

NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY - NOMINATION FORM

(Type all entries - complete applicable sections)

STATE: Maryland	
COUNTY: Montgomery	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

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
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3. CLASSIFICATION

CATEGORY (Check One)	OWNERSHIP	STATUS	ACCESSIBLE TO THE PUBLIC
<input type="checkbox"/> District <input type="checkbox"/> Building <input type="checkbox"/> Site <input checked="" type="checkbox"/> Structure <input type="checkbox"/> Object	<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Both	Public Acquisition: <input type="checkbox"/> In Process <input type="checkbox"/> Being Considered	Yes: <input type="checkbox"/> Restricted <input checked="" type="checkbox"/> Unrestricted <input type="checkbox"/> No
PRESENT USE (Check One or More as Appropriate)			
<input type="checkbox"/> Agricultural <input type="checkbox"/> Commercial <input type="checkbox"/> Educational <input type="checkbox"/> Entertainment	<input checked="" type="checkbox"/> Government <input type="checkbox"/> Industrial <input type="checkbox"/> Military <input type="checkbox"/> Museum	<input type="checkbox"/> Park <input type="checkbox"/> Private Residence <input type="checkbox"/> Religious <input type="checkbox"/> Scientific	<input checked="" type="checkbox"/> Transportation <input checked="" type="checkbox"/> Other (Specify) bridge 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
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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
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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
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SEE INSTRUCTIONS

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7. DESCRIPTION

CONDITION	(Check One)					
	<input checked="" type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Deteriorated	<input type="checkbox"/> Ruins	<input type="checkbox"/> Unexposed
	(Check One)			(Check One)		
	<input type="checkbox"/> Altered	<input checked="" type="checkbox"/> Unaltered		<input type="checkbox"/> Moved	<input checked="" type="checkbox"/> 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 Seneca (Maryland) sandstone except for Quincy (Massachusetts) granite in the arch ring and Port Deposit (Maryland) granite in the skew-backs. 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; 16th Century 18th Century 20th Century
 15th Century 17th Century 19th Century

SPECIFIC DATE(S) (If Applicable and Known)

~~1860~~ 1853-63

AREAS OF SIGNIFICANCE (Check One or More as Appropriate)

- | | | | |
|--|---|--|---|
| <input type="checkbox"/> Aboriginal | <input type="checkbox"/> Education | <input type="checkbox"/> Political | <input type="checkbox"/> Urban Planning |
| <input type="checkbox"/> Prehistoric | <input checked="" type="checkbox"/> Engineering | <input type="checkbox"/> Religion/Philosophy | <input checked="" type="checkbox"/> Other (Specify) |
| <input type="checkbox"/> Historic | <input type="checkbox"/> Industry | | <u>construction</u> |
| <input type="checkbox"/> Agriculture | <input type="checkbox"/> Invention | <input type="checkbox"/> Science | _____ |
| <input checked="" type="checkbox"/> Architecture | <input type="checkbox"/> Landscape Architecture | <input type="checkbox"/> Sculpture | _____ |
| <input type="checkbox"/> Art | <input type="checkbox"/> Literature | <input type="checkbox"/> Social/Humanitarian | _____ |
| <input type="checkbox"/> Commerce | <input type="checkbox"/> Military | <input type="checkbox"/> Theater | _____ |
| <input type="checkbox"/> Communications | <input type="checkbox"/> Music | <input checked="" type="checkbox"/> Transportation | _____ |
| <input type="checkbox"/> Conservation | | | _____ |

STATEMENT OF SIGNIFICANCE

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 innovative 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

SEE INSTRUCTIONS

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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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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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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.

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			LATITUDE AND LONGITUDE COORDINATES DEFINING THE CENTER POINT OF A PROPERTY OF LESS THAN TEN ACRES		
CORNER	LATITUDE		LONGITUDE		
	Degrees	Minutes Seconds	Degrees	Minutes	Seconds
NW	°	' "	°	' "	"
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

CODL: 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.

Chief, Office of Archeology and Historic Preservation

Date _____

ATTEST:

Keeper of The National Register

Date _____

SEE INSTRUCTIONS

NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY PHOTOGRAPH FORM

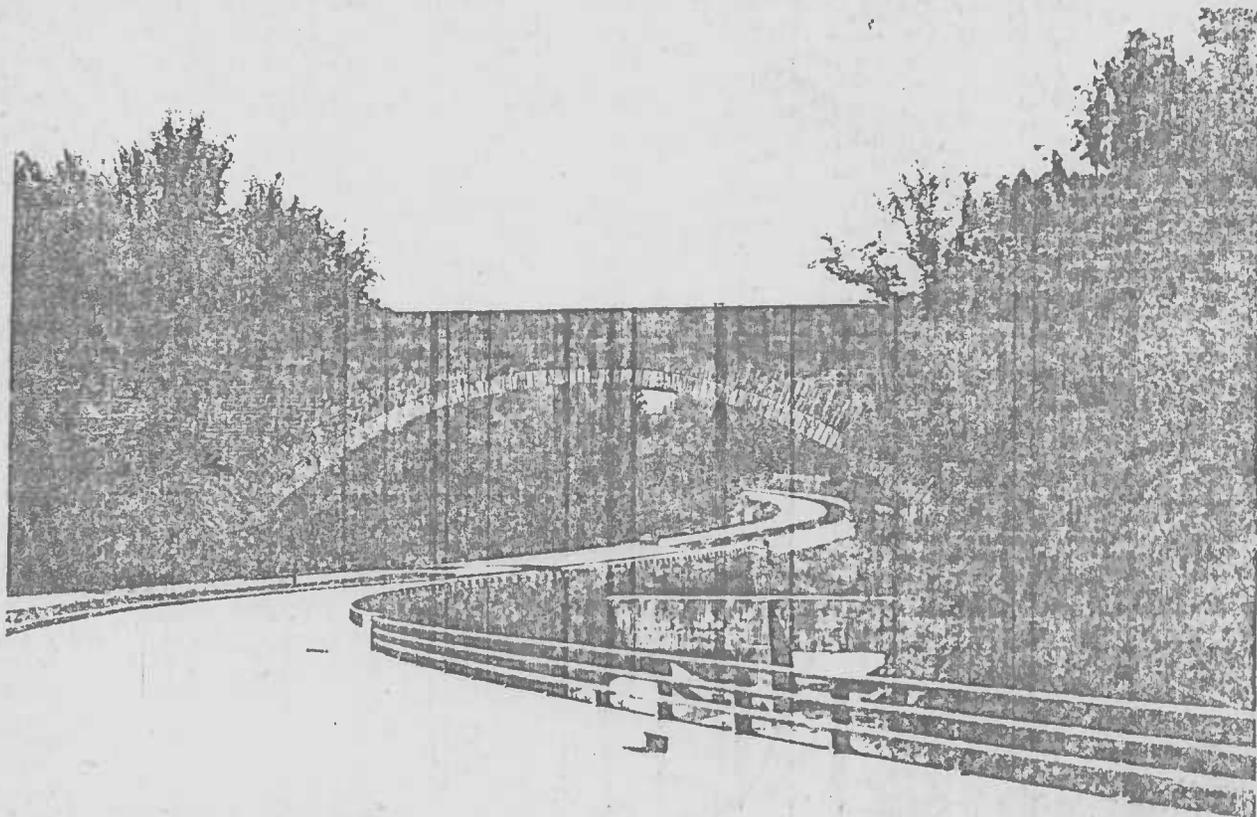
(Type all entries - attach to or enclose with photograph)

Maryland	
COUNTY	
Montgomery	
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SEE INSTRUCTIONS

1. NAME			
COMMON: Cabin John Aqueduct			
AND/OR HISTORIC: Cabin John Bridge, Old Cabin John Bridge, Union Arch			
2. LOCATION / Washington Aqueduct Bridge Number 4, MacArthur Boulevard			
STREET AND NUMBER: MacArthur Blvd. over Cabin John Creek & over Cabin John Parkway / Bridge			
CITY OR TOWN: Glen Echo			
STATE:	CODE	COUNTY:	CODE
Maryland	24	Montgomery	031
3. PHOTO REFERENCE			
PHOTO CREDIT: Michael Bourne			
DATE OF PHOTO: September 1969			
NEGATIVE FILED AT: Maryland Historical Trust			
94 College Avenue, Annapolis, Maryland 21401			
4. IDENTIFICATION			
DESCRIBE VIEW, DIRECTION, ETC.			
South elevation			

M: 35-37



NATIONAL REGISTER OF HISTORIC PLACES

PROPERTY MAP FORM

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

STATE	
Maryland	
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SEE INSTRUCTIONS

1. NAME

COMMON: Cabin John Aqueduct
 AND/OR HISTORIC: Cabin John Bridge, Old Cabin John Bridge, Union Arch

2. LOCATION /Washington Aqueduct Bridge Number 4, MacArthur Boulevard
 STREET AND NUMBER: MacArthur Blvd. over Cabin John Creek & over Cabin John Parkway /Bridge
 CITY OR TOWN: Glen Echo

STATE:	CODE	COUNTY:
Maryland	24	Montgomery

3. MAP REFERENCE 031

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 boundaries where required.
2. North arrow.
3. Latitude and longitude reference.

ACHS SUMMARY FORM

M:35-37

Name Cabin John Aqueduct:

2. Planning Area/Site Number 35-37

3. MNCPPC Atlas Reference

4. Address MacArthur Boulevard over
Cabin John Creek & over Cabin John Parkway

Map 21 Coordinate A-14

5. Classification Summary

Category Structure

Ownership Public

Public Acquisition --

Status Occupied

Accessible Unrestricted

Present use Government; Transportation; Bridge aqueduct

Previous Survey Recording _____ Federal x State _____ County _____ Local _____

National Register, 1972

6. Date 1859-1863

8. Apparent Condition

a. Excellent

c. Original Site

b. Unaltered

Description

Cabin John Aqueduct is a single arch bridge carrying traffic over Cabin John Creek and Parkway and containing a water conduit within its structure, It is built chiefly of Seneca sandstone and the weight of the arch rests on its own pilings. There are steel doors in each abutment for interior access. The roadway atop the aqueduct has been covered with asphalt.

10. Significance Architecture; Engineering; Transportation; Construction

Cabin John Aqueduct/Bridge is a viable link with the past and an architectural innovation unique in the era of its origin. The bridge, designed by Maj. Gen. Montgomery Cunningham Meigs, U.S. Army Corps of Engineers, was the world's longest (220 Ft.) stone masonry arch for 40 years. Outstanding features include the method of control of flow and distribution of water and use of the water main as an arch support. It has remained in continuous use since its completion and for many years was Washington's main water source. U.S. Congress ordered the bridge constructed in 1852 to prevent a water shortage in the capital. Guarded carefully during the Civil War, the removal of Jefferson Davis's name from a plaque in the bridge reflected the feeling of the time. Local history has it that fugitive slaves were hidden inside the structure. Union Arch later became known as Cabin John Bridge, said to be named for a hermit who lived in a nearby cabin. The Arch was completed in 1863 and the aqueduct put in operation in 1864.

11. Date researched 1972 Nancy Miller, Md. Historical Trust

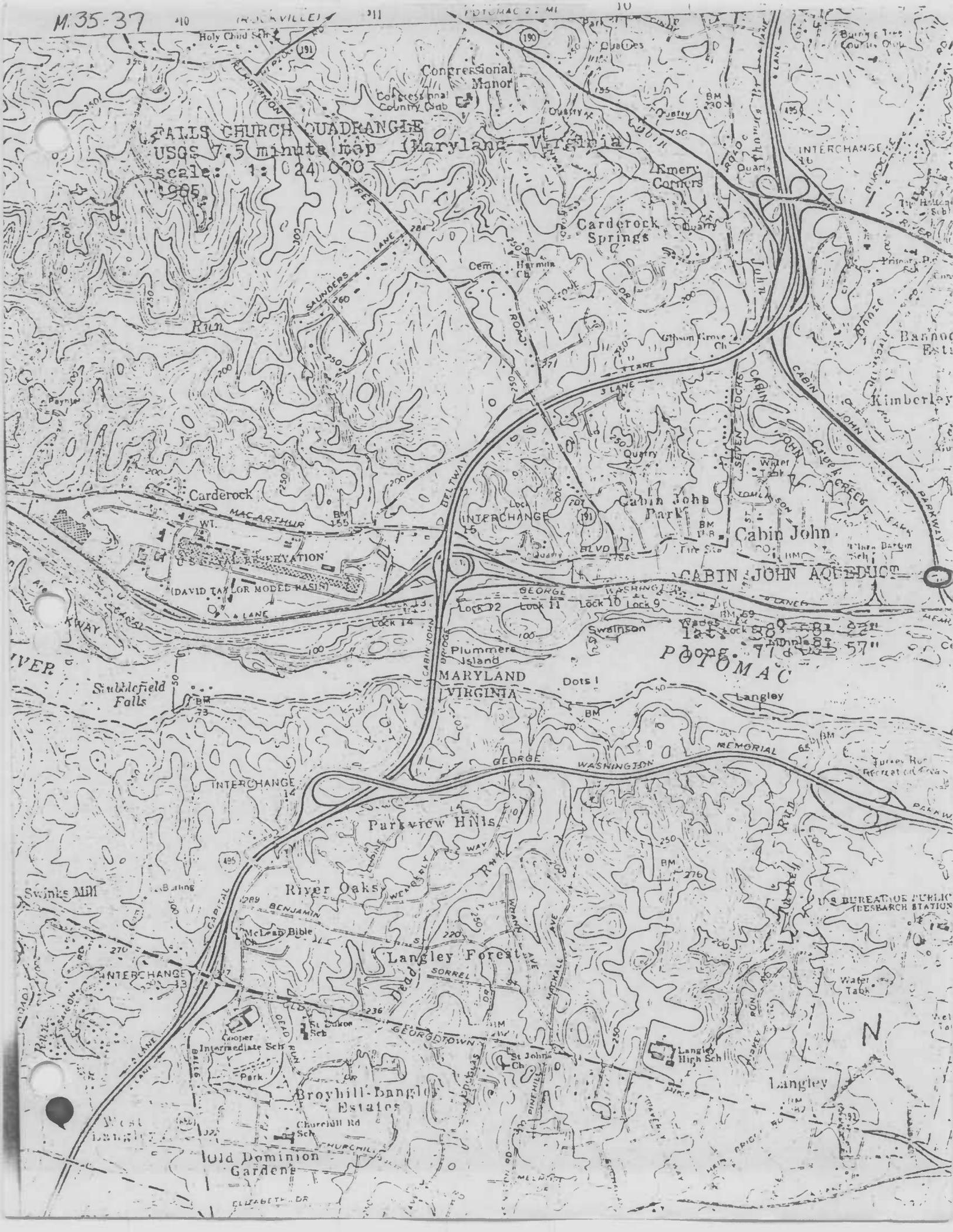
12. Compiler -
Ann Harris

13. Date Compiled Fall 1978

14. Designation
Approval _____ 1973

15. Acreage: 4 Acres

FALLS CHURCH QUADRANGLE
USGS 7.5 minute map (Maryland-Virginia)
scale: 1:624,000
1965



Congressional Manor

Carderock Springs

Cabin John

MARYLAND VIRGINIA

POTOMAC

Parkview Hills

River Oaks

Langley Forest

Broyhill-Banglo Estates

Old Dominion Gardens

Langley

U.S. BUREAU OF PUBLIC RESEARCH STATION

U.S. NAVAL RESERVATION
DAVID TAYLOR MODEL BASIN

Lock 12 Lock 11 Lock 10 Lock 9

lat. 38° 58' 57" N
long. 77° 02' 57" W

Subtlefield Falls

INTERCHANGE 14

INTERCHANGE 13

Intermediate Sch

Langley High Sch

Churchill Rd Sch

ELIZABETH DR

WATER TOWER

N

Coleman, Margaret Marshall and Anne Dennis Lewis
1984 Montgomery County: A Pictorial History. Norfolk: Donning Co.

Built in 1857, the sandstone-constructed Union Arch looks like a rainbow in the sky over the small hotel. Guests apparently arrived by descending the steep steps from Conduit Road (MacArthur Boulevard), strolling the rustic path, and crossing the picturesque low bridge.

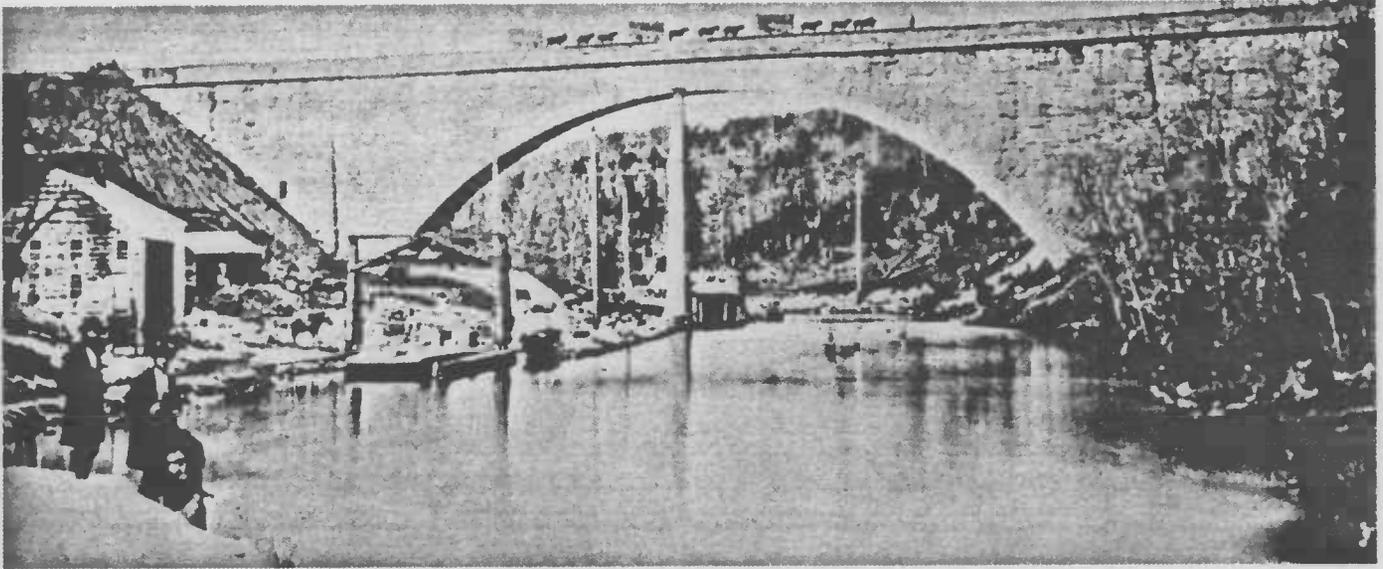
Today the small hotel is gone, but the bridge remains. Courtesy of Library of Congress



At the Montgomery Lane-Wisconsin Avenue intersection near Edgemoor in Bethesda, W. J. O'Donnell once sat beside his blacksmith shop, patting the head of his old hound dog.

Shown here, Mr. O'Donnell's new wagon wheel replacements contrast sharply with the trolley tracks in the foreground. The smith had enough customers, but he augmented his income by renting advertising wall space to the Corby's Mother's Bread and Laxtos companies. Courtesy of Brooks Photographers

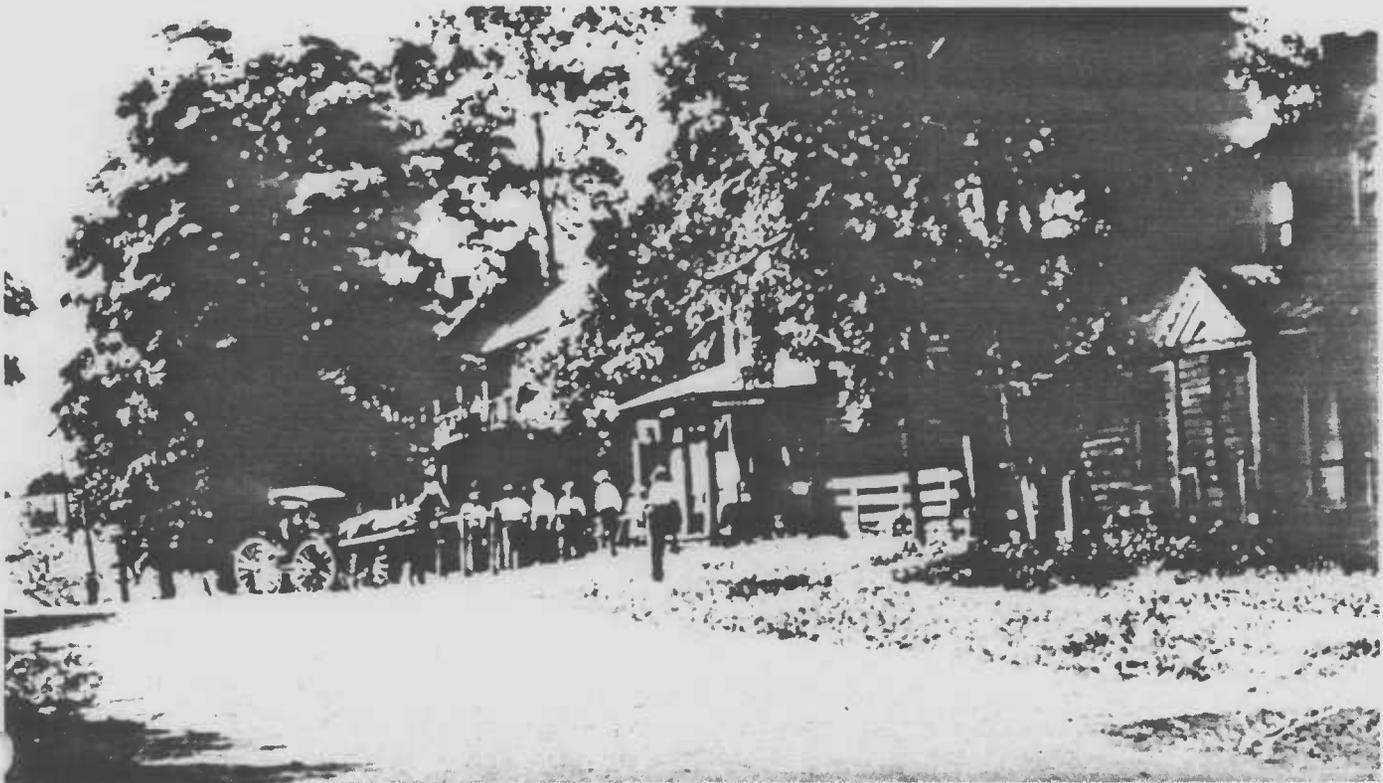




Mules pull freight over the Union Arch, circa 1865. Courtesy of Library of Congress

John Clark founded this store on the Frederick-Georgetown Road. One of the Civil War-period telegraph poles lining the road was used as a hitching post for shoppers' horses. William

Willson, Clark's son-in-law, followed Clark in the merchandising business. Courtesy of Boyds/Clarksburg/Germantown Historical Society



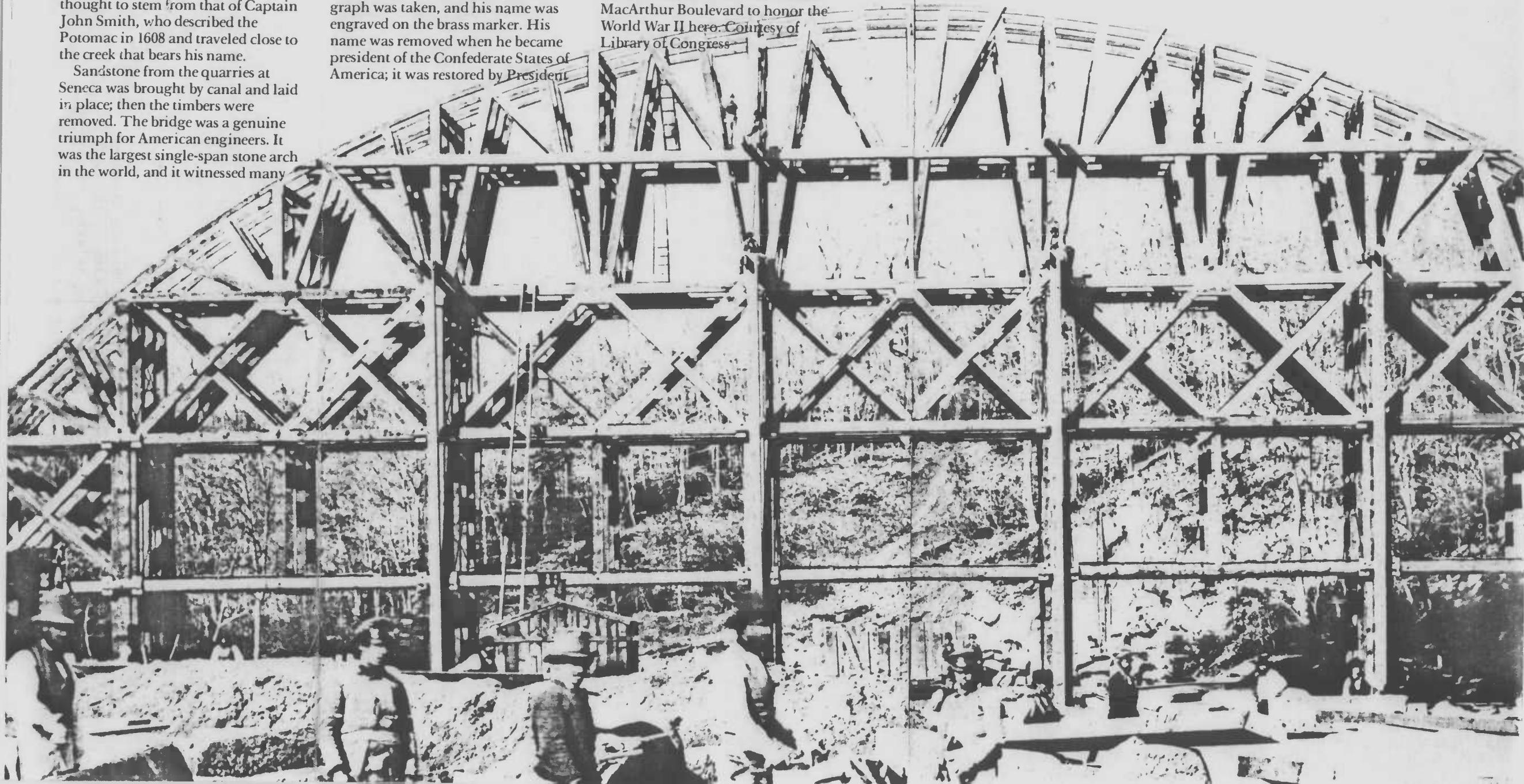
In 1857 scaffolding was in place for the Union Arch across Cabin John Creek, part of the conduit bringing water to Washington from the Potomac. The name "Cabin John" is thought to stem from that of Captain John Smith, who described the Potomac in 1608 and traveled close to the creek that bears his name.

Sandstone from the quarries at Seneca was brought by canal and laid in place; then the timbers were removed. The bridge was a genuine triumph for American engineers. It was the largest single-span stone arch in the world, and it witnessed many

changes. According to local legend, slaves hid in a secret passageway, making the arch part of the underground railroad. Jefferson Davis was secretary of war when this photograph was taken, and his name was engraved on the brass marker. His name was removed when he became president of the Confederate States of America; it was restored by President

Theodore Roosevelt in 1909. A small hotel was built in the sylvan setting underneath the bridge, which flourished at first, but was later abandoned. Conduit Road was renamed MacArthur Boulevard to honor the World War II hero. Courtesy of Library of Congress

M: 35-37
Cabin John Aqueduct



Coleman, Margaret Marshall and Anne Dennis Lewis
1984 Montgomery County: A Pictorial History.
Norfolk: Donning Company.



CABIN JOHN AQUADUCT

9/1969

• B:35-37



Cabin John Budge 1972

USA Corps of Engineers

M:35-37



Cabin John Aqueduct

before construction completed

c. mid 1860s

USA Corps of Engineers

M:35-37