Maryland Historical Trust

Maryland Inventory of Historic Properties number: HA-1974

Name: US40 over Church 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. HA-1974

SHA Bridge No. 12025 **Bridge name** US 40 over Church Creek

LOCATION:

Street/Road name and number [facility carried] US 40 (Pulaski Highway)

City/town Aberdeen **Vicinity** X

County Harford

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 X:
Rolled Girder X **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** ____

DESCRIPTION:

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

Describe Setting:

Bridge No. 12025 carries US 40 (Pulaski Highway) over Church Creek in Harford County. MD 40 runs east-west and Church Creek flows north-south. The bridge is located in the vicinity of Aberdeen, and is surrounded by a wooded area and some commercial development.

Describe Superstructure and Substructure:

Bridge No. 12025 is a single-span, 4-lane, metal girder bridge. The bridge was originally built in 1935, and modern parapets were added in 1983. The structure is 39 feet long and has a clear roadway width of 88 feet. The out-to-out width is 91 feet. The superstructure consists of rolled girders which support a concrete deck and concrete parapets. The roadway is carried on the girders. The concrete deck has a bituminous wearing surface and the structure has solid, concrete parapets with metal pipe railings. The roadway approaches have steel guard rails. A date impression on the parapet indicates that the bridge was constructed in 1935 and rehabilitated in 1983. The substructure consists of two (2) concrete abutments and flared, concrete wing walls. The bridge has a sufficiency rating of 6.

According to the 1996 inspection report, this structure was in satisfactory condition with light rust on the bottom flanges of the girders. The concrete abutments and wing walls have light cracks and spalled concrete, and concrete erosion at the water line. The concrete parapets have light cracking and peeling paint and the metal railings have no defects.

Discuss Major Alterations:

The original parapet walls were removed and replaced with modern concrete parapets with metal railings in 1983.

HISTORY:

WHEN was the bridge built: 1935

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

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

Other (specify) : State Highway Administration bridge files/inspection form

WHY was the bridge built?

The route of present U.S. 40 was traveled as early as 1733, when *Poor Richard's Almanac* noted the route of the Old Philadelphia Road (State Route 7) on the general course of the present highway. Under pressure from the federal Bureau of Public Roads in the early 1930s, the State Roads Commission planned the construction of a new road from Baltimore to Havre de Grace, in lieu of widening the old Philadelphia Road. In 1935, the "new" Philadelphia Road opened as Maryland's first dual highway, and was christened the Pulaski Highway. This bridge was built as a component of the construction of the Pulaski Highway.

WHO was the designer?

State Roads Commission

WHO was the builder?

Unknown

WHY was the bridge altered?

The bridge was altered to correct functional or structural deficiencies.

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?

Metal girder bridges were most likely introduced and first popularized in Maryland by the state's major railroads of the nineteenth century including the Baltimore and Susquehanna, its successor the Northern Central, and the Baltimore and Ohio Railroad. Bridge engineering historians have documented the fact that James Milholland (or Mulholland) erected the earliest plate girder span in the United States on the Baltimore and Susquehanna Railroad in 1846 at Bolton Station, near present-day Mount Royal Station. The sides (web) and bottom flange of Milholland's 54-foot-long span were wholly of wrought iron and included a top flange reinforced with a 12x12-inch timber. Plates employed in the bridge were 6 feet deep and 38 inches wide, giving the entire bridge a total weight of some 14 tons. Milholland's pioneering plate girder cost $2,200 (Tyrrell 1911:195). By December 31, 1861, the Northern Central Railroad, which succeeded the Baltimore and Susquehanna, maintained an operating inventory in Maryland of 50 or more bridges described simply as "girder" spans, in addition to a number of Howe trusses. Most of these were probably iron girder bridges; the longest were the 117-foot double-span bridge over Jones Falls and the 106-foot double-span girder bridge at Pierce's Mill (Gunnarson 1990:179-180).

As in the nation, girder bridge technology in Maryland was quickly adapted to cope with the increasingly heavy traffic demands of the twentieth century caused by automobile and truck traffic. The 1899 Maryland Geological Survey report on highways noted that "there are comparatively few I-beam bridges, one of the cheapest and best forms for spans less than 25 or 30 feet" (Johnson 1899:206). Interestingly, the report also urged construction of a composite metal, brick, and concrete bridge, noting that "no method of construction is more durable than the combination of masonry and I-beams, between which are transverse arches of brick, the whole covered with concrete, over which is laid the roadway" (Johnson 1899:206). Whether any such bridges (transitional structures between I-beams and reinforced concrete spans) were built is unknown.

Official state and county highway reports—issued between 1900 and the early 1920s through the Highway Division of the Maryland Geological Survey and its successor, the State Roads Commission—generally do not reference or describe girder construction. An analysis of the current statewide listing of county and municipal bridges (a listing maintained by the State Highway

Administration) reveals that 48 county bridges, out of the total of 141 approximately dated to "1900" by county engineers, were listed as steel girder, steel stringer, or variants of such terms. (It should be noted that the "1900" date is often given when no exact date is pinpointed for a bridge that is clearly old). A grand total of 200 bridges (including "steel culverts"), out of 550 bridges dated on the county list between 1901 and 1930, were described as steel beam, steel girder, or steel stringer and girder varieties. The total suggests that among the various highway bridge types built in the early twentieth century metal girder bridges in Maryland between 1900 and 1930 were second in popularity only to reinforced concrete bridges. However, these numbers must be interpreted with caution, as they do not necessarily include all county and municipal bridges.

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 metal girder 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, which is lacking such features as the original parapet walls, is an undistinguished example of a metal girder bridge and conveys a modern appearance from the roadway approach.

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

The bridge retains some character-defining elements of its type, as defined by the Statewide Historic Bridge Context, including rolled girders and concrete abutments and wing walls, however, alterations to the structure in 1983 resulted in the loss of such distinctive features as the parapets.

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.

BIBLIOGRAPHY:

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

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Gunnarson, Robert
1990 *The Story of the Northern Central Railway, From Baltimore to Lake Ontario*. Greenberg Publishing Co., Sykesville, Maryland.

Johnson, Arthur Newhall
1899 The Present Condition of Maryland Highways. In *Report on the Highways of Maryland*. Maryland Geological Survey, The Johns Hopkins University Press, Baltimore.

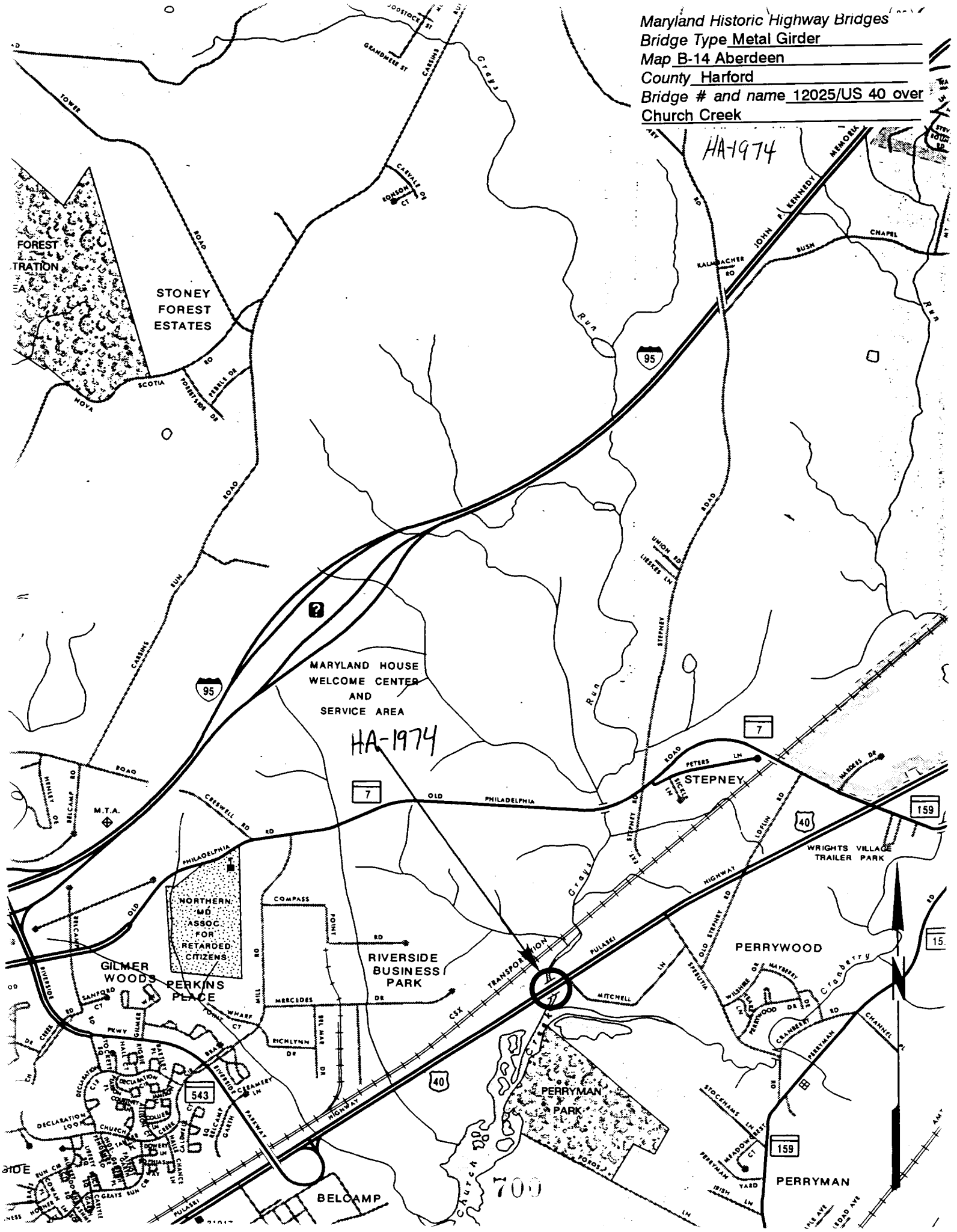
State Roads Commission
1958 *A History of Road Building in Maryland*. Published by author, Baltimore.

Tyrrell, Henry G.
1911 *History of Bridge Engineering*. Published by author, Chicago.

SURVEYOR:

Date bridge recorded 2/25/97
Name of surveyor Caroline Hall
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 Metal Girder
Map B-14 Aberdeen
County Harford
Bridge # and name 12025/US 40 over Church Creek



1. HA-1974
2. US 40 over Church Creek
3. Harford County, MD
4. Caroline Hall
5. 3/97
6. MDSHPO
7. roadway approach
8. 1 of 6

1. HA-1974
2. US 40 over Church Creek
3. Harford Co. MD
4. Caroline Hall
5. 3/97
6. MDSHPO
7. ~~[illegible]~~ north side
8. 2 of 6

1. HA-1974
2. US 40 over Church Creek
3. Harford Co, MD
4. Caroline Hall
5. 3/97
6. MDSHPO
7. south side
8. 3 of 6

1. HA-1974
2. US 40 over Church Creek
3. Harford Co, MD
4. Caroline Hall
5. 3/97
6. MDSHPO
7. roadway approach
8. 4 of 6

1. HAER 1974

2. US 40 over Church Creek

3. Harford Co, MD

4. Caroline Hall

5. 3/97

6. MDSHPO

7. north side

8. 5 of 6

1. HA-1974
2. US 40 over Church Creek
3. Harford Co, MD
4. Caroline Hall
5. 3/97
6. MDSHPO
7. detail of substructure
8. 6 of 6