PH0026018 MHT M-223

Form 10-300
(July 1969)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NHL

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY – NOMINATION FORM

(Type all entries – complete applicable sections)

STATE: Maryland
COUNTY: Montgomery
FOR NPS USE ONLY
ENTRY NUMBER: FEB 28 1973 | DATE:

SEE INSTRUCTIONS

1. NAME

COMMON: Cabin John Aqueduct

AND/OR HISTORIC: Cabin John Bridge, Old Cabin John Bridge, Union Arch, Washington Aqueduct Bridge Number 4, MacArthur Boulevard Bridge

2. LOCATION

STREET AND NUMBER: MacArthur Boulevard over Cabin John Creek & over Cabin John Parkway

CITY OR TOWN: Glen Echo

STATE: Maryland | CODE: 24 | COUNTY: Montgomery | CODE: 031

RECEIVED AUG 25 1972 NAT. REG.

3. CLASSIFICATION

CATEGORY (Check One)	OWNERSHIP		STATUS	ACCESSIBLE TO THE PUBLIC
☐ District ☐ Building	☒ Public	Public Acquisition:	☒ Occupied	Yes:
☐ Site ☒ Structure	☐ Private	☐ In Process	☐ Unoccupied	☐ Restricted
☐ Object	☐ Both	☐ Being Considered	☐ Preservation work in progress	☒ Unrestricted
				☐ No

PRESENT USE *(Check One or More as Appropriate)*

☐ Agricultural	☒ Government	☐ Park	☒ Transportation	☐ Comments
☐ Commercial	☐ Industrial	☐ Private Residence	☒ Other *(Specify)*	
☐ Educational	☐ Military	☐ Religious	bridge	
☐ Entertainment	☐ Museum	☐ Scientific	aqueduct	

4. OWNER OF PROPERTY

OWNER'S NAME: United States Government (Contact: U. S. Engineer District, Baltimore)

STREET AND NUMBER: P. O. Box 1715

CITY OR TOWN: Baltimore | STATE: Maryland | CODE: 24

5. LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC: Montgomery County Courthouse

STREET AND NUMBER: East Montgomery Avenue and North Washington Street

CITY OR TOWN: Rockville | STATE: Maryland | CODE: 24

6. REPRESENTATION IN EXISTING SURVEYS

TITLE OF SURVEY: Maryland Register of Historic Sites and Landmarks

DATE OF SURVEY: 1970 ☐ Federal ☒ State ☐ County ☐ Local

DEPOSITORY FOR SURVEY RECORDS: Maryland Historical Trust

STREET AND NUMBER: 94 College Avenue

CITY OR TOWN: Annapolis | STATE: Maryland | CODE: 24

STATE: Maryland
COUNTY: Montgomery
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7. DESCRIPTION

CONDITION	(Check One)					
	☒ Excellent	☐ Good	☐ Fair	☐ Deteriorated	☐ Ruins	☐ Unexposed
	(Check One)		(Check One)			
	☐ Altered	☒ Unaltered	☐ Moved	☒ Original Site		

DESCRIBE THE PRESENT AND ORIGINAL *(if known)* PHYSICAL APPEARANCE

Cabin John Aqueduct, located one-half mile west of Glen Echo, Maryland, and four-tenths of a mile north of the Potomac River, carries MacArthur Boulevard traffic on the bridge (E/W) over Cabin John Creek (N/S) and over the Cabin John Parkway (N/S). The Cabin John Aqueduct conduit is located within the bridge structure under the boulevard.

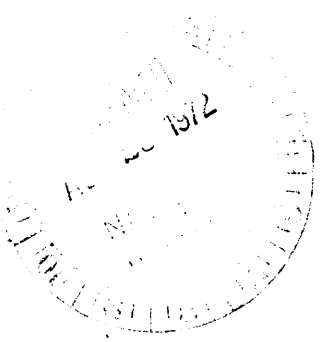
Cabin John Aqueduct is comprised of one principal arch segment of 110 degrees which has a span of 220 feet and a height at the center of 57 feet three inches. Five additional arches and four spandrel spans form the remainder of the structure, but they are concealed from view in the appended photograph. The weight of the principal arch rests on its own pilings.

The facing stone of the Aqueduct is Senecca (Maryland) sandstone except for Quincy (Massachusetts) granite in the arch ring and Port Deposit (Maryland) granite in the skewbacks. The backing stone, dug from a nearby quarry, is "blue" or "Potomac" gneiss. The lead and brick lined conduit, with an average fall of nine inches per mile, acts as an arch, providing support for the bridge. A steel door in each abutment provides access to the interior of the bridge.

The deck of the Cabin John Aqueduct, originally of sandstone, was turned into an asphalt roadbed in 1873. The roadway is 17 feet two inches wide over the main arch and 19 feet two inches wide over the abutments and approach spans.

The flat surface of the aqueduct is relieved by two projecting courses at the parapet.

Cabin John Aqueduct is on its original site.



SEE INSTRUCTIONS

8. SIGNIFICANCE

PERIOD *(Check One or More as Appropriate)*

- ☐ Pre-Columbian
- ☐ 15th Century
- ☐ 16th Century
- ☐ 17th Century
- ☐ 18th Century
- ☒ 19th Century
- ☐ 20th Century

SPECIFIC DATE(S) *(If Applicable and Known)* 1869

AREAS OF SIGNIFICANCE *(Check One or More as Appropriate)*

- ☐ Aboriginal
- ☐ Prehistoric
- ☐ Historic
- ☐ Agriculture
- ☒ Architecture
- ☐ Art
- ☐ Commerce
- ☐ Communications
- ☐ Conservation
- ☐ Education
- ☒ Engineering
- ☐ Industry
- ☐ Invention
- ☐ Landscape Architecture
- ☐ Literature
- ☐ Military
- ☐ Music
- ☐ Political
- ☐ Religion/Philosophy
- ☐ Science
- ☐ Sculpture
- ☐ Social/Humanitarian
- ☐ Theater
- ☒ Transportation
- ☐ Urban Planning
- ☒ Other *(Specify)* construction

STATEMENT OF SIGNIFICANCE

SEE INSTRUCTIONS

ARCHITECTURAL SIGNIFICANCE

The 220 foot span single arch was, from 1863-1903, the unchallenged longest stone masonry arch in the world. Designed by ~~Montgomery Cunningham~~ Meigs (1816-1892) of the United States Army Corps of Engineering, it was an innova~~tional feat of nineteenth-century~~ engineering. The ingenious features of the aqueduct include the method of the control of water flow and water distribution as designed by Meigs. The use of the water main itself as a supporting member of the arch is an innovation.

The strength and durability of the arch is further attested to by the fact that it remains in continuous use (1971) to carry E/W traffic on MacArthur Boulevard over Cabin John Creek. The aqueduct inside the bridge provided the principal source of water to Washington, D. C., throughout the late nineteenth century. At peak capacity the conduit transported forty million gallons of water per day to the District of Columbia. By 1968 the aqueduct supplied the city with twenty percent of its water.

HISTORICAL SIGNIFICANCE

The United States Congress, fearing a water famine in 1852 in Washington, D. C., ordered the construction of an aqueduct. President Millard Fillmore wrote the War Department on September 13, 1852, initiating the construction of an aqueduct.

On November 3, 1852, the War Department gave Lieutenant Meigs, Army Corps of Engineers, the responsibility for the construction of the aqueduct.

Georgia-born Meigs, who graduated fifth in the Class of 1836 from the United States Military Academy, West Point, was a major architect-engineer in the Washington, D. C. area as well as an outstanding soldier. His first, and favorite, design commission was the Cabin John Aqueduct, known then

SEE CONTINUATION SHEET

9. MAJOR BIBLIOGRAPHICAL REFERENCES

Zerah Colburn and William H. Maw (eds.), The Waterworks of London, Together With A Series of Articles on Various Other Waterworks, London: E. & F. N. Spon, 1867.

Cabin John File, Office of Robert M. Vogel, Division of Mechanical and Civil Engineering, Smithsonian Institution, Washington, D. C.

SEE CONTINUATION SHEET

10. GEOGRAPHICAL DATA

LATITUDE AND LONGITUDE COORDINATES DEFINING A RECTANGLE LOCATING THE PROPERTY						OR	LATITUDE AND LONGITUDE COORDINATES DEFINING THE CENTER POINT OF A PROPERTY OF LESS THAN TEN ACRES					
CORNER	LATITUDE			LONGITUDE				LATITUDE			LONGITUDE		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
NW	°	'	"	°	'	"		38	58	22	77	08	57
NE	°	'	"	°	'	"							
SE	°	'	"	°	'	"							
SW	°	'	"	°	'	"							

APPROXIMATE ACREAGE OF NOMINATED PROPERTY: 4 acres

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE:	CODE	COUNTY	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE

11. FORM PREPARED BY

NAME AND TITLE:
Nancy Miller, Historian

ORGANIZATION
Maryland Historical Trust

DATE
May 24, 1972

STREET AND NUMBER:
94 College Avenue

CITY OR TOWN:
Annapolis

STATE
Maryland

CODE
24

12. STATE LIAISON OFFICER CERTIFICATION

As the designated State Liaison Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service. The recommended level of significance of this nomination is:

National ☐ State ☒ Local ☐

Name Orlando Ridout IV
Orlando Ridout IV

Title State Liaison Officer for Maryland

Date May 25, 1972

NATIONAL REGISTER VERIFICATION

I hereby certify that this property is included in the National Register.

Robert Ran Utley
Chief, Office of Archeology and Historic Preservation

Date 2/28/73

ATTEST:

Keeper of The National Register

Date 2-27-73

SEE INSTRUCTIONS

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UNITED STATES DEPARTMENT OF THE INTERIOR
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NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY - NOMINATION FORM

(Continuation Sheet)

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Maryland	
COUNTY	
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FOR NPS USE ONLY	
ENTRY NUMBER	DATE
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(Number all entries)

Cabin John Aqueduct

#8. SIGNIFICANCE continued

as the "Union Arch," the mid-nineteenth-century aqueduct which supplied Washington, D. C. with water. The innovational features of the aqueduct, as well as those of the other three bridges in the aqueduct system, in particular the elliptical Bridge Number Three, set this project as a major landmark in the history of American engineering as well as in Meigs' career. Meigs' other engineering accomplishments include his design and supervision of the construction of the wings and dome on the United States Capitol (1853-1859); supervision of the extension of the General Post Office in the District of Columbia (1855-1859); plans for the War Department Building of 1867; supervision of the National Museum (1876); and the extension of the Washington aqueduct (1876). Meigs, in 1882, after retiring from the army, was the architect for the Pension Building in Washington, D. C., a National Register of Historic Places property.

As a soldier, Meigs served the United States in the Civil War. In early April 1861, he was sent on a secret mission, for President Abraham Lincoln, to Fort Dickens in Florida. The following month he was promoted to Brigadier General and became Quartermaster General. While serving in General U. S. Grant's army at the battles of Fredericksburg and Belle Plain, both in Virginia, in 1864 and under General William Tecumseh Sherman in Savannah, Georgia, in January of 1865, his outstanding service won him the praise of James G. Blaine and Secretary of State William H. Seward, as well as a promotion to Major General.

Meigs died in 1892 and was buried with high honors at the National Cemetery, Arlington, Virginia.

In 1853 before Meigs began construction of the aqueduct for Washington, D. C., he wrote an extensive outline of his design plans including a projection of the growth of the population of Washington and a discussion of a method for filtering water at a time when that subject was virtually unknown.

Construction of the Cabin John Aqueduct began in 1853 under the direction of Meigs. Alfred L. Rives, educated at the University of Parish, was the resident engineer.

In order to speed efficient construction of the aqueduct and bridge, an additional lock was installed in the Chesapeake

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(Continuation Sheet)

STATE	
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COUNTY	
Montgomery	
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(Number all entries)

Cabin John Aqueduct

#8. SIGNIFICANCE continued

and Ohio Canal 1,000 feet to the south, which dammed up Cabin John Creek allowing mule-drawn barges to float all necessary supplies to the site. Construction proceeded swiftly; by 1857 the main arch ring was completed. Progress slowed down after 1859 owing to a lack of funds; it was not until December 3, 1863 that the arch was completed. The aqueduct was put in operation on July 29, 1864.

The technical advances embodied by the design of the arch were immediately recognized in Europe in an English book (1867) on waterworks by Zerah Colburn and William H. Maw, and in Annals des Points et Chaussies, published in France in the 1860's. The significance of the aqueduct, however, failed to reach the American public until a later date.

During the Civil War the United States Army kept a constant guard over the aqueduct in order to protect the Capital's principal source of water.

Local residents used the aqueduct as a bridge over Cabin John Creek. The traffic necessitated the construction of an asphalt road bed in 1873 in addition to parapets as guard rails.

The anomosity during the Civil War affected the bridge when Jefferson Davis' name was effaced from a plaque on the arch. Davis was Secretary of War in 1853 when construction began. In 1862 the Secretary of the Department of the Interior ordered Robert McIntyre, a contractor, to remove Davis' name under the cover of darkness. The name of the Confederate President was restored in 1909 by order of President Theodore Roosevelt.

One of the unique features of the Cabin John Aqueduct, the steel doors in each abutment giving access to the interior of the arch for maintenance, also served another function. According to local history the interior of the bridge was used to hide fugitive slaves fleeing to Canada on the Underground Railroad.

The Union Arch, so called at the time of its construction, became known as Cabin John Bridge--named for Captain John, a hermit, who lived in a cabin near the bridge site. In 1962 when a highway bridge over the Potomac at Cabin John Creek was

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Maryland	
COUNTY	
Montgomery	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE
	FEB 28 1973

(Number all entries)

Cabin John Aqueduct

#8. SIGNIFICANCE continued

called Cabin John Bridge, the older aqueduct bridge was named "Old Cabin John Bridge."

#9. BIBLIOGRAPHICAL REFERENCES continued

Dictionary of American Biography, 23 vols., New York: Charles Scribner's Sons, 1933, XII.

"Wizard of the Water," Evening Star (Washington, D. C.), January 16, 1892.

"Union Arch, Washington Aqueduct," Scientific American, XLV (July 23, 1881).

Morris Fradin, "Old Cabin John Bridge Links the United States to Graceful Buggy Days," The Potomac Current (Washington) January 11, 1968.

Norman Thompson, Western Gateway to the National Capital (Rockville, Maryland), published by the author, 1950.

Harry W. Hill, Maryland's Colonial Charm Portrayed in Silver, Baltimore: Waverly Press, 1938.

Skramstad, Harold. "Montgomery Meigs: the Engineer as Architect in Washington," Abstracts of Papers Presented at the Twenty-third Annual Meeting of the Society of Architectural Historians. Washington, D. C., January 29--February 1, 1970. Journal of the Society of Architectural Historians. XXIX. (October 1970), 267.

Fradin, Morris. "Arch With a History." Maryland. (Winter 1970), 14-15.

House of Representatives Documents, Number 1329, 61st Congress, 3rd Session.

MHT M-223

Form 10-301
(July 1969)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES

PROPERTY MAP FORM

(Type all entries - attach to or enclose with map)

STATE	
Maryland	
COUNTY	
Montgomery	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE
	FEB 28 1973

SEE INSTRUCTIONS

1. NAME

COMMON: Cabin John Aqueduct

AND/OR HISTORIC: Cabin John Bridge, Old Cabin John Bridge, Union Arch, /Washington Aqueduct Bridge Number 4, MacArthur Boulevard /Bridge

2. LOCATION

STREET AND NUMBER:
MacArthur Blvd. over Cabin John Creek & over Cabin John Parkway

CITY OR TOWN:
Glen Echo

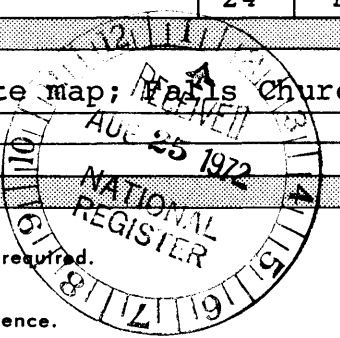
STATE:	CODE	COUNTY:	CODE
Maryland	24	Montgomery	031

3. MAP REFERENCE

SOURCE: U.S.G.S. 7.5 minute map; Falls Church Quadrangle (Md.)

SCALE: 1: 24,000

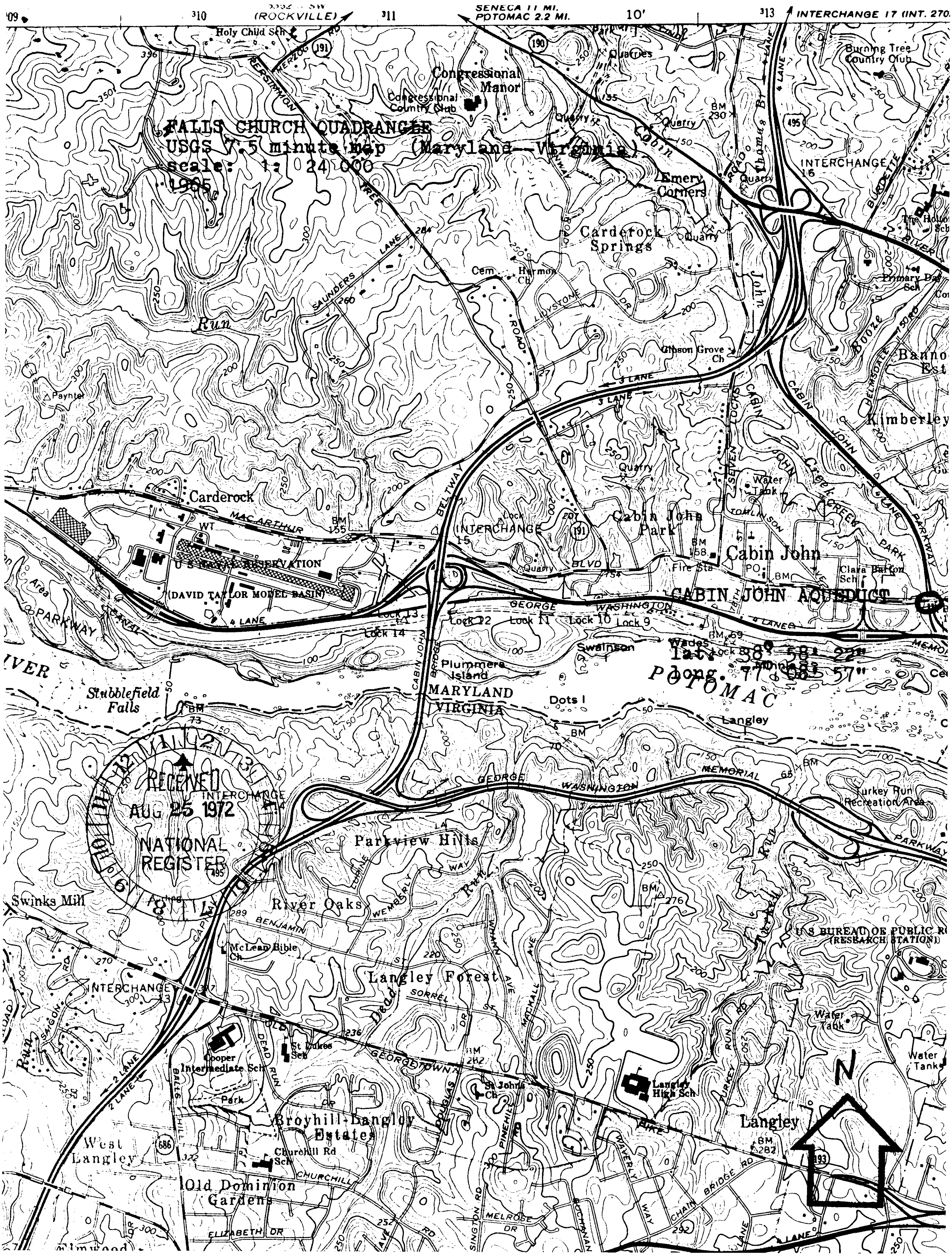
DATE: 1965



4. REQUIREMENTS

TO BE INCLUDED ON ALL MAPS

1. Property broundaries where required.
2. North arrow.
3. Latitude and longitude reference.


FALLS CHURCH QUADRANGLE
USGS 7.5 minute map (Maryland--Virginia)
scale: 1: 24 000
1965
(ROCKVILLE)
SENECA 11 MI.
POTOMAC 2.2 MI.
INTERCHANGE 17
Holy Child Sch
Congressional Manor
Congressional Country Club
Burning Tree Country Club
Quarries
Emery Corners
Carderock Springs
Cem
Harmon Ch
Gibson Grove Ch
Paynter
Carderock
MAC ARTHUR
U S NAVAL RESERVATION
(DAVID TAYLOR MODEL BASIN)
INTERCHANGE 15
Cabin John Park
Cabin John
Fire Sta
Clara Barton Sch
CABIN JOHN AQUEDUCT
GEORGE WASHINGTON
PARKWAY
Lock 14
Lock 13
Lock 12
Lock 11
Lock 10
Lock 9
Lock 8
Swainson
lat. 38° 58' 22"
long. 77° 08' 57"
POTOMAC
RIVER
Stubblefield Falls
Plummers Island
MARYLAND
VIRGINIA
Dots I
Langley
Kimberley
Turkey Run Recreation Area
GEORGE WASHINGTON MEMORIAL PARKWAY
RECEIVED
AUG 25 1972
NATIONAL REGISTER
Parkview Hills
River Oaks
Swinks Mill
BENJAMIN
McLean Bible Ch
Langley Forest
U S BUREAU OF PUBLIC R
(RESEARCH STATION)
INTERCHANGE 13
Cooper Intermediate Sch
St Lukes Sch
St Johns Ch
Langley High Sch
GEORGETOWN PIKE
Park
Broyhill-Langley Estates
West Langley
Churchill Rd Sch
Old Dominion Gardens
CHURCHILL
MELROSE
ELIZABETH DR
CHAIN BRIDGE RD
Water Tank
N