Maryland Historical Trust

Maryland Inventory of Historic Properties number: BA-2682

Name: B-0176/ LONG GREEN PIKE OVER LONG GREEN CREEK

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. BA-2682

SHA Bridge No. B 0176 **Bridge name** Long Green Pike over Long Green Creek

LOCATION:
Street/Road name and number [facility carried] Long Green Pike

City/town Glen Arm 0.3 mi S of Long Green Road **Vicinity** _____

County Baltimore

This bridge projects over: Road ___ **Railway** ___ **Water** X **Land** ___

Ownership: State ___ **County** X **Municipal** ___ **Other** ___

HISTORIC STATUS:
Is bridge located within a designated historic district? Yes X **No** ___
National Register-listed district X **National Register-determined-eligible district** ___
Locally-designated district ___ **Other** ___

Name of district Long Green Valley Historic 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** ___

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DESCRIPTION:

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

Describe Setting:

Bridge B0176 carries Long Green Pike in a north-south direction over Long Green Creek which flows in an easterly direction. The area is relatively undeveloped with only a few houses visible from the bridge and open fields around the bridge.

Describe Superstructure and Substructure:

Bridge B0176 is a two span concrete slab bridge on concrete abutments with a solid shaft concrete pier. It was built in 1916. The span lengths are 14.0 feet and the overall length is 30.0 feet. The curb to curb width is 20.6 feet and the deck out to out width is 22.3 feet; the skew is 21 degrees. The concrete wingwalls are each of different length and flare at about 30 degrees out from the centerline of the bridge. The parapets are solid concrete and integral to the deck. The roadway supports two way traffic. The bridge is posted for restricted load.

The 1993 inspection describes the bridge as in fair condition. Honeycombing and exposed aggregate are present throughout the underside of the deck slab in both spans. There are numerous random minor cracks and approximately 30% of the deck underside is hollow sounding, delaminated or soft. Both abutment stems exhibit honeycombing and exposed aggregate throughout, as well as random cracking. All wingwalls are in fair condition. The S/W wingwall is spalled along the footing and has a large spall at the abutment interface. Both pier faces have random open cracks, open horizontal construction joints and honeycombing with exposed reinforcement throughout. The concrete is soft and delaminated throughout.

Discuss Major Alterations:

Baltimore County 1993 Inspection Report indicates outer two feet of deck and both parapets have been replaced.

HISTORY:

WHEN was bridge built (actual date or date range) ____1916

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 need for a more efficient transportation network and increased load capacity

WHO was the designer?

State Highway Administration

WHO was the builder?

Unknown

WHY was the bridge altered?

N/A

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

The bridge was built as part of an effort by the State to increase load capacity on secondary roads.

SURVEYOR/HISTORIAN ANALYSIS:

This bridge may have National Register significance for its association with:
A - Events _____ B- Person _____
C- Engineering/architectural character _____

This bridge is within the National Register district of Long Green Valley, however it is not a contributing resource.

Was the bridge constructed in response to significant events in Maryland or local history?
Yes. 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 I.

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.

Three years later, in 1933, a new set of standard plans was introduced (State Roads Commission 1933). 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 width 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 bearing capacity.

A system of standard nomenclature for plans was introduced at this time: span type was indicated by a two-letter designator followed by span length and the year of the plan. Thus, CS-18-33 indicates an 18 foot concrete slab of the 1933 standard plan design; CG-36-33 was a 36 foot concrete girder (T-beam) of the same year. The inclusion of the year designator gave ready access to design details for each bridge and indicates that the State Roads Commission anticipated revisions to standard plans.

Based upon documentary evidence, Baltimore County and City were the early pioneers in concrete bridge building in Maryland. The first reinforced concrete bridge documented in Maryland was the bridge at Sherwood Station, built in 1903 by Baltimore County.

Evidence from historic maps suggests that almost all of the extant concrete slab bridges built before 1940 in Baltimore County replaced earlier bridges. With the exception of two bridges, all of these structures lie on roads whose alignments have changed little since the middle of the nineteenth century. The two exceptions are both located on Shelbourne Avenue in Arbutus. Shelbourne Avenue does not appear on the 1850 map of Baltimore County but does appear on the 1915 map.

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Both concrete slabs bridges on Shelbourne Avenue, however, were built after 1915. The evidence therefore suggests that these two bridges were also built to replace previous structures.

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 to suggest 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?
This bridge is located in the Long Green Valley Historic District which is listed on the National Register of Historic Places. The bridge does no add to or detract from the historic district.

Is the bridge a significant example of its type?
This bridge is an undistinguished example of a concrete slab bridge.

Does the bridge retain integrity of important elements described in Context Addendum?
The bridge has lost the outer two feet of the deck and both parapets.

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

Should the bridge be given further study before an evaluation of its significance is made?
Yes, to determine any relationship with the historic district and any significance of its date of construction.

BIBLIOGRAPHY:

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

SURVEYOR:

Date bridge recorded 08/15/95
Name of surveyor Colin Farr
Organization/Address P.A.C. Spero & Company, Suite 412, 40 West Chesapeake Ave., Baltimore, MD 21204
Phone number (410) 296-1635 **FAX number** (410) 296-1670

Maryland Historic Highway Bridges
Bridge Type CONCRETE SLAB
Map BELAIR, B-13
County BALTIMORE
Bridge # and Name B0176, LONG GREEN PIKE OVER LONG GREEN CREEK

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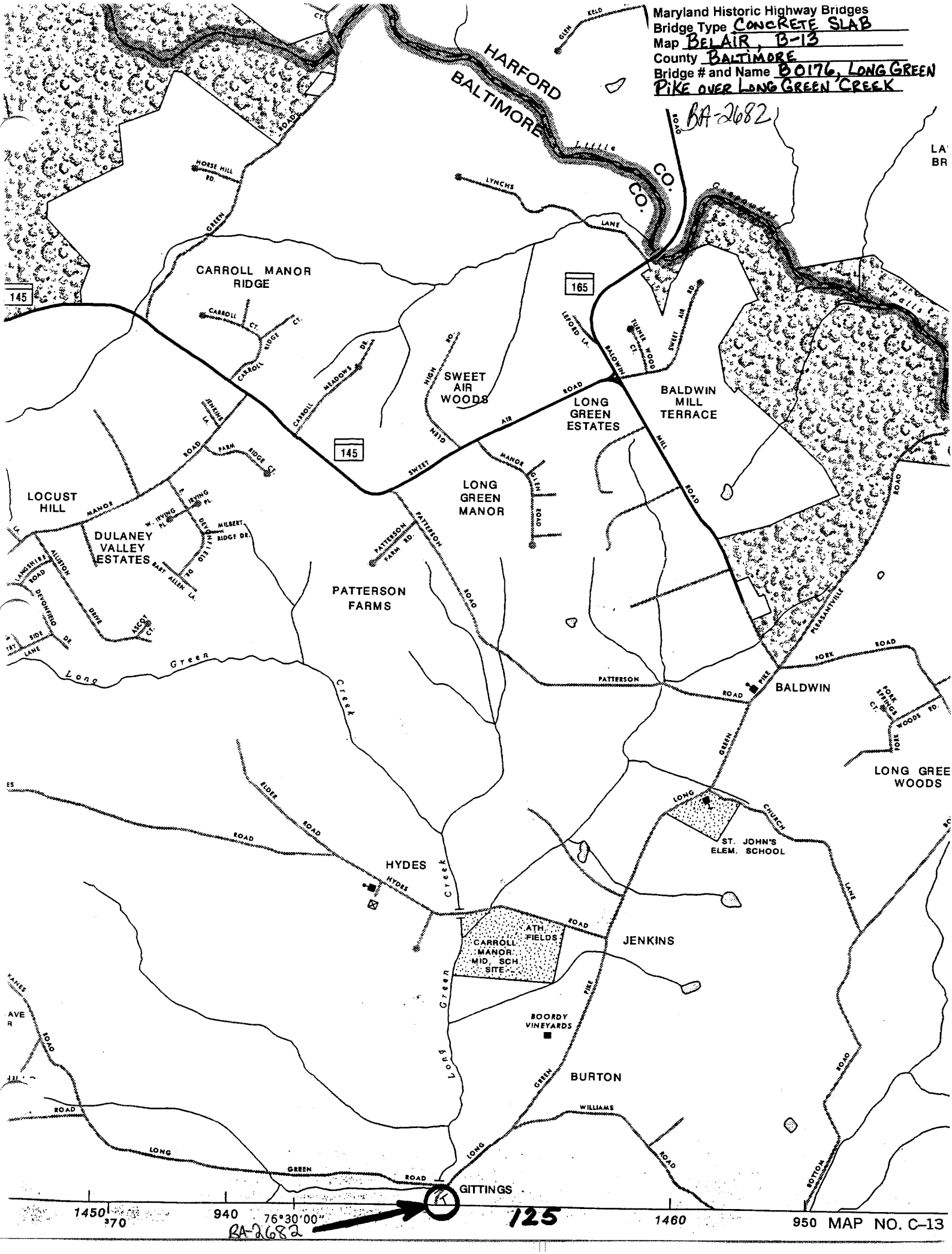

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Inventory # BA-2682

Name BU176 - LONG GREEN PIKE OVER LONG GREEN CREEK

County/State BALTIMORE COUNTY/MD

Name of Photographer DAVE DIEHL

Date 1/95

Location of Negative SHA

Description EAST APPROACH LOOKING SOUTHWEST

Number ~~2~~ 1 of ~~35~~ 4

Inventory # BA-2682

Name BO176-LONG GREEN PIKE OVER LONG GREEN CREEK

County/State BALTIMORE COUNTY | MD

Name of Photographer DAVE DIEHL

Date 1/95

Location of Negative SHA

Description NORTH ELEVATION LOOKING SOUTH

Number ~~4~~ 2 of ~~35~~ 4

Inventory # BA-2682

Name B0176-LONG GREEN PIKE OVER LONG GREEN CREEK

County/State BALTIMORE COUNTY/MD

Name of Photographer DAVE DIEHL

Date 1/95

Location of Negative SHA

Description SOUTH ELEVATION LOOKING WEST

Number ~~5~~ 3 of ~~35~~ 4

Inventory # BA-2682

Name B0176-LONG GREEN PIKE OVER LONG GREEN CREEK

County/State BALTIMORE COUNTY / MD

Name of Photographer DAVE DIEHL

Date 1/95

Location of Negative SHA

Description WEST APPROACH LOOKING NORTHEAST

Number ~~6~~ 4 of ~~35~~ 4