

**MARYLAND HISTORICAL TRUST
DETERMINATION OF ELIGIBILITY FORM**

NR Eligible: yes
no

Property Name: SHA Small Structure 13167X0 Inventory Number: HO-1101
 Address: MD 144 over a Branch of the Middle Patuxent River Historic district: yes no
 City: West Friendship Zip Code: 21794 County: Howard
 USGS Quadrangle(s): Sykesville
 Property Owner: MD SHA Tax Account ID Number: N/A
 Tax Map Parcel Number(s): N/A Tax Map Number: N/A
 Project: MD 144 over Branch of Middle Patuxent River Agency: MD SHA
 Agency Prepared By: MD SHA
 Preparer's Name: Jon Schmidt, Consultant Architectural Historian Date Prepared:

Documentation is presented in: Regular DOE Form
 Preparer's Eligibility Recommendation: Eligibility recommended Eligibility not recommended
 Criteria: A B C D Considerations: A B C D E F G

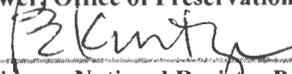
Complete if the property is a contributing or non-contributing resource to a NR district/property:
 Name of the District/Property:
 Inventory Number: Eligible: yes Listed: yes

Site visit by MHT Staff yes no Name: Date:

Description of Property and Justification: (Please attach map and photo)

Description
 SHA Small Structure 13067X0 carries MD 144 over a branch of the Middle Patuxent River in Howard County. The structure is a T-beam, concrete girder bridge with reinforced concrete abutments and wingwalls. The wingwalls are cast-in-place concrete replacements dating from the middle decades of the 20th century. The alteration is not documented by plans. The end of the northeast wingwall is a section of uncoursed masonry, possibly a remnant from an earlier crossing. The structure is 22 feet long with a clear span of 18 feet. The road width is 24 feet. The design is consistent with State Roads Commission (SRC) 1919 plans for Standard Girder Bridges. The likely date of construction for the small structure is between 1919 and 1924, when the SRC issued updated specifications for standard bridge designs. A girder bridge for an 18-foot span was not included in the plans for 1924, although allowing for some overlap a date as late as 1930 is possible. In that year the standard width for bridges and roadways became 27 feet.

In accordance with federal regulations, SHA has adopted the universally accepted term "small structure" to identify bridges with a span of less than 20 feet. The Standard Plans for 1919 included for a 24-foot clear roadway width and solid parapet walls adorned with an incised rectangle. Small structure 13067X0 has one straight and one angled wingwall at both the north and south sides of

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the roadway. At the south side of the structure, the southwest wingwall extends straight, while the southeast wingwall angles outward. A wire-mesh fence adjacent to the wing wall prevents spalling concrete from entering the streambed. At the north side of the structure, the eastern wingwall extends straight and the western wingwall angles outward. The deck is composed of a reinforced concrete slab integrated with five reinforced concrete girders visible at the underside. The small structure has a bituminous wearing surface.

The small structure exhibits one major undocumented alteration and another change that has been documented on project plans. A close look at the parapet walls reveals their width of 11¼" is not consistent with the 1919 standard plan width of 12" with a 16" cap. The parapet walls are mid-century cast-in-place concrete replacements. The original parapet walls would have had incised concrete panel walls on the interior and exterior faces. This treatment is seen on two other National Register of Historic Places (NRHP) eligible bridges in Maryland from this time period: Bridge B0183 (BA-2656) and Bridge B0421 (BA-2661). Both were constructed in 1920. The original parapet walls on Small Structure 13067X0 were likely replaced because they exhibited spalling and cracking similar to the current parapets. The only other notable alteration to the bridge is the application of W-beam traffic barrier across the structure. The guardrail was applied in 1990 as part of SHA Contract 720-501-777.

In addition to the poor condition of the parapet wall, the exterior stringers exhibit cracking, scaling and spalling. Rebar is exposed at several locations on the exterior elevations and on underside of the bridge deck. Additionally, the pointing is in poor condition at the base of the masonry section of the northeastern wingwall.

Context

Small Structure 13067X0 fits into two historic contexts. Small Structure 13167X0 was constructed as part of the second generation of standard design concrete girder bridges in Maryland. In Maryland, few of these early standard design bridges survive. Additionally, the structure is situated on a segment of MD 144 that is part of the historical alignment of the Baltimore and Frederick Turnpike. The crossing was constructed approximately ten years after the SRC purchased the road from the turnpike company in 1910.

Small Structure 13067X0 is a T-beam concrete girder bridge with an 18-foot span built to carry MD 144 across a branch of the Middle Patuxent River. The bridge was constructed of reinforced concrete by the SRC circa 1920. First employed by modern engineers in the 1870s, reinforced concrete was not widely applied to bridge building until the last decade of the nineteenth century.(1) It only achieved broad acceptance during the first decade of the twentieth century.(2) Concrete was used in arch, slab, and girder bridges. Next to a simple slab, girder bridges are the simplest method of spanning an obstacle. The earliest concrete girder bridges were concrete slab decks supported by independently constructed longitudinal concrete beams.(3) The T-beam span is a more modern variant of the traditional design in which the concrete beams are integrated into the deck slab through the use of reinforcing steel bars.(4) The T-beam takes its name from the appearance of the structure when viewed as a cross section. Spans employing this design were first described as T-beams by Henry G. Tyrell in his 1909 work Concrete Bridges and Culverts.(5)

The first reinforced concrete girder bridge in Maryland was built in 1903 at Sherwood Station in Baltimore County.(6) While concrete girder bridges were built widely in the first decade of the 20th century, the design was not widely used for small structures, where the simpler slab design was favored.(7) Only the SRC Standard Plans of 1912 and 1919 specify the use of the T-beam design for 18-foot spans. As a result of the short time period for which the design was in use, few small structures were built employing the T-beam design. Even fewer are still in service. The 1997 historic context Small Structures on Maryland's Roadways identifies three surviving examples in the state.(8) Two have been significantly altered. At that time, the context identified Small Structure 13067X0 as the only T-beam structure from this time period without extensive modifications. However, close examination of the bridge and discussions with SHA Bridge Engineers have revealed that the bridge has been extensively

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altered by the removal and replacement of the original concrete parapet walls. Therefore, although the Small Structures Context identifies the Small Structure 13067X0 as significant, the replacement of the parapet walls has resulted in the loss of a prominent character defining feature, integrity, and significance.

The small structure is also related to the evolution of the privately operated Baltimore and Frederick Turnpike into a publicly maintained road. The history of the road is extensive. In 1805 the Maryland General Assembly incorporated the Baltimore and Frederick Turnpike Company to improve the existing road between Baltimore City and Boonsboro in Washington County.(9) Under the direction of the privately held company, the road was straightened and resurfaced with crushed stone.(10) The first twenty miles west from Baltimore were completed at a cost \$9000 per mile and opened to tolled traffic on April 23, 1807.(11) This first section included a stone culvert over a branch of the Middle Patuxent River where Small Structure 13167X0 is now situated. Turnpike records indicate that a flood in September 1868 washed out all the culverts between the miles nine and eighteen on the turnpike.(12) Although there is no record of the reconstruction process, it is likely there have been at least three different culverts at this location.

A common complaint of all nineteenth century roads was maintenance. Poor techniques, inadequate materials, outdated equipment, infrequent attempts, and a simple lack of funds all explain poor road conditions.(13) Although citizens petitioned for improved roads on a regular basis, it took the sudden popularity of bicycles that moved the state to act. Bicycling became popular in the 1890s and riders were required to pay tolls as any other traveler.(14) The bicyclists formed organizations and raised concerns about problems caused by the deep ruts created by larger, wheeled traffic.(15) Around this time the state's Geological Survey Commission was tasked with reporting on the condition of the Maryland's roads. A result was the creation of a Highway Division in 1899 and early attempts to purchase the Maryland's privately operated turnpikes. A heated battle ensued between the turnpike companies on one side and the government and citizen advocates on the other. Similar conflicts were taking place nationwide and the era has been broadly labeled as the Good Roads Movement. In the end, the government enacted a law in April 1900 enabling cyclists to travel on some turnpikes toll free.(16) The operations of the privately held Baltimore and Frederick Turnpike Company continued through December 1910, when the tolled facility road was sold to the SRC for \$100,000.(17)

The Baltimore and Frederick Turnpike entered a new era when the SRC straightened, widened, and converted the tolled facility into a free road for the first time in a century.(18) River and stream crossings were also upgraded. It was during this period that Small Structure 13167X0 was constructed. The road was designated US 40 in 1926 and continued to operate as the primary route between Baltimore and Frederick until 1940. In that year US 40 was relocated off alignment in eastern Howard County as part of SRC Contract HO-176-000-329. The modern four-lane, divided highway bypassed Ellicott City to the north of the historic route, which was designated US 40 Alternate at that time. In 1949, Contract HO-234-001-315 continued the new US 40 westward through West Friendship, bypassing the segment where Small Structure 13167X0 is located. During the 1950's construction of the Interstate Highway System, I-70 was built in western Maryland as an alternate to US 40.(19) Because US 40 had already been modernized east of West Friendship, I-70 not extended to its current terminus in west Baltimore until the late 1960s under SRC Contract HO-359-001-717.

Evaluation

SHA Small Structure 13067X0 is evaluated for the NRHP as a concrete girder small structure. The concrete girder design was not commonly used for small structures. According to the historic context Small Structures on Maryland's Roadways, small structures may be eligible for the NRHP under Criterion A if it stands on a roadway highly significant to the early growth and development of the state. Small Structure 13067X0 is associated with the evolution of the Baltimore and Frederick Turnpike. However, the small structure was constructed during the first decades after privately operated turnpike was taken over by the publicly administered SRC. The transition of privately operated and locally maintained roads is a common trend with countless examples nationwide.

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The route of the Baltimore and Frederick Turnpike is part of a series of private turnpikes that were historically referred to as the National Pike. This route, along with the National Road from Cumberland to the Pennsylvania state line, has been identified as the Historic National Road Scenic Byway. In 2001, the Corridor Partnership Plan for the Maryland Historic National Road Scenic Byway established the period of significance for the National Road as 1810 to 1960. The period of significance is broken down into three distinct eras: the Heyday of the National Road (1810-1850), Agriculture and Trade (1850-1910), and Revival of the National Road (1910-1960). During the Revival of the National Road, the popularity of automobiles led to a resurgence in the route's importance. Tourist travel, freight traffic, and commuters resulted in renewed interest in the corridor. The Corridor Partnership Plan identifies property types that are associated with the Revival of the National Road: hotels, garages, shopping centers, and places of worship. Small Structure 13067X0 is a common example of a standard design bridge and is not identified as a significant property type associated with the Revival of the National Road. For these reasons Small Structure 13067X0 is not eligible for the NRHP under Criterion A.

Research has not been able to associate the small structure with individuals significant to local, Howard County, State of Maryland, regional or national history. As such, the bridge is recommended not eligible for the NRHP under Criterion B.

According to Small Structures on Maryland's Roadways, girder small structures may be eligible for the National Register under Criterion C if all character defining elements (CDE) remain intact. The primary CDEs for concrete girder small structures are the slab and longitudinal beams, parapets, abutments, and wingwalls. Small Structure 13067X0 is an 18-foot span concrete girder span constructed according to the SRC 1919 standard plans. The parapet walls of the small structure were replaced sometime during the mid-20th century. Since the small structure has not retained its CDEs, it does not possess integrity of materials, design, association, or feeling. It is a modest, altered structure and common example of a standard plan design. For these reasons Small Structure 13067X0 is not eligible for the NRHP under Criterion C.

The property was not evaluated under Criterion D as part of this assessment.

FOOTNOTES

- (1) Lichtenstein Consulting Engineers. Delaware's Historic Bridges: Survey and Evaluation of Historic Bridges with Historic Contexts for Highways. 2nd Edition. Baltimore: (2000), 151
- (2) Lichtenstein. Delaware Historic Bridges, 152.
- (3) Parsons Brinckerhoff, Quade and Douglass. Small Structures on Maryland's Roadways: Historic Context Report. Baltimore: (June 1997), 3-10.
- (4) Parsons. Small Structures, 3-18.
- (5) Pac Spero and Company and Louis Berger Associates. Historic Bridges in Maryland: 1631-1960, Historic Context Report. Baltimore (1995), 149
- (6) Pac Spero. Historic Bridges, 144.
- (7) Parsons. Small Structures, 3-18.
- (8) Parsons. Small Structures, 3-18.
- (9) Hollifield, William. Difficulties Made Easy: History of the Turnpikes in Baltimore City and County. Baltimore: Baltimore Historical Society. (1978), 16.
- (10) Hollifield. Difficulties Made Easy, 16.
- (11) Hollifield. Difficulties Made Easy, 16.
- (12) Hollifield. Difficulties Made Easy, 21.

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- (13)Hollifield. Difficulties Made Easy, 22.
- (14)Hollifield. Difficulties Made Easy, 7.
- (15)Lichtenstein. Delaware Historic Bridges, 8.
- (16)Hollifield. Difficulties Made Easy, 7.
- (17)Hollifield. Difficulties Made Easy, 22.
- (18)Hollifield. Difficulties Made Easy, 22.
- (19)McGin, Russell H., Edgar T. Bennett, Bramwell Kelly. State Roads Commission Report 1953-1954. Baltimore (1954), 215, 218-219

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Considerations:

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Location Map



HO-1101
Small Structure 13067X0
Howard County
USGS Sykesville Topo Quad

January 29, 2013
1:24,000



**Maryland State Highway Administration
Cultural Resources Section
Photo Log**

Project No.: 2380713-X067X0

Project Name: MD 144 over Branch of the Middle Patuxent River

MIHP No.: HO-1101

MIHP Name: SHA Small Structure 13067X0

County: Howard

Photographer: Jon Schmidt

Date: August 21, 2012

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

CD/DVD: Verbatim, CD-R, Archival Gold

Image File Name	Description of View
HO-1101_2012-08-21_01	North elevation of Small Structure 13067X0, looking south
HO-1101_2012-08-21_02	South elevation of Small Structure 13067X0, looking north
HO-1101_2012-08-21_03	Detail view of exterior, north parapet wall, looking south
HO-1101_2012-08-21_04	Oblique view of parapet wall and wingwalls of south elevation, looking east
HO-1101_2012-08-21_05	Detail view of interior south parapet wall, looking south
HO-1101_2012-08-21_06	View of the wearing surface of the bridge, looking east



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SHA SMALL STRUCTURE 13067X0

HOWARD COUNTY, MD

PHOTOGRAPHER: JON A. SCHMIST

DATE: 8/21/2012

DIGITAL FILE: MD SHA

NORTH ELEVATION OF SMALL STRUCTURE 13067X0, LOOKING SOUTH

HO-1101_2012-08-21-01.TIF

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SNA SMALL STRUCTURE 13067X0

HOWARD COUNTY, MD

PHOTOGRAPHER: JON A. SCHMIDT

DATE: 8/21/2012

DIGITAL FILE: MJD SNA

VIEW OF SOUTH ELEVATION OF SMALL STRUCTURE 13067X0,
LOOKING NORTH

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Epson
Professional Paper



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SHA SMALL STRUCTURE 13067XO

HOWARD COUNTY, MD

PHOTOGRAPHER: JON A. SCHMIAT

DATE: 8/21/2012

DIGITAL FILE: MD SHA

DETAIL VIEW OF EXTERIOR, NORTH PARAPET WALL, LOOKING SOUTH

HO-1101_2012-08-21-03.TIF

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SHA SMALL STRUCTURE 13067X0

HOWARD COUNTY, MD

PHOTOGRAPHER: JON A. SCHMIAT

DATE: 8/21/2012

DIGITAL FILE: MD SHA

OBLIQUE VIEW OF PARAPET WALL AND WING WALLS OF
SOUTH ELEVATION, LOOKING EAST

HO-1101_2012-08-21-04.TIF

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SHA SMALL STRUCTURE 13067X0

HOWARD COUNTY, MD

PHOTOGRAPHER: JON A. SCHMIDT

DATE: 8/21/2012

DIGITAL FILE: MD SHA

DETAIL VIEW OF INTERIOR SOUTH PARAPET WALL,
LOOKING SOUTH

HO-1101_2012-08-21-05.TIF

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SHA Small Structure 13067XD

HOWARD COUNTY, MD

PHOTOGRAPHER: JON A. SCHMIDT

DATE: 8/21/2012

DIGITAL FILE: MD SHA

VIEW OF WEARING SURFACE OF THE BRIDGE,
LOOKING EAST

HO-1101_2012-08-21-06.TIF

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