Memo to file

March 16, 2016

From: Casey Pecoraro
Inventory Registrar

Re: WO-485
SHA Bridge No. 2301400

The following Historic Bridge Inventory form, prepared in 1995 to document the concrete slab bridge carrying MD 374 over Libertytown Branch, was completed using SHA Bridge No. 23014. The SHA Office of Structures, Remedial Section, later changed the formatting of bridge numbers from five-digits to seven or nine-digits (Anne Bruder, personal communication, June 26, 2015).

SHA Bridge No. 23014 corresponds with SHA Bridge No. 2301400.

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

MHT No. WO-485

SHA Bridge No. 23014 Bridge name Libertytown Branch

LOCATION:
Street/Road name and number [facility carried] MD 374

City/town Libertytown Vicinity X

County Worcester

This bridge projects over: Road____ Railway_____ Water X Land ____

Ownership: State X County _____ 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 _____

DESCRIPTION:

Setting: Urban____ Small town____ Rural__

Describe Setting: Bridge No. 23014 carries MD 374 over Libertytown Branch in western Worcester County. The bridge lies approximately one half mile east of the village of Libertytown in western Worcester County. There is a grouping of modern houses to the east of the bridge along the highway. The area to the west is wooded. The stream flows towards the northwest.

Describe Superstructure and Substructure:

Built in 1931, this structure is designed according to 1930 standard 20'-0" slab bridge plans. This is evidenced by all the dimensions matching the standard, including the open parapet. The parapets are pierced with panelled endblocks. They are integral with the bridge. The concrete wingwalls and abutments are decorated with molded chamfering. The clear roadway is 27'-2" between curbs. There is a 4" diameter electrical conduit on one side of the bridge. This bridge has approximately a 7-1/2" wearing surface above the concrete deck. Debris and vegetation growth has collected along the abutments. The bridge is overall in good condition.

Discuss Major Alterations:

Guardrails have been attached to the parapets which conceals some of the decorative panelling. The abutments and wingwalls have been recently painted.

HISTORY:

WHEN was bridge built: 1931

This date is: Actual X Estimated

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

Other (specify): SHA files

WHY was the bridge built?

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

WHO was the designer?

The bridge design is based on standardized state bridge plans.

WHO was the builder?

State Roads Commission

WHY was the bridge altered?

Guardrails were added to increase road safety.

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

The bridge was part of a large scale effort by the State to upgrade roads and bridges after World War I.

SURVEYOR/HISTORIAN ANALYSIS:

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

A-Events B-Person

C-Engineering/architectural character

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?
An 1877 map of Worcester depicts Libertytown much as it is today. Although the modernization of the crossing of Libertytown Branch facilitated travel in this part of the county, it does not appear as if it significantly altered the patterns of development of the 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 not located in an area which may be eligible for historic designation.

Is the bridge a significant example of its type?
This bridge is a typical example of a 1930s concrete bridge with open parapets.

Does the bridge retain integrity of important elements described in Context Addendum?
The character defining elements of this bridge have retained their integrity.

Is the bridge a significant example of work of manufacturer, designer and/or engineer?
The bridge is a typical example of a 1930s standardized concrete slab bridge with open parapets.

Should the bridge be given further study before significance analysis is made?
No further evaluation is necessary to determine National Register significance. However, additional research concerning the history of this bridge and its relationship to the surrounding landscape may be useful in providing a more complete picture of the bridge's background.

BIBLIOGRAPHY:

State Highway Administration files for bridge #23014

Lake, Griffin, and Stevenson, 1877 Atlases and other early maps of the Eastern Shore of Maryland, Philadelphia, 1877.

SURVEYOR/SURVEY INFORMATION:

Date bridge recorded 8/11/95
Name of surveyor Daniel Moriarty
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


P.A.C. Spero & Company
Concrete Slab Bridge Project, 9/95
Bridge# 23014 County Worcester
Quad Ninepins
Timmonstown
Libertytown
Cem
Liberty
CROSSING
Nine Pin
ROAD

WO-485

WORCESTER COUNTY

MATT HICKSON

2-2-95

~~MARYLAND SHPO~~ SHA

BRIDGE 23014, LOOKING SOUTH ON MD 374

1 OF 4

WO-485
WORCESTER COUNTY
MATT HICKSON
2-2-95
~~MARYLAND SHPO~~ SHA
BRIDGE 23014, LOOKING NORTH ON MD 374
2 OF 4

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WORCESTER COUNTY
MATT HICKSON
2-2-95
~~MARYLAND SHPO~~ SHA
BRIDGE 23014, LOOKING DOWNSTREAM (EAST)
3 OF 4

WO-485

WORCESTER COUNTY

MATT HICKSON

2-2-95

~~MARYLAND SHPO~~ SHA

BRIDGE 23014, LOOKING UPSTREAM (WEST)

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