

Addendum to Maryland Historical Trust Maryland Inventory of Historic Properties Form

Inventory No. SM-520

Page 1 of 4

Name of Property: SHA Bridge No. 1800800

Location: MD 5 (Point Lookout Road) over Eastern Branch, Park Hall, St. Mary's County

SHA Bridge 1800800 over Eastern Branch (MIHP No. SM-520) is located on the west side of Park Hall, Maryland and carries MD 5 over Eastern Branch in St. Mary's County. The bridge, built in 1936, is a single-span steel girder bridge that carries one lane of traffic in each direction. In general, MD 5 runs north-south. MD 5 is classified as a rural major collector. The Average Daily Traffic (ADT) in the vicinity of the bridge as of 2010 was 8,010 vehicles.

SHA Bridge No. 1800800 is slated for replacement in 2014. This addendum is provided as mitigation for the loss of the NRHP-eligible bridge. SHA Bridge No. 1800800 has not been classified under SHA's Historic Highway Bridge Program, but it is similar to other bridges that are classified as Non-Priority Documentation Level Bridges. The bridge is located along the Religious Freedom Tour Scenic Byway and within the Southern Maryland Heritage Area, and is similar to other bridges within these historic designations along MD 5 (e.g., MD 5 over Church Creek [Bridge 1801000; SM-519]).

Metal rolled multi-beam bridges were fabricated in the United States as early as the 1850s, but were not used widely on highway bridges until the 1920s and 1930s. The federal Bureau of Public Roads prepared the earliest known standard drawings of rolled beam bridges in 1917 (PB and Elli 2005: 3-107). In the twentieth century, state transportation departments created standard plans for concrete and metal bridges to be used on state highways and local roadways. A number of significant state planning studies were carried out in the 1930s in Maryland, which marked the beginning of the end of Maryland's traditional system of individual road and bridge petitions (P.A.C. Spero & Company et al. 1995: 31).

Like many other metal rolled girder bridges constructed during this time, SHA Bridge 1800800 was part of an organized bridge building campaign. In 1927, MD 5 was originally designated to run from north of Point Lookout State Park to Washington D.C. An earlier concrete girder bridge was built before 1932 as part of this campaign. In September 1935, flooding resulting from a cloudburst over Southern Maryland caused damage to numerous bridges in Charles and St. Mary's Counties, necessitating immediate repairs and replacements. When replacement bridges were constructed, "steel pile bridges" were used to meet foundation requirements in that part of the state. By 1935, six of these bridges had been built and opened to traffic in Southern Maryland (Maryland State Roads Commission 1937: 53). Bridge 1800800 was part of this campaign the following year.

The 1933 Standard Plans for Maryland included a standardized plan for steel beam bridges for secondary roads (Parsons Brinckerhoff Quade & Douglas, Inc. 1997: A-42). In this plan, the standard bridge was meant to carry one lane with H-15 design loading. The design loading was increased in the

Addendum to Maryland Historical Trust Maryland Inventory of Historic Properties Form

Inventory No. SM-520

Page 2 of 4

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next six years, and is reflected in the design of Bridge 1800800. The annual report of the Maryland State Roads Commission in 1939 stated that the design of bridges on the State Roads system proper, excluding secondary or tertiary highways, utilized the H-20 loading of the Bridge Specifications of the American Association of State Highway Officials (Maryland State Roads Commission 1939: 72).

A Context for Common Historic Bridge Types (2005: 3-108) states that "metal rolled multi-beam bridges possess low significance" and their level of significance depends on dates, span lengths, integrity, and the use of early innovative fabric techniques. Although Bridge No. 1800800 is quite typical of metal rolled girder bridges constructed over the course of the 1920s and 1930s, it is eligible for inclusion in the National Register since no significant alterations are documented, since its initial assessment in 1995.

The Bridge Sufficiency Rating for the bridge is 60.1 according to a 2010 National Bridge Inventory Database Record. The sufficiency rating was calculated to determine if the bridge was eligible for Federal funding, and a sufficiency rating of 80 or less is eligible for rehabilitation. SHA assigned the condition rating of 4 to the deck of the bridge, a 6 to the superstructure, and a 5 to the substructure. According to the National Bridge Inspection Standards [23 CFR Part 650], bridges are classified as "structurally deficient" if they have a general condition rating for the deck, superstructure, or substructure of 4 or less, or if flooding regularly overtops the road approaches. A brief conversation with a local resident indicated that the area around Old Hermanville Road flooded regularly.

A field visit in November 2013 indicated a number of cracks, spalled areas with exposed aggregate, and efflorescence on the bridge's abutments and wingwalls. Significant, deep vertical cracks and map cracking were noted on the northern side of the east abutment and on the northeast wingwall. The northwest corner of the east abutment was spalled so that aggregate was exposed. The northwest and southeast wingwalls had similar spalled areas in two spots as well as a full height vertical crack. Significant vegetation has grown along the southeast wingwall. The southern part of the east abutment also had spalled areas of exposed aggregate and the abutment appears to be bulging. The southwest wingwall and the west abutment appear to be in generally good condition. However, there is staining and heavy efflorescence on the interior of both abutments.

The fascia beams of the superstructure showed evidence of hairline cracking, rust staining from the soffit, and minor section loss on the webs and bottom flanges. Both of the fascia beams were painted in 2000 with heavy pitting and section loss under the paint (BIRE 2005). Heavy pitting and section loss on the fascia and interior beams was noted again in the 2007 inspection reports (BIRE 2007). Between 2007 and 2009, the fascia beams were painted and retrofitted with a bolted plate connection across the entire length, and four of the interior beams were plated along the bottom flange and lower web (BIRE

Addendum to Maryland Historical Trust Maryland Inventory of Historic Properties Form

Inventory No. SM-520

Page 3 of 4

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2009). According to the 2013 inspection report, there was staining and medium surface rust along interior webs and flanges due to moisture seepage from the soffit.

The exteriors of the soffit showed map cracking of various degrees, from hairline to heavy cracks, as well as spalling and efflorescence. Small stalactites were evident on the north side. Between 1996 and 1998, bays 2, 3, 10, 11, and 12 were patched (BIRE 1998). In 2013, heavy dripping efflorescence was noted in bays 2, 3, 10, and 11, and the old repair of bay 12 was failing (BIRE 2013).

The posts which attached the original guard rails to the soffit on both sides of the bridge were rusted and corroded at the base and a number of bolts are missing. W-beam guard rails were attached to the original green railing on each side for added protection in 1998 (BIRE 1998). The original railing posts were re-painted between 1998 and 2001, but rust at the bases of the railing were noted almost immediately (BIRE 2001). In the field visit, the old railing on both sides showed signs of warping and the surface was rusted and corroded where it connected to the new guard rail.

The surface of the travel lanes showed increased rutting and depressions. Cracking in the deck of the bridge was filled in 1996 (BIRE 1996), and the deck was repaired with a bituminous overlay between 1998 and 2001 (BIRE 2001). Subsequent repairs were noted in the field visit. Two large concrete patches and a large area of old asphalt patching were visible in the northbound lane. There were also map cracking and small puncture holes. Long, horizontal cracks appear along both north and south edges of the bridge. These cracks appear to follow the points where the old railing are attached to the bridge.

References:

Federal Highway Administration

2008 National Bridge Inspection Standards. Available at <http://www.fhwa.dot.gov/bridge/nbis.cfm>. Accessed 11/26/13.

Maryland Historical Trust

2001 MIHP Form for SM-520: MD 5 Over Eastern Branch.

Maryland State Roads Commission

1937 Report of the State Roads Commission of Maryland. Operating Report for the years 1935-1936; Financial Report for the fiscal year 1936.

1939 Report of the State Roads Commission of Maryland. Operating Report for the years 1937-1938; Financial Report for the fiscal year 1937-1938.

Parsons Brinckerhoff and Engineering and Industrial Heritage (PB and Elli)

Prepared by: Gerry Kuncio, Skelly & Loy and Robert Wanner, EAC/A

Date: 1/20/2014

Addendum to Maryland Historical Trust Maryland Inventory of Historic Properties Form

Inventory No. SM-520

Page 4 of 4

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2005 A Context for Common Historic Bridge Types. NCHRP Project 25-25, Task 15. Prepared for the National Cooperative Highway Research Program, Transportation Research Council, National Research Council.

Parsons Brinckerhoff Quade & Douglas, Inc.

1997 Small Structures on Maryland's Roadways: Historic Context Report. Prepared for Maryland State Highway Administration, Maryland Department of Transportation.

P.A.C. Spero & Company, Louis Berger & Associates

1995 Historic Highway Bridges in Maryland, 1631-1960: Historic Context Report. Prepared for the Maryland State Highway Administration, Maryland State Department of Transportation.

State Highway Administration

2013 Bridge Inspection Report for Bridge Number 18000800.

2011 Bridge Inspection Report for Bridge Number 18000800.

2009 Bridge Inspection Report for Bridge Number 18000800.

2007 Bridge Inspection Report for Bridge Number 18000800.

2005 Bridge Inspection Report for Bridge Number 18000800.

2004 Bridge Inspection Report for Bridge Number 18000800.

2003 Bridge Inspection Report for Bridge Number 18000800.

2001 Bridge Inspection Report for Bridge Number 18000800.

1998 Bridge Inspection Report for Bridge Number 18000800.

1996 Bridge Inspection Report for Bridge Number 18000800.

**MD 5 OVER EASTERN BRANCH
SM-520
PARK HALL, ST. MARY'S COUNTY
PHOTOGRAPH LOG**

Project No. SM366C21

MD 5 over North Branch, Replacement of SHA Bridge No. 1800800

St. Mary's County, Maryland

Photographer: Robert Wanner, EAC/A, Inc.

Date: November 19, 2013

Ink and Paper Combination: Epson UltraChrome pigmented ink on Epson Premium Luster Photo Paper

Brand, Make, and Dye Type of the CD-R Gold: Verbatim UltraLife Archival Grade CD-R, 24 karat gold and patented AZO dye

Image File Name	Image No.	Description
SM-520_2013-11-19_01.TIF	#1	General view of MD5 and cracking and rutting in the bridge deck, facing east
SM-520_2013-11-19_02.TIF	#2	North side of bridge, spalling on east wingwall, connection between original guard rail and W-beam guard rail, facing southeast
SM-520_2013-11-19_03.TIF	#3	Cracking and efflorescence on northwest wingwall, facing southeast
SM-520_2013-11-19_04.TIF	#4	Detail of cracks on northeast wingwall, north side fascia beam, and original guardrail, facing west
SM-520_2013-11-19_05.TIF	#5	South side of bridge, west abutment, east wingwall, and MD5, facing west



Epson
Professional Paper

SM-520
St. Mary's County, Maryland

Rob Wanner

November 19, 2013

MD SHPO

General view of MD5 and
cracking and rutting in the
bridge deck, facing east

Photo # 115

SM-520_2013-11-19_01.TIFF

Epson



SM-520

St. Mary's County, Maryland

Rob Wanner

November 19, 2013

MD SHPO

North side of bridge, spalling on east
wingwall, connection between original
guard rail and W-beam guard rail,
facing southeast

Photograph # 2/5

SM-520_2013-11-19_02.TIF



SM-520

St. Mary's County, Maryland

Rob Wanner

November 19, 2013

MD SHPO

Cracking and efflorescence on northwest
wingwall, facing southeast

Photograph #3/5

SM-520-2013-11-19-03.TIFF



SM-520

St. Mary's County, Maryland

Rob Wanner

November 19, 2013

MD SHPO

Detail of cracks on northeast wingwall,
north side fascia beam, and
original guardrail, facing west

Photograph #4/5

SM-520_2013-11-19_04.TIFF



SM-520

St. Mary's County, Maryland

Rob Wanner

November 19, 2013

MD SHPO

South side of bridge, west abutment,
east wing wall, and MD5, facing west

Photograph #515

SM-520-2013-11-19_05.TIFF

Maryland Historical Trust

Maryland Inventory of Historic Properties number: SM-570

Name: MD Sossou Eastern Branch

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> </u> A <u> </u> B <u> X </u> C <u> </u> D	Considerations: <u> </u> A <u> </u> B <u> </u> C <u> </u> D <u> </u> E <u> </u> F <u> </u> G <u> </u> None
Comments: _____ _____	
Reviewer, OPS: <u>Anne E. Bruder</u>	Date: <u> 3 April 2001 </u>
Reviewer, NR Program: <u>Peter E. Kurtze</u>	Date: <u> 3 April 2001 </u>

gms

✓

Maryland Inventory of Historic Properties
Historic Bridge Inventory
Maryland State Highway Administration
Maryland Historical Trust

MHT Number SM-520

Name and SHA No. 18008 over Eastern Branch

Location:

Street/Road Name and Number: MD 5 over Eastern Branch

City/Town: Park Hall Vicinity X

County: St. Mary's

Ownership: X State County Municipal Other

This bridge projects over: Road Railway X Water Land

Is the bridge located within a designated district: yes X no

 NR listed district NR determined eligible district

 locally designated other

Name of District _____

Bridge Type:

 Timber Bridge

 Beam Bridge Truss-Covered Trestle

 Timber-and-Concrete

 Stone Arch

 Metal Truss

 Movable Bridge

 Swing

 Bascule Single Leaf Bascule Multiple Leaf

 Vertical Lift Retractable Pontoon

X Metal Girder

X Rolled Girder Rolled Girder Concrete Encased

 Plate Girder Plate Girder Concrete Encased

 Metal Suspension

Metal Arch Metal Cantilever Concrete Concrete Arch Concrete Slab Concrete Beam Rigid Frame Other Type Name _____**Description:****Describe Setting:**

Bridge No. 18008 carries Maryland Route 5 north-south over Eastern Branch in St. Mary's County, Maryland. At this point Eastern Branch flows from south to north. Overhead power lines are located on the north side of the bridge. The area to the south of the bridge is heavily wooded and an old beaver dam is visible downstream.

Describe Superstructure and Substructure:

Bridge 18008 carries Maryland Route 5 over Eastern Branch in St. Mary's County, Maryland. This structure is a single span steel beam bridge with a span length of 37'±. The substructure consists of two concrete abutments and wingwalls. The bridge has a clear roadway width of 30'± and an ADT of 3,725. The structure was built in 1936 and has an H-20 design loading.

Deterioration of the bridge has caused minor traffic rutting of the bituminous wearing surface. Exterior steel beams exhibit light to moderate rusting throughout, and all four corners at the abutments have section loss mostly in the lower flanges. Abutments, backwalls, and wing walls all exhibit some cracking.

Discuss Major Alterations:

There have been no known alterations to this bridge.

History:**When Built:** 1936**Why Built:** Local transportation needs**Who Built:** Unknown**Why Altered:** Not applicable**Was this bridge built as part of an organized bridge building campaign:** Yes**Surveyor Analysis:****This bridge may have NR significance for association with:** A Events Person

X C Engineering/Architectural**Was this bridge constructed in response to significant events in Maryland or local history:**

No, this bridge was not constructed in response to significant events in Maryland or local history.

The structure currently in use replaced an earlier bridge built in this same location. The first structure at this location was a concrete girder bridge built before 1932, 29.5' in length and with a clear roadway width of 30'. It was replaced in 1936 by the current steel beam bridge.

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?

No, the construction and/or alteration of this bridge has had no significant impact on the growth and development of the area.

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

No, this bridge is not located in an area which may be eligible for historic designation.

Is the bridge a significant example of its type?

This bridge may be a significant example of its type.

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

This bridge appears to retain the integrity of its primary character defining elements. There is no documentation indicating any major modifications to this bridge.

Should this bridge be given further study before significance analysis is made and Why?

Further study of this bridge is not warranted. This bridge appears to retain its integrity as defined by the Context Addendum. This bridge is eligible for inclusion on the National Register of Historic Places.

Bibliography:

Greiner, Inc.

1995 Maryland Inventory of Historic Bridges.

Spero, P.A.C. & Company, and Louis Berger & Associates

1994 Historic Bridges in Maryland: Historic Bridge Context.

State Highway Administration

v.d. Bridge Inspection files.
United States Geological Survey
1987 7.5' St. Mary's City Quadrangle.
United States Geological Survey
1912 15' Point Lookout Quadrangle.

Surveyor:

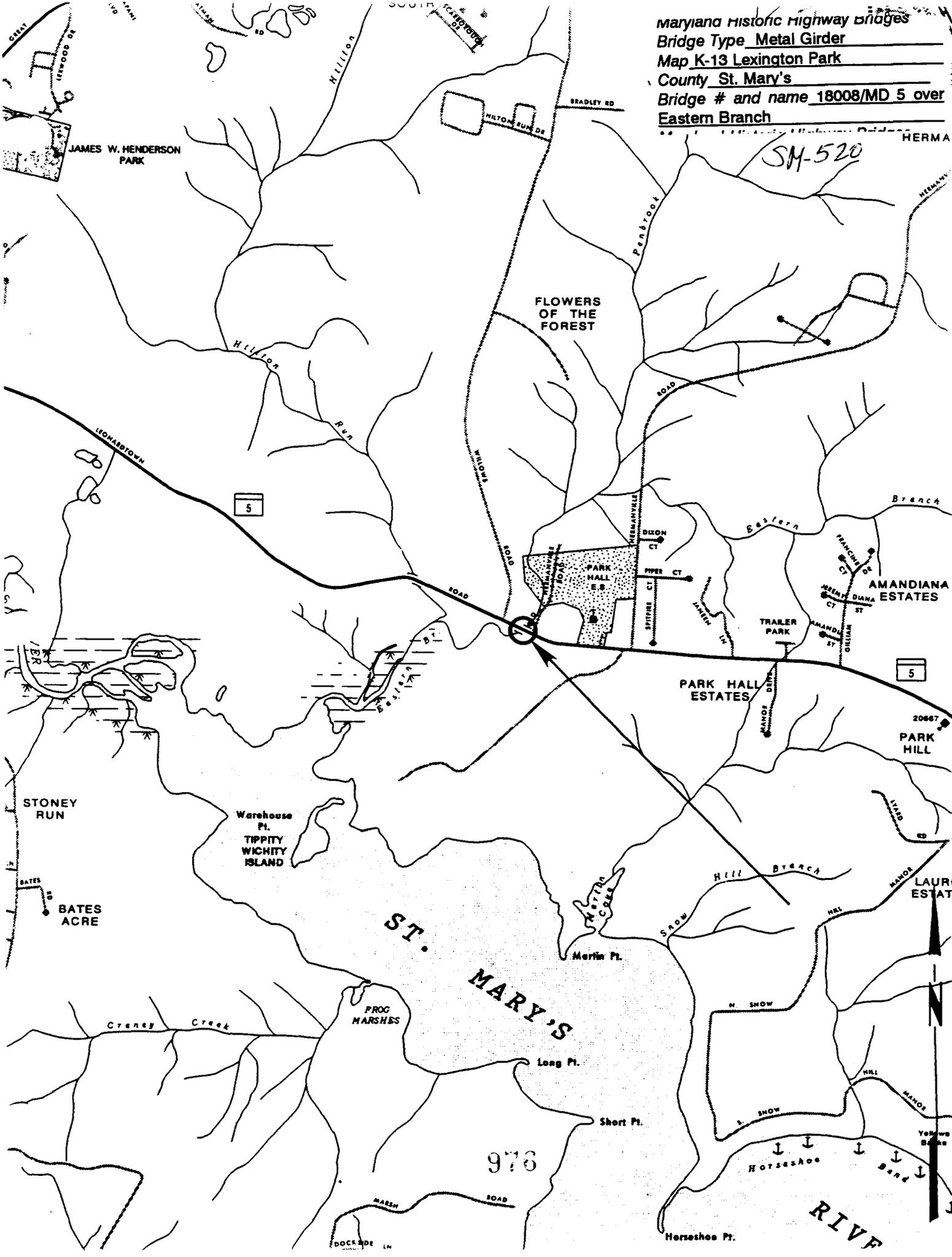
Name: Jason D. Moser **Date:** August 1995

Organization: State Highway Admin. **Telephone:** (410) 321-2213

Address: 2323 West Joppa Road Brooklandville, MD 21022

Maryland historic highway bridges
Bridge Type Metal Girder
Map K-13 Lexington Park
County St. Mary's
Bridge # and name 18008/MD 5 over
Eastern Branch

SM-520





1 OF 4

SM-520

ST MARYS COUNTY

D. BHAAUMIK

2-1-95

MARYLAND SHPO SHP

MD 5 OVER EASTERN BRANCH

LOOKING EAST ON MD 5

(BRIDGE 1800B)



SM-520

2 OF 4

ST MARYS COUNTY

D. BAUMIK

2-1-95

MARYLAND SHPO

MD 5 OVER EASTERN BRANCH

LOOKING WEST ON MD 5

(BRIDGE 13003)



SM-520

ST MARYS COUNTY

D. BHACMIK

2-1-95

MARYLAND SHPO SITE

MD 5 OVER EASTERN BRANCH

LOOKING NORTH (DOWN STREAM FACE)

(BRIDGE 1800B)



SM-520

4 OF 4

ST MARYS COUNTY

D. BRAUMER

2-1-95

MARYLAND SHPO

MD 5 OVER EASTERN BRANCH

LOOKING SOUTH (UPSTREAM FACE)

(BRIDGE 18003)