

PH 0661694

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FOR NPS USE ONLY

DATA SHEET

RECEIVED

JAN 31 1978

DATE ENTERED

MAY 23 1978

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC

Caledonia Bowstring Bridge

AND/OR COMMON

2 LOCATION

STREET & NUMBER

Spanning the Olentangy River

NOT FOR PUBLICATION

CITY, TOWN

Village of Caledonia *vic.*

VICINITY OF

CONGRESSIONAL DISTRICT

7 - Brown

STATE

Ohio

CODE

039

COUNTY

Marion

CODE

101 ✓

3 CLASSIFICATION

CATEGORY

DISTRICT
 BUILDING(S)
 STRUCTURE
 SITE
 OBJECT

OWNERSHIP

PUBLIC
 PRIVATE
 BOTH
PUBLIC ACQUISITION
 IN PROCESS
 BEING CONSIDERED

STATUS

OCCUPIED
 UNOCCUPIED
 WORK IN PROGRESS
ACCESSIBLE
 YES: RESTRICTED
 YES: UNRESTRICTED
 NO

PRESENT USE

AGRICULTURE
 COMMERCIAL
 EDUCATIONAL
 ENTERTAINMENT
 GOVERNMENT
 INDUSTRIAL
 MILITARY
 MUSEUM
 PARK
 PRIVATE RESIDENCE
 RELIGIOUS
 SCIENTIFIC
 TRANSPORTATION
 OTHER:

4 OWNER OF PROPERTY

NAME

Village of Caledonia

STREET & NUMBER

CITY, TOWN

Caledonia

VICINITY OF

STATE

Ohio

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE,
REGISTRY OF DEEDS, ETC.

Marion County Engineer's Office

STREET & NUMBER

Courthouse

CITY, TOWN

Marion

STATE

Ohio

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

None

DATE

FEDERAL STATE COUNTY LOCAL

DEPOSITORY FOR
SURVEY RECORDS

CITY, TOWN

STATE

7 DESCRIPTION

42-100049

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input checked="" type="checkbox"/> ALTERED	<input checked="" type="checkbox"/> MOVED
<input checked="" type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		DATE April, 1976

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Caledonia Bowstring Bridge is a 104 foot long and 16 foot wide bowstring arch-truss of wrought iron. The arches are composed of "Phoenix-type" columns which in cross-section are formed of four flanged longitudinal segments riveted in pairs. They are united at top and bottom by channel bars and spacer blocks through which the verticals supporting the deck are bolted. The verticals alternate between lattice work and angle bars and have round diagonal tension rod bracing. The main bracing against lateral movement is provided by the two patented lattice girders which stretch between the tops of each arch. They are bolted to both the arches and the verticals below, and there is additional top diagonal lateral bracing between these two girders. The wooden deck is supported by I floor beams that rest on the lower chord constructed of double flat rolled bars.

The bridge is now positioned on abutments composed of concrete piers and a steel I-beam. Two circular concrete piers resting on bedrock were poured as the base for each abutment. The arch shoes of the bridge are seated on the I-beam stretching between the two piers at each end. Fill material was packed around the piers and beams to form ramps to the deck. The deck has not yet been completely replaced and the modern steel guardrails that were added by the county have been removed.

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input checked="" type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input checked="" type="checkbox"/> TRANSPORTATION
<input type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES 1873

BUILDER/ARCHITECT Wrought Iron Bridge Company

STATEMENT OF SIGNIFICANCE

The Caledonia Bowstring Bridge represents an important segment of engineering history in Ohio and the Midwest because of its rare metal bowstring arch-truss type and its fabrication in 1873 by the Wrought Iron Bridge Company of Canton, Ohio.

The bowstring arch-truss was first patented in 1841 by the famous bridge engineer Squire Whipple. The "Column and Channel Arch Bridge" design of this bridge was patented in 1873 by David Hammond, Job Abbott, and Michael Adler. The design utilized an overhead lattice work brace that provided, at a minimal cost, lateral and vertical stiffness under rolling loads for an arch structure.

Hammond, Abbott, and Adler were all employees of the Wrought Iron Bridge Company. David Hammond was a native of Stark County, Ohio, where he learned the carpenter trade. He began building bridges in 1861 and organized the Wrought Iron Bridge Company five years later with himself as president. Hammond was the patentee of a number of bridge designs and improvements in the 1860s and 70s. Job Abbott was the vice-president and chief engineer of the company, and Michael Adler was the general superintendent.

The Wrought Iron Bridge Company became one of the leading and widest ranging metal bridge fabrication firms in the nation. They circulated agents and erected structures throughout the New England, Eastern, Midwest, Southern, and Southwestern states. Their Book of Designs of Wrought Iron Bridges published in 1874 included a variety of bowstring arches; deck arches; low trusses; single, double and triple intersection Pratt through trusses; combination trusses; and girder and swing bridges. They were also among the forerunners in heralding the advantages of wrought iron bridges over wood or cast iron. The same Book of Designs included a history of iron bridge buildings in Europe and America, and articles on the strength, durability, resistance to corrosiveness, and working loads for wrought iron structures.

The Caledonia Bowstring Bridge originally spanned the Scioto River along with a small steel truss on the Espyville Road in the same county. It was closed to traffic for several years because of its inability to meet modern load capacities. The bridge was relocated to Caledonia in 1976 by the county engineer's office in order to build a new structure on its former site. The Village plans to use it to span the Olentangy River as the entrance to a community park.

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**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

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CONTINUATION SHEET 1

ITEM NUMBER 9 PAGE

Bibliography

Heald, Edward T. The Stark County Story. Canton, Ohio: The Stark County Historical Society, 1949.

Illustrated Pamphlet of Wrought Iron Bridges Built By the Wrought Iron Bridge Company. Canton, Ohio: Canton Repository, 1885.

Official Gazette of the United States Patent Office. Vol. III. Washington, D.C.: Government Printing Office, 1873.

Property Caledonia Bowstring Bridge

78002131

State OH

Working Number 7.31.78.2346

Marion

TECHNICAL

Photos 5
Maps 1

accept!

CONTROL

OK 2.1.78

HISTORIAN

Joe Zinner 5/9/78

ARCHITECTURAL HISTORIAN

*ACCEPT
MAC DONALD
5/10/78*

ARCHEOLOGIST

OTHER

a good example of ~~a~~ a bowstring arch-truss bridge fabricated by the wrought iron bridge Co. Though structure has recently been moved it still possesses integrity of design - accept

HAER

Inventory X
Review 4/18/78

Donald C. Jackson

REVIEW UNIT CHIEF

rare example of type of bridge construction. Although moved, it is over water and will serve as park entrance

*Accept
Lebowich
5/11/78*

BRANCH CHIEF

KEEPER

*Approved
5/23/78*

National Register Write-up _____
Federal Register Entry 7.5.78

Send-back _____
Re-submit _____

Entered MAY 23 1978

INT:2106-74



Caledonia Bowstring Bridge, Marion Co., Ohio

Photo; David Simmons, Feb. 1977

Negative: Ohio Historic Preservation Office

View of south perspective

1. 85

JAN 31 1978

MAY 23 1978

PROPERTY OF THE NATIONAL REGISTER

News site
2/77
DTS



Caledonia B owstring Bridge, Marion Co., Ohio

Photo: David Simmons, Feb. 1977

Negative: Ohio Historic Preservation Office

View of arch and south web

2.

45

JAN 31 1978

MAY 23 1978

PROPERTY OF THE NATIONAL REGISTER

new site
2/77
DAS



Caledonia Bowstring Bridge, Marion Co., Ohio

Photo: David Simmons, Feb. 1977

Negative: Ohio Historic Preservation Office

Detail of Construction

3.

05

JAN 31 1978

MAY 23 1978

PROPERTY OF THE NATIONAL REGISTER

NEG. 2

2/77

DAS



Caledonia Bowstring Bridge, Marion Co., Ohio

Photo: David Simmons, Feb. 1977

Negative: Ohio Historic Preservation Office

Portal View

4. 45

JAN 31 1978

MAY 23 1978

PROPERTY OF THE NATIONAL REGISTER

new site
2/77
DS



Caledonia Bowstring Bridge, Marion Co., Ohio

Photo: Jeff Darbee, Dec. 1975 //

Negative: Ohio Historic Preservation Office

View on original location

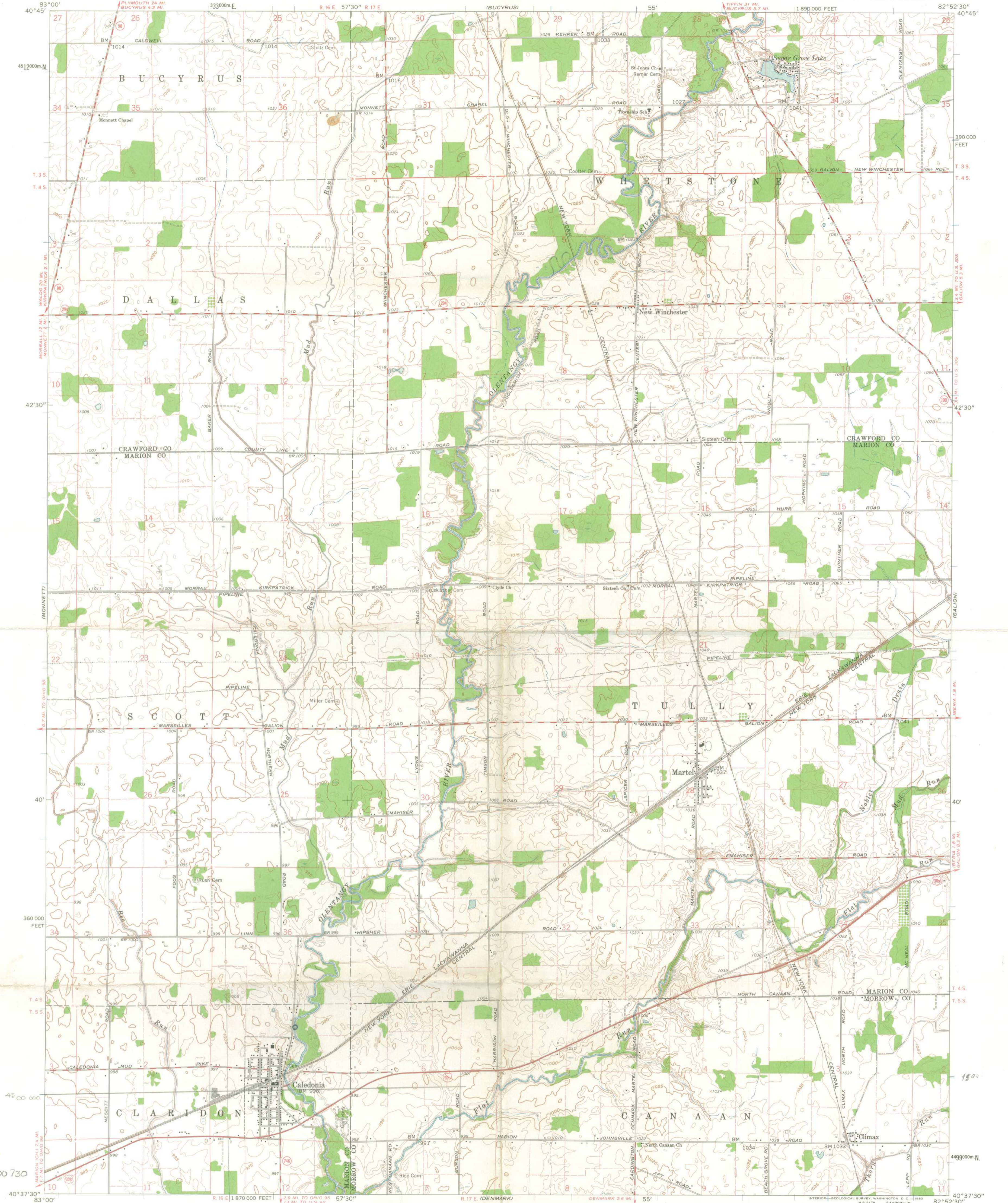
5. 95

JAN 31 1978

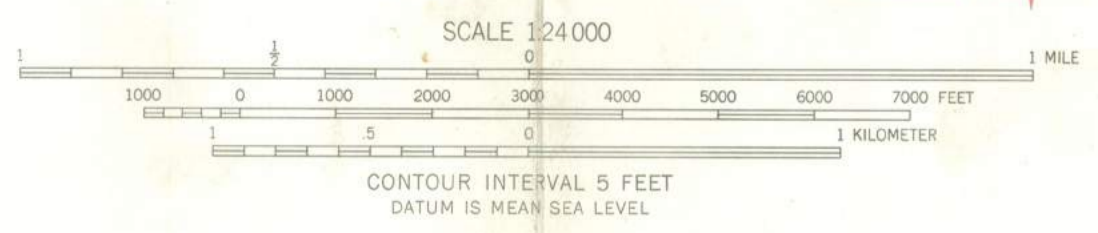
MAY 23 1978

PROPERTY OF THE NATIONAL REGISTER

ROAD
CLOSED



Mapped, edited, and published by the Geological Survey #33 000
Control by USGS and USC&GS
Topography by photogrammetric methods from aerial photographs taken 1960. Field checked 1961
Polyconic projection. 1927 North American datum
10,000-foot grid based on Ohio coordinate system, north zone
1000-meter Universal Transverse Mercator grid ticks, zone 17, shown in blue
Entire area lies within Congress Lands
Land lines based on the First Principal Meridian
Fine red dashed lines indicate fenced and field lines where generally visible on aerial photographs. This information is unchecked



ROAD CLASSIFICATION
Heavy-duty ——— Light-duty ———
Medium-duty ——— Unimproved dirt ———
U. S. Route ——— State Road ———



RECEIVED
JAN 31 1978
NATIONAL REGISTER
CALEDONIA, OHIO
NW/4 MOUNT GILEAD 15' QUADRANGLE
N4037.5-W8252.5/75
1961

5

ENTRIES IN THE NATIONAL REGISTER

STATE OHIO

Date Entered MAY 23 1978

<u>Name</u>	<u>Location</u>
Georgetown Historic District	Georgetown Brown County
Oak Hill Welsh Congregational Church	Oak Hill Jackson County
Terra Vista Prehistoric District	Cuyahoga County
Gabel, Daniel, House	Seven Hills Cuyahoga County
Sunday Creek Coal Company Mine No. 6	East Millfield vicinity Athens County
Caledonia Bowstring Bridge	Caledonia Marion County

Also Notified

Honorable Howard M. Metzenbaum
Honorable John H. Glenn, Jr.
Honorable William H. Harsha
Honorable Ronald M. Mottl
Honorable Clarence E. Miller
Honorable Clarence J. Brown

State Historic Preservation Officer
Dr. Thomas H. Smith
Director, The Ohio Historical
Society
Interstate 71 at 17th Avenue
Columbus, Ohio 43211

NR

Mott/bjr

6/2/78

NATIONAL REGISTER DATA SHEET

① NAME as it appears on federal register: **Caledonia Bowstring Bridge** ② OTHER NAMES: _____ ③ date of entry: **MAY 23 1978** ④ county code: **101**

⑤ LOCATION street & number city / town vicinity of state county ⑥ NPS REGION:
N of Caledonia, spans Olentangy River **Caledonia** **Caledonia** **OH** **Marion** **MW**

⑦ OWNER PRIVATE STATE MUNICIPAL COUNTY MULTIPLE FEDERAL (agency name) _____ ⑧ ADMINISTRATOR: _____

⑨ EXISTING SURVEYS HABS HAER NHL ⑩ FUNDED? YES NO ⑪ CONGRESS. DISTRICT **7th** ⑫ SOURCE of NOMINATION STATE FEDERAL _____

⑬ WITHIN NATIONAL REGISTER HISTORIC DISTRICT? YES, NAME _____ NO ⑭ WITHIN NATIONAL HISTORIC LANDMARK? YES, NAME _____ NO ⑮ ACREAGE _____
 if state who prepared form? **Ohio Hist. Pres. Office**
 LOCAL PRIVATE ORGANIZATION

⑯ CONDITION ⑰ features:

<input type="checkbox"/> excellent	<input type="checkbox"/> deteriorated	<input type="checkbox"/> altered	<input type="checkbox"/> original site	INTERIOR <input type="checkbox"/> SUBSTANTIALLY INTACT-1 <input type="checkbox"/> NOT INTACT-0 <input type="checkbox"/> UNKNOWN-4 <input type="checkbox"/> NOT APPLICABLE-7	EXTERIOR <input type="checkbox"/> SUBSTANTIALLY INTACT-2 <input type="checkbox"/> NOT INTACT-0 <input type="checkbox"/> UNKNOWN-5 <input type="checkbox"/> NOT APPLICABLE-8	ENVIRONS <input type="checkbox"/> SUBSTANTIALLY INTACT-3 <input type="checkbox"/> NOT INTACT-0 <input type="checkbox"/> UNKNOWN-6 <input type="checkbox"/> NOT APPLICABLE-9
<input type="checkbox"/> good	<input type="checkbox"/> ruins	<input type="checkbox"/> unaltered	<input type="checkbox"/> moved			
<input type="checkbox"/> fair	<input type="checkbox"/> unexposed	<input type="checkbox"/> reconstructed	<input type="checkbox"/> unknown			
	<input type="checkbox"/> unexcavated	<input type="checkbox"/> excavated				

⑱ ACCESS YES-Restricted YES-Unrestricted No Access Unknown ⑲ ADAPTIVE USE YES NO ⑳ SAVED? YES ㉑ IS PROPERTY A HISTORIC DISTRICT? yes no

㉒ AREAS OF SIGNIFICANCE :

<input type="checkbox"/> ARCHEOLOGY-prehistoric-2	<input type="checkbox"/> COMMERCE-6	<input type="checkbox"/> ENTERTAINMENT-26	<input type="checkbox"/> LANDSCAPE ARCH.-15	<input type="checkbox"/> POLITICS/GOVT.-21	<input type="checkbox"/> RECREATION-28
<input type="checkbox"/> ARCHEOLOGY-historic-1	<input type="checkbox"/> COMMUNICATIONS-7	<input type="checkbox"/> EXPLORATION-12	<input type="checkbox"/> LAW-16	<input type="checkbox"/> RELIGION-22	<input type="checkbox"/> SETTLEMENT-29
<input type="checkbox"/> AGRICULTURE-3	<input type="checkbox"/> CONSERVATION-8	<input type="checkbox"/> HEALTH-27	<input type="checkbox"/> LITERATURE-17	<input type="checkbox"/> SCIENCE-23	<input type="checkbox"/> URBAN PLANNING-31
<input type="checkbox"/> ARCHITECTURE-4	<input type="checkbox"/> ECONOMICS-9	<input type="checkbox"/> INDUSTRY-13	<input type="checkbox"/> MILITARY-18	<input type="checkbox"/> SOCIAL/HUMANITARIAN-24	<input type="checkbox"/> OTHER (SPECIFY) _____
<input type="checkbox"/> ART-5	<input type="checkbox"/> EDUCATION-10	<input type="checkbox"/> INVENTION-14	<input type="checkbox"/> MUSIC-19	<input type="checkbox"/> SOCIAL/CULTURAL-30	
			<input type="checkbox"/> PHILOSOPHY-20	<input type="checkbox"/> TRANSPORTATION-25	

㉓ CLAIMS: explain
 'first'
 'oldest'
 'only'

㉔ functions
 WHEN HISTORICALLY SIGNIFICANT:
 CURRENTLY: _____

㉕ dates of initial construction:
 major alterations:
 historic events: _____

㉖ ETHNIC GROUP ASSOCIATION _____

㉗ architectural style(s): _____ ㉘ architect: _____ ㉙ master builder: _____ ㉚ engineer: _____

㉛ landscape architect / garden designer: _____ ㉜ interior decorator: _____ ㉝ artist: _____ ㉞ artisan: _____ ㉟ builder/contractor: _____

㊱ NAMES give role & date

PERSONAL:

EVENTS:

INSTITUTIONAL:

㊲ NATIONAL REGISTER WRITE-UP

reviewers initials _____ date _____

IF ADDITIONAL SPACE NEEDED, NUMBER & PUT ON REVERSE