Maryland Historical Trust

Maryland Inventory of Historic Properties number: BA-2812

Name: Piney Grove Rd. over CSX Railroad

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
HISTORIC BRIDGE INVENTORY
MARYLAND STATE HIGHWAY ADMINISTRATION/
MARYLAND HISTORICAL TRUST

MHT No. BA-2812

SHA Bridge No. B 0140 Bridge name Piney Grove Road over CSX Railroad

LOCATION:

Street/Road name and number [facility carried] Piney Grove Road

City/town Piney Grove Vicinity _____

County Baltimore

This bridge projects over: Road____ Railway X Water _____ 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 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 _____

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DESCRIPTION:

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

Describe Setting:

Bridge No. B 0140 carries Piney Grove Road over the CSX Railroad at the crossroads village of Piney Grove, Baltimore County. Piney Grove Road runs east-west and the CSX Railroad extends north-south. The bridge is located in a rural area and is surrounded by farmland, single family dwellings and a church.

Describe Superstructure and Substructure:

Bridge No. B 0140, constructed in 1907, is a single-lane timber bridge consisting of three timber stringer spans. The structure is a total of 13.5 meters (44.25 feet) in length, comprising an east approach span of 4.3 meters (14 feet), a west approach span of 4.2 meters (13.75 feet) and a center span of 5 meters (16.5 feet). The bridge has a clear roadway width of 4.8 meters (15.75 feet) between timber curbs; there are no sidewalks on the structure. The out-to-out width is 5.4 meters (17.7 feet). The superstructure consists of seven timber beams which support a timber deck and timber railings. The beams are 20.3 centimeters wide x 40.6 centimeters high (8 inches wide x 1.3 feet high) and are spaced 50.8 centimeters (2.7 feet) apart. The timber deck consists of boards 10.2 centimeters (4 inches) thick and 35.6 centimeters (1.2 feet) wide. The structure has a timber railing of wood posts supporting two rails and a wood cap. The roadway approaches have metal guardrails. The substructure consists of two concrete abutments and two timber bents. The bents have concrete footings, four timber columns with cross bracing and a timber pier cap. There are four flared, concrete wingwalls. The bridge is posted for load limits of 9 tonnes (10 tons), 12.7 tonnes (14 tons) and 22.7 tonnes (25 tons) for the H-15, MD type 3 and MD type 3S2 vehicles, respectively. The bridge has a sufficiency rating of 56.3.

According to the 1995 inspection report, the overall condition of the structure is fair. The superstructure is in satisfactory condition with a heavily weathered timber plank deck. The timber planks comprising the deck are loose and worn with isolated splits and decay. The timber stringers have minor splits at isolated locations with minor corrosion on the hardware. The substructure is in fair condition. The wingwalls have cracking, spalling, scaling and efflorescence. The east abutment has a large fracture crack at the south end and both abutment footings are exposed. The timber caps and columns exhibit minor splitting and the hardware has minor corrosion. The pier footings have minor scaling and isolated cracking. The roadway approaches have asphalt wearing surfaces. The approach pavements are slightly worn and exhibit minor scaling at the edges of the roadway.

Discuss Major Alterations:

According to the 1995 inspection report, some sections of the timber curbs and railings were replaced between the 1993 and 1995 inspection periods.

HISTORY:

WHEN was the bridge built: 1907

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 to eliminate an at-grade crossing of the Western Maryland Railroad.

WHO was the designer?

Unknown

WHO was the builder?

Western Maryland Railroad

WHY was the bridge altered?

N/A

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

The bridge was constructed to eliminate an at-grade crossing of the Western Maryland Railroad (now CSX Railroad).

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 timber beam construction. Despite a possible alteration of the original abutments, the structure has a high degree of integrity and retains such character-defining elements of the type as timber stringers, railing and bents.

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, in particular 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?

The bridge is a potentially significant example of a timber beam 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 timber stingers, railing and bents.

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.

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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.

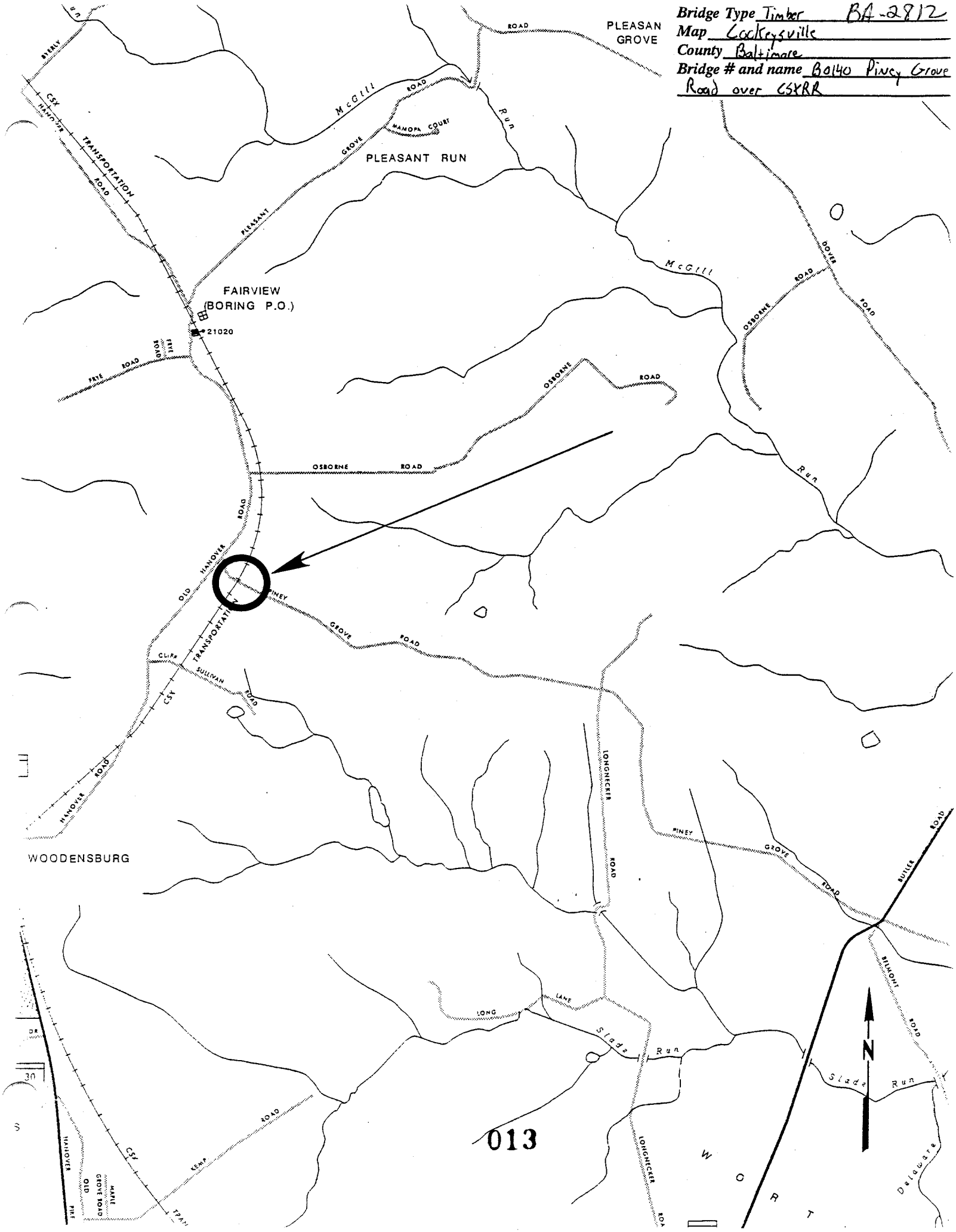
Maryland State Roads Commission
1930a *Report of the State Roads Commission for the Years 1927, 1928, 1929 and 1930.* State of Maryland, State Roads Commission, Baltimore.

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

SURVEYOR:

Date bridge recorded 7/21/97
Name of surveyor Caroline Hall/Tim Tamburrino
Organization/Address P.A.C. Spero & Co., 40 W. Chesapeake Avenue, Suite 412, Baltimore, Maryland 21204
Phone number (410) 296-1635 **FAX number** (410) 296-1670

Bridge Type Timber BA-2812
Map Cockeysville
County Baltimore
Bridge # and name B0140 Piney Grove Road over CSXRR



1. BA-2817
2. B140, Piney Grove Road over CSXRR
3. Baltimore County, MD
4. Tim Tamburino
5. July 1997
6. MD SHPO
7. East approach
8. 1 of 5

WEIGHT
LIMIT

1. BA-2812
2. B140, Piney Grove Road over CSXRR
3. Baltimore County, MD
4. Tim Tamburino
5. July 1997
6. MD SHPO
7. West approach
8. 2 of 5

1. BA-2812

2. B140, Piney Grove Road over CSX RR

3. Baltimore County, MD

4. Tim Tamburino

5. July 1997

6. MD SHPO

7. North elevation

8. 3 of 5

1. BA - 2812

2. B 140, Piney Grove Road over CSX RR

3. Baltimore County, MD

4. Tim Tamburrino

5. July 2007

6. MD 5480

7. Timber deck and wood railing

8. 4 of 5

1. BA - 2812

2. 0140, Piney Grove Road over CSX RR

3. Baltimore County, MD

4. Tim Tamburrino

5. July 1997

6. MD SHPO

7. South elevation

8. 5 of 5