set in concrete footings. The water tank is approximately 142 feet in height. The structure also serves as a structure on which telecommunications antennas are collocated.

# Maryland Historical Trust
# Maryland Inventory of
# Historic Properties Form

Inventory No. M: 29-52 - 31

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

| | |
|---|---|
| historic | Water Tank |
| other | Facility 145, Water Tank (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, Naval District Washington | | | | |
| 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
__X__ Other: Contributing Resource in National Register-Eligible Historic District

## 6. Classification

**Category**
_____district
_____building(s)
__X__structure
_____site
_____object

**Ownership**
__X__public
_____private
_____both

**Current Function**
_____agriculture
_____commerce/trade
__X__defense
_____domestic
_____education
_____funerary
__X__government
_____health care
_____industry
_____landscape
_____recreation/culture
_____religion
_____social
_____transportation
_____work in progress
_____unknown
_____vacant/not in use
_____other:

**Resource Count**

| Contributing | Noncontributing | |
|---|---|---|
| _____ | _____ | buildings |
| _____ | _____ | sites |
| __1__ | _____ | structures |
| _____ | _____ | objects |
| __1__ | _____ | Total |

**Number of Contributing Resources previously listed in the Inventory**

_____

# 7. Description

Inventory No. M: 29-52-31

**Condition**

___ excellent ___ deteriorated
X_ 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.

Facility 145 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. Facility 145 is a contributing resource in the NSF Carderock Historic District.

Facility 145, a water tank, stands on the north side of Building 10. Built in 1948, this elevated water tank is supported by six metal legs set in concrete footings. The water tank is approximately 142 feet high. The structure also serves as a structure on which telecommunications antennas are located.

## 8. Significance

Inventory No. M: 29-52 -31

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

**Specific dates** 1938-1970 **Architect/Builder**

**Construction dates** 1948

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 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).

The water tank (Facility 145) 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).

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.

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.

*Facility 145, Water Tank*

The water tank was erected in 1948 a support structure for NSF Carderock. It was erected at a cost of $52,970 in 1948 (INFADS 2011).

## 9. Major Bibliographical References

Inventory No. M: 29-52-31

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 is the footprint of Facility 145 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 23rd 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: 29-52-31

Name
**Continuation Sheet**

Number 9 Page 1


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.

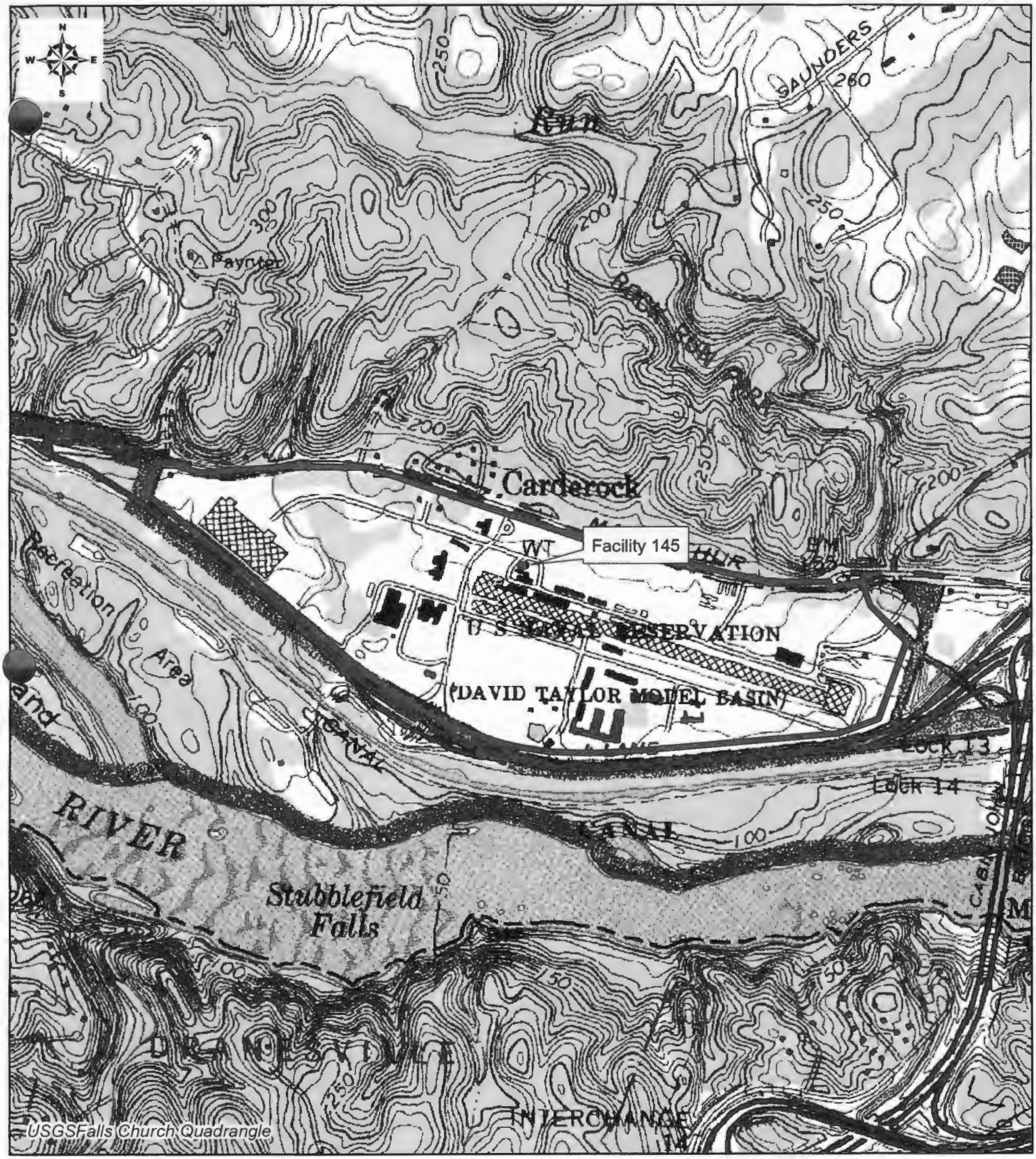
Brownell, W.F.
1962 *Two New Hydromechanics Research Facilities at the David Taylor Model Basin.* Hydromechanics Laboratory Research and Development Report No. 1690. Department of the Navy, David Taylor Model Basin, Carderock, Maryland.

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.

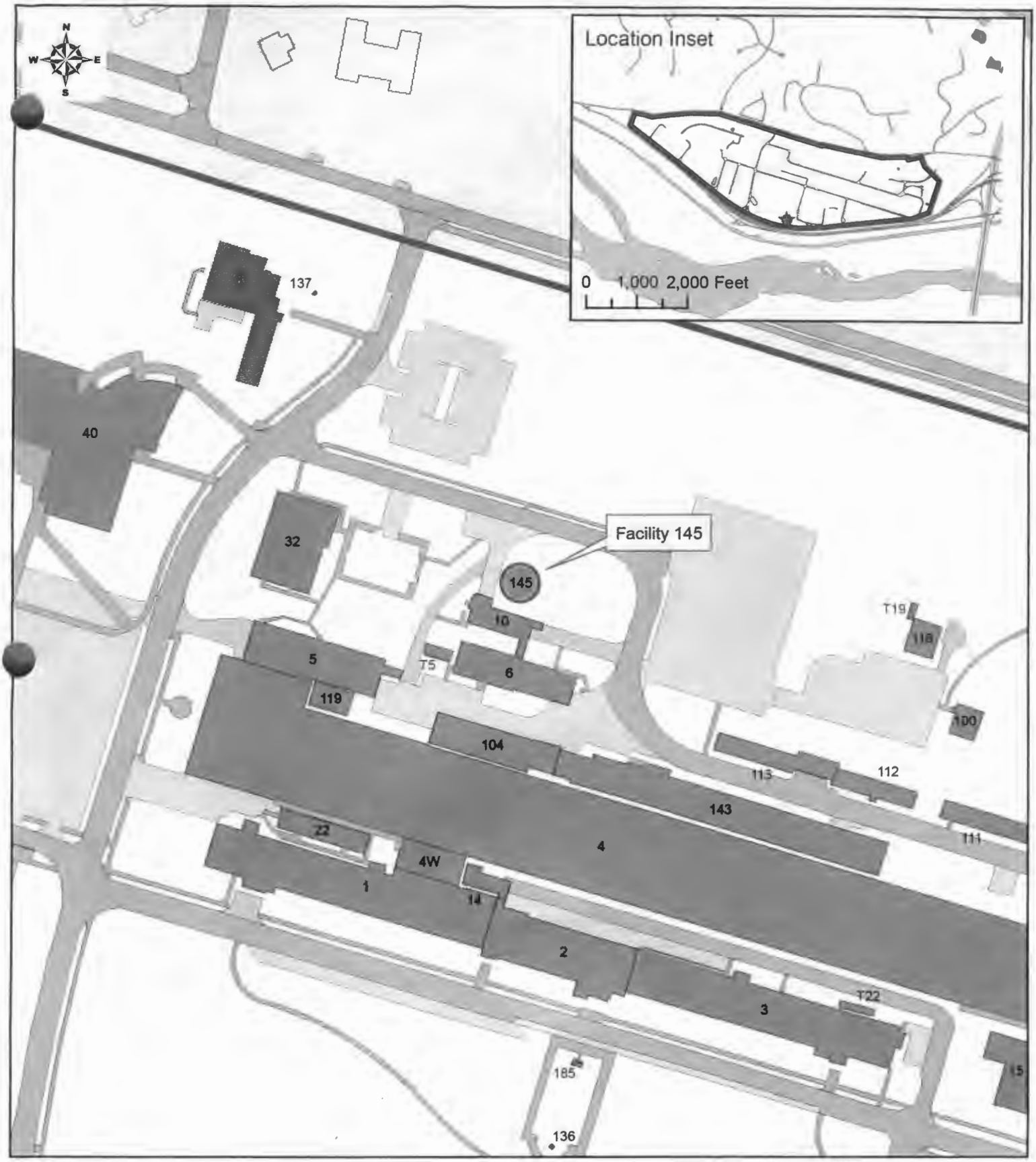



Historic District

500 0 500 Feet

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

Facility Number 145




Historic District

Structures

50 0 50 Feet

Naval Support Facility, Carderock
NSWCCD Historic District (MIHP No. M:29-52)-31

Facility Number 145

M: 29-52-31

NSWCCD HISTORIC DISTRICT (NSF CARDEROCK)

FACILITY 145. WATER TOWER

MONTGOMERY COUNTY, MD

LOUIS BERGER GROUP

4/2010

MDSHPO

LOOKING NORTHEAST

PHOTO 1 OF 1