Maryland Historical Trust

Maryland Inventory of Historic Properties number: [illegible]

Name: [illegible]

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. CE-1497

SHA Bridge No. CE049 **Bridge name** Russell Road over Basin Run

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

City/town Liberty Grove **Vicinity** X

County Cecil

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

CE-1497

DESCRIPTION:

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

Describe Setting:

Bridge No. CE049 carries Russell Road over Basin Run in Cecil County. Russell Road runs east-west and Basin Run flows south to north. The bridge is located between Rising Sun and Port Deposit, in the vicinity of Liberty Grove and is surrounded by wooded areas and open fields.

Describe Superstructure and Substructure:

Bridge No. CE049 is a single span, 1-lane timber beam bridge. The bridge was originally constructed circa 1930. The structure is 6.7 meters (22 feet) long and has a clear roadway width of 4.7 meters (15.6 feet); there is no sidewalk. The out-to-out width is 4.8 meters (16 feet). The superstructure consists of nine timber beams which support a timber plank deck and a timber railing. The beams are 20.3 centimeters (8 inches) wide by 30.5 centimeters (12 inches) high and are spaced .58 meters (1.9 feet) ± apart. The structure has two strand timber railings. The substructure consists of two stone abutments and stone wing walls; the wing walls on the west side are straight, while those on the east side are flared. The bridge is posted at 8.16 tonnes (9 tons) for single vehicles and 14.5 tonnes (16 tons) for combination vehicles. The structure has a sufficiency rating of 55.1.

According to the 1997 inspection report, this structure was in fair condition with minor checks throughout, substandard railings and no guardrails at the roadway approaches.

Discuss Major Alterations:

There have been no major alterations to this structure.

HISTORY:

WHEN was the bridge built: circa 1930

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 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?

There is no evidence that the bridge was built as part of an organized bridge building campaign.

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?

The earliest bridges built in North America were timber bridges. According to one account, European settlers at first utilized the bridges constructed by the Native American populations, which consisted of tied timbers laid across up-turned forked tree trunks (American Association of State Highway Officials 1953: 19). This design was adopted by the settlers, who then modified the design by hewing the upper portions of the timbers to provide a flat surface and by adding a handrail to one side (American Society of Civil Engineers 1976: 143). Where crossings exceeded the length of the available timber, short spans were joined and supported on wood piles or on timber cribs filled with earth or stone. In fact, the earliest recorded bridge built by European settlers in America was most likely this type of design. Constructed in 1611 on James Towne Island, Virginia, this timber bridge extended approximately 200 feet into the water and provided docking facilities in the 12 foot deep channel (American Association of State Highway Officials 1953: 19).

The railroads had a significant impact on the construction as well as the on-going popularity of the timber bridge. During the 1830s, the Baltimore & Ohio Railroad employed engineers such as Theodore Burr and Lewis Wernwag to construct bridges over its major crossings. Burr, Town and Long trusses were all extensively employed and became standard for railroad-bridge construction (Waddell 1916: 21).

Another type, the timber trestle bridge, also was used extensively by the railroads. The first timber trestle was built by the Philadelphia and Reading Railroad in 1840 (Waddell 1916: 22). With timber in abundant supply, the railroads used this functional design as an inexpensive and practical bridge design for its lines, particularly in remote locations of the country.

The combination of timber with other materials began with the invention of the Howe truss in 1840. William Howe patented a truss which utilized iron verticals as tension members and wood diagonals as compression members. The Howe truss became a standard of railroad bridge design. By the 1860s, the problem of wood deterioration was under better control with the invention of pressure creosote treatments, which extended the life of the wood members. Timber pile bent structures remained popular, particularly in tidal areas, into the twentieth century. These were most often used in combination with concrete.

The popularity of the timber bridge continued into the 1880s even with the ascension of iron and steel as bridge materials. Due to the availability of lumber in the state, the timber bridge was a functionally popular bridge type in Maryland from the European settlement era to the twentieth century. The numerous small streams that cross the state as well as the larger rivers such as the Susquehanna were often spanned by timber bridges during the eighteenth and nineteenth centuries.

Despite the rise of use of metal and concrete in bridge building, timber bridges continued to be constructed in Maryland in the twentieth century. Many of these later timber bridges were combination structures that have been favored in the flat terrain of the Tidewater Region.

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 timber beam 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 timber beam bridge.

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 timber stringers, deck, railing, stone abutments and stone wing walls.

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:

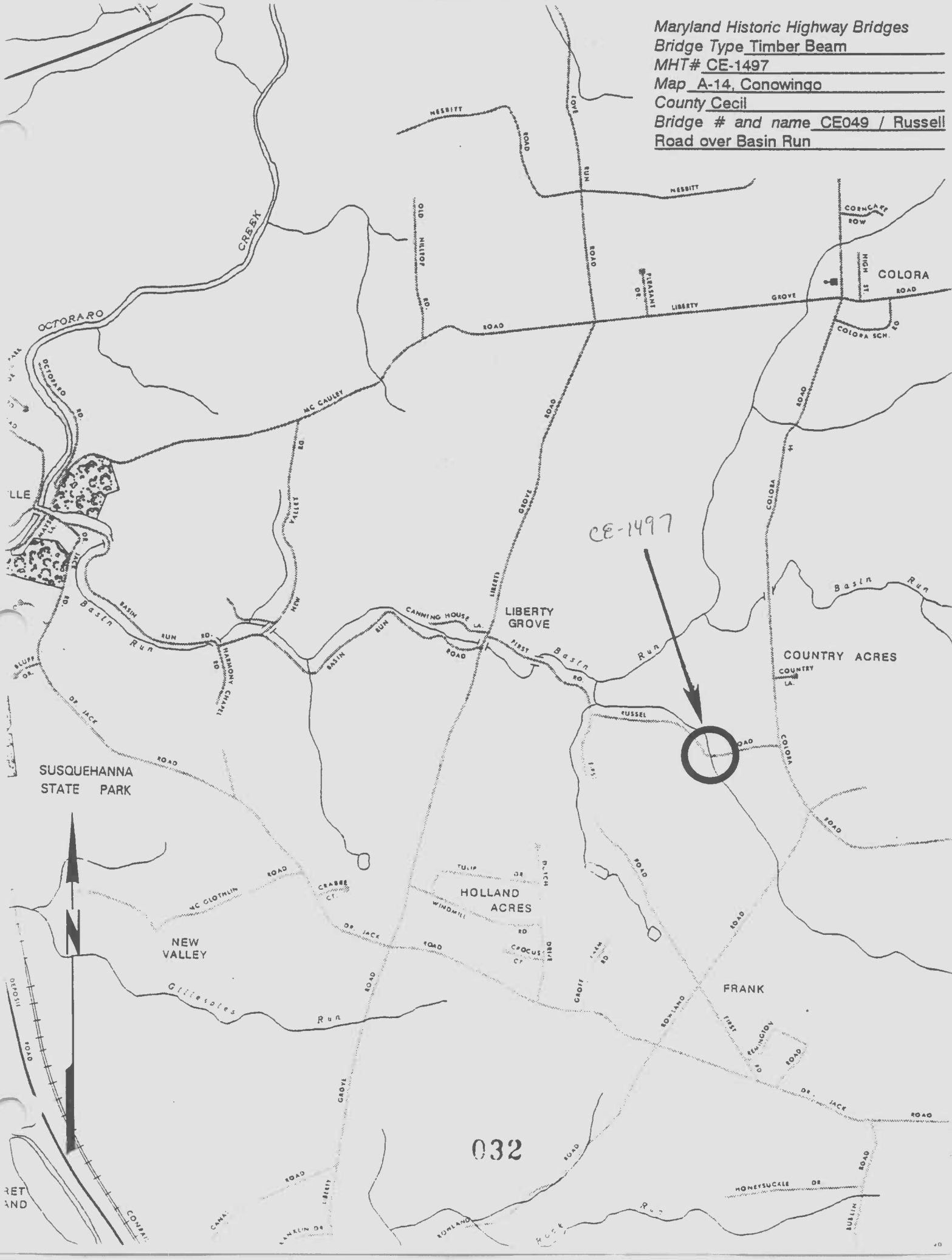
County inspection/bridge files X **SHA inspection/bridge files** _____
Other (list):

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 Historic Highway Bridges
Bridge Type Timber Beam
MHT# CE-1497
Map A-14, Conowingo
County Cecil
Bridge # and name CE049 / Russell Road over Basin Run



1 CE-1497

2 Russell Rd over Basin Run

3 Cecil Co., MD

4 3/98

5 Marris German, WMA

6 MD SHPO

7 Elevation looking Downstream

8 1 of 4

1 CE. 1497

2 Russell Rd over Basin Run

3 Cecil Co., MD

4 3/98

5 Morris German, WMA

6 MD SHPO

7 Elevation looking upstream

8 2 of 4

1 CE-1497

2 Russell Road over Basin Run

3 Cecil Co., MD

4 3/98

5 Marris German, WMA

6 MD SHPO

7 Looking east

8 3 of 4

RESTRICTED BRIDGE
SINGLE UNIT
18000 LBS GVW
COMBINATION UNIT
32000 LBS GCW

1 CE-1497

2 Russell Rd over Basin Run

3 Cecil Co., MD

4 3/98

5 Marris German, WMA

6 MD SHPO

7 Looking West

8 4 of 4