Maryland Historical Trust

Maryland Inventory of Historic Properties number: HO-677

Name: Bonne Branch Rd over Bonne Br

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 _____ Eligibility Not Recommended __X____

Criteria: ____A ____B ____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
HISTORIC BRIDGE INVENTORY
MARYLAND STATE HIGHWAY ADMINISTRATION/
MARYLAND HISTORICAL TRUST

MHT No. HO-677

SHA Bridge No. HO-2 Bridge name Bonnie Branch Road over Bonnie Branch

LOCATION:

Street/Road name and number [facility carried] Bonnie Branch

City/town Ellicott City Vicinity X

County Howard

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

Ownership: State ____ County X 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 X:

Rolled Girder X 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. HO-2 carries Bonnie Branch Road over Bonnie Branch in Howard County. Bonnie Branch Road runs north-south and Bonnie Branch flows west-east. The bridge is located in the vicinity of Ellicott City and is surrounded by wooded area and single family dwellings.

Describe Superstructure and Substructure:

Bridge No. HO-2 is a single-span, 2-lane, metal girder bridge. The bridge was built in 1947 with a span length of 42 feet and an overall structure length of 50 feet. The structure has a clear roadway width of 26.5 feet between asphalt curbs and a total deck width of 28.16 feet. The bridge is built on a skew of 44 degrees. The superstructure consists of five (5) rolled girders which support a concrete deck and w-beam guardrails. The girders are 2 feet x 1 foot and are spaced 6.5 feet apart. The top flanges of the girders are encased in concrete. The roadway is carried on the girders. The concrete deck is 7 inches thick and it has a 4 inch bituminous wearing surface. The structure has a standard w-section metal guardrail. The substructure consists of concrete abutments and wing walls. The southwest and northeast wing walls are straight, while the northwest and southeast wing walls are flared. The bridge is posted for 15 tons with a speed limit of 30 mph, and has a Howard County sufficiency rating of 64.7.

According to the 1992 inspection report, this structure was in fair to poor condition with spalling, cracking and section loss. The underside of the deck has a 6 foot spall with exposed and corroded reinforcing steel. The west abutment has numerous hairline cracks with efflorescence. The approach roadways have an abrupt change in the vertical alignment at both ends of the bridge.

Discuss Major Alterations:

According to the 1992 bridge inspection report, there have been no major alterations to the structure.

HISTORY:

WHEN was the bridge built: 1947

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

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

Other (specify)

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?

Unknown

WHO was the builder?

Unknown

WHY was the bridge altered?

N/A

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

Unknown

SURVEYOR/HISTORIAN ANALYSIS:

This bridge may have National Register significance for its association with:
A - Events _____ B- Person _____
C- Engineering/architectural character _____

The bridge does not have National Register significance.

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?

A significant example of a metal girder bridge should possess character-defining elements of its type, and be readily recognizable as an historic structure from the perspective of the traveler. The integrity of distinctive features visible from the roadway approach, including parapet walls or railings, is important in structures which are common examples of their type. In addition, the structure must be in excellent condition. This bridge is an undistinguished example of a metal girder bridge which lacks any distinctive design or ornamentation of its period, such as stylized concrete end posts or metal railings with a patterned grillage.

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 metal girders and abutments.

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

This bridge is not a significant example of the work of a manufacturer, designer, and/or engineer.

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** _____
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.

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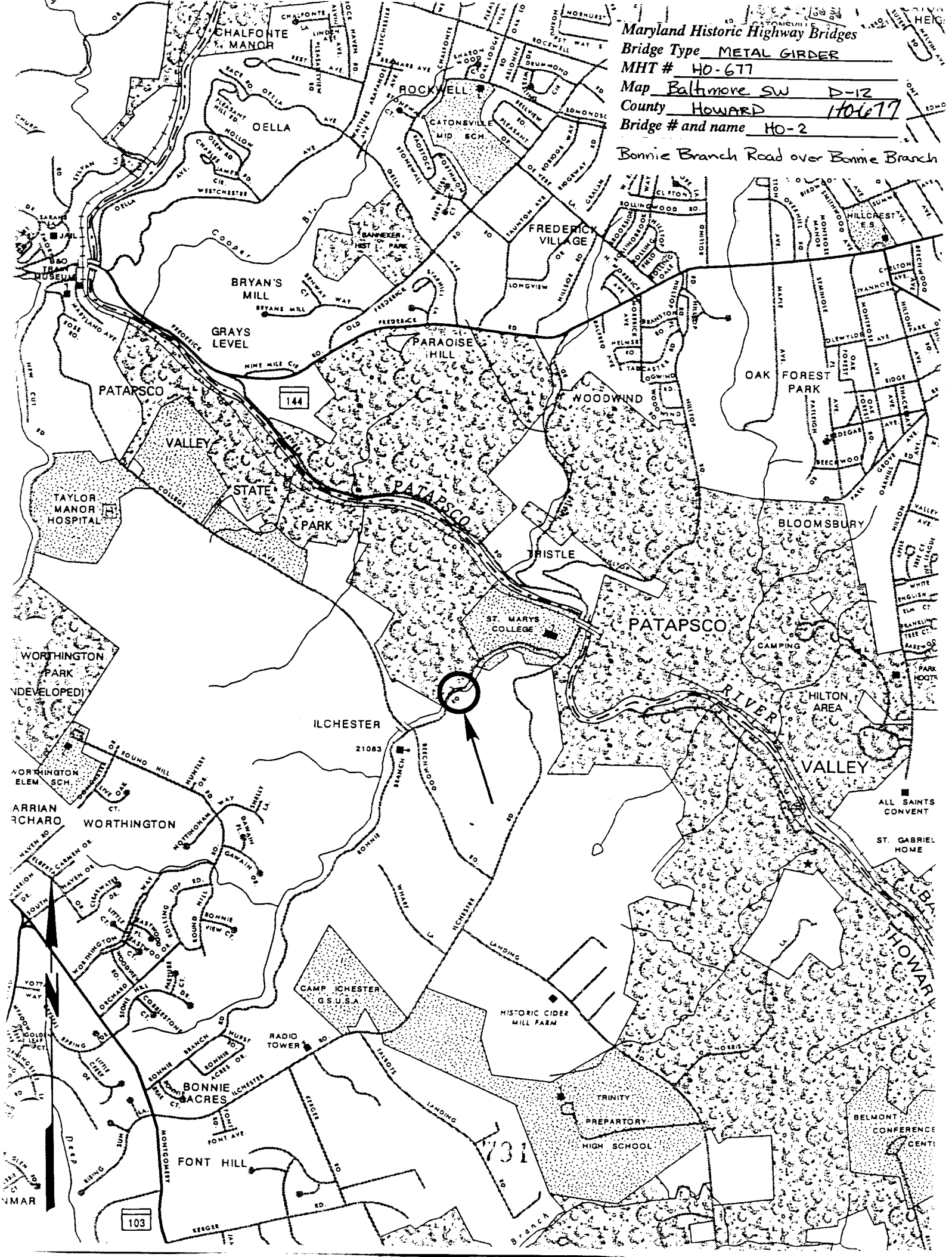
Tyrrell, Henry G.
1911 *History of Bridge Engineering*. Published by author, Chicago.

SURVEYOR:

Date bridge recorded 2/25/97
Name of surveyor Caroline Hall/Tim Tamburrino
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 # HO-677
Map Baltimore SW D-12
County HOWARD 1406677
Bridge # and name HO-2

Bonnie Branch Road over Bonnie Branch



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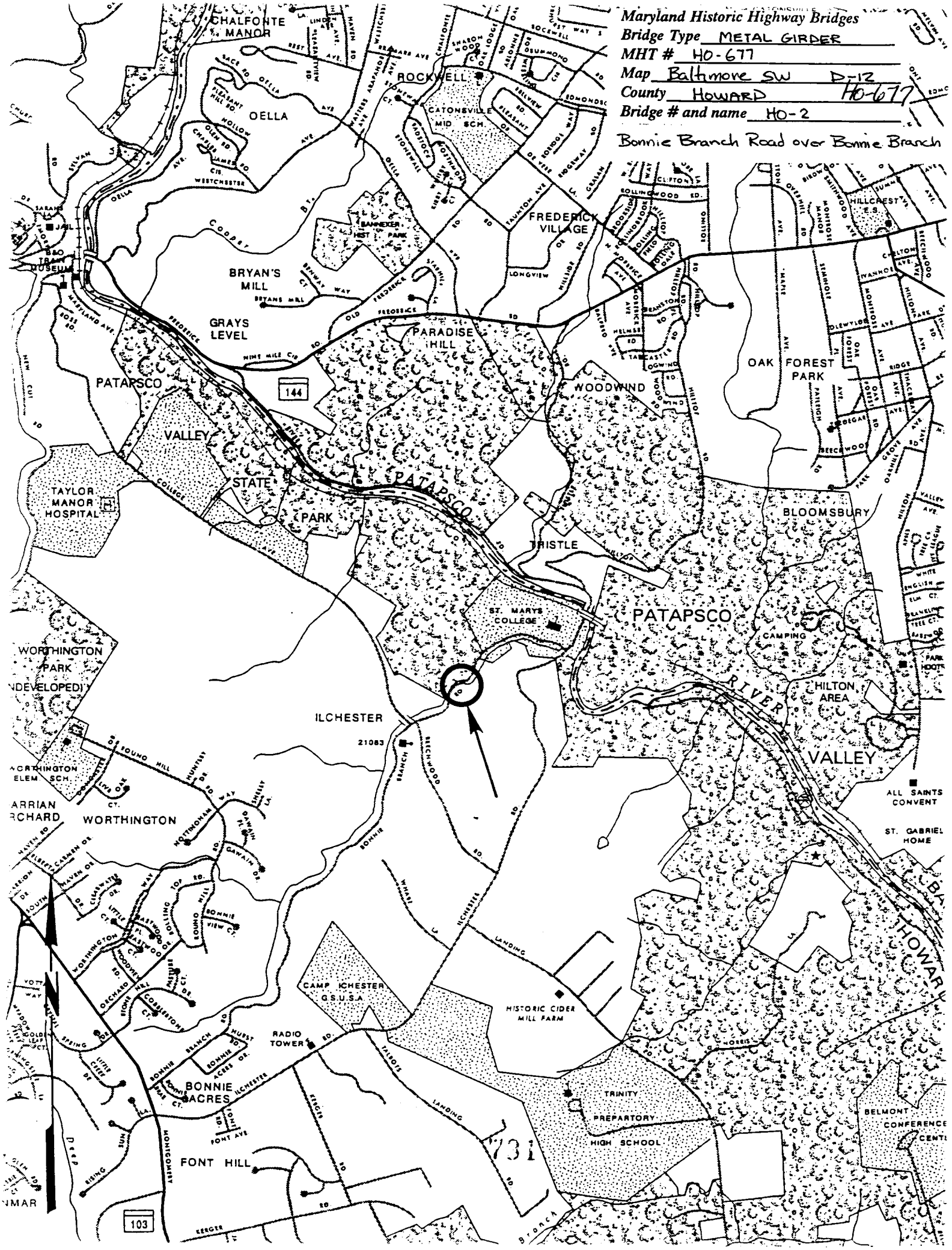

1. HO-677
2. Bonnie Branch Road over Bonnie Branch
3. Howard Co., MD.
4. Tim Tamburino
5. 3-97
6. MD SHPO
7. South approach
8. 1 of 6

1. HO-677
2. Bonnie Branch Road over Bonnie Branch
3. Howard Co., M.D.
4. Tim Tamburrino
5. 3-97
6. MD SHPO
7. Sout approach
8. 6 of 6

1. Hu-677

2. Bowie Branch Road over Bowie Branch

3. Howard Co., MD

4. Tim Tarburrino

5. 3-97

6. MD SHPO

7. East elevation

8. 3 of 6

1. Pb-677

2. Bonnie Branch Road over Bonnie Branch

3. Howard Co., MD

4. TM Tamburino

5. 3-9-

6. MD 5-10

7. [illegible]

8. [illegible] 6

1. HO-577

2. Bonnie Branch Road over Bonnie Branch

3. Howard Co., MD

4. Tim Tarburrino

5. 3-97

6. MD 4410

7. North abutment

8. 5 of 6

1. 40-677

2. Bonnie Branch Road over Bonnie Branch

3. Howard Co., MD

4. T.M. Tamburrino

5. 3-97

6. MD SHPO

7. North abutment

8. 6 of 6