Maryland Historical Trust

Maryland Inventory of Historic Properties Number: CE-1495.

Name: MD 7 over Northeast 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 bridged received the following determination of eligibly.

MARYLAND HISTORICAL TRUST

Eligibility Recommended ___X____ Eligibility Not Recommended _____

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 Properties
Historic Bridge Inventory
Maryland State Highway Administration
Maryland Historical Trust

MHT Number CE-1495

SHA Bridge No. 7009 **Name:** MD 7 over Northeast Creek (Northeast Creek Bridge)

Location:

Street/Road Name and Number: MD 7 (Old Philadelphia Road)

City/Town: Northeast **Vicinity** X

County: Cecil

Ownership: X State__County__Municipal__Other

This bridge projects over: __Road__Railway X Water__Land

Is the bridge located within a designated district:__yes X no
_NR listed district_NR determined eligible district
_locally designated_other
Name of District_____

Bridge Type:

_Timber Bridge
_Beam Bridge_Truss-Covered_Trestle
_Timber-and-Concrete

_Stone Arch

_Metal Truss

_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

X Concrete
X Concrete Arch _Concrete Slab_Concrete Beam
_Rigid Frame

_Other Type Name_____

Describe Setting:

Bridge 7009 carries MD 7 over Northeast Creek in Cecil County. MD 7 runs east-west over southern flowing Northeast Creek. The bridge is in a sparsely settled area. Farms with late-nineteenth century, early-twentieth century, and modern agricultural structures surround the bridge.

Describe Superstructure and Substructure:

Bridge 7009 is a double-span filled spandrel concrete arch bridge. The length of the bridge is 153 feet with each span measuring 59 feet. The arches have a rise of 8 feet 5 inches from springline to crown. There is a clear roadway width of 24 feet, with an overall width of 27 feet 4 inches. The bridge originally had open parapets, but these were filled at a later date. The bridge has 2 concrete abutments, and a concrete pier. There a 4 flared concrete wingwalls. Two bronze plaques are attached to the bridge, indicating that it was designed by the Luten Bridge Company and built by the State Roads Commission in 1922. According to a 1996 inspection report, the bridge is in satisfactory condition, with a sufficiency rating of 79.9.

Discuss Major Alterations:

At some unknown date the State Highway Administration filled in the open parapet.

When Built: 1922
Why Built:. Statewide road improvement programs and local transportation needs.
Who Built: State Roads Commission
Who Designed: Luten Bridge Company
Why Altered: N/A
Was this bridge built as part of an organized bridge building campaign?
No, this bridge was not built as part of an organized bridge building campaign.

Surveyor Analysis:

This bridge may have NR significance for association with:
_A Events _Person
_X_C Engineering/Architectural

The bridge is eligible for the National Register of Historic Places under Criterion C, as a significant example of concrete arch construction. The structure has a high degree of integrity and retains such character-defining elements of the type as its filled spandrel walls, concrete abutments, wingwalls.

Was this bridge constructed in response to significant events in Maryland or local history?

The advent of modern concrete technology fostered a renaissance of arch bridge construction in the United States. Reinforced concrete allowed the arch bridge to be constructed with much more ease than ever before and maintained the load-bearing capabilities of the form. As the structural advantages of reinforced concrete became apparent, the heavy, filled barrel of the arch was lightened into ribs. Spandrel walls were opened, to give a lighter appearance and to decrease dead load. This enabled the concrete arch to become flatter and multi-centered, with longer spans possible. Designers were no longer limited to the semicircular or segmental arch form of the stone arch bridge. The versatility of reinforced concrete permitted development of a variety of economical bridges for use on roads crossing small streams and rivers.

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 that 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.

As the nation's automotive traffic increased in the early twentieth century, local road networks were consolidated, and state highway departments were formed to supervise the construction and improvement of state roads. With a diverse topographical domain encompassing numerous small and large crossings, Maryland engineers quickly recognized the need for expedient design and construction through the standardization of bridge designs.

The concept and practice of standardization was one of the most important developments in engineering of the twentieth century. In Maryland, as in the rest of the nation, the standardized concrete types became the predominant bridge types built. In the period 1911 to 1920 (the decade in which standardized plans were introduced), beams and slabs constituted 65 percent and arches 35 percent of the extant 29 bridges built in Maryland during this period. In the following decade, 1921 to 1930, the beam (now the T-beam) and slab increased to 73 percent and the arch had declined to 27 percent of the 129 extant bridges; in the next decade (1931-1940), the beam and slab achieved 82 percent and arches had further declined, constituting only 18 percent of the total of extant bridges built on state-owned roads between 1931 and 1946.

Although beam and slab bridges became the utilitarian choice, it appears that the arch was selected when aesthetics as well as other site conditions were considered. The architectural treatment of extant arch bridges supports this assessment. Many of these bridges were multiple span structures with open spandrels or masonry facing. Another decorative feature of the concrete arch bridge was an open, balustrade-style parapet. Despite the popularity of ornamental arches and the increase in use of beam and slab bridges, examples of simpler, single and multiple span closed concrete arch bridges with solid parapets continued to be constructed throughout the early twentieth century.

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 that 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 that does not appear to be eligible for historic designation.

Is the bridge a significant example of its type?

Yes, this is a good example of a concrete arch bridge designed by the Luten Bridge Company.

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

Yes, though the parapet walls have been altered, the bridge retains its filled spandrel walls, barrel, concrete abutments and wingwalls.

CE-1495

Is the bridge a significant example of the work of a manufacturer, designer, and/or engineer?

This bridge is an example of the work of the Luten Bridge Company. The company was incorporated in 1909 as a contracting concern specializing in the designs of Daniel Luten. It grew to be the largest of Luten's loosely affiliated corporations and operated offices in Clarksburg, WV; Concord, NH; Columbus, OH; Chatsworth, GA; and Syracuse, NY. Daniel Luten specialized in reinforced concrete bridges. His designs dominated the industry and were copied (under patent protection) and used throughout the eastern United States.

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):

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.

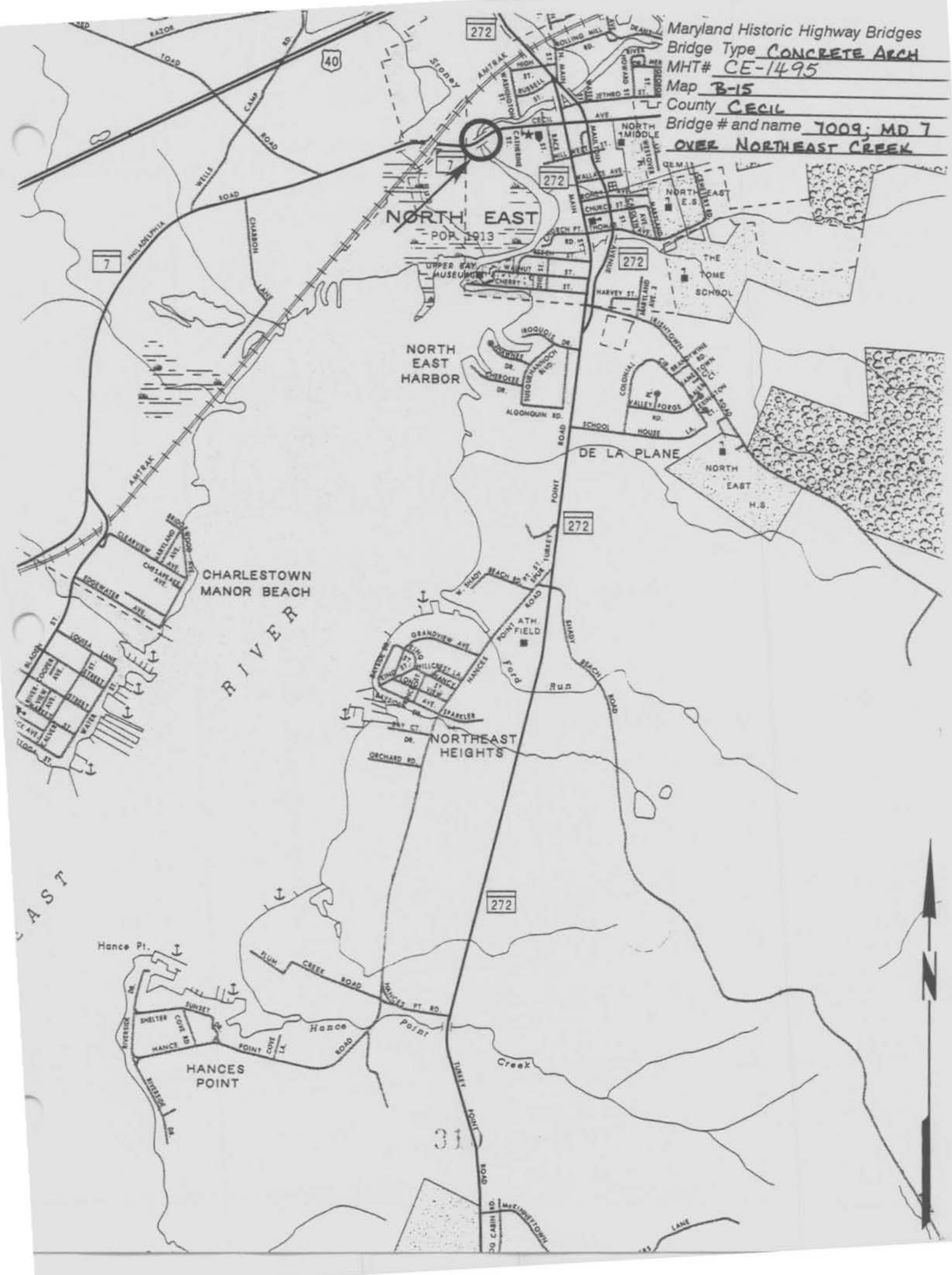
P.A.C. Spero & Company and Louis Berger & Associates
1995 Historic Highway Bridges in Maryland: 1631-1960: Historic Context Report. Maryland State Highway Administration, Maryland State Department of Transportation, Baltimore, Maryland.

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

SURVEYOR:

Date bridge recorded December 1997
Name of surveyor Wallace, Montgomery & Associates / P.A.C. Spero & Company
Organization/Address P.A.C. Spero & Co., 40 W. Chesapeake Avenue, Baltimore, MD 21204
Phone number (410) 296-1635 **FAX number** (410) 296-1670

Maryland Historic Highway Bridges
Bridge Type CONCRETE ARCH
MHT# CE-1495
Map B-15
County CECIL
Bridge # and name 7009; MD 7 OVER NORTHEAST CREEK



CE-1495
CECIL COUNTY, MD
MATT HURLEY
FEB 14 1995
~~MARYLAND SHPO~~ SHA
BRIDGE NO 7009
LOOKING EAST
1 OF 8

NORTHEAST CREEK BRIDGE
BUILT-1922
STATE ROADS COMMISSION
JOHN N. MACKALL CHAIRMAN & CHIEF ENG'R.
OTTAR D. CROTHERS
L.H. STEUART-SECRETARY

CE-1495
CECIL COUNTY, MD
MATT HURLEY
FEB 14 1995
~~MARYLAND SHPO~~ SHA
BRIDGE NO 7009
ID PE ON D.S. PARAPET
MIDDLE OF BRIDGE
2 OF 8

1922
LUTEN BRIDGE CO
YORK PA

CE-1495
CECIL COUNTY, MD
MATT HURLEY
FEB 14 1995
~~MARYLAND SHPO~~ SHA
BRIDGE NO 1009
ID # ON U.S. PARAPET
MIDDLE OF BRIDGE
3 OF 8

NORTH EAST
CREEK

CE-1495
CECIL COUNTY, MD

MATT HURLEY

FEB 14 1995

~~MARYLAND SHPO~~ SHA

BRIDGE NO 7009

LOOKING WEST

4 OF 8

NORTH EAST
GEORGE TALBOT OF SUSQUEHANNA MANOR
RENAMED NORTH EAST RIVER "THE LITTLE
SHANNON" THE IRON FORGES OF THE
PRINCIPIO COMPANY WERE LOCATED HERE
SAINT MARY ANN'S PARISH CHURCH ONE OF
THE OLDEST IN CECIL COUNTY. RUSSELL,
ONE OF THE OWNERS OF THE PRINCIPIO
COMPANY LIVED NEARBY.
MARYLAND HISTORICAL SOCIETY

CE-1495
CECIL COUNTY, MD
MATT HURLEY
FEB 14 1995
~~MARYLAND SHPO~~ SHA
BRIDGE NO 7009
MD HISTORIC SOCIETY SIGN
EAST OF BRIDGE
5 OF 8

CE-1495

CECIL COUNTY, MD

MATT HORLEY

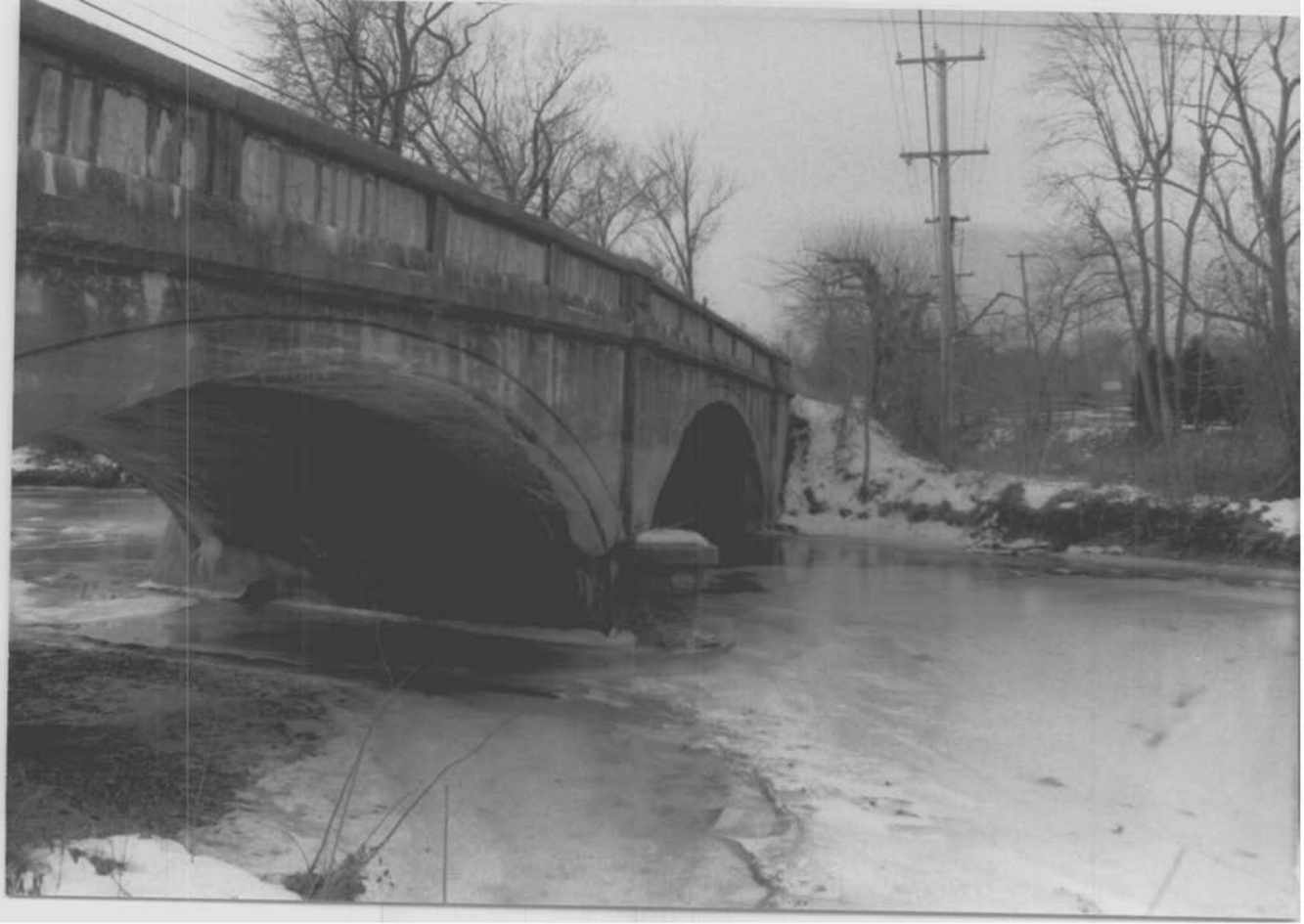
FEB 14 1995

~~MARYLAND SHPO~~ SHA

BRIDGE NO 7009

LOOKING UPSTREAM

6 OF 8



CE-1495
CECIL COUNTY, MD
MATT HURLEY
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~~MARYLAND SHPO~~ SHA
BRIDGE NO 7009
UPSTREAM SIDE OF BRIDGE
7 OF 8

CE-1495
CECIL COUNTY MD
MATT HURLEY
FEB 14 1995
~~MARYLAND SHPO~~ SHA
BRIDGE NO 7009
OLD HOUSE NORTHWEST OF BRIDGE

8 OF 8