MARYLAND HISTORICAL TRUST
DETERMINATION OF ELIGIBILITY FORM

NR Eligible: yes___ no___

Property Name: Bridge B-0391 Mt Zion Rd over Branch of Piney Run Inventory Number: BA-2779

Address: Mount Zion Road over Branch of Piney Run City: Boring Zip Code: 21155

County: Baltimore County USGS Topographic Map: Hampstead

Owner: Baltimore County DPW Is the property being evaluated a district? ___ yes

Tax Parcel Number: _____ Tax Map Number: _____ Tax Account ID Number: _____

Project: Replacement of Bridges B-0065 and B-0391 Agency: Baltimore County Dept Public Works

Site visit by MHT staff: _X_ no ____yes Name: _____ Date: _____

Is the property is located within a historic district? ____ yes _X_ no

If the property is within a district District Inventory Number: _____

NR-listed district ____yes Eligible district ____yes Name of District: _____

Preparer's Recommendation: Contributing resource ___yes ____ no Non-contributing but eligible in another context ____ yes

If the property is not within a district (or the property is a district) Preparer's Recommendation: Eligible ____yes _X_ no

Criteria: ___ A ___B ___C___ D Considerations: ___ A ___B___ C___ D___ E___ F ___G___ None

Documentation on the property/district is presented in:
MIHP Form BA-2779 and Project Review & Compliance Files

Description of Property and Eligibility Determination: *(Use continuation sheet if necessary and attach map and photo)*

Bridge B-0391 (Mount Zion Road over Branch of Piney Run) is a two-span concrete slab bridge constructed in 1920. The bridge has a total span of 20 feet between abutments and a clear roadway width of 20 feet. The structure has solid concrete parapets.

The bridge lacks design significance and material integrity. In addition, the structure does not represent a significant trend in bridge construction in Maryland. Therefore, Bridge B-0391 is not eligible for the National Register of Historic Places.

Prepared by: Tim Tamburrino Date Prepared: 02/24/2003

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended ____ **Eligibility not recommended** _X_

Criteria: ___ **A** ___**B** ___**C** ___**D** **Considerations:** ___ **A** ___**B**___ **C**___ **D**___ **E**___ **F**___ **G** ___**None**

MHT Comments

Andrew Lewis ✓ 2/28/03
Reviewer, Office of Preservation Services **Date**

[signature] 3/3/03
Reviewer, NR Program **Date**

2003001143

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

MHT No. BA-2779

SHA Bridge No. B 0391 Bridge name Mount Zion Road over Branch of Piney Run

LOCATION:
Street/Road name and number [facility carried] Mount Zion Road

City/town Boring Vicinity X

County Baltimore

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____:
Rolled Girder ____ Rolled Girder Concrete Encased ____
Plate Girder ____ Plate Girder Concrete Encased ____

Metal Suspension ____

Metal Arch ____

Metal Cantilever ____

Concrete X:
Concrete Arch____ Concrete Slab X Concrete Beam ____ Rigid Frame ____
Other ____ Type Name ____

BA-2779

DESCRIPTION:
Setting: Urban _____ **Small town** _____ **Rural** X

Describe Setting:

Bridge No. B 0391 carries Mount Zion Road over a branch of Piney Run in Baltimore County. Mount Zion Road runs east-west and the branch of Piney Run flows north-south. The bridge is located in the vicinity of Boring and is surrounded by farmland.

Describe Superstructure and Substructure:

Bridge No. B 0391 is a 2-span, 2-lane, concrete slab bridge. According to the bridge files, the structure was built in 1920. The structure is 20 feet long and has a clear roadway width of 20 feet. The out-to-out width is 22 feet. The concrete slab is 3 feet, 3 inches thick, and it has a bituminous wearing surface. The structure has solid unornamented concrete parapets. The north approach has a sharp curve prior to the bridge. The substructure consists of two (2) concrete abutments and a concrete intermediate pier at mid-length. There are two (2) flared and two (2) straight concrete wing walls. The bridge is posted for 15, 27, and 40 tons for the H, MD Type 3, and the MD Type 3S2 vehicles respectively, and has a sufficiency rating of 78.8.

According to the 1995 inspection report, this structure is in satisfactory condition. The south approach is 7/8 inch higher than the bridge. The deck contains diagonal cracks extending from the northwest corner of the bridge into the west parapet. There is also an area of concrete deterioration at the northwest corner of the slab with exposed reinforcing bars. Also, the concrete parapets have some small spalls and scale. The concrete is cracking in the abutments and wing walls. The southeast and northeast wing walls have separated from the abutments and rotated a few inches forward. The south abutment has three (3) spalls, and the north abutment has some cracking.

Discuss Major Alterations:

Inspection reports from 1995 detail no alterations to the bridge.

HISTORY:

WHEN was the bridge built: 1920
This date is: Actual _____ **Estimated** X
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 a more efficient transportation network and increased load capacity.

WHO was the designer?

Unknown

WHO was the builder?

Unknown

BA-2779

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?

Reinforced concrete slab bridges are a twentieth century structure type, easily adapted to the need for expedient engineering solutions. Reinforced concrete technology developed rapidly in the early twentieth century with early recognition of the potential for standardized design. The first U.S. attempt to standardize concrete design specifications came in 1903-1904 with the formation of the Joint Committee on Concrete and Reinforced Concrete of the American Society of Civil Engineers.

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. Most improvements to local roads waited until the years after World War I.

In the early years, there was a need to replace the numerous single lane timber bridges. Walter Wilson Crosby, Chief Engineer, stated in 1906, "the general plan has been to replace these [wood bridges] with pipe culverts or concrete bridges and thus forever do away with the further expense of the maintenance of expensive and dangerous wooden structures." Within a few years, readily constructed standardized bridges of concrete were being built throughout the state.

In 1930, the roadway width for all standard plan bridges was increased to 27 feet in order to accommodate the increasing demands of automobile and truck traffic (State Roads Commission

1930). The range of span lengths remained the same, but there were some changes designed to increase the load bearing capacities. The reinforcing bars increased in thickness. Visually, the 1930 design can be distinguished from its predecessors by the pierced concrete railing that was introduced at this time.

In 1933, a new set of standard plans were introduced by the State Roads Commission. This time their preparation was not announced in the Report; new standard plans were by this time nothing special - they had indeed become standard. Once again accommodating the ever-increasing demands of traffic, the roadway was increased, this time to 30 feet. The slab span's reinforcing bars remained the same diameter but were placed closer together to achieve still more load capacity.

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 concrete slab 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. Although the bridge retains its distinctive features visible from the roadway, the structure has considerable deterioration in the slab and abutments. Additionally, the northeast and southeast wing walls have separated from the structure.

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

The bridge retains much of the character-defining elements of its type, including the slab, parapets, abutments, wing walls, and pier. However, the integrity of these elements has been compromised by severe deterioration. The northeast and southeast wing walls have separated from the structure, and the slab and abutments have considerable deterioration.

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.

BA-2779

BIBLIOGRAPHY:

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

Ketchum, Milo S.
1908 *The Design of Highway Bridges and the Calculation of Stresses in Bridge Trusses.* The Engineering News Publishing Co., New York.

1920 *The Design of Highway Bridges of Steel, Timber and Concrete.* Second edition. McGraw-Hill Book Company, New York.

Lay, Maxwell Gordon
1992 *Ways of the World: A History of the World's Roads and of the Vehicles That Used Them.* Rutgers University Press, New Brunswick, New Jersey.

Maryland State Roads Commission
1930a *Report of the State Roads Commission for the Years 1927, 1928, 1929 and 1930.* State of Maryland, State Roads Commission, Baltimore.

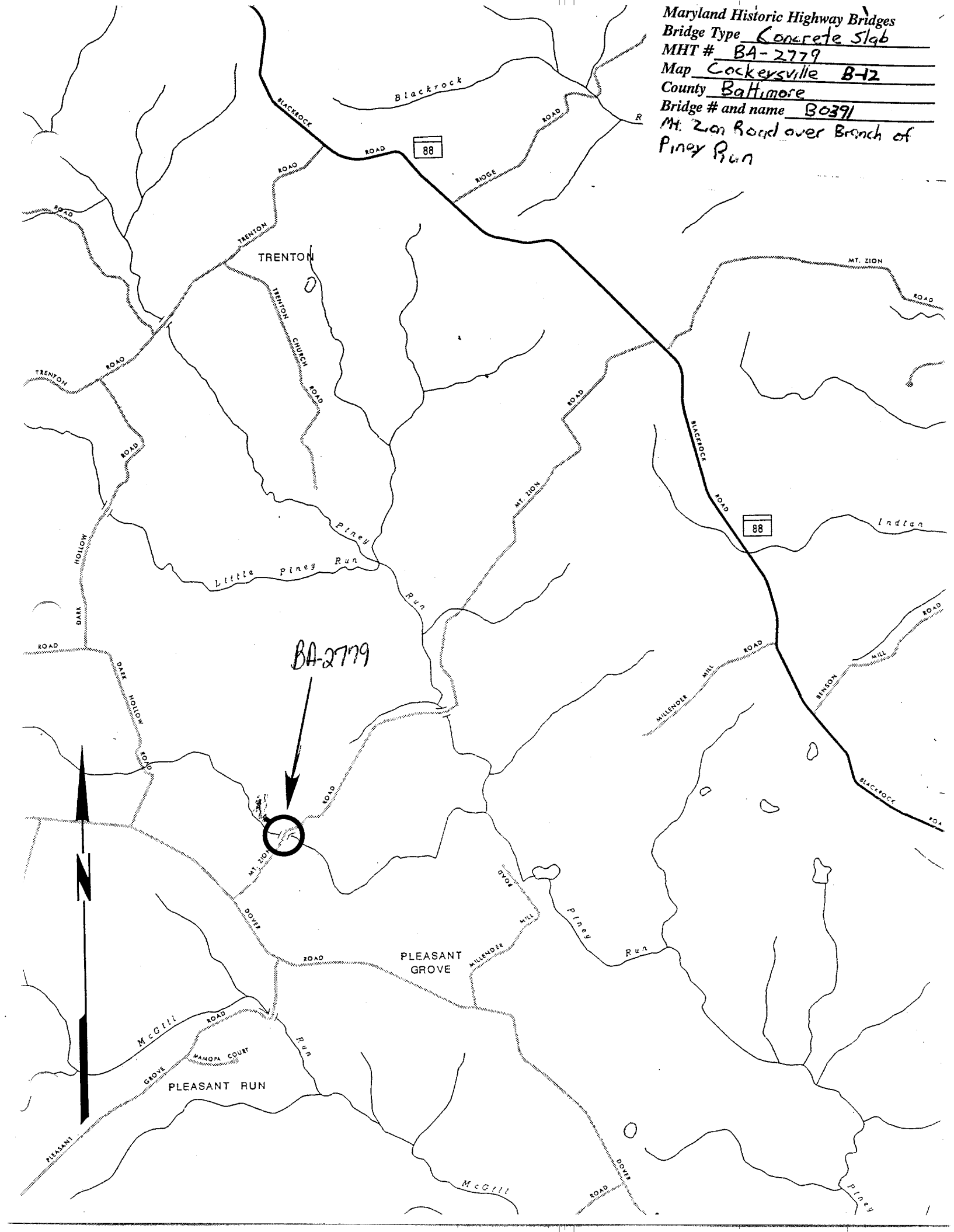
1930b *Standard Plans.* State of Maryland, State Roads Commission, Baltimore.

Taylor, Frederick W., Sanford E. Thompson, and Edward Smulski
1939 *Reinforced-Concrete Bridges with Formulas Applicable to Structural Steel and Concrete.* John Wiley & Sons, Inc., New York.

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 3/1/97
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 Concrete Slab
MHT # BA-2779
Map Cockeysville B-12
County Baltimore
Bridge # and name B0391
Mt. Zion Road over Branch of Piney Run
BA-2779
TRENTON
PLEASANT GROVE
PLEASANT RUN
Blackrock
Piney Run
Little Piney Run
Indian
McGill
Dover
Mt. Zion
Trenton
Dark Hollow
Millender Mill
Benson Mill
Trenton Church
Mahopa Court
Pleasant Grove
88
N

1. BA - 2779
2. Mount Zion Flour Branch
3. Baltimore County of Piney Run
4. Eric Griffitts
5. 3/97
6. MD SHPO
7. east elevation
8. 1 of 5

1. BA-2779
2. Mt. Zion Rd over Branch of
3. Baltimore County Piney Run (B0391)
4. Eric Huffitts
5. 3/97
6. MD SHPO
7. north approach
8. 2 of 5

1. BA-2779
2. Mt. Zion Rd over Branch of
3. Baltimore County Piney Run
(B039)
4. Eric Griffiths
5. 3/97
6. MD SHPO
7. South approach
8. 3 of 5

1. BA-2779
2. Mt. Zion Rd over Branch of
3. Baltimore County Piney Run
4. Eric Griffitts / (B039)
5. 3/97
6. MD SHPO
7. west elevation
8. 4 of 5

1. BA-2779
2. Mt. Zion Rd over Branch of Piney Run (B0391)
3. Baltimore County
4. Eric Griffitts
5. 3/97
6. MD SHPO
7. detail of abutments
8. 5 of 5