Memo to file

March 16, 2016

From: Casey Pecoraro
Inventory Registrar

Re: CT-1209
Bridge No. C-011

The following Historic Bridge Inventory form, prepared in 1997 to document the concrete slab bridge carrying Wrighton Road over Lyons Creek, was completed using Bridge No. C-011.

This bridge is a county-owned bridge and is not owned by Maryland SHA (Anne Bruder, personal communication, March 11, 2015).

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

MHT No. CT-1209

~~SHA~~ Bridge No. C-011 Bridge name Wrighton Road over Lyons Creek

LOCATION:

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

City/town Lyons Creek Vicinity X

County Calvert

This bridge projects over: Road____ Railway_____ Water X Land ____

Ownership: State _____ County _____ Municipal _____ Other Abandoned

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 _____

DESCRIPTION:

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

Describe Setting:

Bridge No. C-011 carries Wrighton Road over Lyons Creek between Calvert and Anne Arundel counties. Wrighton Road runs north-south, while Lyons Creek flows east to west. The bridge is located in the Lyons Creek vicinity, and is surrounded by woodland.

Describe Superstructure and Substructure:

Bridge No. C-011 is a 2-span, 2-lane concrete slab bridge. The bridge had been abandoned and is in deteriorated condition. Neither the state nor the adjacent counties claim ownership. The bridge appears to have been constructed in the 1920s, based upon the presence of features common to standardized designs of that period, such as solid parapet walls with raised panels. The structure is 40 feet long and has a clear roadway width of 23 feet; there are no sidewalks. The out-to-out width is 25 feet. The concrete slab is 2 feet thick without a bituminous wearing surface. The structure has solid, raised panel parapets. The substructure consists of two (2) concrete abutments and a 2 foot, 6 inch wide concrete intermediate pier at mid-span. The concrete wing walls consist of three (3) straight wing walls and a flared northeast wing wall. It has a sufficiency rating of 36.0.

This structure is in poor condition with cracking spalling and a missing section of parapet wall. The northeast parapet wall is missing and the west wall has shifted several inches at the expansion joint mid-span. The deck is covered with vegetation and is not visible.

Discuss Major Alterations:

The bridge has not had any major alterations.

HISTORY:

WHEN was the bridge built: circa 1925

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

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

Other (specify): The construction date is based on visual inspection and the presence of features typical of 1920s State Roads Commission standardized plans.

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

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?

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. This bridge has considerable deterioration and is an undistinguished example of a concrete slab bridge.

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

The bridge retains much of the character-defining elements of its type, however, the integrity of these elements has been compromised by severe 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.

CT-1209

BIBLIOGRAPHY:

County inspection/bridge files _____ **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.

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

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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.

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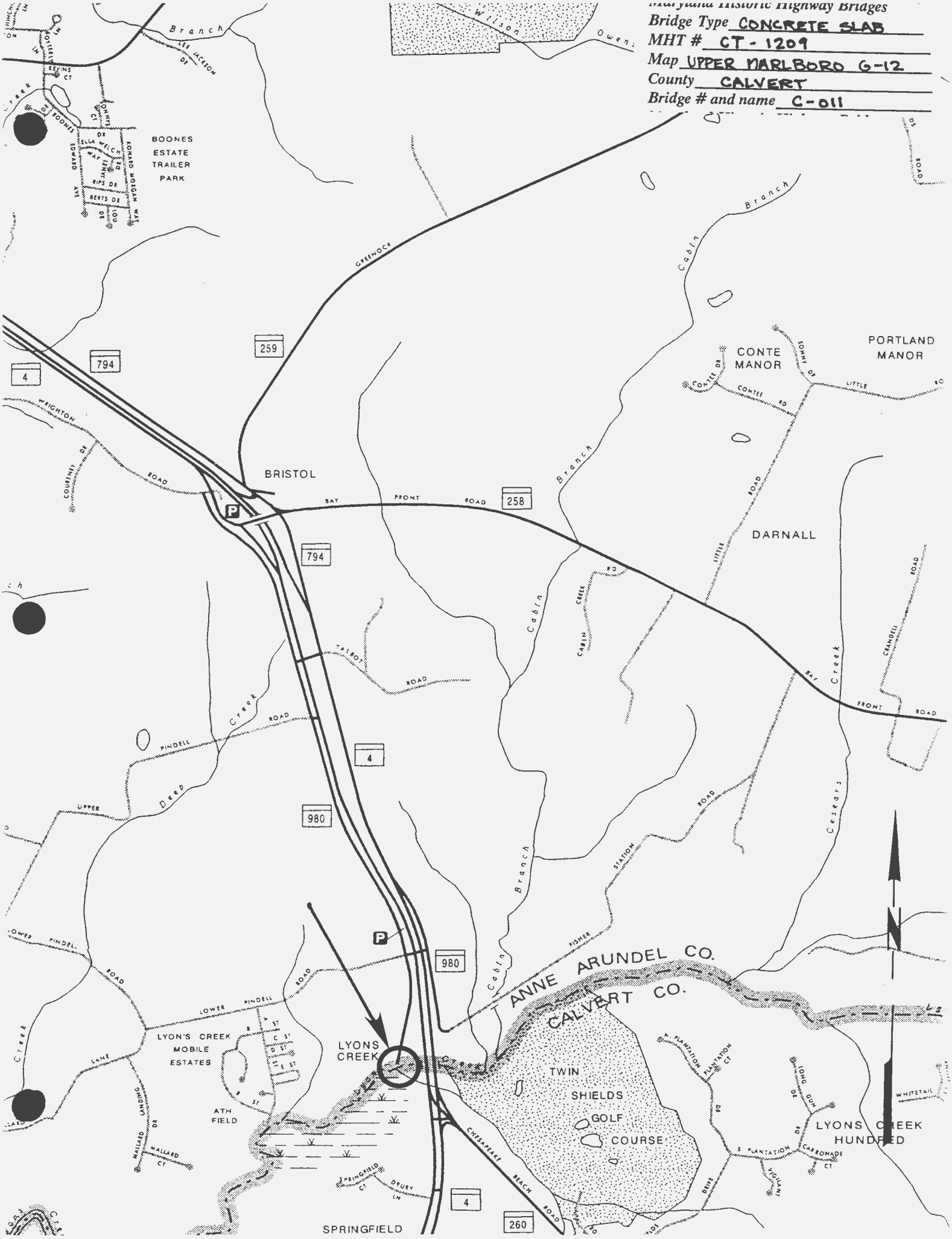
1909 *Concrete Bridges and Culverts for Both Railroads and Highways.* The Myron C. Clark Publishing Company, Chicago and New York.

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 CONCRETE SLAB
MHT # CT-1209
Map UPPER MARLBORO G-12
County CALVERT
Bridge # and name C-011



1. CT-1209
2. Wrighton Road over Lyons Creek (CC-011)
3. Calvert Co. MD
4. Tim Tamburrino
5. 3-97
6. MD SHPO
7. North approach
8. 1 of 6

1. CT- 1209
2. Wrighton Road over Lyons Creek (C-011)
3. Calvert Co. MD
4. Tim Tamburrino
5. 3-97
6. MD SHPO
7. South approach
8. 2 of 6

1. CT-1209
2. Wrighton Road over Lyons Creek (C-011)
3. Calvert Co. MD
4. Tim Tamburrino.
5. 3-97
6. MD SHPO
7. east elevation
8. 3 of 6

1. CT- 1209
2. Wrighton Road over Lyons Creek (C-011)
3. Calvert Co, MD
4. Tim Tamburinno
5. 3-97
6. MD SHPO
7. West elevation
8. 4 of 6

1. CT-1209
2. Wrighton Road over Lyons Creek (C-011)
3. Calvert Co. MD
4. Tim Tamburrino
5. 3-97
6. MD SHPO
7. Detail of east parapet
8. 5 of 6

1. CT-1209
2. Wrighton Road over Lyons Creek (C-011)
3. Calvert Co. MD
4. Tim Tamburrino
5. 3-97
6. MD SHPO
7. Detail of west parapet
8. 6 of 6