

MARYLAND HISTORICAL TRUST
DETERMINATION OF ELIGIBILITY FORM

NR Eligible: yes ___
no

Property Name: SHA Bridge 0310000,MD 165 Little Gunpowder Falls Inventory Number: BA-2721
Address: Baldwin Mill Road (MD 165) Historic district: ___ yes no
City: Baldwin Zip Code: 21013 County: Baltimore County
USGS Quadrangle(s): Edgewood
Property Owner: State Highway Administration Tax Account ID Number: _____
Tax Map Parcel Number(s): _____ Tax Map Number: _____
Project: Reevaluation of Highway Bridges Statewide Agency: FHWA/MD SHA
Agency Prepared By: KCI Technologies, Inc.
Preparer's Name: Alison Ross Date Prepared: 10/16/2009

Documentation is presented in: Project Review and Compliance Files
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)*
Bridge No. 0310000 (MIHP No. BA-2721) is a single-span, 2-lane, metal girder bridge that carries MD 165 over Little Gunpowder Falls in Baltimore County, Maryland. Constructed in 1931, the bridge is composed of 6 rolled girders that support a concrete deck and pierced concrete parapets. The substructure consists of 2 concrete abutments and 4 wingwalls. The area around the bridge is in an industrial park. The 2006 Average Daily Traffic (ADT) count is 8,091 and the future 2026 ADT is 9,329. The bridge's function class is Rural Major Collector.

Background
The first evaluation of SHA Bridge No. 0310000 was completed in 1995, for which a Maryland Inventory of Historic Properties (MIHP) form was completed. The Interagency Historic Highway Bridge Inventory Committee (HHBIC) considered the MIHP form in 1996 and subsequently determined Bridge No. 0310000 to be eligible for listing in the National Register of Historic Places (NRHP). The bridge was recommended eligible under NRHP Criterion C as a significant example of concrete beam construction. The Maryland Historical Trust (MHT) concurred with the determination in 2001.

MARYLAND HISTORICAL TRUST REVIEW	
Eligibility recommended ___	Eligibility not recommended <input checked="" type="checkbox"/>
Criteria: ___ A ___ B ___ C ___ D	Considerations: ___ A ___ B ___ C ___ D ___ E ___ F ___ G
MHT Comments: <i>lost integrity</i>	
<u><i>Jim J. [Signature]</i></u> Reviewer, Office of Preservation Services	<u>5/14/10</u> Date
<u><i>[Signature]</i></u> Reviewer, National Register Program	<u>5/18/10</u> Date

SHA Bridge No. 0310000 was re-evaluated for NRHP eligibility as part of the 2009 statewide re-evaluation of the eligible bridges in SHA's Historic Highway Bridge Inventory. SHA requested that KCI conduct research to gather information and provide additional analysis of each of the bridge's integrity and significance to supplement the original NRHP evaluation. As part of the re-evaluation, a KCI historian conducted research at SHA's Office of Structures (OOS) to gather additional information on the bridge, including alterations and repairs that have been made to the structure between the years of 1995 to 1998. The following documents were reviewed by the KCI architectural historian: inspection files, repair history files, bridge plans, the Bridge Inspection and Remedial Engineering (BIRE) Worklist, and the Structure Inventory and Appraisal (SI&A) reports. A KCI architectural historian visited the bridge to examine and document current conditions with field notes, digital photography, and black and white photography. In order to re-evaluate the bridge's historic significance and NRHP eligibility, the following documents were used: the original MIHP form, Historic Highway Bridges in Maryland: 1631-1960: Historic Context Report and A Context for Common Historic Bridge Types, NCHRP Project 25-25, Task 15.

Evaluation and Justification

At the time of the initial evaluation, the Bridge Sufficiency Rating (BSR) was relatively low in 1995 at 49.6. When the bridge was re-evaluated in 2009, the bridge's rating had declined to 46.9, giving evidence of advancing deterioration.

Between the years of 1995 and 1998, the condition ratings for the bridge were 5 for the deck, and 6s for the superstructure and substructure. Field survey conducted during the re-evaluation has shown deterioration on the superstructure, with heavy rusting or the ends of each of the interior girders on their bottom flanges, webs, and at each bearing, giving evidence of a leaking deck. Other observations include deterioration of the material on the fascias. There is an area of section loss and exposed rebar on the western fascia and patched concrete on the fascia's northern side.

During the 2009 field visit, it was observed that both parapet walls are deteriorated, with one baluster missing on the eastern wall, and two balusters with exposed rebar on the western wall. The caps and endcaps are heavily scaled as well. The inner curb on the eastern side is spalled in three large areas, and over a quarter of the curb is spalled on the western side. The guardrails have been installed all the way across the inside of the parapet walls, obscuring their design.

Deterioration is apparent on the substructure as well. According to the BIRE Worklist, a repair was made to a deteriorated wingwall in 1986, which was not mentioned in the 1995 evaluation. Field survey has confirmed that the northwestern and northeastern wingwalls have been patched with a material that does not match the original concrete. During field survey cracking on the deck was observed as well.

The 1995 MIHP form stated that the bridge retains a high degree of integrity and retains its character-defining elements (CDEs), including its concrete slab, longitudinal T-beams, integral parapets, abutments, and wing walls. Although the bridge retains the majority of its primary CDEs, a close examination reveals that the historic integrity of the CDEs has been compromised because of a continuous loss of materials, design, and workmanship due to deterioration. The integrity of setting, location, and association of the bridge has not changed and remain good. The overall feeling of the bridge is poor due to the deteriorated condition of the structure.

As a result of the re-evaluation, it is recommended that SHA Bridge No. 0310000 is not eligible for listing in the NRHP. The bridge is an example of the work of the State Roads Commission using the 1930 standardized plans for metal girder bridges. Its design is neither unique nor exceptional, and there are many other examples in the state. According to A Context for Common

MARYLAND HISTORICAL TRUST REVIEW	
Eligibility recommended _____	Eligibility not recommended _____
Criteria: ___A ___B ___C ___D	Considerations: ___A ___B ___C ___D ___E ___F ___G
MHT Comments:	
_____	_____
Reviewer, Office of Preservation Services	Date
_____	_____
Reviewer, National Register Program	Date

Historic Bridge Types, NCHRP Project 25-25, Task 15, the metal rolled multi-beam bridge possesses low significance. The earliest known standard drawings for the type were prepared by the U.S. Government in 1917; therefore SHA Bridge No. 030350C constructed in 1935, is not an early example of the type. The bridge type had become increasingly used for highway bridges from the 1920s to the 1930s. According to Historic Highway Bridges in Maryland: 1631-1960: Historic Context Report, more than 40 steel girder structures are listed on the Maryland state inventory as dating from the 1931-1940 period. Additional research indicates that the bridge is not associated with known events of local, regional, or national significance (Criterion A), or known persons of local, regional, or national significance (Criterion B). Criterion D was not evaluated as part of the historic standing structures studies for this project.

MARYLAND HISTORICAL TRUST REVIEW	
Eligibility recommended _____	Eligibility not recommended _____
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MHT Comments:	
_____	_____
Reviewer, Office of Preservation Services	Date
_____	_____
Reviewer, National Register Program	Date

MIHP No. BA-2721
SHA Bridge No. 0310000
MD 165 over Little Gunpowder Falls
Baltimore County, Maryland

Photograph Log

Image File Name	Description of View
BA-2721_2009-02-05_01.tif	Eastern elevation of bridge, facing west
BA-2721_2009-02-05_02.tif	Western elevation, facing southeast
BA-2721_2009-02-05_03.tif	Deteriorated western parapet wall, facing west
BA-2721_2009-02-05_04.tif	Girder web and flange, showing rust, stains, and section loss
BA-2721_2009-02-05_05.tif	Close-up of exterior of eastern fascia and parapet

Printed on Epson Premium Photo Paper Glossy with Epson UltraChrome Black Ink

Saved on Verbatim UltraLife Archival Grade DVD-R, AZO recording dye



MIHA BA - 2721

SHA BRIDGE NO. 0310000, MD 165 OVER
LITTLE GUNPOWDER FALLS

BALTIMORE COUNTY, MD

JAMES SKOCIK

2/5/09

MD SHPO

EASTERN ELEVATION, FACING WEST

1 OF 5



MIHP BA-2721

SHA BRIDGE NO. 0310000, MD 165 OVER LITTLE
GUNPOWDER FALLS

BALTIMORE COUNTY, MD

JAMES SKOUK

2/5/09

MD SHPO

WESTERN ELEVATION, FACING SOUTHEAST

2 OF 5



MIHP BA-2721

SHA BRIDGE NO. 0310000, MD 165 OVER LITTLE
GUNPOWDER FALLS

BALTIMORE COUNTY, MD

JAMES SKOCIK

2/5/09

MD SHPO

DETERIORATED WESTERN PARAPET WALL, FACING
WEST

3 of 5



MIHP BA - 2721

SHA BRIDGE NO. 0310000, MD 165 OVER LITTLE
GUNPOWDER FALLS

BALTIMORE COUNTY, MD

JAMES SKOLIK

2/5/09

MD SHPO

GIRDER WEB AND FLANGE, SHOWING RUST, STAINS,
AND SECTION LOSS.

4 of 5



MIHP BA - 2721

SHA BRIDGE NO. 031000D, MD 165 OVER LITTLE
GUNPOWDER FALLS

BALTIMORE COUNTY, MD

JAMES SKOCIK

2/5/09

MD SHPO

CLOSE-UP OF EXTERIOR OF EASTERN
FASCIA AND PARAPET

5 OF 5

Maryland Historical Trust

Maryland Inventory of Historic Properties number: BA-2721

Name: MD 165 over Little Gunpowder Falls

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 _____
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 April 2001 </u>
Reviewer, NR Program: <u> Peter E. Kurtze </u>	Date: <u> 3 April 2001 </u>

June

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

MHT No. BA-2721

SHA Bridge No. 3100 Bridge name MD 165 over Little Gunpowder Falls

LOCATION:

Street/Road name and number [facility carried] MD 165 (Baldwin Mill Road)

City/town Baldwin Vicinity X

County Baltimore

This bridge projects over: Road Railway Water Land

Ownership: State County Municipal Other

HISTORIC STATUS:

Is the bridge located within a designated historic district? Yes No

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 Retractable Pontoon

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:

Setting: Urban _____ Small town _____ Rural X

Describe Setting:

Bridge No. 3100 carries MD 165 (Baldwin Mill Road) over Little Gunpowder Falls in Baltimore County. MD 165 runs north-south and Little Gunpowder Falls flows east-west. The bridge is located in the vicinity of Baldwin and is surrounded by a wooded area.

Describe Superstructure and Substructure:

Bridge No. 3100 is a 1-span, 2-lane, metal girder bridge. The bridge was originally built in 1931. The structure is 61 feet long and has a clear roadway width of 27 feet. The out-to-out width is 29 feet, 6 inches. The superstructure consists of six (6) rolled girders which support a concrete deck and concrete parapets. The girders are 9 inches x 37 inches and are spaced 4 feet, 10 inches apart. The roadway is carried on the girders. The concrete deck is 9 inches thick and it has a bituminous wearing surface. The structure has pierced parapets, and the roadway approaches at a downgrade from the south and is tangent and level with the bridge from the north. A date plaque on the east parapet indicates that the bridge was constructed in 1931 by the State Roads Commission. The substructure consists of two (2) concrete abutments. There are four (4) wing walls. The bridge has a sufficiency rating of 49.6.

According to the 1995 inspection report, this structure is in fair condition with minor deterioration in both the superstructure and substructure. The girders have areas of rust, pitting, and minor section loss. The concrete surface is 75 percent patched. The concrete has vertical and horizontal cracking in the abutments and wingwalls, but the substructure is in good condition. Also, the concrete parapets have exposed aggregate and some medium cracking.

Discuss Major Alterations:

Inspection reports from 1995 detail the concrete patching of the abutments.

HISTORY:

WHEN was the bridge built: 1931

This date is: Actual X

Estimated _____

Source of date: Plaque X Design plans X County bridge files/inspection form _____

Other (specify): State Highway Administration bridge files/inspection form

WHY was the bridge built?

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

WHO was the designer?

State Roads Commission

WHO was the builder?

Unknown

WHY was the bridge altered?

N/A

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

The bridge was constructed by the State, as part of a campaign to increase load capacity on secondary roads during the 1930s

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 metal girder construction. The structure has a high degree of integrity and retains such character-defining elements of the type as rolled longitudinal I-beams and concrete abutments. The bridge also retains its original pierced parapet.

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

Metal girder bridges were most likely introduced and first popularized in Maryland by the state's major railroads of the nineteenth century including the Baltimore and Susquehanna, its successor the Northern Central, and the Baltimore and Ohio Railroad. Bridge engineering historians have documented the fact that James Milholland (or Mulholland) erected the earliest plate girder span in the United States on the Baltimore and Susquehanna Railroad in 1846 at Bolton Station, near present-day Mount Royal Station. The sides (web) and bottom flange of Milholland's 54-foot-long span were wholly of wrought iron and included a top flange reinforced with a 12x12-inch timber. Plates employed in the bridge were 6 feet deep and 38 inches wide, giving the entire bridge a total weight of some 14 tons. Milholland's pioneering plate girder cost \$2,200 (Tyrrell 1911:195). By December 31, 1861, the Northern Central Railroad, which succeeded the Baltimore and Susquehanna, maintained an operating inventory in Maryland of 50 or more bridges described simply as "girder" spans, in addition to a number of Howe trusses. Most of these were probably iron girder bridges; the longest were the 117-foot double-span bridge over Jones Falls and the 106-foot double-span girder bridge at Pierce's Mill (Gunnarson 1990:179-180).

As in the nation, girder bridge technology in Maryland was quickly adapted to cope with the increasingly heavy traffic demands of the twentieth century caused by automobile and truck traffic. The 1899 Maryland Geological Survey report on highways noted that "there are comparatively few I-beam bridges, one of the cheapest and best forms for spans less than 25 or 30 feet" (Johnson 1899:206). Interestingly, the report also urged construction of a composite metal, brick, and concrete bridge, noting that "no method of construction is more durable than the combination of masonry and I-beams, between which are transverse arches of brick, the whole covered with concrete, over which is laid the roadway" (Johnson 1899:206). Whether any such bridges (transitional structures between I-beams and reinforced concrete spans) were built is unknown.

Official state and county highway reports—issued between 1900 and the early 1920s through the Highway Division of the Maryland Geological Survey and its successor, the State Roads Commission—generally do not reference or describe girder construction. An analysis of the current statewide listing of county and municipal bridges (a listing maintained by the State Highway Administration) reveals that 48 county bridges, out of the total of 141 approximately dated to "1900"

by county engineers, were listed as steel girder, steel stringer, or variants of such terms. (It should be noted that the "1900" date is often given when no exact date is pinpointed for a bridge that is clearly old). A grand total of 200 bridges (including "steel culverts"), out of 550 bridges dated on the county list between 1901 and 1930, were described as steel beam, steel girder, or steel stringer and girder varieties. The total suggests that among the various highway bridge types built in the early twentieth century metal girder bridges in Maryland between 1900 and 1930 were second in popularity only to reinforced concrete bridges. However, these numbers must be interpreted with caution, as they do not necessarily include all county and municipal bridges.

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.

Is the bridge a significant example of its type?

The bridge is a potentially significant example of a metal girder 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 rolled longitudinal I-beams and concrete abutments.

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 1930s.

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):

Gunnarson, Robert

1990 *The Story of the Northern Central Railway, From Baltimore to Lake Ontario.* Greenberg Publishing Co., Sykesville, Maryland.

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.

Tyrrell, Henry G.

1911 *History of Bridge Engineering*. Published by author, Chicago.

SURVEYOR:

Date bridge recorded 2/28/97

Name of surveyor Caroline Hall/Eric F. Griffitts

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

Phone number (410) 296-1685

FAX number (410) 296-1670

Maryland Historic Highway Bridges

Bridge Type Metal Girder

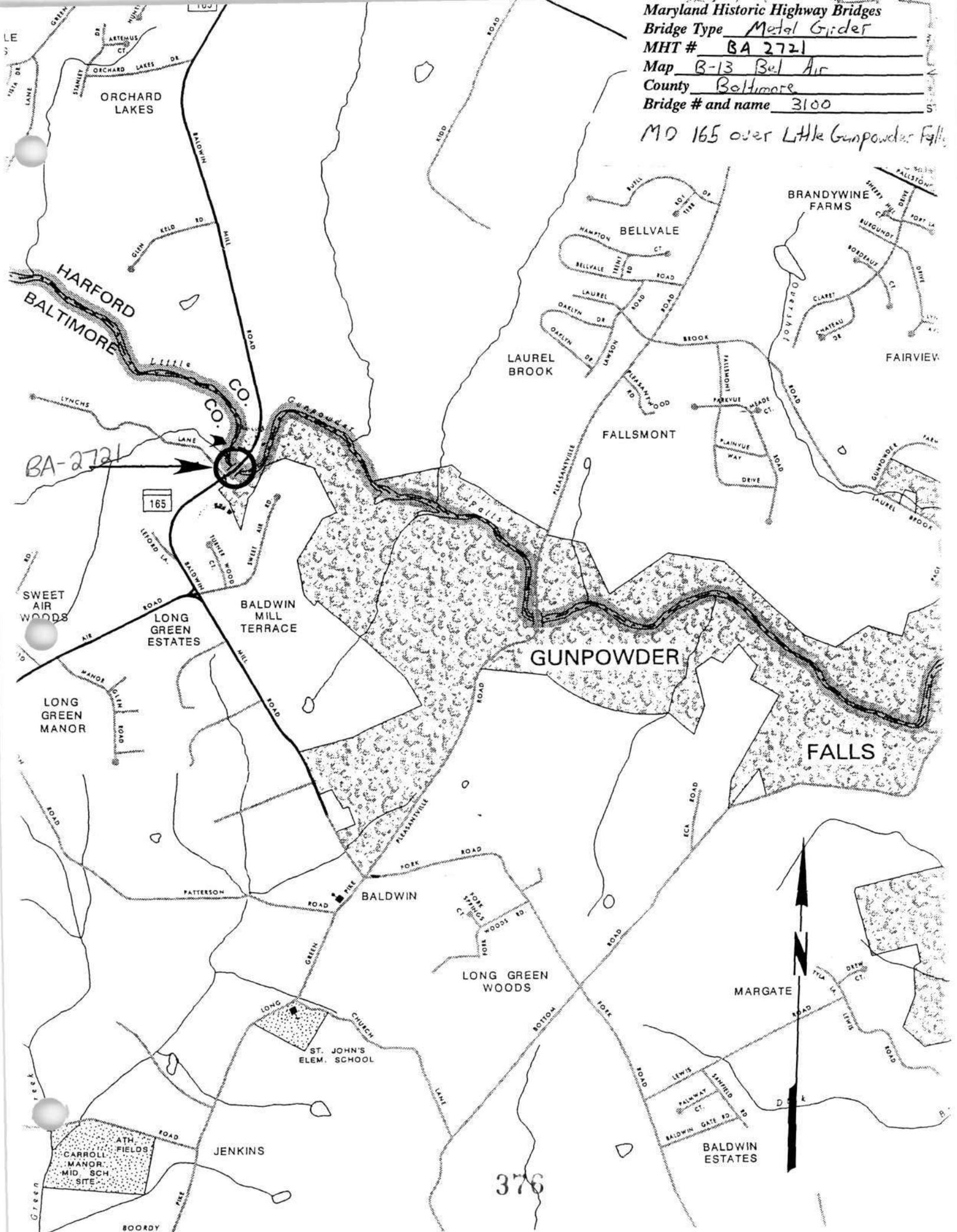
MHT # BA 2721

Map B-13 Bel Air

County Baltimore

Bridge # and name 3100

MD 165 over Little Gunpowder Falls





1. BA - 2721
2. MD 165 over Little Gorge - Baltimore
3. Baltimore County
4. Eric Griffiths
5. 3/97
6. MD SHPO
7. south approach
8. 1 of 6



HARFORD
COUNTY
KEEP HARFORD
INTO THE SEATTLE

1. BA-2721
2. MD 165 over Little Gunpowder Falls
3. Baltimore County
4. Eric Griffitts
5. 3/97
6. MD SHPO
7. north approach
8. 2 of 6



1. BA 2721
2. MD 165 over Little Gunpowder Falls
3. Baltimore County
4. Eric Griffiths
5. 3/97
6. MD SHPO
7. west elevation
8. 3 of 6



1. BA - 2721
2. MD 105 over Little Gunpowder Falls
3. Baltimore County
4. Eric Gruffitts
5. 3/97
6. MD SHPO
7. last elevation
8. 4 of 6



1. BA - 2721
2. MD 165 over Little Gunpowder Falls
3. Baltimore County
4. Eric Griffiths
5. 3/97
6. MD SHPO
7. girders under deck
8. 5 of 6



1. BA- 2721

2. MD 165 over Little Gunpowder Falls

3. Baltimore County

4. Eric Gruffitts

5. 3/97

6. MD SHPO

7. parapet on east elevation + N abut

8. 6 of 6