Maryland Historical Trust

Maryland Inventory of Historic Properties number: MD 45 over Gunpowder Falls

Name: BA-2860

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 ___X____ Eligibility Not Recommended _____

Criteria: ____A ____B ___X___C ____D Considerations: ___A ___B ___C ___D ___E ___F ___G ___None

Comments:_____

Reviewer, OPS: Anne E. Bruder_____ Date: 3 April 2001

Reviewer, NR Program: Peter E. Kurtze_____ Date: 3 April 2001

MARYLAND INVENTORY OF HISTORIC BRIDGES **MHT No.** BA-2860
HISTORIC BRIDGE INVENTORY
MARYLAND STATE HIGHWAY ADMINISTRATION/
MARYLAND HISTORICAL TRUST

SHA Bridge No. 3048 **Bridge name** MD 45 over Gunpowder Falls (Gunpowder Falls Bridge)

LOCATION:
Street/Road name and number [facility carried] MD 45 (York Road)

City/town Hereford **Vicinity** X

County Baltimore

This bridge projects over: Road____ **Railway**_____ **Water** X **Land** ____

Ownership: State X **County** _____ **Municipal** _____ **Other** _____

HISTORIC STATUS:
Is the bridge located within a designated historic district? Yes _____ **No** X
National Register-listed district ____ **National Register-determined-eligible district** __
Locally-designated district _____ **Other** _____

Name of district _____

BRIDGE TYPE:
Timber Bridge _____:
Beam Bridge _____ **Truss -Covered** ___ **Trestle** ____ **Timber-And-Concrete** ___

Stone Arch Bridge _____

Metal Truss Bridge _____

Movable Bridge ____:
Swing _____ **Bascule Single Leaf** __ **Bascule Multiple Leaf** _____
Vertical Lift _____ **Retractile**_____ **Pontoon** _____

Metal Girder_____:
Rolled Girder _____ **Rolled Girder Concrete Encased** _____
Plate Girder _____ **Plate Girder Concrete Encased** _____

Metal Suspension _____

Metal Arch _____

Metal Cantilever _____

Concrete X:
Concrete Arch X **Concrete Slab**____ **Concrete Beam** ____ **Rigid Frame** _____
Other _____ **Type Name** _____

BA-2860

DESCRIPTION:

Setting: Urban _____ **Small town** _____ **Rural** ___X___

Describe Setting:

Bridge 3048 carries MD 45 (York Road) over Gunpowder Falls in Baltimore County. MD 45 runs north-south and Gunpowder Falls flows west to east. The bridge is located within the boundaries of the Gunpowder Falls State Park with a picnic/recreation area to the south of the bridge.

Describe Superstructure and Substructure:

Bridge 3048 is a 1-span, 2-lane, filled concrete arch bridge. The bridge, built in 1924, is 24.3 meters (80 feet) long and has a clear roadway width of 7.7 meters (25.2 feet); there are no sidewalks. The out-to-out width is 8.1 meters (26.7 feet). The superstructure consists of one arch which spans 19.5 meters (64 feet) and supports a cast-in-place concrete deck and solid concrete parapets. The substructure consists of two concrete abutments and four rubble stone wingwalls. A portion of the southwest wingwall is made of concrete, and the other stone wingwalls have been extensively patched with concrete. The bridge has a sufficiency rating of 77.2.

According to the 1997 inspection report, this structure was in satisfactory condition. The bituminous surface over the deck and the roadway approaches have cracks and light rutting. The north approach has light surface erosion, while the south approach has a recent bituminous overlay. The vertical faces of both spandrel walls have light to medium surface cracks with efflorescence, surface erosion and scattered spalls with exposed reinforcement bars. A spalled area over 6.1 meters (20 feet) long is located at the bottom edge of the spandrel wall on the east side of the bridge. The east parapet wall has surface pitting, scaling and surface erosion with areas of map cracking. The west parapet has been replaced in-kind. The pieces of the original wall are in the steam and on the stream bank. The west parapet also has vertical cracks and collision damage. The underside of the arch has spalling with exposed reinforcement bars and heavy efflorescence. The south abutment has heavy scaling and erosion with exposed aggregate, while the north abutment is below the waterline. The wingwalls have cracks with voids and loose stones.

Discuss Major Alterations:

According to the 1997 bridge inspection report, the west parapet of the bridge has been replaced. There is no record of any reconstruction of Bridge 3048.

HISTORY:

WHEN was the bridge built: 1924

This date is: Actual ___X___ **Estimated** _____

Source of date: Plaque __X__ **Design plans** ___ **County bridge files/inspection form** ___

Other (specify): State Highway Administration Inspection Reports/Bridge Files

WHY was the bridge built?

The bridge was constructed in response to the need for more efficient transportation network and increased load capacity.

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WHO was the designer?

State Roads Commission

WHO was the builder?

State Roads Commission

WHY was the bridge altered?

Unknown

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

This bridge was built as part of the improvement to York Road in the 1920s.

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 concrete arch construction. The structure has a high degree of integrity and retains such character-defining elements of the type as arch barrel and ring, one original concrete parapet, spandrel walls, concrete abutments, and stone wingwalls.

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

The advent of modern concrete technology fostered a renaissance of arch bridge construction in the United States. Reinforced concrete allowed the arch bridge to be constructed with much more ease than ever before and maintained the load-bearing capabilities of the form. As the structural advantages of reinforced concrete became apparent, the heavy, filled barrel of the arch was lightened into ribs. Spandrel walls were opened, to give a lighter appearance and to decrease dead load. This enabled the concrete arch to become flatter and multi-centered, with longer spans possible. Designers were no longer limited to the semicircular or segmental arch form of the stone arch bridge. The versatility of reinforced concrete permitted development of a variety of economical bridges for use on roads crossing small streams and rivers.

Maryland's roads and bridge improvement programs mirrored economic cycles. The first road improvement of the State Roads Commission was a 7 year program, starting with the Commission's establishment in 1908 and ending in 1915. Due to World War I, the period from 1916-1920 was one of relative inactivity; only roads of first priority were built. Truck traffic resulting from war related factories and military installations generated new, heavy traffic unanticipated by the builders of the early road system. From 1920-1929, numerous highway improvements occurred in response to the increase in Maryland motor vehicles from 103,000 in 1920 to 320,000 in 1929, with emphasis on the secondary system of feeder roads which moved traffic from the primary roads built before World War I. After World War I, Maryland's bridge system also was appraised as too narrow and structurally inadequate for the increasing traffic , with plans for an expanded bridge program to be handled by the Bridge Division, set up in 1920. In 1920 under Chapter 508 of the Acts of 1920 the

State issued a bond of $3,000,000.00 for road construction; the primary purpose of these monies was to meet the state obligations involving the construction of rural post roads. The secondary purpose of these monies was to fund (with an equal sum from the counties) the building of lateral roads. The number of hard surfaced roads on the state system grew from 2000 in 1920 to 3200 in 1930. By 1930, Maryland's primary system had been inadequate to the huge freight trucks and volume of passenger cars in use, with major improvements occurring in the late 1930's.

As the nation's automotive traffic increased in the early twentieth century, local road networks were consolidated, and state highway departments were formed to supervise the construction and improvement of state roads. With a diverse topographical domain encompassing numerous small and large crossings, Maryland engineers quickly recognized the need for expedient design and construction through the standardization of bridge designs.

The concept and practice of standardization was one of the most important developments in engineering of the twentieth century. In Maryland, as in the rest of the nation, the standardized concrete types became the predominant bridge types built. In the period 1911 to 1920 (the decade in which standardized plans were introduced), beams and slabs constituted 65 percent and arches 35 percent of the extant 29 bridges built in Maryland during this period. In the following decade, 1921-1930, the beam (now the T-beam) and slab increased to 73 percent and the arch had declined to 27 percent of the 129 extant bridges; in the next decade (1931-1940), the beam and slab achieved 82 percent and arches had further declined, constituting only 18 percent of the total of extant bridges built on state-owned roads between 1931 and 1946.

Although beam and slab bridges became the utilitarian choice, it appears that the arch was selected when aesthetic as well as other site conditions were considered. The architectural treatment of extant arch bridges supports this assessment. Many of these bridges were multiple span structures with open spandrels or masonry facing. Another decorative feature of the concrete arch bridge was an open, balustrade-style parapet. Despite the popularity of ornamental arches and the increase in use of beam and slab bridges, examples of simpler, single and multiple span closed concrete arch bridges with solid parapets continued to be constructed throughout the early twentieth century.

York Road (Maryland Route 45) was built in the early 1740s in order to connect the farms of York County with Baltimore's port on the Patapsco River. The road was heavily travelled throughout the eighteenth and nineteenth centuries. In 1908, the State Roads Commission, established under Governor Crothers, began a seven-year project that created a statewide road network through improvement of existing roads. As a part of this project, York Road was improved from Baltimore north to Parkton. The route is now paralleled by Interstate 83, the Baltimore-Harrisburg Expressway, constructed in the mid-1950s.

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 is located in an area which does not appear to be eligible for historic designation.

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Is the bridge a significant example of its type?

The bridge is a good example of the State Roads Commission standard 1920s bridge plan.

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 spandrel walls, arch barrel and ring, concrete abutments and stone wingwalls, however some deterioration is evident.

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

This bridge is a significant example of the work of the State Roads Commission in the 1920s.

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 _____ **SHA inspection/bridge files** X
Other (list):_____

Johnson, Arthur Newhall
1899 The Present Condition of Maryland Highways. In *Report on the Highways of Maryland.* Maryland Geological Survey, The Johns Hopkins University Press, Baltimore.

P.A.C. Spero & Company and Louis Berger & Associates
1995 Historic Highway Bridges in Maryland: 1631-1960: Historic Context Report. Maryland State Highway Administration, Maryland State Department of Transportation, Baltimore, Maryland.

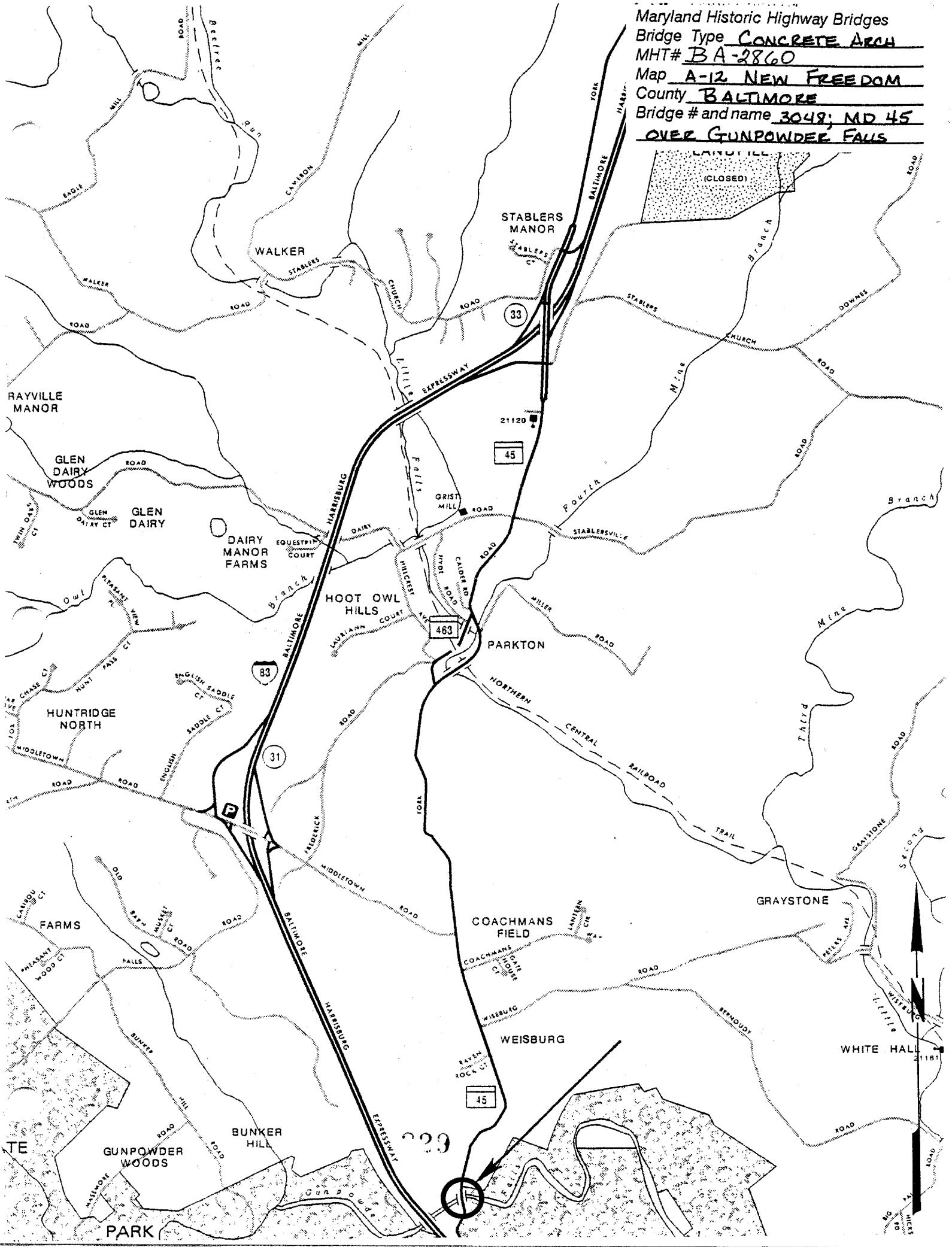
State Roads Commission
1958 A History of Road Building in Maryland. Published by author, Baltimore.

Tyrrell, H. Grattan
1909 *Concrete Bridges and Culverts for Both Railroads and Highways.* The Myron C. Clark Publishing Company, Chicago and New York.

SURVEYOR:

Date bridge recorded December 1997
Name of surveyor Wallace, Montgomery & Associates / P.A.C. Spero & Company
Organization/Address P.A.C. Spero & Co., 40 W. Chesapeake Avenue, Baltimore, MD 21204
Phone number (410) 296-1635 **FAX number** (410) 296-1670

Maryland Historic Highway Bridges
Bridge Type CONCRETE ARCH
MHT# BA-2860
Map A-12 NEW FREEDOM
County BALTIMORE
Bridge # and name 3048; MD 45
OVER GUNPOWDER FALLS



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INDIVIDUAL PROPERTY/DISTRICT
MARYLAND HISTORICAL TRUST
INTERNAL NR-ELIGIBILITY REVIEW FORM

Property/District Name: Bridge 3048,MD45 over Gunpowder Survey Number: ~~NA~~ BA-2860

Project: Repairs to Bridge 3048 Agency: FHWA

Site visit by MHT Staff: X no ___ yes Name _____ Date _____

Eligibility recommended _____ Eligibility **not** recommended X

Criteria: ___A ___B X C ___D Considerations: ___A ___B ___C ___D ___E ___F ___G ___None

Justification for decision: (Use continuation sheet if necessary and attach map)

Bridge 3048, MD 45 over Gunpowder Falls in Baltimore County does not meet the National Register Criteria for individual listing. According to the information presented in SHA's 12/10/91 letter concerning this project and in SHA's draft context statement for concrete arch bridges, Bridge 3048 is not significant. Simple concrete arch bridges such as this one were constructed in Maryland in great numbers throughout the first three decades of the 20th century. A single span, constructed in 1924, Bridge #3048 is not notable in technical terms or unusual in age. In addition, it has been altered somewhat so is probably not the best representative of this common type.

Documentation on the property/district is presented in: project file

Prepared by: Ms. Rita Suffness, SHA

Elizabeth Hannold 1/15/91
Reviewer, Office of Preservation Services Date

NR program concurrence: ✓ yes ___ no ___ not applicable

Reviewer, NR program 16 Jan 92
Date

BA-2860

Survey No. ~~NA~~

MARYLAND COMPREHENSIVE HISTORIC PRESERVATION PLAN DATA - HISTORIC CONTEXT

I. Geographic Region:

____	Eastern Shore	(all Eastern Shore counties, and Cecil)
____	Western Shore	(Anne Arundel, Calvert, Charles, Prince George's and St. Mary's)
X	Piedmont	(Baltimore City, Baltimore, Carroll, Frederick, Harford, Howard, Montgomery)
____	Western Maryland	(Allegany, Garrett and Washington)

II. Chronological/Developmental Periods:

____	Paleo-Indian	10000-7500 B.C.
____	Early Archaic	7500-6000 B.C.
____	Middle Archaic	6000-4000 B.C.
____	Late Archaic	4000-2000 B.C.
____	Early Woodland	2000-500 B.C.
____	Middle Woodland	500 B.C. - A.D. 900
____	Late Woodland/Archaic	A.D. 900-1600
____	Contact and Settlement	A.D. 1570-1750
____	Rural Agrarian Intensification	A.D. 1680-1815
____	Agricultural-Industrial Transition	A.D. 1815-1870
X	Industrial/Urban Dominance	A.D. 1870-1930
____	Modern Period	A.D. 1930-Present
____	Unknown Period (___ prehistoric	___ historic)

III. Prehistoric Period Themes:

____ Subsistence
____ Settlement

____ Political
____ Demographic
____ Religion
____ Technology
____ Environmental Adaption

IV. Historic Period Themes:

____ Agriculture
x Architecture, Landscape Architecture, and Community Planning
____ Economic (Commercial and Industrial)
____ Government/Law
____ Military
____ Religion
____ Social/Educational/Cultural
____ Transportation

V. Resource Type:

Category: Structure

Historic Environment: Rural

Historic Function(s) and Use(s): Transportation

Known Design Source: NA

1. BA-2860
2. MD 45 over Gunpowder Falls
3. Baltimore Co., MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Looking South
8. 1 of 5

1. BA-2860
2. 3048, MD 45 OVER GUNPOWDER FALLS
3. BALTIMORE COUNTY
4. WALLACE- MONTGOMERY
5. 12/97
6. MD SHPO
7. ROADWAY LOOKING NORTH
8. 2 OF 5

1. BA-2860
2. MD 45 over Gunpowder Falls
3. Baltimore Co., MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Elevation looking downstream
8. 3 of 5

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1. BA-2860
2. MD 45 over Gunpowder Falls
3. Baltimore Co., MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Elevation looking upstream
8. 4 of 5

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GUNPOWDER FALLS BRIDGE
BUILT - 1922
STATE ROADS COMMISSION
OMAR D. CROTHERS
W. W. BROWN

1. BA-2860
2. MD 45 over Gunpowder Falls
3. Baltimore County, MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Bronze Plaque
8. 5 of 5

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