

**MARYLAND HISTORICAL TRUST
DETERMINATION OF ELIGIBILITY FORM**

NR Eligible: yes _____
no

Property Name: US 1 over Broad Run SHA Small Structure 03478X0 Inventory Number: BA 2701

Address: Belair Road (US 1) over Broad Run Historic district: yes no

City: Kingsville Zip Code: 21087 County: Baltimore County

USGS Quadrangle(s): White Marsh

Property Owner: State Highway Administration Tax Account ID Number: _____

Tax Map Parcel Number(s): _____ Tax Map Number: _____

Project: 2380703-X478X0 Agency: SHA

Agency Prepared By: SHA

Preparer's Name: Fred Shoken Date Prepared: 08/12/2008

Documentation is presented in: MIHP BA 2701 - SHA Bridge 3002 US Route 1 over Broad Run, 08/09/1995
Colin Farr, P.A.C. Spero & Company.

Preparer's Eligibility Recommendation: _____ Eligibility recommended Eligibility not recommended

Criteria: A B C D Considerations: A B C D E F G

Complete if the property is a contributing or non-contributing resource to a NR district/property:

Name of the District/Property: _____

Inventory Number: _____ Eligible: yes Listed: yes

Site visit by MHT Staff yes no Name: _____ Date: _____

Description of Property and Justification: *(Please attach map and photo)*

US Route 1 over Broad Run is a 19'4" long concrete slab small structure crossing a creek in northeast Baltimore County. It is located in a sparsely developed area near Kingsville in the vicinity of Gunpowder Falls State Park. Once known as SHA Bridge No. 3002, this structure is now identified as SHA Structure No. 03478X0 since it is 8" shy of the 20' requirement to be defined a bridge.

Built in 1934, the design is similar to the standard slab bridge plans used by the Maryland State Roads Commission in 1933, however the abutments were skewed to conform with the waterway which crosses under the roadway on a diagonal and also to take into account the expanded width of the roadway (46' feet plus two 7' sidewalks, instead of the standard 30' road width).

The open balustrade of the bridge features incised rectangular designs along the end walls and approximately 6" wide openings, as well as a pronounced cap. The east parapet is in generally good condition. The most notable damage is along the cap and the base of the northern end wall. The west parapet is in extremely poor condition. The cap is slightly skewed; the concrete balusters are worn away exposing steel reinforcement bars; and the base is broken in many places. The appearance of the structure has also been altered with the construction of new approach slabs and solid concrete parapet extensions with attached guardrails.

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended _____ Eligibility not recommended

Criteria: A B C D Considerations: A B C D E F G

MHT Comments:

Jim VanLinn
Reviewer, Office of Preservation Services

9/17/08
Date

N/A
Reviewer, National Register Program

Date

Wingwalls are cracked and spalling in many places. They have been repaired several times over past 74 years. One repair along the northwest corner has filled in the original horizontal incised bands.

Although the 1995 Maryland Historic Highway Bridge Inventory states that the bridge has been widened to the east and the east parapet was replaced "at that time," the existing 62.3' out-to-out width of the structure is consistent with the original design. The relatively good condition of the east parapet as compared to the west may be indicative that it was rebuilt at one time, but if it was rebuilt it was done in a manner to match the original design and materials.

US 1 over Broad Run was built at a time when traffic volume of both passenger cars and freight trucks was increasing. This structure replaced an earlier bridge over Broad Run as a part of general improvements to US Route 1 in northeast Maryland in the 1930s. US Route 1 was the major thoroughfare along the East Coast of the United States prior to the construction of I-95. Prior to its designation as US Route 1, it was known as the Atlantic Highway.

When this structure was surveyed in 1995 as part of the bridge inventory, the surveyor/historian analysis stated, "This bridge does not have National Register significance." No formal determination was made at the time, because the structure was deleted from the inventory since it was less than 20' in length and therefore was classified a small structure, rather than a bridge.

As a small structure it must be evaluated within the context of the Small Structures on Maryland's Roadways Historic Context Report, June 1997. This report states that small concrete slab structures are found throughout the state and were built from around 1900 to the present day. Standard plans were developed as early as 1912 for these concrete structures, a twentieth century technological improvement over timber and metal beam structures of the nineteenth century. These structures are considered individually eligible for listing in the National Register of Historic Places under Criterion C if they are unaltered; date between 1912 and 1947; and built according to the standard plan. To be considered eligible the structure would need to retain the following character defining elements: slab, parapet or railing, abutments and wingwalls.

US Route 1 over Broad Run (SHA Structure No. 03478X0) is not eligible for listing in the National Register of Historic Places (NRHP).

The structure is not associated with events that have made a significant contribution to the broad patterns of our history (Criterion A). Although US 1, the Atlantic Highway, was a major thoroughfare for the eastern United States, it was not developed as a planned national highway such as the historic National Road (from Maryland to Ohio) dating from 1806. US Route 1 developed in a piecemeal manner and was not designated a national road until the early to mid-twentieth century. US Route 1 was altered and modernized over many years and it was eventually replaced by I-95 as the main highway along the East Coast. This minor small structure can not be considered to be significant in the development national roads in the United States.

The structure is not associated with the lives of persons significant in our past (Criterion B). There are no known significant persons involved with the construction or use of this structure.

It is not eligible for the NRHP as a structure that embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or as a distinctive architectural or engineering significance (Criterion C). Although this structure was built between 1912 and 1947, the design of this bridge deviates from standard plans due to the width of the road and the diagonal crossing of Broad Run. It has also been altered with the construction of newer concrete extensions and the possible rebuilding of the east parapet. It does not retain all necessary character defining

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended				Eligibility not recommended								
Criteria:	A	B	C	D	Considerations:	A	B	C	D	E	F	G

MHT Comments:

 Reviewer, Office of Preservation Services

 Date

 Reviewer, National Register Program

 Date

elements due to the degree of damage to the west parapet and wingwalls.

The structure is not likely to yield information important in prehistory or history (Criterion D). SHA Archeologist April Fehr assessed the archeological potential of the archeology survey area based on review of the SHA-GIS Cultural Resources Database, site file data, photographs, and aerial photography. One archeological survey included the area (Ervin 2001); no sites are recorded here. The proposed work involves no excavation and is confined to the structure and adjacent stream. It is unlikely that significant archeological resources will be impacted and no additional investigation is recommended.

MARYLAND HISTORICAL TRUST REVIEW

Eligibility recommended _____

Eligibility not recommended _____

Criteria: A B C D Considerations: A B C D E F G

MHT Comments:

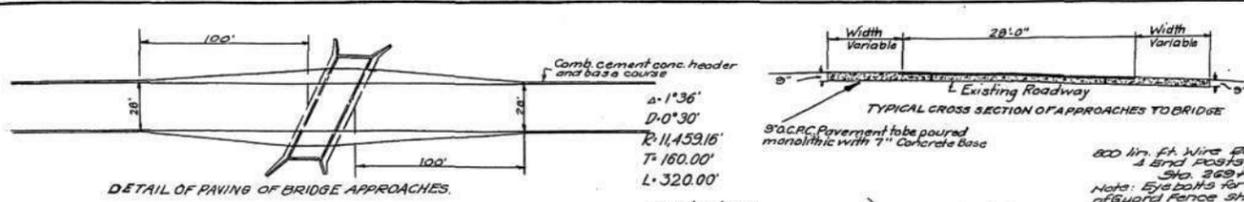
Reviewer, Office of Preservation Services

Date

Reviewer, National Register Program

Date

DATE	BY	NO.	REV.
10	MD	1877	15 20



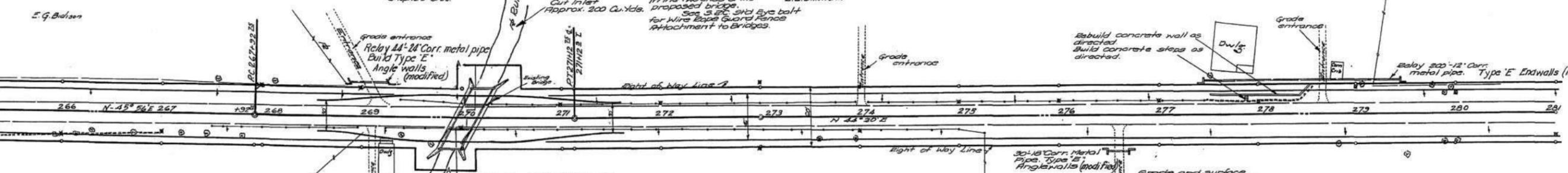
Note: Any existing surfacing which may be removed in connection with the extension of the existing bridge will be replaced with seven (7) inch Concrete Base.

B.M. 1913
2 Nails in Locust Tree
Lt. Sta. 277+15
Elev. 210.27

Sta 274+10
Sta 278+70
Grade and surface entr.
H.D.W. Jr. 4-12-34

DETAIL OF PAVING OF BRIDGE APPROACHES.

E. G. Bulson



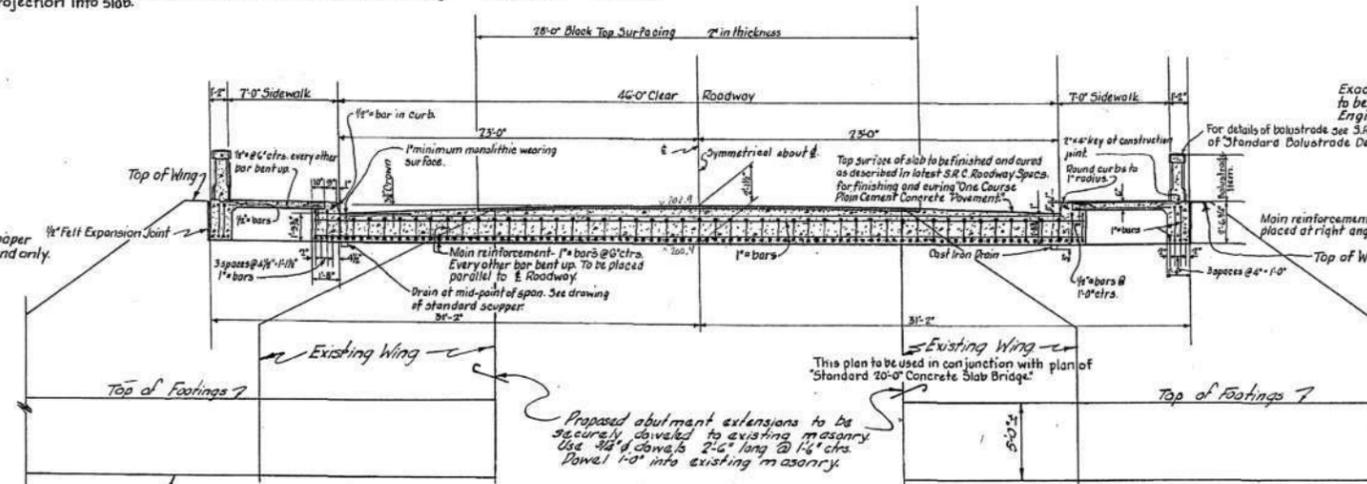
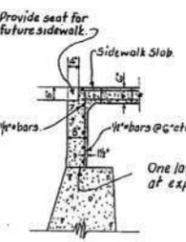
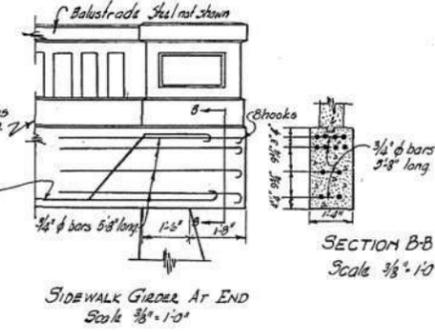
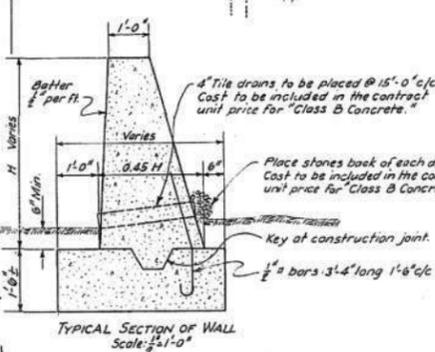
L.L. Dillworth
Sta 266 to 269
Sta. 265+20 to 263+50.
Grade and surface entr.
Cut Side Ditch
H.D.W. Jr. 4-12-34

NOTE! Standard abutments to be modified to suit skewed bridge, and width of roadway.
Length and direction of wings to be determined by the Engineer.
Existing 4" Gas Pipe to be relocated by others.
Fixed end of slab to be anchored to abutment with 1" dowels-1'6" long @ projection into slab.

Sta 270.
Remove existing bridge. Construct new bridge with design similar to plans for extension.
H.D.W. Jr. 2-15-34

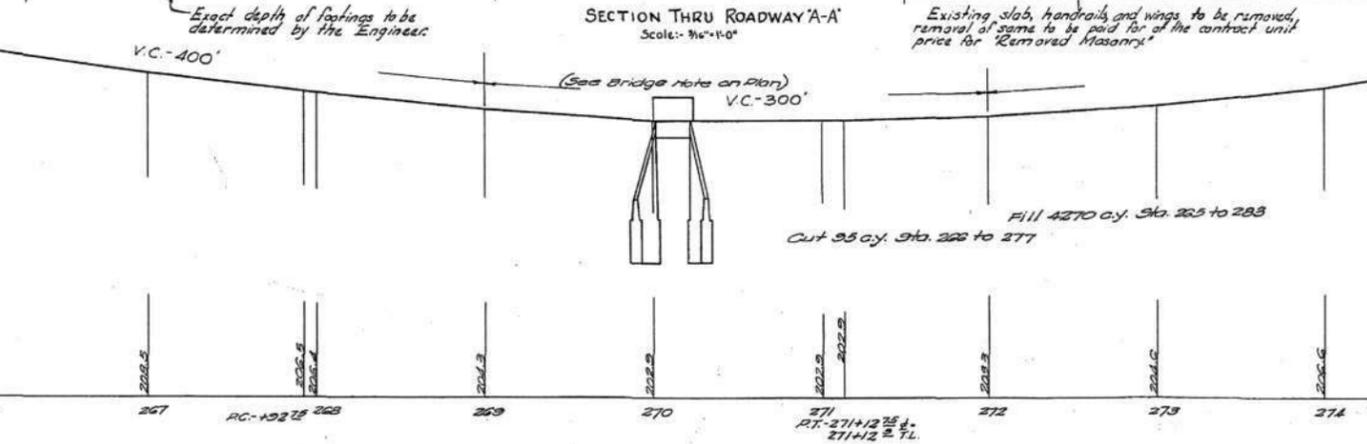
Existing bridge 161 Spout 13.7' Rel. Elev. 267.7'.
Existing to give 45' clear roadway. Sidewalk each side. Remove existing slab and replace with 3" slab. Slab construction, footings to have depth of 30".
Class 2 or Wet Excavation to be allowed between elevations 192.0 and 198.0 (For structure only).
Class 2 or Wet Excavation to be allowed below elevation 188.0 (For structure only).

C. Huber
700 lin. ft. Wire Rope Guard Fence & End Posts, 2 Eye Bolts.
Sta. 267+ to 273+.



NOTE! All expansion joints to be in accordance with standard plans or as modified in the Special Provisions.

WALL NOTES
Wall to be of "Class B Concrete".
Reinforcing to be deformed steel bars.
Place 3" precast expansion joints at 40'-0" c/c. as directed by the Engineer. Cost of joints to be included in the contract unit price for "Class B Concrete".
Provide key and copper plate at each expansion joint. Copper plate to extend from top of wall to top of footing. Cost of copper plate to be included in the contract unit price for "Class B Concrete".

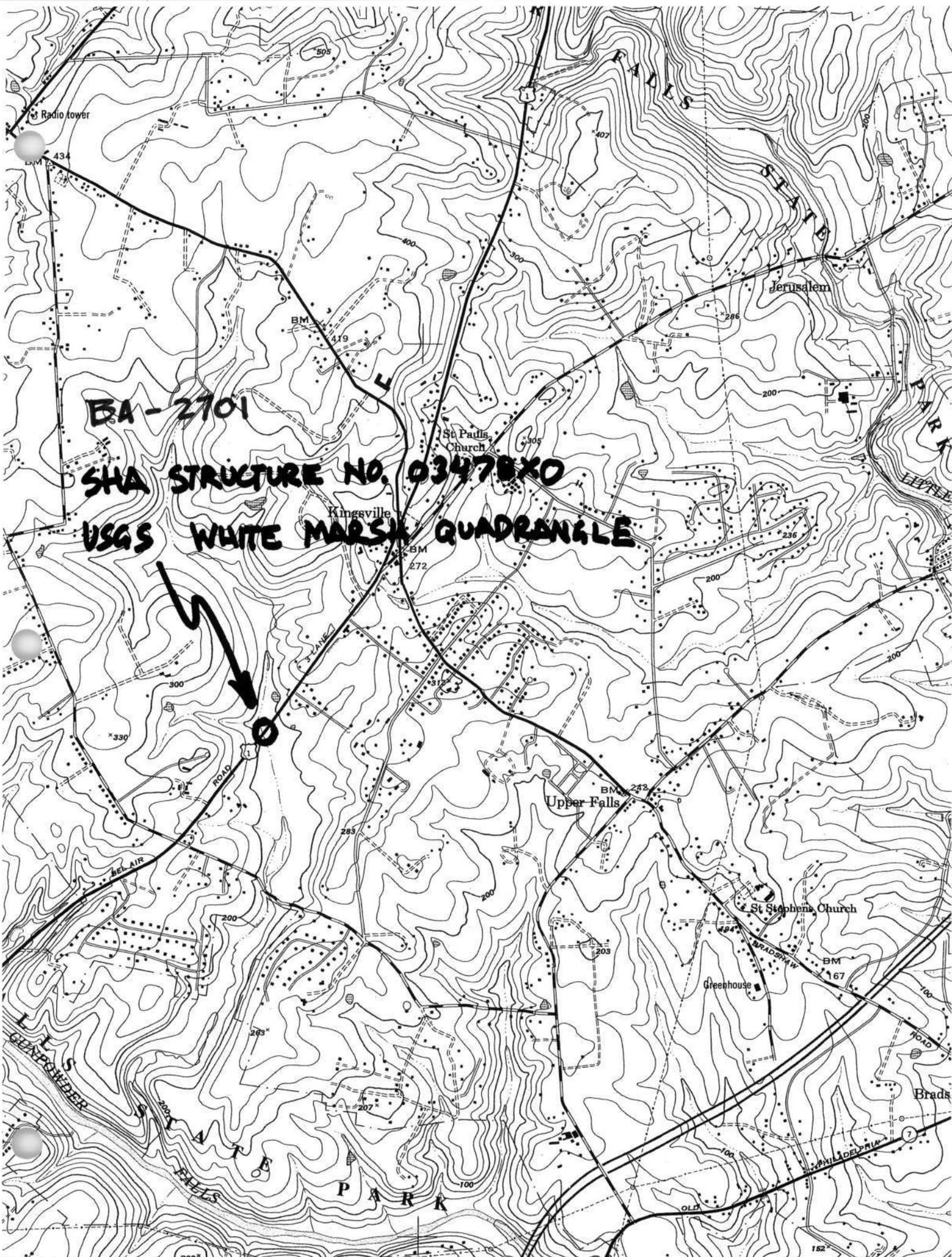


DRAWER No 139

03478x0

L.L. Dillworth

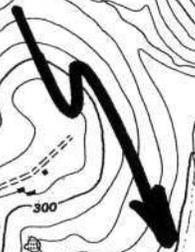
Babur, K. to...
Contract No. B-2701-48
Sheet No. 15 of 20



BA-2701

SHA STRUCTURE NO. 03478XO

USGS WHITE MARSH QUADRANGLE





BA 2701

US 1 over Broad Run - SA Structure No. 03478X0

BALTIMORE COUNTY, MARYLAND

FRED SHOKEN

6/28/2008

MARYLAND SHPO

OVERALL VIEW OF STRUCTURE SHOWING WEST PARAPET
LOOKING TO NW.

1 OF 8



BA 2701

US 1 over Broad Run - STA Structure No. 03478X0

BALTIMORE COUNTY, MARYLAND

FRED SHOKEN

6/28/2008

MARYLAND SHPO

EAST PALMERS VIEW LOOKING EAST

2 OF 8



BA 2701

US1 over Broad Run - SHA STRUCTURE NO. 03478X0

Baltimore County, MARYLAND

FRED SHOKEN

6/28/2008

MARYANN SHPO

DAMAGE TO GAP OF EAST PARAPET

3 OF 8



BA 2701

US1 over Broad Run - SHA Structure No. 03478X0

BALTIMORE COUNTY, MARYLAND

FRED SANDKEN

6/28/2008

MARYLAND SHPO

EAST PARAPET DAMAGE TO NORTH END

4 OF 8



BA 2701

US1 Over Broad Run - SHA Structure No. 03478X0

BAUTIMORE COUNTY, MARYLAND

FRED SHAKEN

6/28/2008

MARYLAND SAPO

WEST PARAPET VIEW LOOKING WEST

5 OF 8



BA 2701

US1 over Broad Run - SHA Structure No. 03478x0

BALTIMORE COUNTY, MD.

FRED STOKEN

6/28/2008

MARYLAND SHPO

WEST PARAPET DAMAGE VIEW LOOKING SOUTH

6 OF 8



BA 2701

US 1 over Broad Run - SHD Structure No 03478x0

BAUTIMORE COUNTY, MARYLAND

FRED SHOKEN

6/28/2008

MARYLAND SHD

DETAIL OF Damage to West Parapet showing
skewed cap

7 OF 8



BA 2701

US 1 over Broad Run - SAA Structure No. 03478x0

Baltimore County, Maryland

FRED SHOKEN

6/28/2008

MARYLAND SHPO

NORTH ABUTMENT AND NORTHWEST WING WALL SHOWING
DAMAGE TO SUBSTRUCTURE VIEW looking Northeast

B of B

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

MHT No. BA-2701

SHA Bridge No. 3002

Bridge name U.S. Route 1 over Broad Run

LOCATION:

Street/Road name and number [facility carried] US Route 1

City/town Kingsville Vicinity X

County Baltimore

This bridge projects over: Road Railway Water X Land

Ownership: State X County Municipal Other

HISTORIC STATUS:

Is 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 Retractable 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 3002 carries US Rt 1 in a north-south direction over Broad Run which flows in an easterly direction. The bridge is in a relatively undeveloped area with two houses visible from the bridge open fields around the bridge and trees lining the stream.

Describe Superstructure and Substructure:

Bridge 3002 is a single span concrete slab measuring 20 feet in total length. It differs from the S.H.A. 1933 standard design in that it is 62.3 feet out to out. The bridge has 2-7.0 feet wide side walks it has open parapets integral to the deck and the concrete wingwalls flare back approximately 45 degrees. The crossing has a skew of approximately 20 degrees. The roadway supports two lanes of traffic with a 1988 ADT of 27000 vehicles per day. The 1993 inspection report shows that repairs using epoxy crackfiller to the wingwalls were necessary to arrest differential settlement. Repairs were also carried out at the same time to the sidewalks placing a concrete girder under the sidewalks for support and resurfacing them.

Discuss Major Alterations:

In 1993 the west parapet was repaired. The bridge has been widened to the east and the parapet was replaced at that time. New approach slabs have been constructed in the recent past and solid parapet extensions built at the same time; guiderails are attached to these extensions.

HISTORY:

WHEN was bridge built (actual date or date range) _____ 1934 _____

This date is: Actual X Estimated _____

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

Other (specify) S.H.A. INSPECTION REPORT**WHY was the bridge built?**

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

WHO was the designer?

State Highway Administration

WHO was the builder?

State Highway Administration

WHY was the bridge altered?

The bridge was widened for traffic, structural needs, and safety.

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

As part of an effort by the State to increase load capacity on secondary roads during the 1920s.

SURVEYOR/HISTORIAN ANALYSIS:

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

- A - Events _____ B- Person _____
 C- Engineering/architectural character _____

This 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 1903-04 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.

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.

BA-2701

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?

The bridge is not located in an area which may be eligible for historic designation.

Is the bridge a significant example of its type?

The bridge is not a significant example of its type.

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

No, the east parapet has been removed and the east side of the bridge has been widened.

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 will be necessary to evaluate its significance.

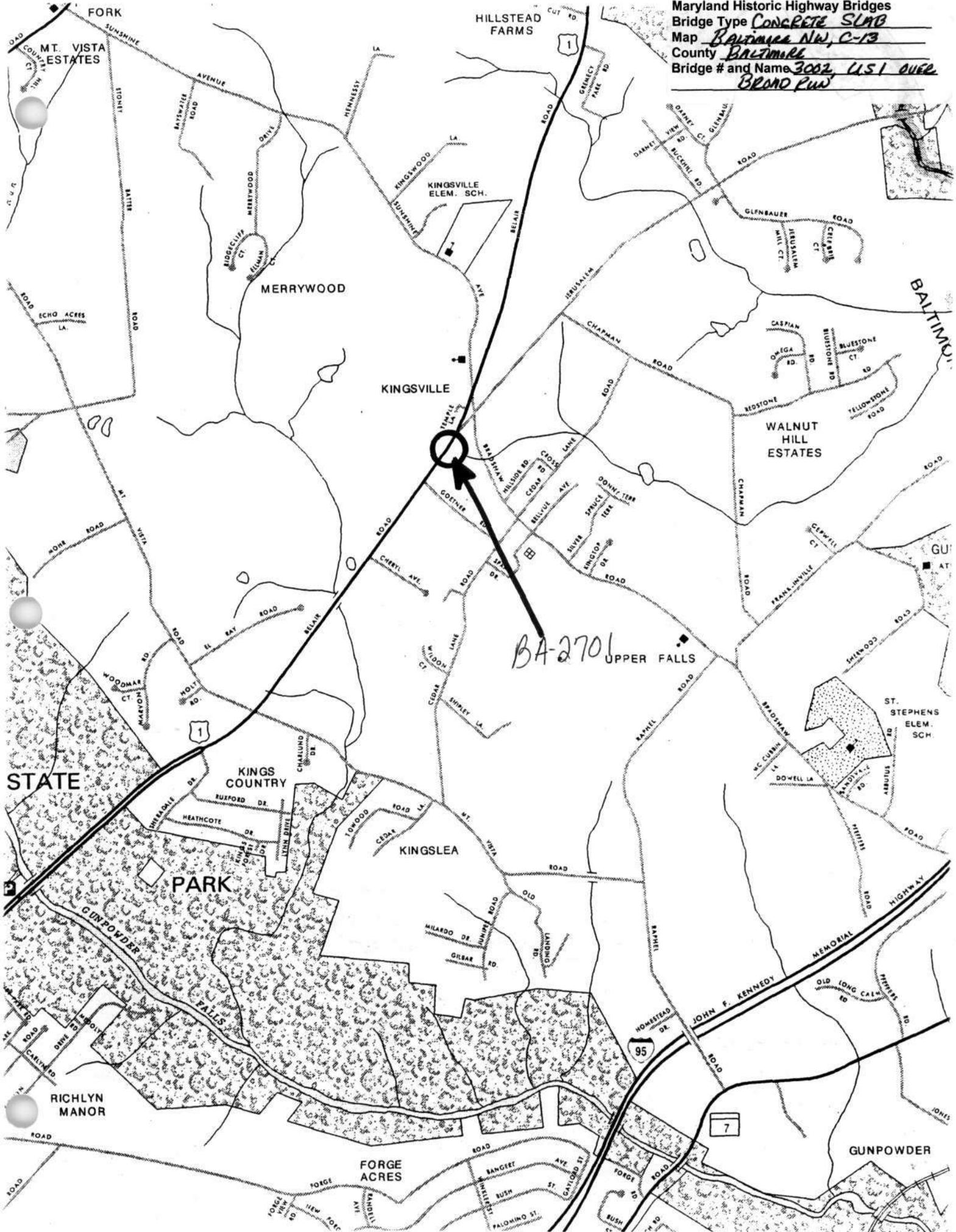
BIBLIOGRAPHY:

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

SURVEYOR:

Date bridge recorded 08/09/95
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 Baltimore NW, C-13
County Baltimore
Bridge # and Name 3002, US 1 over
BRAND FAN





- 1 BA 2701
- 2 3000, 421 OVER BROAD RIV
- 3 BALTIMORE CO., MD.
- 4 D. Diehl
- 5 1/95
- 6 MD. (P)
- 7
- 8 1 of 3



1 BA 2701

2 3002, US Shore Bands R 111

3 BALTO. Co., MD

4 D. DIEHL

5 NY.

6 MD S'PO

7 SOUTH ELEVATION, Looking NW

8 2 of 3



1 BA 2701

2 3002, USI 2000, BROAD, KU-1

3- Es. Co., MD

4 D. DIEHL

5 1/95

6 MD SHPS

7

8 300