

AL-VI-D-308

Westernport Bowstring Arch Truss Bridge  
Westernport  
Public

1892

The Westernport Bowstring Arch-Truss Bridge is located within the corporate limits of Westernport. The bridge carries vehicular traffic on Waverly Street over Georges Creek. It is a single span, bowstring arch through truss steel bridge with a span length of 108 feet. The bridge reaches a maximum height of 15.7 feet and is 15.6 feet wide. The bridge consists of 8 panels each measuring 13.5 feet wide. Stone abutments support the bridge. It has a timber deck and timber stringers.

It is one of two extant bowstring bridges found in the state of Maryland and the only one in use at its original location in the state.

United States Department of the Interior  
Heritage Conservation and Recreation Service

For HCRS use only

National Register of Historic Places  
Inventory—Nomination Form

received

date entered

See instructions in *How to Complete National Register Forms*  
Type all entries—complete applicable sections

1. Name

historic Waverly Street Bridge

and or common Westernport Bowstring Arch Truss Bridge

2. Location

street & number Waverly Street at George's Creek n/a not for publication

city, town Westernport n/a vicinity of congressional district Sixth

state Maryland code 24 county Allegany code 001

3. Classification

Category	Ownership	Status	Present Use
<input type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture
<input type="checkbox"/> building(s)	<input type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational
<input type="checkbox"/> site	<b>Public Acquisition</b>	<b>Accessible</b>	<input type="checkbox"/> entertainment
<input checked="" type="checkbox"/> object	<input type="checkbox"/> in process	<input type="checkbox"/> yes: restricted	<input type="checkbox"/> government
	<input type="checkbox"/> being considered	<input checked="" type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial
	<input checked="" type="checkbox"/> not applicable	<input type="checkbox"/> no	<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 type="checkbox"/> other:

4. Owner of Property

name City of Westernport

street & number Box 266

city, town Westernport n/a vicinity of state Maryland 21562

5. Location of Legal Description

courthouse, registry of deeds, etc. Allegany County Courthouse

street & number 30 Washington Street

city, town Cumberland state Maryland 21502

6. Representation in Existing Surveys

title Coal Basin Historic Sites Survey has this property been determined eligible?  yes  no

date 1982  federal  state  county  local

depository for survey records Maryland Historical Trust, 21 State Circle

city, town Annapolis state Maryland 21401

**7. Description**

<b>Condition</b>		<b>Check one</b>	<b>Check one</b>
<input type="checkbox"/> excellent	<input type="checkbox"/> deteriorated	<input checked="" type="checkbox"/> unaltered	<input checked="" type="checkbox"/> original site
<input checked="" type="checkbox"/> good	<input type="checkbox"/> ruins	<input type="checkbox"/> altered	<input type="checkbox"/> moved date <u>n/a</u>
<input type="checkbox"/> fair	<input type="checkbox"/> unexposed		

Describe the present and original (if known) physical appearance

## Number of Resources

Contributing	Noncontributing
<u>0</u>	<u>0</u> buildings
<u>0</u>	<u>0</u> sites
<u>1</u>	<u>0</u> structures
<u>0</u>	<u>0</u> objects
<u>1</u>	<u>0</u> Total

Number of previously listed National Register properties included in this nomination: none

Original and historic functions and uses: transportation

DESCRIPTION SUMMARY:

The Westernport Bowstring Arch-Truss Bridge, sometimes known as the Waverly Street Bridge, is located within Westernport, a small town in the mountainous southwest corner of Allegany County, Maryland. The bridge carries vehicular traffic on Waverly Street over Georges Creek. It is a single span, bowstring arch through truss steel bridge with a span length of 108 feet. The bridge is supported by stone abutments and has a timber deck and timber stringers. Built in 1892 by the King Bridge Company of Ohio, the bridge has retained its original appearance and is in good condition.

For General Description, see Continuation Sheet No.

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United States Department of the Interior  
National Park Service  
**National Register of Historic Places  
Inventory—Nomination Form**

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Continuation sheet Waverly Street Bridge Item number 7 Page 1  
Allegany County, Maryland

GENERAL DESCRIPTION

The Westernport Bowstring Arch-Truss Bridge, sometimes known as the Waverly Street Bridge, is located within Westernport, a small coal mining and manufacturing town in the mountainous southwest corner of Allegany County, Maryland. The bridge is located approximately thirty yards from Main Street and the single track of the Western Maryland Railroad (formerly the Cumberland & Pittsburgh Railroad) in a mixed residential and commercial part of town. It carries vehicular traffic over George's Creek on Waverly Street, which runs perpendicular to Main Street and the railroad tracks.

The steel bridge has a single span bowstring arch through truss with a span length of 108 feet. The truss is pin connected. The arched top chord of the truss terminates at the bridge's bearing joints on the abutments. The bottom chord consists of paired eye bars from joint to joint. Each panel is laterally braced with cylindrical tie rods. The bridge reaches a maximum height of 15.7 feet, and is 15.6 feet wide and consists of eight panels measuring 13' 6" wide.

The fourteen vertical posts, of differing height, consist of two angles tied together with lattice work. Similar latticework is used for the three horizontal braces. A series of three pipes running the length of either side of the bridge serve as guardrails. There are stone abutments which support the bridge on either side of George's Creek.

The bridge, built in 1892 by the King Bridge Company of Ohio has not been altered since that time and is in good condition.

## 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/
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input checked="" type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> humanitarian
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> theater
<input type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics government	<input type="checkbox"/> transportation
		<input type="checkbox"/> invention		<input type="checkbox"/> other (specify)

**Specific dates** 1892 **Builder/Architect** King Bridge Co., Cleveland, Ohio

### Statement of Significance (in one paragraph)

Applicable Criteria: C  
 Applicable Exceptions: none  
 Level of Significance for Evaluation: local

### SIGNIFICANCE SUMMARY:

The Westernport Bowstring Arch Truss Bridge is significant as one of only two extant bowstring bridges in Maryland and the only one in use at its original location. The bridge was built in 1892 by the King Bridge Company of Cleveland, Ohio, one of the most prolific and innovative of nineteenth century bridge manufacturing companies in the United States. The bridge embodies the distinctive characteristics of the bowstring arch truss in its two tubular steel arches which stretch between the abutments in a single span. The King Iron Bridge and Manufacturing Company introduced numerous innovations in the truss design, notably the rectangular cross section of the steel tubing forming the arches; this feature was patented in 1861 by the company's founder, Zenas King, and is employed in the Westernport bridge. The bowstring arch truss was one of numerous designs for metal bridges developed during the second half of the 19th century; this design was most suitable for short spans and low traffic volume, as reflected in the location and use of the Westernport bridge.

United States Department of the Interior  
National Park Service  
**National Register of Historic Places  
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date entered

Continuation sheet    Waverly Street Bridge    Item number    8    Page    2  
Allegany County, Maryland

HISTORY AND SUPPORT

The bowstring arch truss bridge in Westernport is significant as one of only two extant bowstring bridges in Maryland and the only one in use at its original location in the state. The other bridge, located in Frederick County, has been moved to a state park and carries no vehicular traffic.

In May 1891, a motion was set before the town commissioners of Westernport to have the existing bridge over George's Creek inspected for needed repairs.<sup>1</sup> The earlier bridge was obviously deemed obsolete or irreparable, as the town commissioners appeared before the Allegany County Commissioners in early 1892 seeking funds "... to place an iron bridge over the run."<sup>2</sup> At their June 23, 1892 meeting the town commissioners resolved to contract with the King Bridge Company to erect a bridge over George's Creek. Adam Lebbek's low bid of \$149.00 was accepted for construction of abutments for the bridge and on July 5, 1892 a contract with the company was "...properly signed."<sup>3</sup> In October of that year the bridge was shipped to Westernport.

The bowstring truss was one of several bridge types developed in the nineteenth century and reflected a trend to replace wooden bridges with metal because of its greater strength and durability. Its economy and relatively large carrying capacity made the bowstring truss particularly popular, although in the long run examples of other truss systems such as Warren and Pratt were to be more numerous. Several patents were taken out for bowstring designs during the 1850s and 1860s, most of them concerning methods to increase the lateral stiffness of the arch or to reduce its tendency to sway under live loads.<sup>4</sup> Bowstring bridges were not generally used to carry high volume traffic such as railroads but were used instead in rural areas or on lightly used thoroughfares.

Zenas King, who founded the King Iron Bridge and Manufacturing Company in 1858, was one of the first to develop and refine this form of truss. King began his career in Ohio and was an agent for the Moseley Iron Bridge Company which specialized in a tubular wrought iron arch bridge patented in 1857.<sup>5</sup> The arch itself was a tube, triangular in cross section, which also featured inverted counter arches.

After he left the Moseley firm, King designed a Tubular Arch Bridge, first built in 1859 and patented in 1861. King's patented designs substituted a square shaped tube for the triangular Moseley design along with a "tie beam" bottom chord and radial rods connecting them.<sup>6</sup> The revised and repatented design of 1866 consisted of an upper chord of a built up section, a lower chord of two parallel rods, the two connected by vertical rods and diagonal bracing.<sup>7</sup>

Although the company's reputation was originally based on King's bowstring designs, it rarely built more than two dozen such truss spans annually during its early years. However, by 1874 their catalogue claimed an annual production number of 250-300 tubular arch spans with over 2700 in use by that year.<sup>8</sup>

United States Department of the Interior  
National Park Service

# National Register of Historic Places Inventory—Nomination Form

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received

date entered

Continuation sheet Waverly Street Bridge Item number 8 Page 3  
Allegany County, Maryland

## HISTORY AND SUPPORT (continued)

The King Iron Bridge and Manufacturing Company was one of the most prolific and innovative manufacturers of metal truss bridges in the United States during the nineteenth century. By 1884 the company had the largest highway bridge works in the country, "with the capacity for wrought iron and steel bridges, high and low trusses, arch bridges, swing bridges, iron turntables and combination bridges of all styles."<sup>9</sup>

# 9. Major Bibliographical References

AL-VI-D-308

# 10. Geographical Data

Acreeage of nominated property less than one acre  
Quadrangle name Westernport, MD-W.VA.

Quadrangle scale 1:24,000

UMT References

A	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Zone	Easting	Northing
C	<input type="text"/>	<input type="text"/>	<input type="text"/>
E	<input type="text"/>	<input type="text"/>	<input type="text"/>
G	<input type="text"/>	<input type="text"/>	<input type="text"/>

B	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Zone	Easting	Northing
D	<input type="text"/>	<input type="text"/>	<input type="text"/>
F	<input type="text"/>	<input type="text"/>	<input type="text"/>
H	<input type="text"/>	<input type="text"/>	<input type="text"/>

Verbal boundary description and justification

List all states and counties for properties overlapping state or county boundaries

state	n/a	code	county	code
state		code	county	code

# 11. Form Prepared By

name/title Geoffrey Henry, with contributions by Mark Edwards, David Dorsey & Paula Spero

organization Maryland Historical Trust date 15 April 1984

street & number 21 State Circle telephone (301) 269-2438

city or town Annapolis state Maryland 21401

# 12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

national  state  local

As the designated State Historic Preservation 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 Heritage Conservation and Recreation Service.

State Historic Preservation Officer signature

title STATE HISTORIC PRESERVATION OFFICER date

For HCRS use only

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

date

Keeper of the National Register

Attest:

Chief of Registration

date

(From Piedmont Herald, Friday, June 10, 1892)

"The Board of Town Commissioners of Westernport was represented before the County Commissioners of Allegany County on Tuesday last, by Mssrs. Jas A. MacFarland, C.W. Duckworth, Charles Tonry, and O.H. Bruce, who appeared in the interest of an appropriation for the town from the annual levy now being made. The delegation asked for one thousand dollars. It is the intention of the town authorities to place an iron bridge over the run at the head of Main Street should the county authorities provide the funds that would justify such an expenditure."

AL-VI-D-308

(#9 - Bibliography)

FOOTNOTES

1

MHT-F-6-39, the Big Pipe Creek Bridge, which originally stood at Keymar on Route 77 in Carroll County was moved to Cunningham Falls State Park. A third bowstring bridge, now demolished, was the Keysville Arch Trus Bridge (Carr-20).

2

Stegimaier et al., Allegany County a History, pp. 84-86 and pp. 140-141.

3

Proceedings of the Commissioners of Westernport, p. 161.

4

Piedmont Herald, June 10, 1892.

5

Stegimaier et. al., pp. 140-141

6

Proceedings..., p. 260.

7

Ibid., p. 264

8

Ibid., p. 296.

9

Interview with Mayor, the Honorable James Wills, 1-8-82.

MARYLAND HISTORICAL TRUST

AL-VI-D-308  
MAGI #0112853 17  
NR

INVENTORY FORM FOR STATE HISTORIC SITES SURVEY

**1 NAME**

HISTORIC

AND/OR COMMON

Westernport Bowstring Arch Truss Bridge

**2 LOCATION**

STREET & NUMBER

Waverly Street at Georges Creek, 30 yards west of Main St.

CITY, TOWN

Westernport

\_\_\_ VICINITY OF

CONGRESSIONAL DISTRICT

6th

STATE

Maryland

COUNTY

Allegany

**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
- MUSEUM
- COMMERCIAL
- PARK
- EDUCATIONAL
- PRIVATE RESIDENCE
- ENTERTAINMENT
- RELIGIOUS
- GOVERNMENT
- SCIENTIFIC
- INDUSTRIAL
- TRANSPORTATION
- MILITARY
- OTHER

**4 OWNER OF PROPERTY**

NAME

City of Westernport

Telephone #:

301-359-3932

STREET & NUMBER

Box 266

CITY, TOWN

Westernport

\_\_\_ VICINITY OF

STATE, zip code

Maryland 21562

**5 LOCATION OF LEGAL DESCRIPTION**

COURTHOUSE  
REGISTRY OF DEEDS, ETC

Allegany County Courthouse

Liber #:

Folio #:

STREET & NUMBER

30 Washington Street

CITY, TOWN

Cumberland

STATE

Maryland 21502

**6 REPRESENTATION IN EXISTING SURVEYS**

TITLE

None

DATE

\_\_\_ FEDERAL \_\_\_ STATE \_\_\_ COUNTY \_\_\_ LOCAL

DEPOSITORY FOR  
SURVEY RECORDS

CITY, TOWN

STATE

# 7 DESCRIPTION

AL-V-D-308

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

---

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Westernport Bowstring Arch-Truss Bridge is located within the corporate limits of Westernport, Maryland, in the mountainous southwestern corner of Allegany County. It is located on Waverly Street approximately 30 yards west of Main Street.

The bridge carries vehicular traffic on Waverly Street over Georges Creek. It is a single span, bowstring arch through truss steel bridge with a span length of 108 feet. The bridge reaches a maximum height of 15.7 feet and is 15.6 feet wide. The bridge consists of 8 panels each measuring 13.5 feet wide. Stone abutments support the bridge. It has a timber deck and timber stringers.

A recent inspection of the bridge reveals that it is in "reasonably good condition."

CONTINUE ON SEPARATE SHEET IF NECESSARY

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 1892

BUILDER/ARCHITECT

STATEMENT OF SIGNIFICANCE

The Westernport Bowstring Arch-Truss Bridge is significant as it is one of two extant bowstring bridges found in the state of Maryland and is the only one in use at its original location in the state; the other<sup>1</sup> (MHT-F-6-39) has been moved to a state park and carries no vehicular traffic.

History and Support

The Westernport Bowstring Arch-Truss bridge is located in Westernport, Maryland, at the southern end of the Georges Creek coal region. The town, which was settled late in the 18th century became an important transportation center in the 1850s when the Baltimore and Ohio Railroad and the Cumberland and Pennsylvania Railroad established a junction near the town.<sup>2</sup>

In May, 1891, a motion was set before the town's commissioners to have an existing bridge over Georges Creek inspected for needed repairs.<sup>3</sup> The earlier bridge was obviously deemed obsolete or irreparable as the town commissioners appeared before the Allegany County Commissioners in early June, 1892 seeking funds "... to place an iron bridge over the run..."<sup>4</sup> The need for a reliable bridge may have been the result of the Westernport's rapid growth late in the 19th century. Thriving railroad, paper, coal, and lumber industries contributed to boost the town's population from 1468 people in 1880 to nearly 4000 in 1920.<sup>5</sup>

At their June 23, 1892 meeting, the Board of Town Commissioners of Westernport resolved to contract the King Bridge Company of Chattanooga, Tennessee to erect a bridge over George's Creek at a cost of \$250,000.<sup>6</sup> Adam Lebbek's low bid of \$149.00 was accepted for construction of abutments for the bridge and on July 5, 1892, a contract with the King Bridge Company was "...properly signed."<sup>7</sup> In October, 1892, the town commissioners were notified by the King Bridge Company of an early shipment of the bridge.<sup>8</sup>

Oral tradition indicated that a local concern, White's Foundry, actually erected the iron bridge. The fact that the foundry was located adjacent to the bridge lends some support to the story.<sup>9</sup>

**9 MAJOR BIBLIOGRAPHICAL REFERENCES**

See Footnotes

CONTINUE ON SEPARATE SHEET IF NECESSARY

**10 GEOGRAPHICAL DATA**

ACREAGE OF NOMINATED PROPERTY \_\_\_\_\_

VERBAL BOUNDARY DESCRIPTION

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

STATE COUNTY

STATE COUNTY

**11 FORM PREPARED BY**

NAME/TITLE Mark Edwards, MHT, and  
David Dorsey, Historic Sites Surveyor

ORGANIZATION Maryland Historical Trust/Bureau of Mines

DATE May 1982

STREET & NUMBER 21 State Circle, Shaw House

TELEPHONE 301-269-2438

CITY OR TOWN Annapolis

STATE Maryland 21401

The Maryland Historic Sites Inventory 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  
The Shaw House, 21 State Circle  
Annapolis, Maryland 21401  
(301) 267-1438

## HISTORIC AMERICAN ENGINEERING RECORD

## INDEX TO PHOTOGRAPHS

Waverly Street Bridge  
 (Westernport Bowstring Arch-Truss Bridge)  
 Spanning George's Creek  
 Westernport  
 Allegany County  
 Maryland

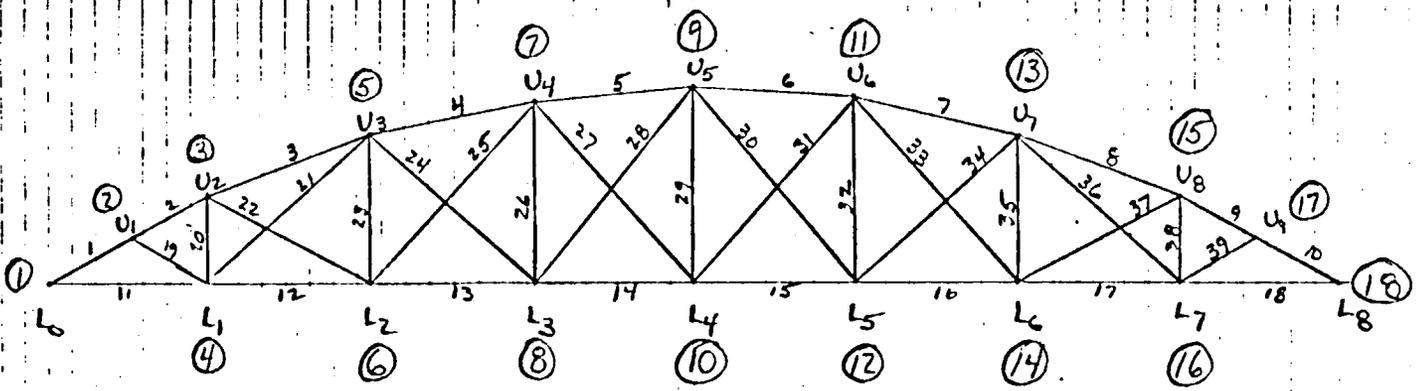
HAER No. MD-83

Photographer: Dr. Emory Kemp

October 1991

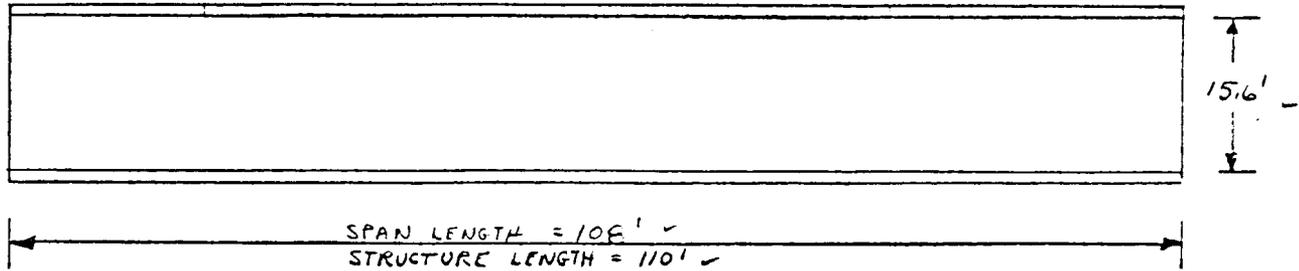
MD-83-1	VIEW EAST, WEST ELEVATION
MD-83-2	VIEW SOUTHEAST, NORTH ELEVATION AND WEST APPROACH
MD-83-3	VIEW EAST, EAST ABUTMENT AND FLOOR BEAMS
MD-83-4	VIEW SOUTHEAST, EAST ABUTMENT AND FLOOR BEAMS
MD-83-5	VIEW WEST, WEST ABUTMENT
MD-83-6	VIEW NORTHWEST, WEST ABUTMENT AND LOWER CHORD
MD-83-7	VIEW SOUTH, DETAIL OF LOWER CHORDS AND PIN
MD-83-8	DETAIL OF LOWER CHORD, NORTH ARCH
MD-83-9	DETAIL OF FIXED BEARING SHOE, SOUTHEAST CORNER
MD-83-10	DETAIL OF MOVEABLE BEARING SHOE, SOUTHWEST CORNER
MD-83-11	DETAIL OF TYPICAL UPPER PIN ASSEMBLY, NORTH ARCH

SEE VERTICAL FILE FOR OVERVIEW OF WAVERLY STREET BRIDGE

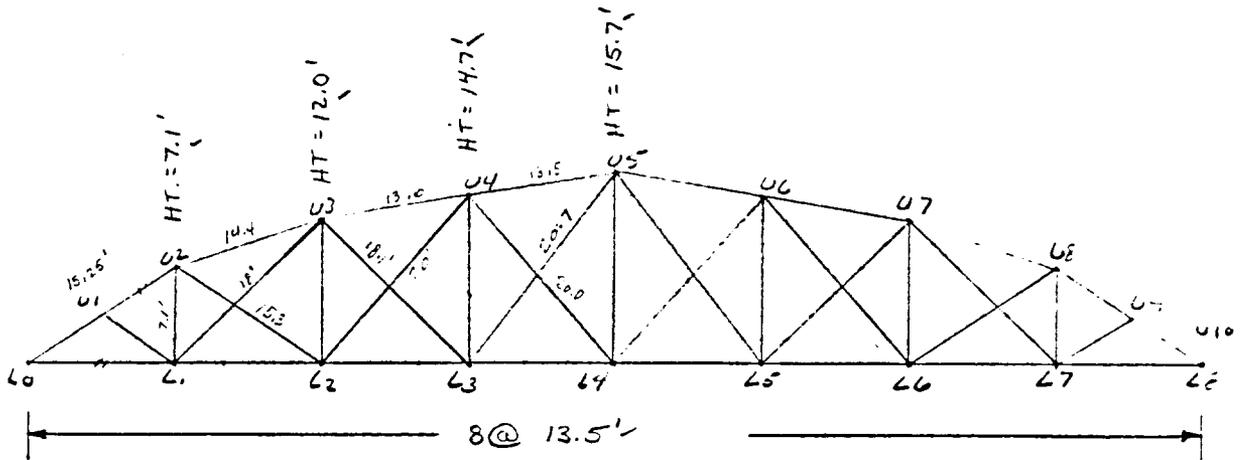


AL-VI-D-308  
Westernport Bowstring  
Arch Truss Bridge

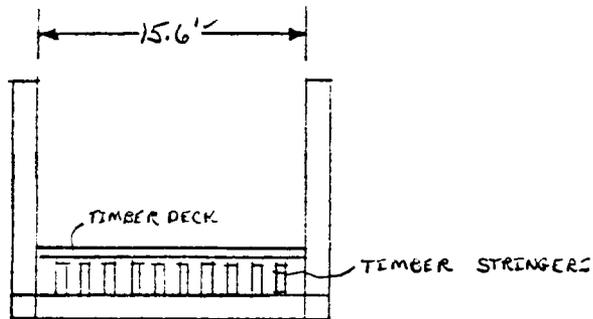
WAVERLY RD OVER GEORGES CREEK BUILT 1900 (EST)  
(WESTERNPORT)



PLAN



ELEVATION



SECTION

AL-VI-D-308  
Westernport Bowstring  
Arch Truss Bridge

# WAVERLY STREET BRIDGE

## WESTERNPORT, MARYLAND

The Youngstown Bridge Co.  
MANUFACTURERS OF  
**IRON BRIDGES STEEL**  
IRON STRUCTURAL WORK. IRON ROOFS AND TURN TABLES.  
**YOUNGSTOWN, O.**

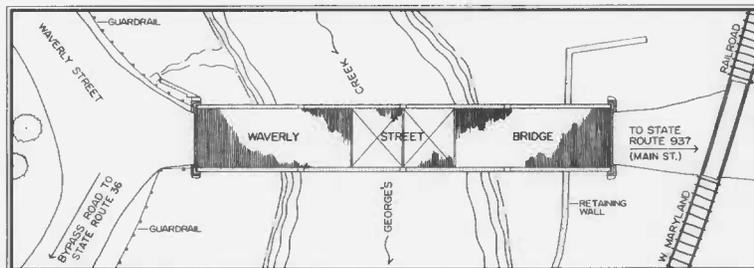
1891-1892

THE WAVERLY STREET OR WESTERNPORT BOWSTRING ARCH TRUSS BRIDGE IS SIGNIFICANT BECAUSE IT IS ONE OF A FEW EXTANT BOWSTRING TRUSS BRIDGES IN THE STATE OF MARYLAND AND ONE OF SEVERAL AT ITS ORIGINAL SITE. THE BOWSTRING ARCH TRUSS WAS AN UNPRECEDENTED NINETEENTH CENTURY BRIDGE DESIGN AND WAS THE FIRST BRIDGE TO BE DESIGNED USING SCIENTIFIC PRINCIPLES. SQUIRE WHIPPLE DESIGNED THE FIRST PRACTICAL IRON BOWSTRING TRUSS BRIDGE, BUT EARLIER PROGENITORS INCLUDED THEODORE BURR AND ROBERT FULTON. WHIPPLE'S DESIGN WAS IMITATED EXTENSIVELY BY OTHER BRIDGE BUILDERS WITH MINOR CHANGES TO AVOID PATENT DISPUTES. THE BOWSTRING ARCH TRUSS BRIDGE DESIGN WAS VERY POPULAR AND ITS POPULARITY SPAWNEO THE ADVENT OF MAIL ORDER BRIDGE COMPANIES SUCH AS THE YOUNGSTOWN BRIDGE COMPANY, YOUNGSTOWN, OHIO. THE YOUNGSTOWN BRIDGE COMPANY WAS ESTABLISHED IN 1889 ON THE SITE OF THE OLO MORSE BRIDGE COMPANY WORKS AND WAS PURCHASED BY ANDREW CARNEGIE IN 1900, WHEN CARNEGIE FORMED THE AMERICAN BRIDGE COMPANY. THE WAVERLY STREET BRIDGE WAS CONSTRUCTED IN 1891-92 BY THE YOUNGSTOWN BRIDGE COMPANY.

THE TOWN OF WESTERNPORT, MARYLAND WAS ESTABLISHED IN THE 1780s BY PETER DEVEGOM, A CUMBERLAND MERCHANT, AT THE CONFLUENCE OF THE NORTH BRANCH OF THE POTOMAC RIVER AND GEORGE'S CREEK. THE TOWN SITE WAS A NATURAL PLACE OF ENCAMPMENT FOR EARLY TRAVELERS. GEORGE'S CREEK REGION IS VERY SIGNIFICANT BECAUSE THE GEORGE'S CREEK COAL FIELDS WERE ONE OF THE EARLIEST COAL FIELDS TO BE EXPLOITED IN AMERICA. THE WAVERLY STREET BRIDGE SPANS THIS HISTORIC WATERCOURSE.

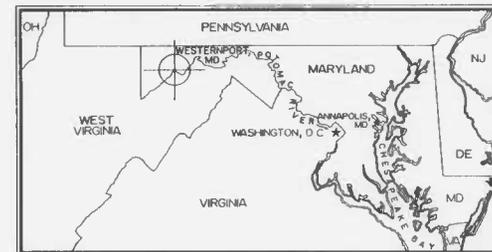
THE WAVERLY STREET BRIDGE RECORDING PROJECT WAS UNERTAKEN IN OCTOBER/NOVEMBER 1991 BY THE WEST VIRGINIA UNIVERSITY INSTITUTE FOR THE HISTORY OF TECHNOLOGY AND INDUSTRIAL ARCHAEOLOGY FOR THE HISTORIC AMERICAN ENGINEERING RECORD (HAER), A LONG RANGE PROGRAM TO DOCUMENT HISTORICALLY SIGNIFICANT ENGINEERING AND INDUSTRIAL WORKS IN THE UNITED STATES. A DIVISION OF THE NATIONAL PARK SERVICE, U.S. DEPARTMENT OF THE INTERIOR, THE HAER PROGRAM IS ADMINISTERED BY THE HISTORIC AMERICAN BUILDINGS SURVEY/HISTORIC AMERICAN ENGINEERING RECORD (HABS/HAER), OR ROBERT KAPSCH, CHIEF. THE MITIGATORY DOCUMENTATION OF THE WAVERLY STREET BRIDGE WAS SPONSORED BY THE ALLEGANY COUNTY DEPARTMENT OF PUBLIC WORKS.

THE FIELD WORK, MEASURED DRAWINGS, HISTORICAL REPORTS, AND PHOTOGRAPHS WERE PREPARED UNDER THE DIRECTION OF DR. EMORY L. KEMP, INSTITUTE DIRECTOR. THE RECORDING TEAM CONSISTED OF JOHN NICELY, CHIEF DELINEATOR, KEVIN MCCLUNG, PAUL BOXLEY, AND CHRISTINA SPYRAKOS, ASSISTANT DELINEATORS. FORMAL PHOTOGRAPHY WAS DONE BY DR. EMORY L. KEMP. LEE R. MADDEX SERVED AS PROJECT HISTORIAN.



**SITE MAP OF WAVERLY STREET BRIDGE**  
 FROM ALLEGANY COUNTY DEPARTMENT OF PUBLIC WORKS, 1991

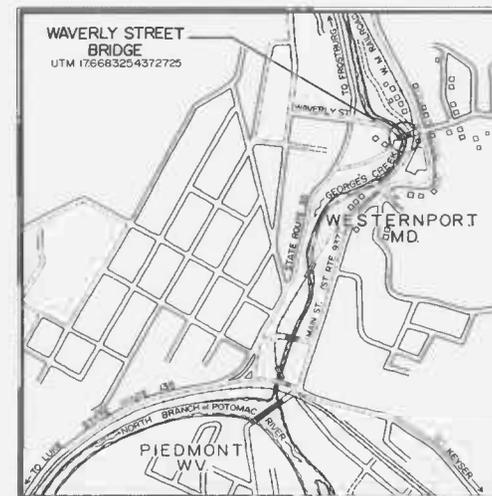
SCALE: 1/16" = 1'-0" APPROX



**REGION MAP**

FROM MARYLAND STATE HIGHWAY MAP, 1991

NO SCALE



**LOCATION MAP**

FROM USGS 7.5' SERIES, WESTERNPORT, MD-WV QUADRANGLE,  
 1981 PHOTO REVISION

NO SCALE

DELINEATED BY: P. BOXLEY  
 OCTOBER 1991  
 INSTITUTE FOR THE HISTORY OF TECHNOLOGY AND  
 INDUSTRIAL ARCHAEOLOGY  
 BRIDGE RECORDING PROJECT 1991  
 UNIVERSITY OF WEST VIRGINIA DEPARTMENT OF THE INTERIOR

WAVERLY STREET BRIDGE circa 1891-1892  
 WAVERLY STREET SPANNING GEORGE'S CREEK  
 ALLEGANY COUNTY

HISTORIC AMERICAN  
 ENGINEERING RECORD  
 MD-83

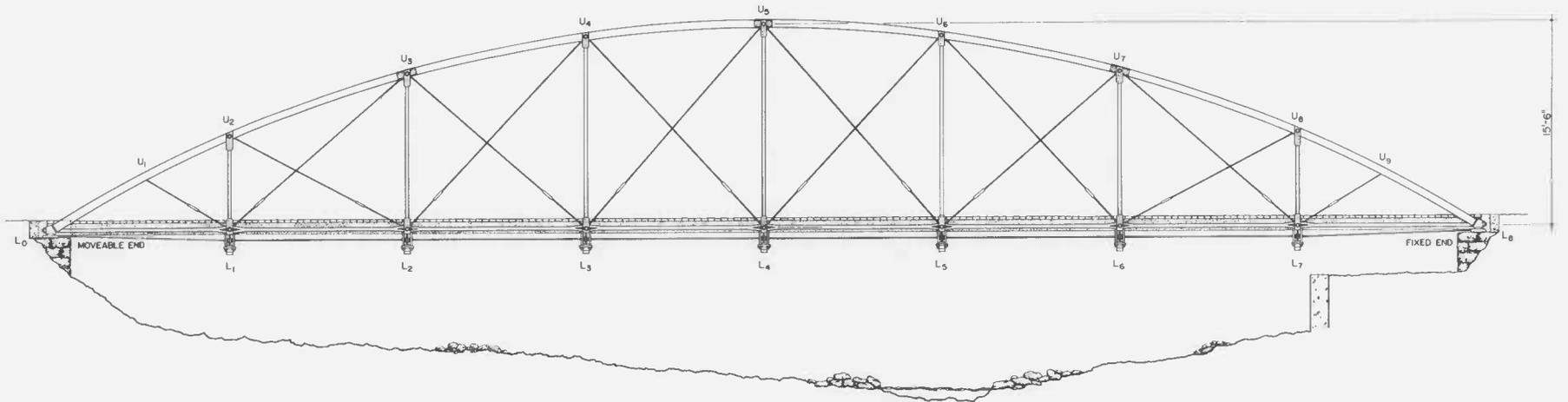
SHEET  
 1 OF 8

MARYLAND

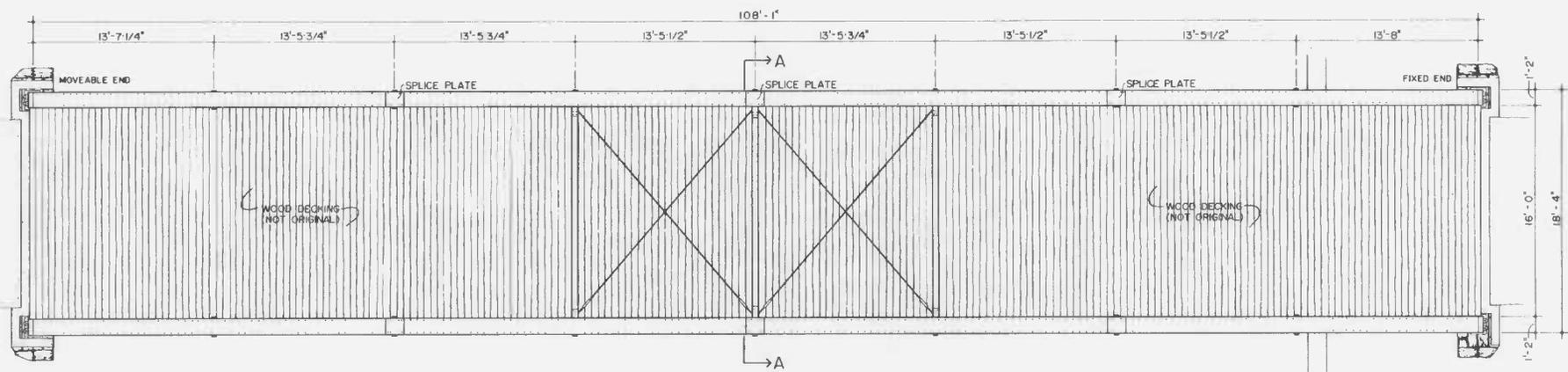
IF REPRODUCED, PLEASE CREDIT: HISTORIC AMERICAN ENGINEERING RECORD, NATIONAL PARK SERVICE, NAME OF DELINEATOR, DATE OF DELINEATION.

AL-VI-D-308

AL-VI-D-308



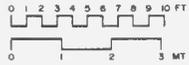
SOUTH ELEVATION



PLAN VIEW



FEET = 1/4" = 1'-0"  
 METRIC = 1:40



DEVELOPED BY: E. BOLEY  
 OCTOBER 1991  
 INSTITUTE OF TECHNOLOGY, INC.  
 BRIDGE ARCHITECTS, INC.  
 WESTERNPORT, MARYLAND  
 UNIVERSITY OF MARYLAND SYSTEM

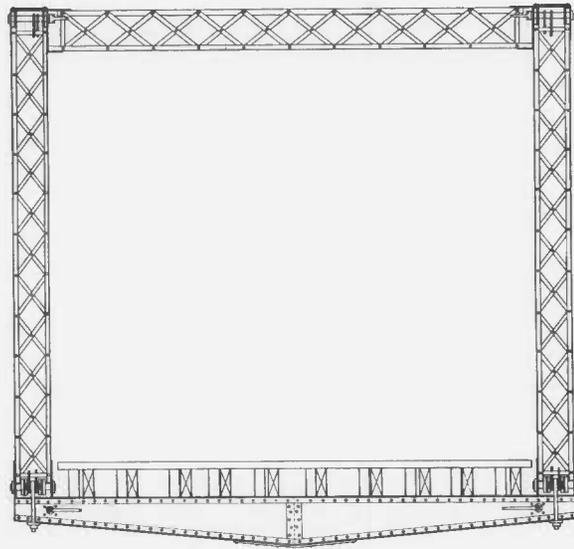
WAVELY STREET BRIDGE, circa 1891-1892  
 WAVELY STREET SPANNING GEORGE'S CREEK  
 ALLEGANY COUNTY, MARYLAND

HISTORIC AMERICAN  
 ENGINEERING RECORD  
 MD - B3

SHEET  
 2 of 8

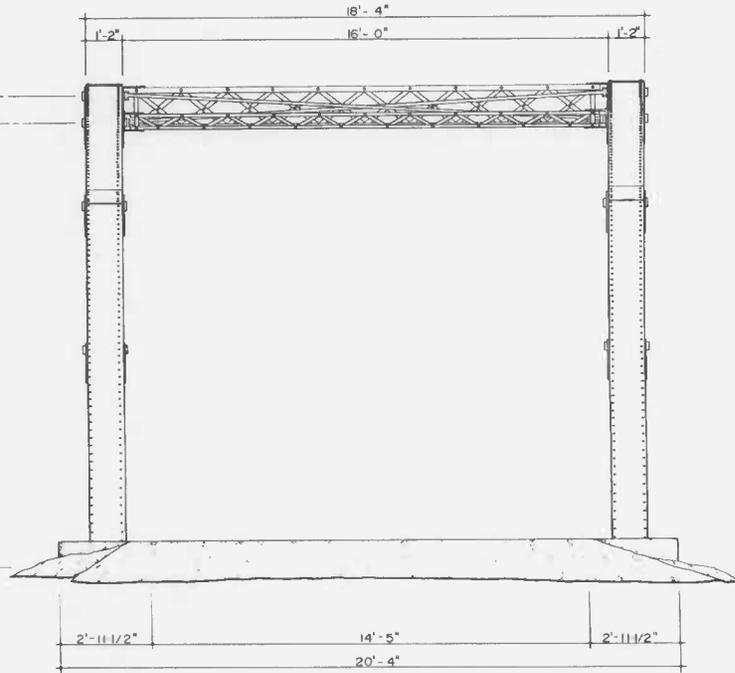
IF REPRODUCED, PLEASE CREDIT: HISTORIC AMERICAN ENGINEERING RECORD, NATIONAL PARK SERVICE, NAME OF DELINEATOR, DATE OF THE DRAWING

AL-VI-D-308



SECTION A-A

15' - 6"  
14' - 7 1/4"

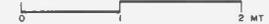


EAST ELEVATION

FEET · 1/2" = 1'-0"



METRIC · 1:24



DEVELOPED BY J. NICELY · OCTOBER 1991  
 INSTITUTE FOR HISTORIC TECHNOLOGY and  
 BRIDGE RECORDING PROJECT 1891  
 UNITED STATES DEPARTMENT OF THE INTERIOR

WESTERNPORT  
 WAVERLY STREET BRIDGE · CIRCA 1891-1892  
 WAVERLY STREET BRIDGE · GEORGE'S CREEK  
 ALLEGANY COUNTY, MARYLAND

HISTORIC AMERICAN  
 ENGINEERING RECORD  
 MD-83

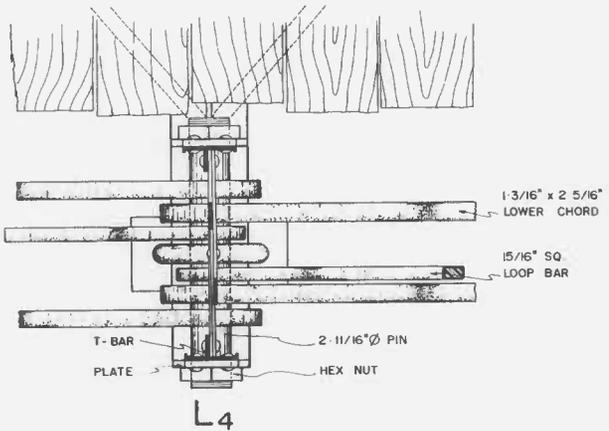
SHEET  
 3 of 8

MARYLAND

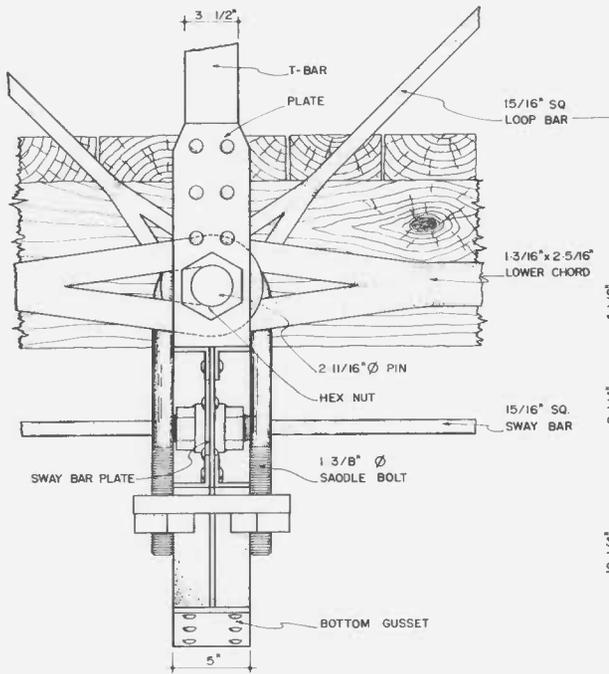
IF REPRODUCED, PLEASE CREDIT HISTORIC AMERICAN ENGINEERING RECORD, NATIONAL PARK SERVICE, NAME OF DESIGNATOR, DATE OF THE DRAWING

AL-VI-D-308

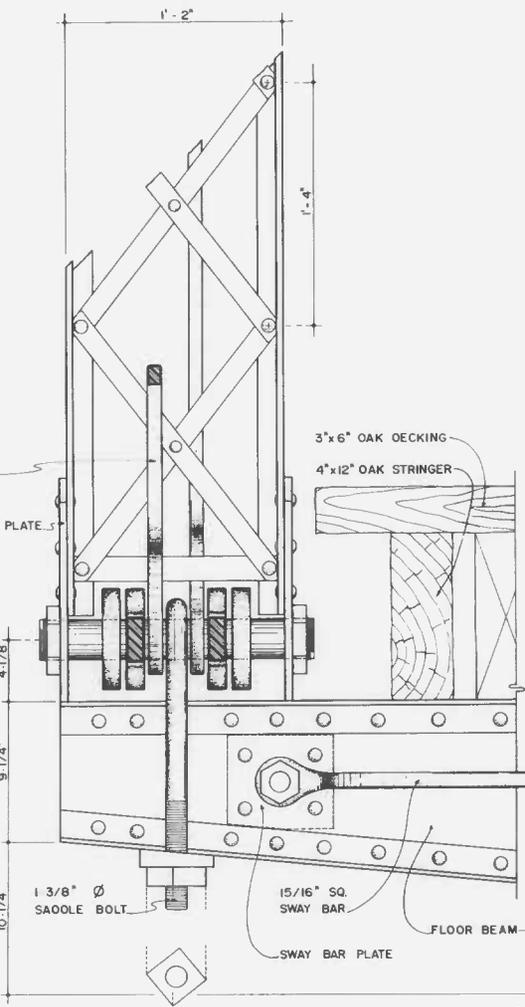
TRIM LINE



L4

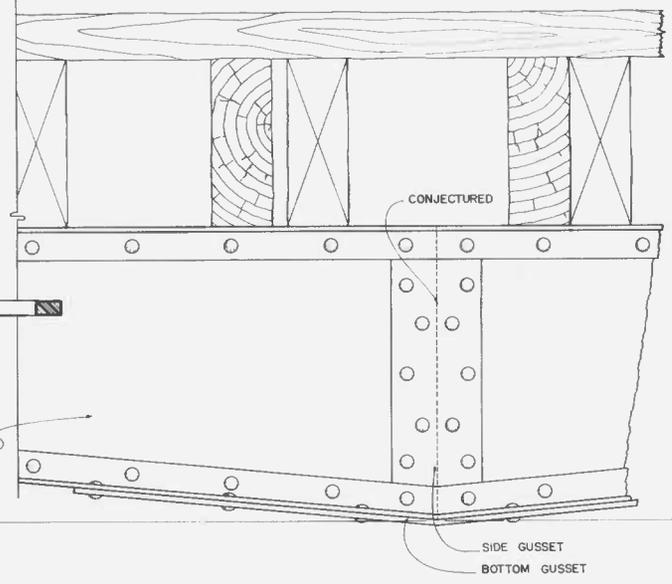
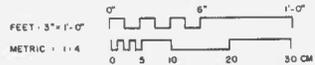
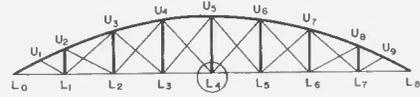


L4



L4

LOWER JOINT DETAIL  
(TYPICAL)  
L<sub>1</sub> - L<sub>7</sub>



1'-7 1/2"

DESIGNED BY: P. BOXLEY, OCTOBER 1991  
INSTITUTE for the HISTORY of TECHNOLOGY and  
INDUSTRIAL ARCHITECTURE  
BRIDGE and STRUCTURAL ENGINEERING  
UNIVERSITY of MARYLAND, COLLEGE PARK, MARYLAND

WESTERNPORT

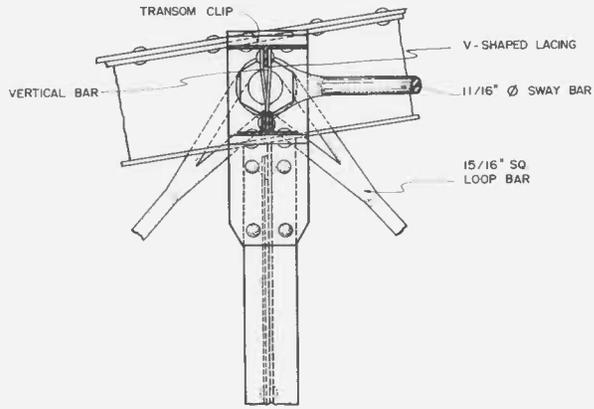
WAVERLY STREET BRIDGE, Circa 1891-1892  
WAVERLY STREET SPANNING GEORGE'S CREEK  
ALLEGANY COUNTY, MARYLAND

SHEET 4 of 8

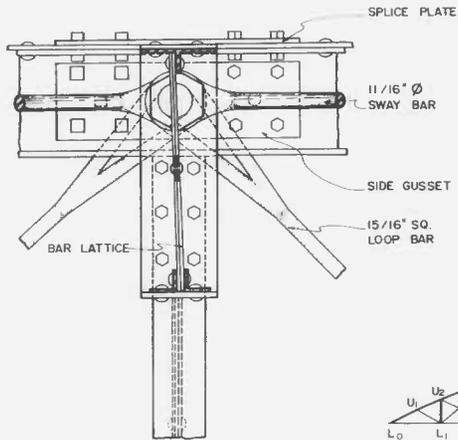
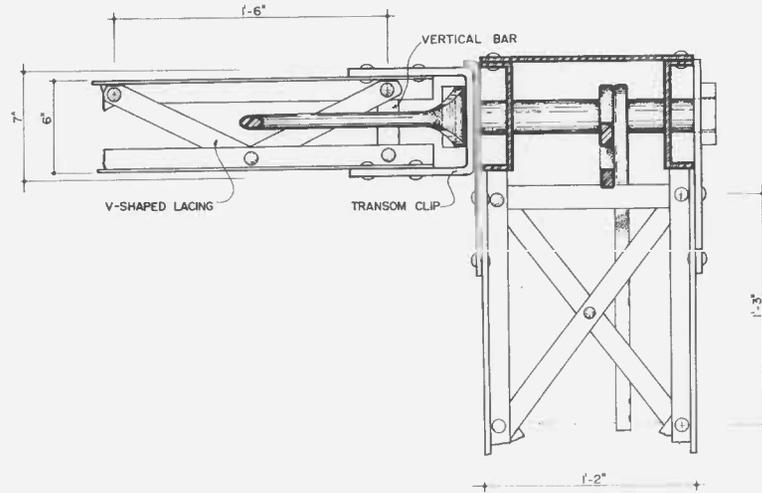
HISTORIC AMERICAN  
ENGINEERING RECORD  
MD-83

IF REPRODUCED, PLEASE CREDIT: HISTORIC AMERICAN ENGINEERING RECORD, NATIONAL PARK SERVICE, NAME OF DELINEATOR, DATE OF THE DRAWING

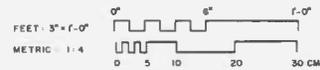
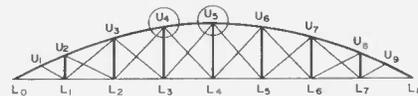
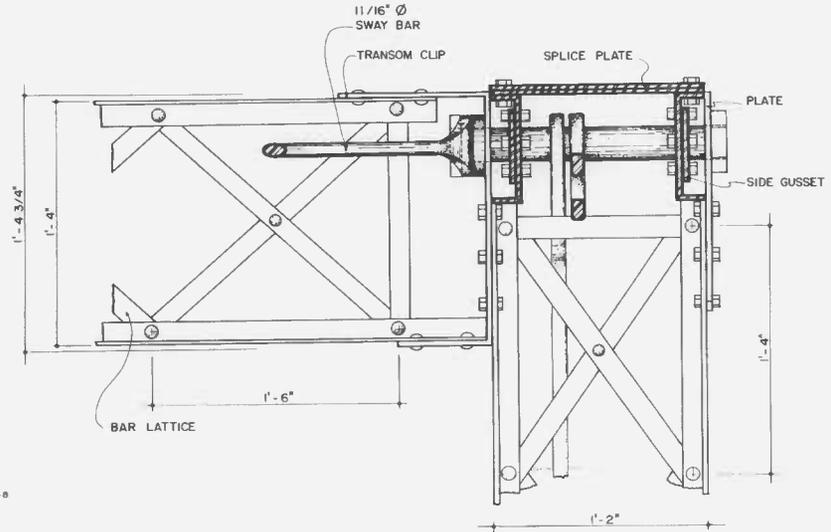
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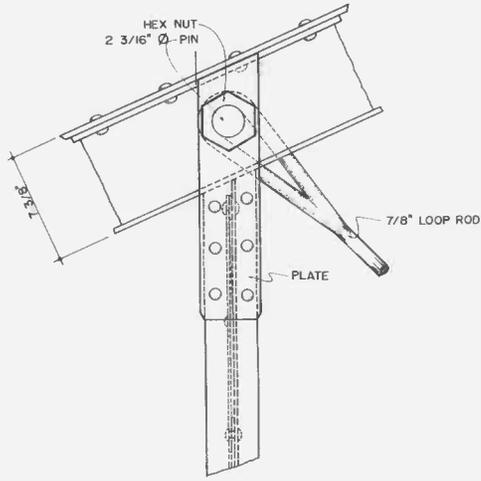
**U<sub>4</sub>**  
SYMMETRICAL JOINT  
AT U<sub>6</sub>



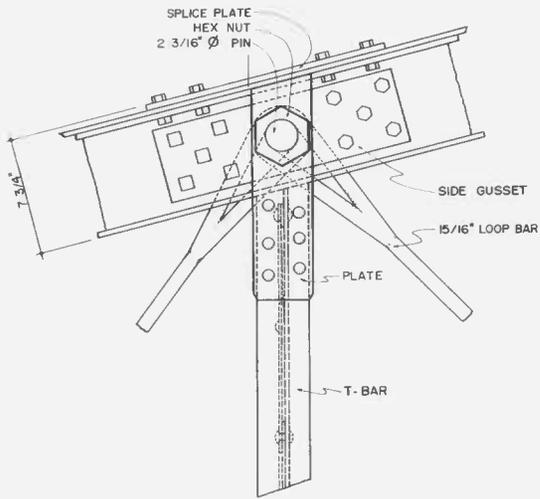
**U<sub>5</sub>**



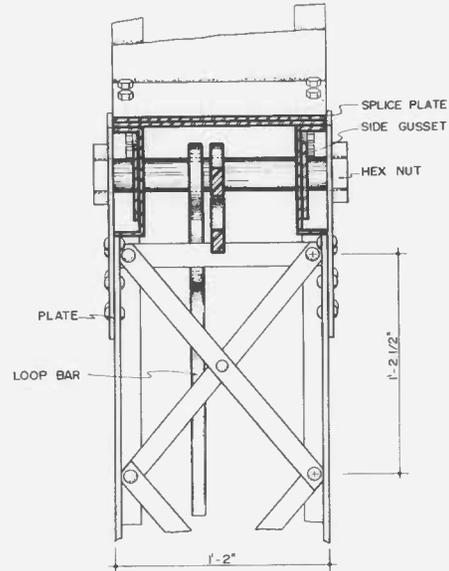
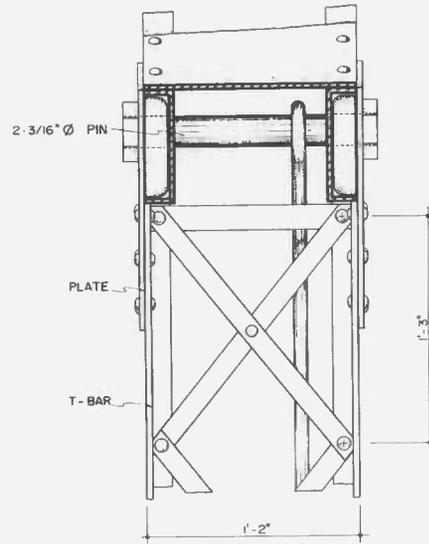
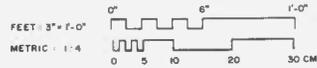
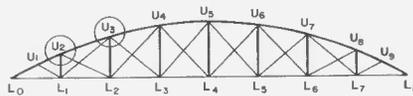
AL-VI-D-308



**U<sub>2</sub>**  
SYMMETRICAL JOINT  
AT U<sub>6</sub>

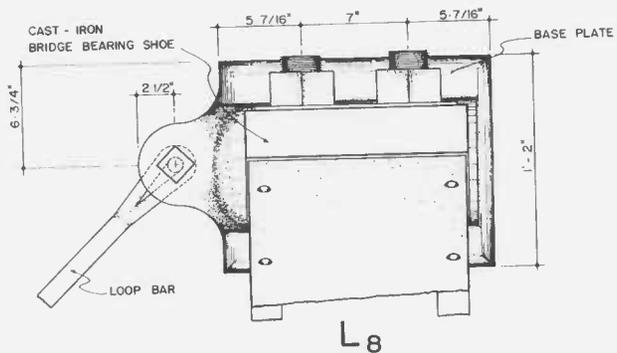


**U<sub>3</sub>**  
SYMMETRICAL JOINT  
AT U<sub>7</sub>

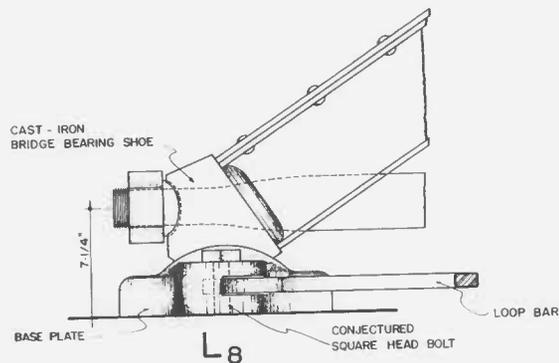


AL-VI-D-308

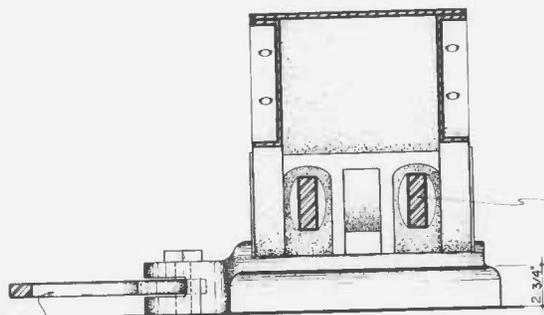
TRIM LINE



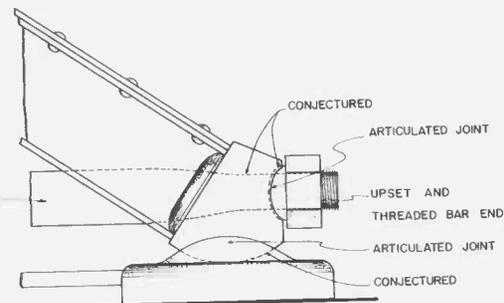
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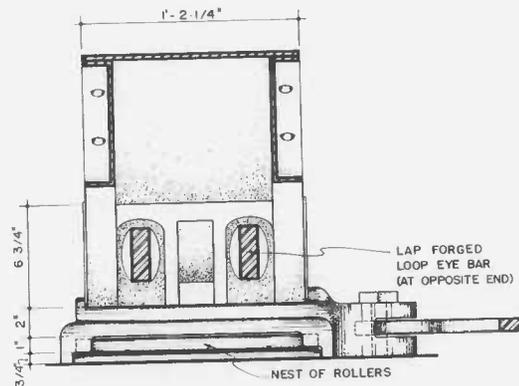
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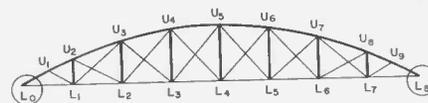
L<sub>8</sub> (FIXED BEARING)



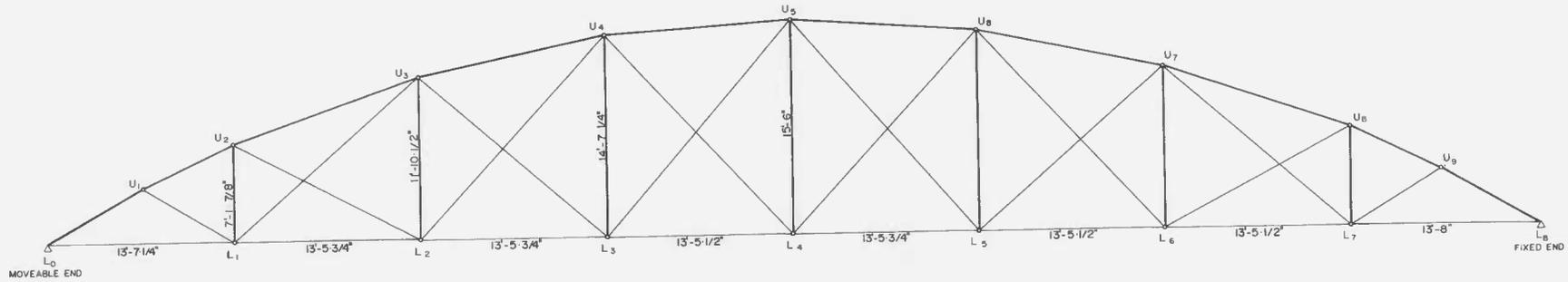
L<sub>8</sub>



L<sub>0</sub> (MOVEABLE BEARING)



AL-VI-D-308



SOUTH ELEVATION

MEMBER SCHEDULE

ELEMENT	DESCRIPTION	DIMENSION	ELEMENT	DESCRIPTION	DIMENSION	ELEMENT	DESCRIPTION	DIMENSION	ELEMENT	DESCRIPTION	DIMENSION
L0	CAST IRON BRIDGE BEARING SHOE WITH ROLLER NEST	3 9/16" x 5 1/2" x 7 7/8"	U4	2 PLATES	5" x 3/8" 8.38 LBS./FT.	L0-U1	2 C-CHANNELS WITH COVER PLATE	14" x 3/8" 17.85 LBS./FT.	U1-U2	UPPER CHORD MEMBER	7 [ 9.75 LBS./FT.
L1	2 PLATES	14" x 5" x 3/8" 8.38 LBS./FT.	U5	1 PIN	18" x 2 3/8" DIA. 12.78 LBS./FT.	U2-U3			U3-U4		
L2	1 PIN	18" x 2 1/16" DIA. 19.29 LBS./FT.		2 HEX NUTS	3/12" ACROSS FLATS	U4-U5			U5-U6		
L3	2 HEX NUTS	4" ACROSS FLATS		1 TRANSOM WITH BAR LACING	7.88 LBS./FT.	U6-U7			U7-U8		
L4	1 U-SHAPED SADDLE BOLT	1 3/8" DIA. 5.04 LBS./FT.		1 SWAY BAR WITH TURNBUCKLE	1 1/8" DIA. 12 LBS./FT.	U8-U9			U9-L0		
L5	1 FLOOR BEAM	5.3 LBS./FT. 2 3/8" x 4 3/4" x 23 1/8"	U3	1 PLATE	5" x 3/8" 8.38 LBS./FT.	L1-U2	2 T-BARS WITH BAR LATTICE	8.7 LBS./FT. 3 1/2"			
L6	2 SWAY BARS WITH TURNBUCKLE	15 1/8" SQ. 21 LBS./FT.		1 PIN	18" x 2 3/8" DIA. 12.78 LBS./FT.	L2-U3	VERTICAL POSTS				
L7	CAST IRON BRIDGE BEARING SHOE FIXED END	7 7/8" x 5 1/2" x 3 5/8"		2 HEX NUTS	3 1/2" ACROSS FLATS	L3-U4			L4-U5		
U1	1 LAP FORGED EYE ROD WITH ONE END SPLIT AND BOLTED TO BOTH C-CHANNELS			2 SIDE GUSSETS	16" x 5" x 3/8" 6.38 LBS./FT.	L5-U6			L6-U7		
U2	2 PLATES	4" x 3/8" 5.01 LBS./FT.		1 SPLICE PLATE	18" x 14" x 3/8" 17.85 LBS./FT.	L7-U8			U1-L1	1 LAP FORGED EYE ROD WITH TURNBUCKLE AND ONE END SPLIT AND THREADED	3/4" DIA. 1.5 LBS./FT.
U3	1 PIN	18" x 2 3/8" DIA. 12.78 LBS./FT.		1 TRANSOM WITH BAR LATTICE	7.88 LBS./FT.	U2-L2	1 LAP FORGED LOOP ROD WITH TURNBUCKLE	7/8" DIA. 2.04 LBS./FT.	U3-L3	1 LAP FORGED LOOP BAR WITH TURNBUCKLE	15 1/8" SQ. 2.98 LBS./FT.
U4	2 HEX NUTS	3 1/2" ACROSS FLATS		2 SWAY BARS WITH TURNBUCKLE	1 1/8" DIA. 12 LBS./FT.	U4-L4			U5-L5		
U5	2 PLATES	4" x 3/8" 5.01 LBS./FT.	L0-L1	2 LAP FORGED LOOP EYE BARS ONE END UPSET AND THREADED	2 15/16" x 1 3/16" 10.2 LBS./FT.	U5-L5			U6-L6		
U6	1 PIN	18" x 2 3/16" 12.78 LBS./FT.	L2-L3	2 LAP FORGED LOOP BARS	2 15/16" x 1 3/16" 10.2 LBS./FT.	U6-L6			U7-L7		
U7	2 HEX NUTS	3 1/2" ACROSS FLATS	L3-L4			U7-L7			U8-L8		
	2 SIDE GUSSETS	16" x 5" x 3/8" 6.38 LBS./FT.	L4-L5			U8-L8					
	1 SPLICE PLATE	16" x 14" x 3/8" 17.85 LBS./FT.	L5-L6								
			L6-L7								

NOTES:  
 JOINT NOTATION TAKEN FROM WAVERLY STREET BRIDGE NATIONAL REGISTER OF HISTORIC PLACES NOMINATION PREPARED BY MARYLAND HISTORICAL TRUST.  
 VALUES FOR STEEL TAKEN FROM SHAPS BOOK, CARNEGIE STEEL CO., PITTSBURGH, PA., COPYRIGHT, 1911

DESIGNED BY K. MCLURG  
 OCTOBER 1981  
 INSTITUTE FOR HISTORIC TECHNOLOGY AND  
 MATERIAL RESEARCH  
 1000 N. WASHINGTON AVENUE, SUITE 100  
 WESTPORT, MARYLAND 21158

WAVERLY STREET BRIDGE circa 1891-1892  
 SPANNING GEORGE'S CREEK  
 ALLEGANY COUNTY  
 WESTMONT, MARYLAND

HISTORIC AMERICAN  
 ENGINEERING RECORD  
 MD - 83  
 SHEET 8 of 8

IF REPRODUCED, PLEASE CREDIT HISTORIC AMERICAN ENGINEERING RECORD NATIONAL PARK SERVICE NAME OF DELINEATOR, DATE OF THE DRAWING

YLAND  
AL SURVEY

WESTERNPORT QUADRANGLE  
WEST VIRGINIA-MARYLAND  
7.5 MINUTE SERIES (TOPOGRAPHIC)  
NE/4 ELK GARDEN 15' QUADRANGLE



Westernport, MD:WV1  
USGS 7.5 Minute Series  
Scale 1:24,000  
1950; photorevised 1974

AL-VI-D-308  
Westernport Bowstring Arch Truss  
Bridge  
Waverly Street at Georges Creek,  
30 yards west of Main St.

WESTERNPORT QUADRANGLE  
WEST, VIRGINIA-MARYLAND  
7.5 MINUTE SERIES (TOPOGRAPHIC)  
NE 1/4 ELK CARD: N 15 QUADRANGLE

LAND

KEY



Westernport, MD:WV1  
USGS 7.5 Minute Series  
Scale 1:24,000  
1950; photorevised 1974

AL-VI-D-308  
Westernport Bowstring Arch Truss  
Bridge  
Waverly Street at Georges Creek,  
30 yards west of Main St.



HAER No. MD-83-1

Waverly Street Bridge

AL-VI-308



ROD

SPEED  
LIMIT  
20

WEIGHT  
LIMIT  
4  
TO

CLOSED OFF

HAER No. MD-83-2

AL-VI-308



HAER No. MD-83-3

AK-VI-308



HAER No. MD-83-4

AL-VI-308



HAER No. MD-83-5

AL-VI-308



HAER No. MD-83-6

AL-VI-308



HAER No. MD-83-8

AL-VI-308



HAER No. MD-83-7

AL-VI-308



HAER No. MD-83-9

AL-VI-308



HAER No. MD-83-10

AL-VI-308



HAER No. MD-83-11

AL-U1-308