Maryland Historical Trust

Maryland Inventory of Historic Properties number: WA-III-119

Name: W-2148/ GAPLAND RD. OVER ISRAEL CREK.

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

MHT No. WA-III-119

SHA Bridge No. W-2148 Bridge name Gapland Road over Israel Creek

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

City/town Gapland Vicinity ____

County Washington

This bridge projects over: Road____ Railway____ Water X Land ____

Ownership: State ____ County X 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** ___X___ **Rural** _____

Describe Setting: Bridge No. W-2148 carries Gapland Road over Israel Creek in Washington County. Where Gapland Road crosses Israel Creek, the road runs generally east-west, and the creek flows in a southerly direction. The bridge is situated near a small cluster of single family homes, and is surrounded by predominantly undeveloped, wooded areas.

Describe Superstructure and Substructure:

This structure matches the Maryland SHA Design Standards from August 1922 for a 20' concrete slab bridge. The bridge is a single span two-lane concrete slab bridge. It is 24' in length, 26' wide, and has a span length of 24'. The superstructure consists of a concrete slab with solid concrete parapets. The substructure consists of reinforced concrete abutments and flared concrete wingwalls. Footing type and depth are unknown. There is a W-beam guardrail on the approaches. The structure is posted for a 17 ton weight restriction.

According to the 1993 inspection report, the top of the slab, at the edges of the wearing surface, is visible and slightly scaled. The parapets and wingwalls, which have been patched, are in good condition. The underside of the slab is in fair condition with five large areas in poor condition. There are numerous cracks, some with efflorescence, delaminations, spalls, and exposed reinforcing steel. The reinforcing steel is badly rusted. The area under the east parapet is quite deteriorated. The concrete near the water line on the abutments is rough from being eroded. The corner between the southeast wingwall and abutment is spalled and delaminated. There is minor local scour but no undermining. There is efflorescence at the top of the abutments beneath the slab.

Discuss Major Alterations:

Washington County bridge files do not contain information pertaining to any repairs made the structure, the extent thereof, or when they took place.

HISTORY:

WHEN was the bridge built (actual date or date range) circa 1922

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

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

Other (specify) _____

WHY was the bridge built?

Unknown

WHO was the designer?

State Roads Commission

WHO was the builder?

State Roads Commission

WHY was the bridge altered?

Extent of alterations/repairs unknown

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

Yes. This bridge was constructed as a part of post World War I improvements to secondary roads in Maryland.

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. 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).

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?
Unknown.

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?
No. This bridge is not located in an area which may be eligible for historic designation.

Is the bridge a significant example of its type?
No. Bridge No. W-2148 is one of many standard concrete slab bridges built after the first World War in Maryland, and it is an undistinguished example of its type.

Does the bridge retain integrity of important elements described in Context Addendum?
Yes. This bridge appears to have retained the integrity of its character-defining elements, and according to the most recent inspection report it is in fair to good condition.

Is the bridge a significant example of the work of a manufacturer, designer, and/or engineer?
No. This bridge is not a significant example of work completed by the State Roads Commission.

Should the bridge be given further study before an evaluation of its significance is made?
No further evaluation is necessary to determine National Register significance. Although it reflects the state's post World War I expansion of secondary road systems, it is an undistinguished example of its type. 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:

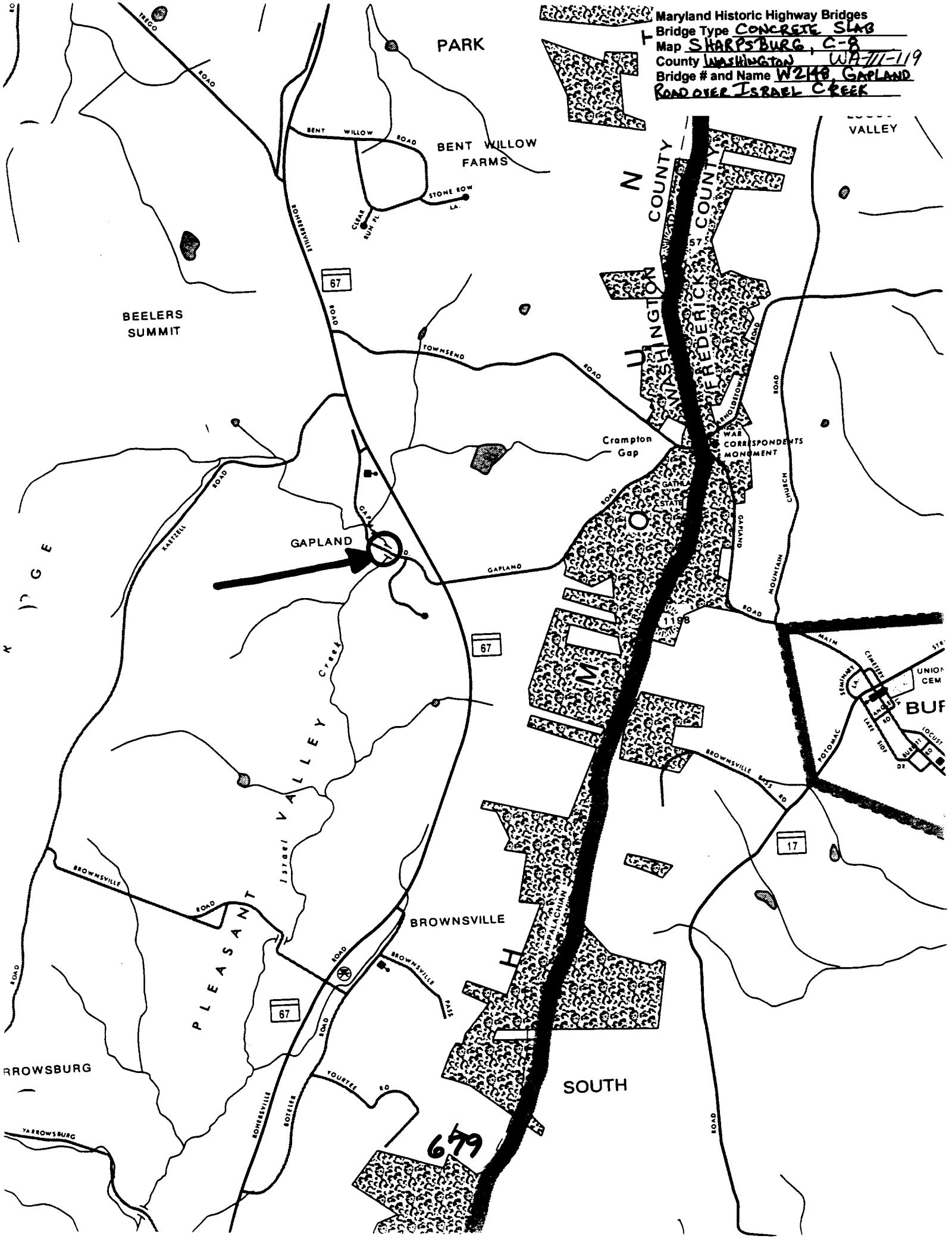
County inspection/bridge files X **SHA inspection/bridge files** _____
Other (list):

WA-III-119

SURVEYOR:

Date bridge recorded August 1995
Name of surveyor Adrienne Beaudet Cowden
Organization/Address P.A.C. Spero & Company; 40 West Chesapeake Avenue, Suite 412; Baltimore, Maryland 21204
Phone number 410-296-1635 **FAX number** 410-296-1670

Maryland Historic Highway Bridges
Bridge Type CONCRETE SLAB
Map SHARPSBURG, C-8
County WASHINGTON WA-III-119
Bridge # and Name W2148, GAPLAND ROAD OVER ISRAEL CREEK



BR #20W214810 WA-III-119

OVER ISRAEL CREEK

WASHINGTON CO., MD.

DAVID KING

2/24/95

S. H. A.

SOUTHEAST APPROACH

1 OF 4

BR#20W2148.10 WA-III-119

OVER ISRAEL CREEK

WASHINGTON CO., MD

DAVID KING

2/24/95

S.H.A.

SOUTHWEST ELEVATION (UPSTREAM)

2 OF 4

BR # 20W2 19810 WA-III-119

OVER ISRAEL CREEK

WASHINGTON CO., MD.

DAVID KING

2/24/95

S. H. A.

NORTHWEST APPROACH

3 OF 4

BR # 20W214810 WA-III-119

OVER ISRAEL CREEK

WASHINGTON CO., MD.

DAVID KING

2/24/95

S.H.A.

NORTHEAST ELEVATION (DOWNSTREAM)

4 OF 4