Maryland Historical Trust

Maryland Inventory of Historic Properties number: F-8-138.

Name: F-1904/ Greenville Road over Br. of Singapore Crk.

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. F-8-138

SHA Bridge No. F 1904 Bridge name Unionville Road over Branch of Linganore Creek

LOCATION:

Street/Road name and number [facility carried] Unionville Road

City/town Unionville Vicinity

County Frederick

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 X _____ No

National Register-listed district ____ National Register-determined-eligible district __

Locally-designated district X_____ Other _____

Name of district: Unionville Survey 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 _____

DESCRIPTION:

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

Describe Setting: Bridge No. F 1904 carries Unionville Road over a branch of Linganore Creek in eastern Frederick County. The bridge lies in the community of Unionville. The bridge lies near numerous nineteenth century residences. The stream flows from north to south.

Describe Superstructure and Substructure:

This 1929 structure is a two span concrete slab structure, whose span lengths are 20 feet each. The superstructure provides a 27'- 2" clear roadway which rests on concrete abutments and is bounded by concrete curbs and concrete parapets extending 4'- 4" above the top of the slab. The parapets are open and have end blocks decorated with panelling. The concrete slab is in fair condition but the concrete is spalling, cracking, and leaking, causing efflorescence deposits on the underside in several areas. Due to the concrete slab not being anchored to its supports, one span has moved one foot (at the pier) in the downstream direction causing severe damage to the concrete parapets on the top of the slab, and the concrete retaining walls. The concrete abutment appears to be in fair condition.

Discuss Major Alterations:

There have been no major alterations to this bridge.

HISTORY:

WHEN was the bridge built 1929

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

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

Other (specify): County inspection files

WHY was the bridge built?

The need for a more efficient transportation network and increased load capacity in the decades following World War I.

WHO was the designer?

Unknown

WHO was the builder?

Unknown

WHY was the bridge altered?

This bridge has not been altered.

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

As part of an effort by the State to increase load capacity on secondary roads during the 1920s and 1930s.

SURVEYOR/HISTORIAN ANALYSIS:

This bridge may have National Register significance for its association with:

A - Events _____ **B- Person** _____

C- Engineering/architectural character _____

This 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 1903-04 with the formation of the Joint Committee on Concrete and Reinforced Concrete of the American Society of Civil Engineers.

Maryland's road and bridge improvement programs mirrored economic cycles. The first road improvement program 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 to 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 become inadequate to the huge freight trucks and volume of passenger cars in use, with major improvements occurring in the late 1930s. Most improvements to local roads waited until the years after World War II.

With a diverse topographical domain encompassing numerous small and large crossings, Maryland engineers quickly recognized the need for expedient design and construction.

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 way 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.

The creation of standard plans and a description of their use was first announced in the 1912-15 Reports of the State Roads Commission whereby bridges spanning up to 36 feet were to use standardized designs.

Published on a single sheet, the 1912 Standard Plans included those structures that were amenable to such an approach: slab spans, (deck) girder spans, box culverts, box bridges, abutments, and piers (State Roads Commission 1912). Slab spans, with lengths of 6 to 16 feet in two foot increments, featured a solid parapet that was integrated into the slab, with a roadway of 22 feet.

In the Report for the years 1916-1919, a revision of the standard plans was noted:

> During the four years covered by this report, it has been found necessary to revise our standard plans for culverts and bridges, to take care of the increased tonnage which they have been forced to carry. Army cantonments...increased their operations several hundred per cent, and the brunt of the enormous truck traffic resulting therefrom, was borne by the

> State Roads of Maryland. In addition to these war activities, freight motor lines from Baltimore to Washington, Philadelphia, New York, and various points throughout Maryland, and the weight of many of these trucks when loaded, was in excess of the loads for which our early bridges were designed (State Roads Commission 1920:56).

Published on separate sheets, the new standard plans (State Roads Commission 1919) for slab bridges reveal that the major changes was an increase in roadway width from 22 feet to 24 feet and a redesign of the reinforcement. The slab spans continued to feature solid parapets integrated into the span. The range of span lengths remained 6 to 16 feet, but the next year (1920) witnessed the issue of a supplemental plan for a 20 foot long slab span (State Roads Commission 1920).

The 1924 standard plans remained in effect until 1930, when 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 load bearing capacities. The reinforcing bars were increased in thickness. Visually, the 1930 design can be distinguished from its predecessors by the pierced concrete railing that was introduced at this time.

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. The adjacent structures appear to pre-date the bridge.

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?
Unionville is a locally designated historic district. However, this bridge is not a contributing structure within this district.

Is the bridge a significant example of its type?
No, this bridge possesses no distinctive characteristics which would make it a significant example of its type.

Does the bridge retain integrity of important elements described in Context Addendum?
No, the concrete parapets have retained integrity of materials, but has been severely damaged due to the concrete slab not being anchored to its supports.

Is the bridge a significant example of the work of a manufacturer, designer, and/or engineer?
Manufacturer and designer of this bridge is not known.

Should the bridge be given further study before an evaluation of its significance is made?
No further study is needed before an evaluation of its significance is made.

BIBLIOGRAPHY:

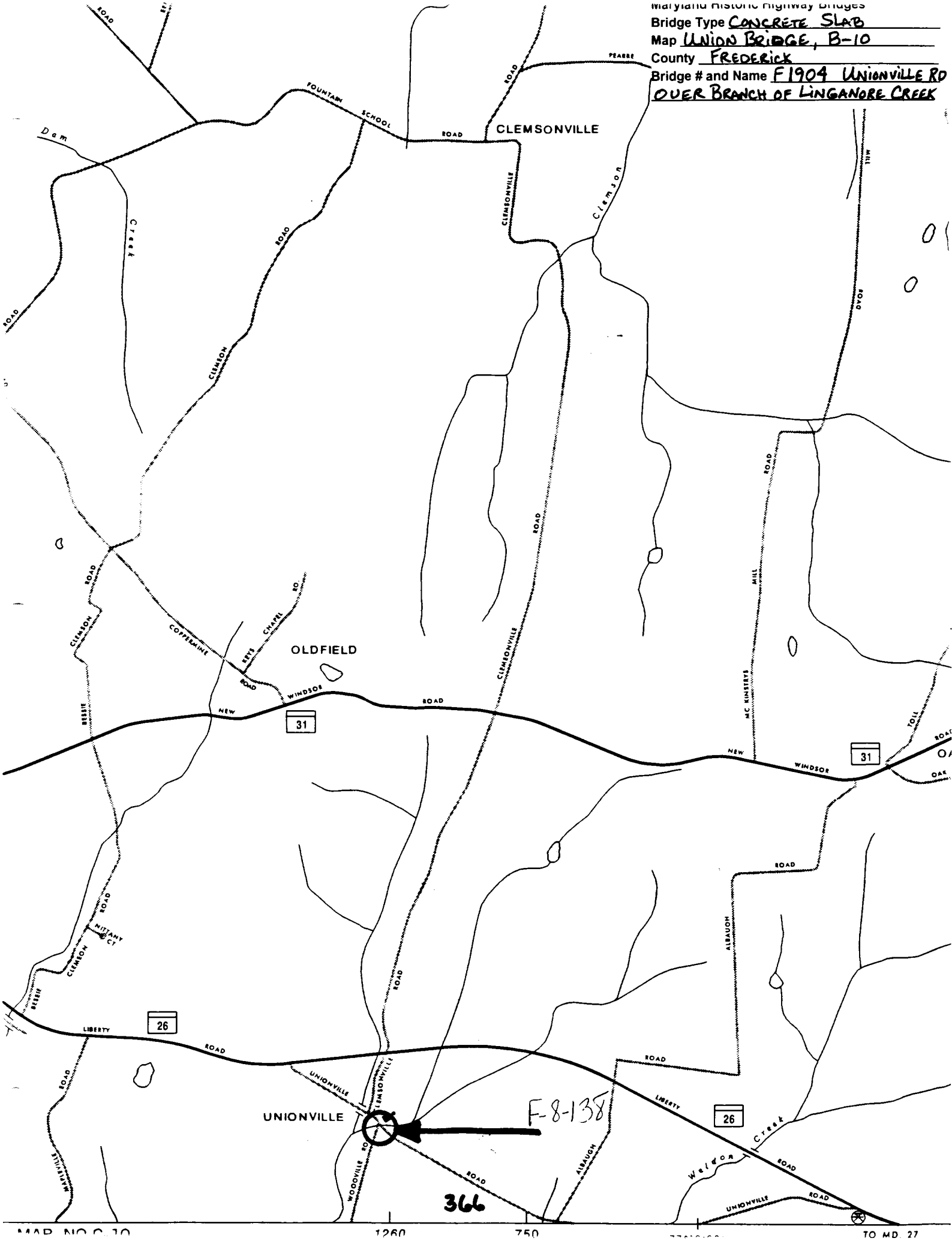
County inspection/bridge files X ____ **SHA inspection/bridge files**
Other (list):

F-8-138

SURVEYOR:

Date bridge recorded 8/95
Name of surveyor Leo Hirrell
Organization/Address P.A.C. Spero & Company, 40 W. Chesapeake Avenue, Suite 412, Baltimore, Maryland 21204
Phone number 410-296-1635 **FAX number** 410-296-1670

Maryland Historic Highway Bridges
Bridge Type CONCRETE SLAB
Map UNION BRIDGE, B-10
County FREDERICK
Bridge # and Name F 1904 UNIONVILLE RD
OVER BRANCH OF LINGANORE CREEK



Inventory # F-8-138

Name FA04 - UNIONVILLE RD OVER LINGANORE CREEK

County/State FREDERICK COUNTY/MD

Name of Photographer FRANK JULIANO

Date 2/95

Location of Negative SHA

Description APPROACH WEST

Number ~~27~~ 1 of ~~35~~ 8

Inventory # F-8138

Name F1904 UNIONVILLE RD OVER LINGANORE CREEK
County/State FREDERICK COUNTY | MD
Name of Photographer FRANK JULIANO
Date 2/95

Location of Negative SHA

Description ELEVATION LOOKING NORTH

Number ~~28~~ 2 of ~~35~~ 8

Inventory # F-8-138

Name F1904-UNIONVILLE RD OVER LINGANORE CREEK

County/State FREDERICK COUNTY / MD

Name of Photographer FRANK JULIANO

Date 2/95

Location of Negative SHA

Description APPROACH EAST

Number 3 ~~29~~ of ~~35~~ 8

Inventory # E8-138

Name F1904-UNIONVILLE RD OVER LINGANORE CREEK

County/State FREDERICK COUNTY/ MD

Name of Photographer FRANK JULIANO

Date 2/95

Location of Negative SHA

Description ELEVATION LOOKING SOUTH

Number ~~30~~ 4 of ~~35~~ 8

Inventory # F-8-138

Name F1904-UNIONVILLE RD OVER LINGANORE CREEK

County/State FREDERICK COUNTY / MD

Name of Photographer FRANK JULIANO

Date 2/95

Location of Negative SHA

Description DAMAGED PARAPET NORTH

Number 5 ~~31~~ of ~~35~~ 8

Inventory # F-8-138

Name F1904-UNIONVILLE RD OVER LINGANORE CREEK

County/State FREDERICK COUNTY/MD

Name of Photographer FRANK JULIANO

Date 2/95

Location of Negative SHA

Description DAMAGED PARAPET SOUTH

Number ~~32~~ 6 of ~~35~~ 8

Inventory # F-8-138

Name F1904-UNIONVILLE RD OVER LINGANORE CREEK

County/State FREDERICK COUNTY/MD

Name of Photographer FRANK JULIANO

Date 2/95

Location of Negative SHA

Description DAMAGED PARAPET SOUTH AND SHIFTED SLAB

Number ~~33~~ 7 of ~~35~~ 8

Inventory # F-8-138

Name F404-UNIONVILLE RD OVER UNGANORE CREEK

County/State FREDERICK COUNTY/MD

Name of Photographer FRANK JULIANO

Date 2/95

Location of Negative SHA

Description DAMAGED PARAPET NORTH AND SHIFTED SLAB

Number 8 ~~34~~ of ~~35~~ 8