

Maryland Historical Trust

Maryland Inventory of Historic Properties number: WA-VI-053

Name: US 522 over Potomac River, CSX Railroad
ACSO Canal

The bridge referenced herein was inventoried by the Maryland State Highway Administration as part of the Historic Bridge Inventory, and SHA provided the Trust with eligibility determinations in February 2001. The Trust accepted the Historic Bridge Inventory on April 3, 2001. The bridge received the following determination of eligibility.

MARYLAND HISTORICAL TRUST	
Eligibility Recommended <u> X </u>	Eligibility Not Recommended <u> </u>
Criteria: <u> A </u> <u> B </u> <u> X </u> <u> C </u> <u> D </u>	Considerations: <u> A </u> <u> B </u> <u> C </u> <u> D </u> <u> E </u> <u> F </u> <u> G </u> <u>None</u>
Comments: _____ _____	
Reviewer, OPS: <u>Anne E. Bruder</u>	Date: <u> 3 </u> April 2001
Reviewer, NR Program: <u>Peter E. Kurtze</u>	Date: <u> 3 </u> April 2001

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MARYLAND INVENTORY OF HISTORIC BRIDGES
HISTORIC BRIDGE INVENTORY
MARYLAND STATE HIGHWAY ADMINISTRATION/
MARYLAND HISTORICAL TRUST

MHT No. WA-VI-053

SHA Bridge No. 21043 Bridge name U.S.522 over Potomac River, CSX Railroad, and Chesapeake and Ohio Canal

LOCATION:

Street/Road name and number [facility carried] U.S. 522 (Warfordsburg Road)

City/town Hancock

Vicinity X

County Washington

This bridge projects over: Road Railway X Water X Land X

Ownership: State X County Municipal Other

HISTORIC STATUS:

Is the bridge located within a designated historic district? Yes X No
National Register-listed district X National Register-determined-eligible district
Locally-designated district Other

Name of district Chesapeake and Ohio Canal National Historical Park

BRIDGE TYPE:

Timber Bridge :
Beam Bridge Truss -Covered Trestle Timber-And-Concrete

Stone Arch Bridge

Metal Truss Bridge X

Movable Bridge :
Swing Bascule Single Leaf Bascule Multiple Leaf
Vertical Lift Retractable Pontoon

Metal Girder X:
Rolled Girder X Rolled Girder Concrete Encased
Plate Girder X Plate Girder Concrete Encased

Metal Suspension

Metal Arch

Metal Cantilever

Concrete :
Concrete Arch Concrete Slab Concrete Beam Rigid Frame
Other Type Name

DESCRIPTION:

Setting: Urban _____ Small town X Rural _____

Describe Setting:

Bridge 21043 carries U.S. Route 522 (Warfordsburg Road) over the Potomac River, the CSX Railroad and the Chesapeake and Ohio Canal (C & O) in the vicinity of Hancock, Washington County. U.S. Route 522 runs generally north-south, while the Potomac River, the C & O Canal, and the CSX Railroad run east-west. The bridge is located south of Hancock, Maryland, and spans the Potomac River, across the Maryland-West Virginia state line.

Describe Superstructure and Substructure:

Bridge 21043 is a 23-span, 2-lane bridge comprising Wichert deck trusses, metal girders, and plate girders; the bridge measures 782.87 meters (2568.5 feet) in total length. From north abutment to south abutment, the bridge superstructure comprises seven metal girder spans, five plate girder spans with Wichert truss connections over the piers, six Wichert deck truss spans which span the Potomac River, and five plate girder spans with Wichert truss connections over the piers. The metal girder spans are located at the north end of the structure over the CSX Railroad right-of-way (former Western Maryland Railroad). Each metal girder span is 13.4 meters (44 feet) in length. The plate girder spans are located at the south end of the bridge, over the CSX Railroad right-of-way (former Baltimore and Ohio Railroad) and at the north end of the bridge, adjacent to the metal girder spans, over the C & O Canal. At the connections over the piers, the plate girders are supported by Wichert trusses which carry the loads to the piers. The plate girder spans vary from 30.48 meters (100 feet) to 42.67 meters (140 feet) in length. The center six spans of the structure are Wichert deck truss spans over the Potomac River. These spans vary from 35.89 meters (117.75 feet) to 59.8 meters (196.25 feet) in length. The top chord of the deck truss is a built-up section of steel channels connected by rivets. The bottom chord is a built-up section of steel channels with lattice bars connected by rivets. All verticals and diagonals are steel channels. The bridge connections are riveted with pinned hinged connections at the abutments and pier bearings.

The floor system of the deck truss spans has four floorbeams and the structure has a concrete deck with a bituminous wearing surface. The deck is approximately .3 meters (1 foot) thick.

The structure has a clear roadway width of 7.3 meters (24 feet) and there are two sidewalks, each .9 meters (3 feet) wide. The out-to-out width is 9.9 meters (32.5 feet). The bridge has concrete parapets; some spans have concrete parapets with metal pipe railings.

The substructure consists of two concrete abutments and twenty-two concrete piers. There are four, flared concrete wingwalls.

Discuss Major Alterations:

Bridge 21043 has been rehabilitated in 1978, 1980, 1989, and 1993. In 1978, the concrete slab bridge deck was replaced. In 1980, the bridge truss and endposts were repaired. Superstructure repairs were made in 1989, including replacement of the support pedestal at pier 7 and the installation of new steel plates at pier 8. In 1993, the structure was cleaned, painted, and the bearings were replaced. In addition, at an unknown date the original railings were replaced with the concrete parapets which currently exist on the structure. These parapets replaced a decorative metal railing with concrete posts which are detailed on the 1937 construction plans (see attachment).

HISTORY:

WHEN was the bridge built 1937-1939
 This date is: Actual X Estimated _____
 Source of date: Plaque _____ Design plans X State bridge files/inspection form X
 Other (specify): _____

WHY was the bridge built?

The bridge was constructed to replace a toll bridge which was partially destroyed by flooding on the Potomac River in 1936.

WHO was the designer?

Unknown

WHO was the builder?

Unknown

WHY was the bridge altered?

The bridge was altered to correct functional or structural deficiencies.

Was this bridge built as part of an organized bridge-building campaign?

The bridge was constructed jointly by the State of Maryland and the State of West Virginia, between 1937 and 1939. Though its construction was not part of an organized bridge-building campaign, this was one of a number of bridges which were constructed following severe flooding on the Potomac River in the Spring of 1936.

SURVEYOR/HISTORIAN ANALYSIS:

This bridge may have National Register significance for its association with:

A - Events _____ B- Person _____
 C- Engineering/architectural character X

The bridge is eligible for the National Register of Historic Places under Criterion C, as a significant example of a Wichert deck truss. Despite some repairs, the structure has a high degree of integrity and retains such character-defining elements of the type as truss elements and concrete abutments and piers.

Was the bridge constructed in response to significant events in Maryland or local history?

This bridge was one of a large number of metal truss bridges built in Maryland in the late nineteenth and early twentieth centuries. Metal trusses built in the late nineteenth century were frequently of wrought iron construction and featured pinned connections. By the turn of the century, steel was the material of choice

and connections were sometimes pinned and sometimes riveted. By 1920, the truss type exhibited more heavily configured members and riveted connections.

General Truss Bridge Trends

The first metal truss bridges in the United States were built to carry rail and canal traffic. A rapidly expanding railroad network, with needs for long spans, heavy load capacity and rapid construction, served as the impetus for advances in metal truss technology from the mid-nineteenth century to its close. The earliest metal truss forms of the United States were patented and introduced between 1830 and the Civil War, including the popular Pratt (1844) and Warren (1848) types.

From the Civil War through the end of the century metal truss technology improved in response to increasing loads and speeds, and new transportation needs; steel began to replace iron; numerous "bridge works" and "iron works" were established in the eastern U.S. for fabricating and shipping the truss components to the bridge site; and expanding road networks required a low cost, expedient bridge type.

General Trends in Maryland

In Maryland, the earliest metal truss bridges carried rail lines, including the Baltimore & Ohio (B&O) and the Baltimore and Susquehanna Railroads. As early as 1849, B&O Chief Engineer Benjamin H. Latrobe recommended the construction of metal truss bridges for "large crossings"; in 1850 he reported "much satisfaction" with the future of iron bridges after constructing the metal truss bridge at Savage.

Numerous metal truss bridges were manufactured in Baltimore, the early industrial hub of bridge building activity in the state, from the 1850s through the 1880s. Among the early bridge builders in the 1850s and 1860s were former B&O employees, B.H. Latrobe and Wendell Bollman, founders of competing Baltimore bridge building companies. Historical research identified more than twenty-five bridge companies that built truss bridges in the state between 1850 and 1920. Among these were the Wrought Iron Bridge Company, King Iron Bridge Company, Patapsco Bridge and Iron Works, Baltimore Bridge Company, Pittsburg Bridge Company, Penn Bridge Company, Smith Bridge Company, Groton Bridge and Manufacturing Company, Roanoke Iron and Bridge Company, York Bridge Company, Vincennes Bridge Company, Bethlehem Steel Company, American Bridge Company.

The location of the Baltimore & Ohio Railroad, Baltimore bridge fabricators, and the urban needs of the city and its environs resulted in the erection of numerous early truss bridges in Baltimore and the surrounding area. Initially constructed for the railroads, their use quickly came to replace the earlier timber bridges on Baltimore roads.

From Baltimore, the use of the metal truss spread to other parts of the state, with County Commissioners in the Piedmont and Appalachian Plateau counties erecting numerous metal trusses from the 1870s to the early twentieth century. Frederick County erected numerous truss spans during that time. Records indicate that in the early twentieth century the York Bridge Company built a number of metal trusses there, primarily Pratt but also Warren and Parker trusses. In the same county, King Iron Bridge Manufacturing Company erected several bowstring pony truss bridges.

The Wichert Truss

During the late nineteenth and early twentieth centuries, many variants of the Pratt and Warren truss designs were developed and put into service on U.S. roads and railroads. An additional significant twentieth century truss type which deserves mention is the Wichert truss, which was utilized in several important bridges built in Maryland.

The Wichert truss is a significant type of continuous truss. Continuous trusses have a chord and web configuration that continues uninterrupted over one or more intermediate supports, compared with simply supported trusses which are supported only at each end. Due to concerns over potential stresses caused by intermediate pier settlement, continuous trusses were not generally employed until the early twentieth century. In 1930, E.M. Wichert of Pittsburgh addressed the problem with his Wichert truss, a continuous truss in which hinged quadrilateral sections were included over the intermediate piers. Wichert's first major truss bridge constructed to this design was the 1937 Homestead High Level Bridge over the Monongahela River at Pittsburgh.

Maryland State Roads Commission engineers, noting the usefulness of the Wichert design for long river spans, built two early examples of the Wichert Truss between 1937 and 1939, in cooperation with the West Virginia State Roads Commission; Bridge 21043 and the high-level crossing of the Potomac connecting Shepherdstown, West Virginia, with Washington County, Maryland. The Shepherdstown bridge, a 1,020-foot-long structure includes six spans of Wichert continuous deck trusses with a 24-foot clear roadway (P.A.C. Spero & Company 1986:124; Maryland State Roads Commission 1939:80). In 1939-1940, J.E. Greiner Company and the Maryland State Roads Commission incorporated Wichert-type deck trusses in the Governor Harry Nice Memorial Bridge over the Potomac at Morgantown and the Thomas Hatem Memorial Bridge crossing the Susquehanna at Havre de Grace (J.E. Greiner Company). Continuous deck trusses were also utilized in portions of the first Chesapeake Bay Bridge, built between 1949 and 1952 by Greiner under state contract (Brown 1952:17).

Bridge 21043 was constructed between 1937 and 1939 as a result of flooding on the Potomac River in the Spring of 1936. The spring thaw caused the Potomac River to rise to flood levels and martial law was declared by Governor Nice. A toll bridge at the present location of Bridge 21043, which was jointly owned by the State of Maryland and the State of West Virginia since 1923, was partially destroyed by the flooding. As a result, the two states jointly built the replacement bridge, which spanned the Potomac River, the C & O Canal, the Western Maryland Railroad and the Baltimore and Ohio Railroad (both present-day CSX Railroad), eliminating at-grade railroad crossings in the area (Maryland State Roads Commission 1958: 135-136).

When the bridge was built and/or given a major alteration, did it have a significant impact on the growth and development of the area?

There is no evidence that the construction of this bridge had a significant impact on the growth and development of this area.

Is the bridge located in an area which may be eligible for historic designation and would the bridge add to or detract from the historic/visual character of the potential district?

The bridge spans the Chesapeake and Ohio Canal. The canal was declared a National Monument in 1961, was listed on the National Register of Historic Places in 1966, and was named a National Historical Park in 1972. Bridge 21043 neither contributes to, nor detracts from the significance or character of the canal.

Is the bridge a significant example of its type?

The bridge is a potentially significant example of a Wichert truss bridge, possessing a high degree of integrity.

Does the bridge retain integrity of important elements described in Context Addendum?

The bridge retains the character-defining elements of its type, as defined by the Statewide Historic Bridge Context, including the truss elements and the concrete abutments and piers.

Is the bridge a significant example of the work of a manufacturer, designer, and/or engineer?

Unknown

Should the bridge be given further study before an evaluation of its significance is made?

No further study of this bridge is required to evaluate its significance.

BIBLIOGRAPHY:

County inspection/bridge files X SHA inspection/bridge files X

Other (list):

Brown, Harry M.

1952 The Construction of the Bay Bridge. *Baltimore*, July : 15-17, 40-45.

J.E. Greiner Company

1938 *Maryland's Primary Bridge Program*. Report prepared for the Maryland State Roads Commission, Baltimore, MD.

Maryland State Roads Commission

1939 *Modernizing Maryland Highways*. State of Maryland, Baltimore, MD.

1958 *A History of Road Building in Maryland*. Maurice Leeser Company, Baltimore, MD.

P.A.C. Spero & Company.

1986 *Historic Highway Bridges in Pennsylvania*. Prepared for Pennsylvania Department of Transportation and Pennsylvania Historical and Museum Commission.

1995 *Historic Highway Bridges in Maryland: Historic Context Report*. Prepared for Maryland State Highway Administration.

SURVEYOR:

Date bridge recorded August 1998

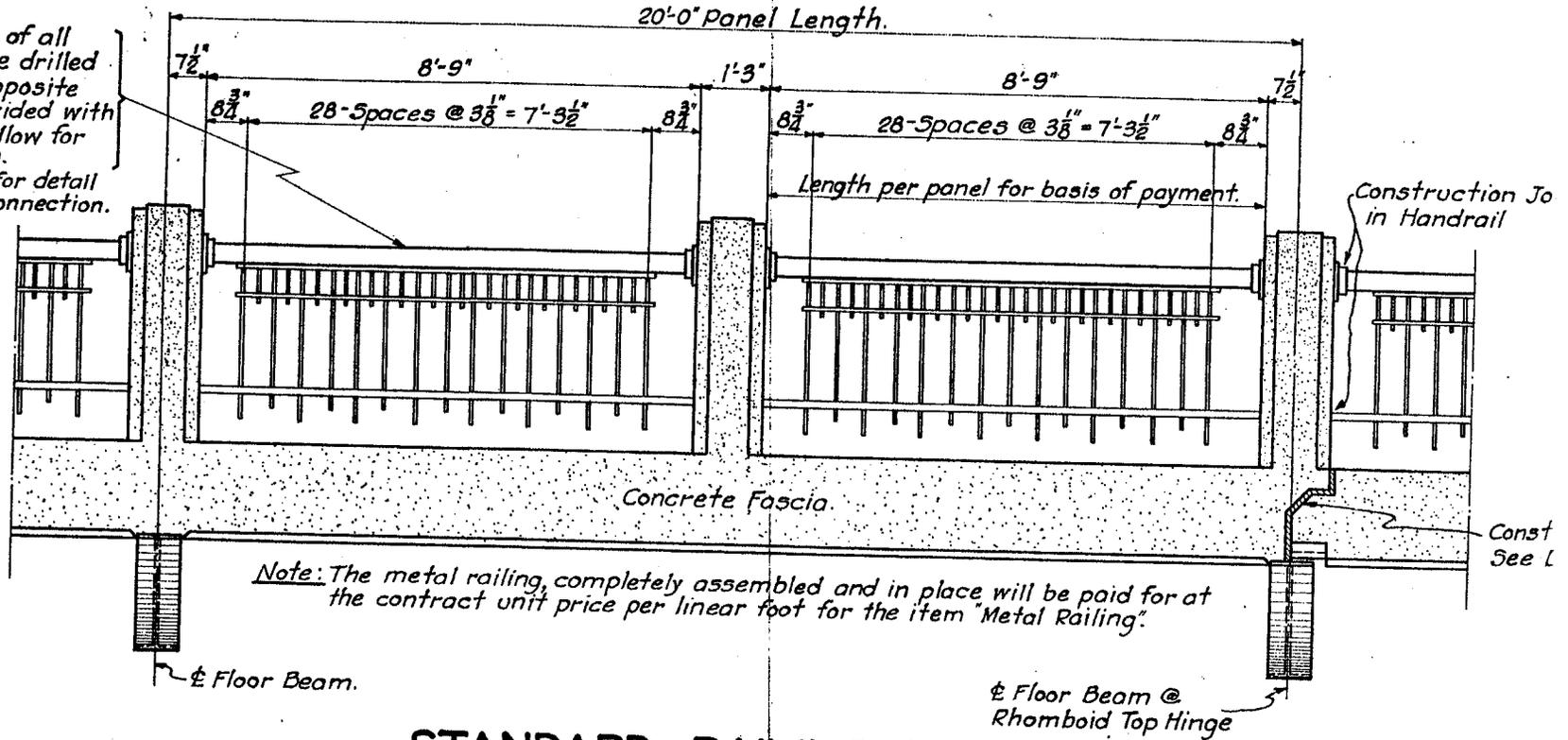
Name of surveyor Caroline Hall

Organization/Address P.A.C. Spero & Co., 40 W. Chesapeake Avenue, Suite 412, Baltimore, Maryland 21204

Phone number 410-296-1635

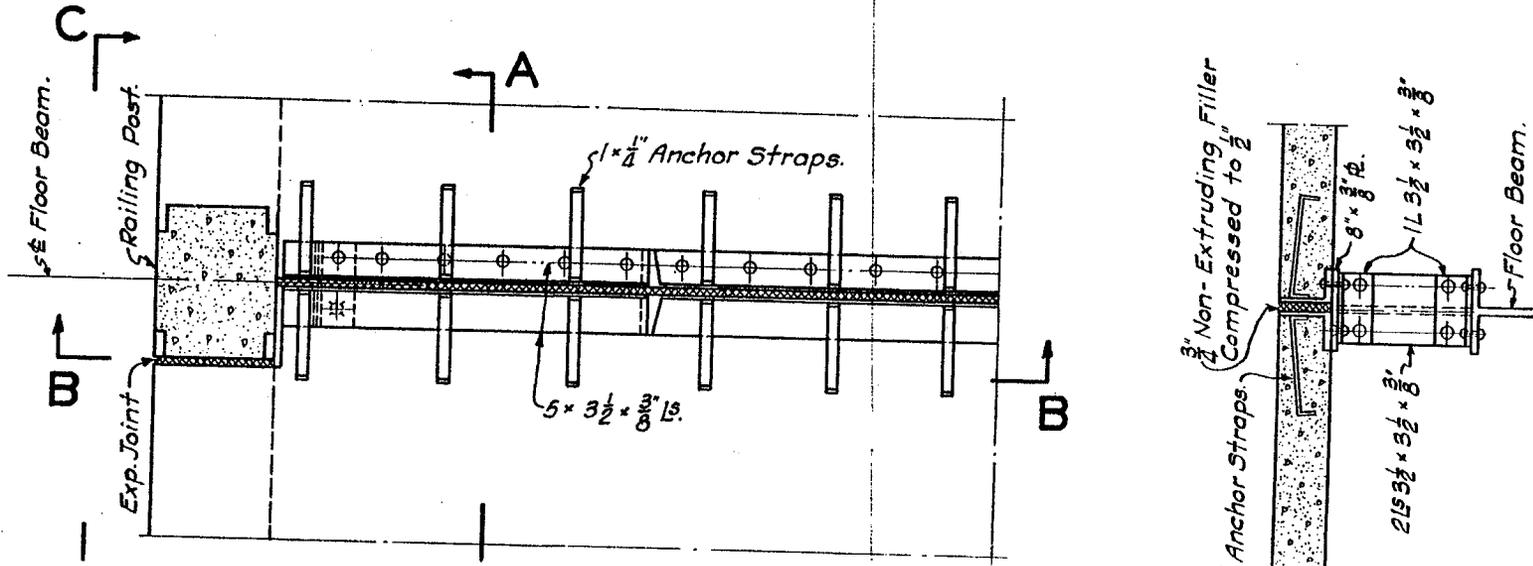
FAX number 410-296-1670

Note: One end of all pipe rail to be drilled for $\frac{3}{4}$ " Pip, opposite end to be provided with $\frac{1}{8}$ " x 1" Slot to allow for rail expansion. See Sheet N#7 for detail of lower rail connection.



STANDARD RAILING PANEL

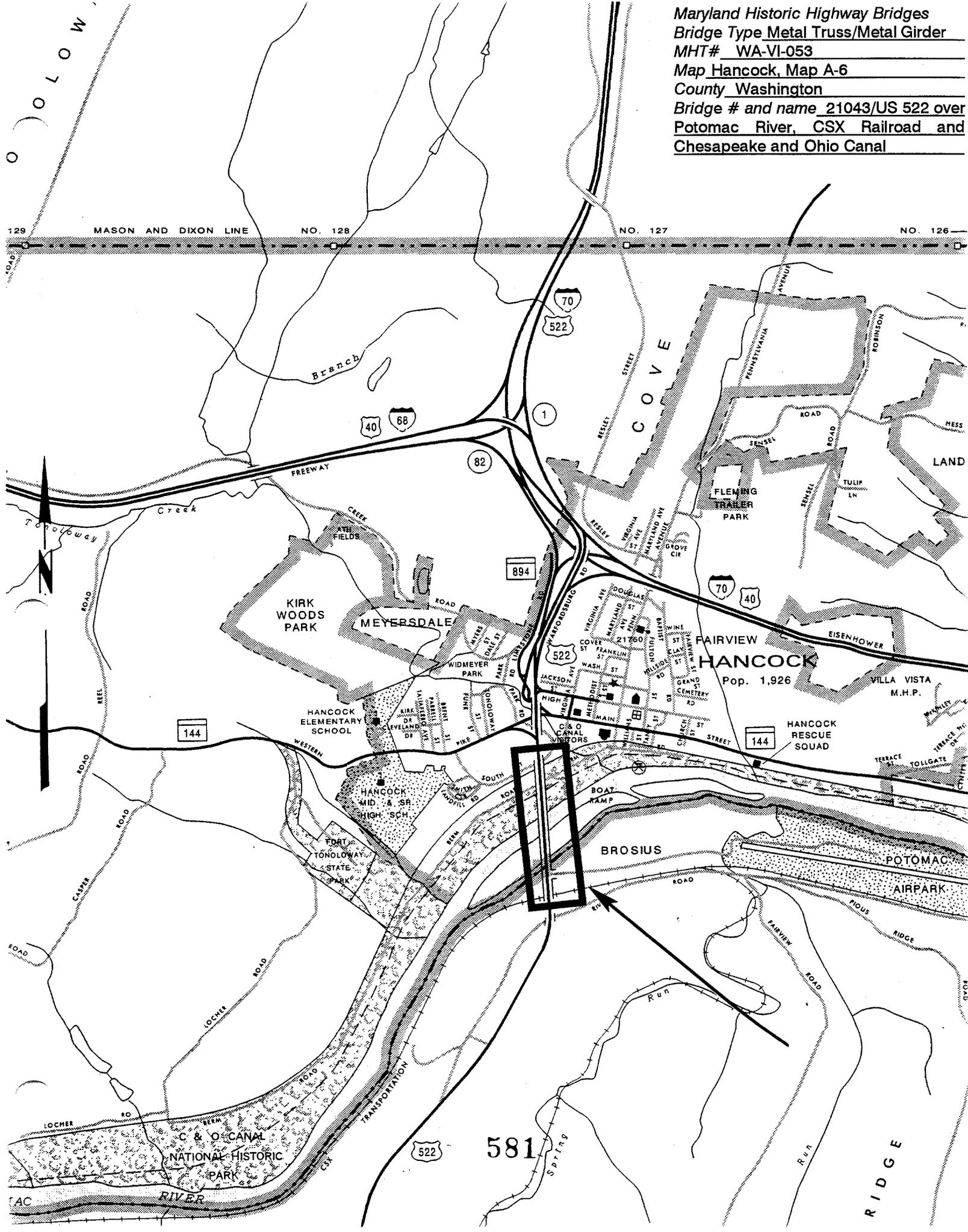
Scale $\frac{3}{8} = 1'-0"$



58
Rage system

WA-U-53

Maryland Historic Highway Bridges
 Bridge Type Metal Truss/Metal Girder
 MHT# WA-VI-053
 Map Hancock, Map A-6
 County Washington
 Bridge # and name 21043/US 522 over
Potomac River, CSX Railroad and
Chesapeake and Ohio Canal





WA-VI-53

BR# 2104310

OVER POTOMAC RIVER

WASHINGTON CO. MD.

DAVID KING

2/22/95

S. H. A.

NORTH APPROACH

1 OF 8



SPEED
LIMIT
35

WA-VI-53

BR # 2104310

OVER POTOMAC RIVER

WASHINGTON CO., MD

DAVID KING

2/22/95

S. H. A.

SOUTH APPROACH

2 OF 8



"STONEWALL" JACKSON
HILL

From this point, "Stonewall"
Jackson shelled Hancock, Md.,
Jan. 5 1862. After destroying
supplies, the B & O Railway track
and the bridge over the Great
Cacapon, Jackson marched his
army of 8,500 men to Romney
and captured it, January 14.

WA-VI-53

BR # 2104310

OVER POTOMAC RIVER

WASHINGTON CO, MD.

DAVID KING

2/22/95

S. H. A.

~~HISTORIC SITE SIGN AT SOUTH
PLAQUE~~

APPROACH

3 OF 8



WA-VI-53

BR # 2104310

OVER POTOMAC RIVER

WASHINGTON CO. MD.

DAVID KING

2/22/95

S. H. A.

EAST ELEVATION SOUTHERN
SPANS

4 OF 8

SPEED
LIMIT
35



Followe ASSE
ANDY
CASSE

WA-VI-53

BR # 2104310

OVER POTOMAC RIVER

WASHINGTON CO., MD.

DAVID KING

2/22/95

S. H. A.

EAST ELEVATION NORTHRAISPANS

LOOKING NORTH

5 OF 8



WA-UI-53

BR # 2104310

OVER POTOMAC RIVER

WASHINGTON CO., MD.

DAVID KING

2/22/95

S. H. A

WEST ELEVATION NORTHERN SPANS

LOOKING NORTH

6 OF 8



WA-VI-53

BR # 2104310

OVER POTOMAC RIVER

WASHINGTON CO., MD.

DAVID KING

2/22/95

S. H. A.

WEST ELEVATION SOUTHERN SPANIS

7 OF 8



WA-VI-53

BR # 210431D

OVER POTOMAC RIVER

WASHINGTON CO, MD.

DAVID KING

2/22/95

S. H. A.

EAST ELEVATION NORTHERN SPANS

LOOKING SOUTH

8 OF 8