AL-V-301

9403343

INDIVIDUAL PROPERTY/DISTRICT
MARYLAND HISTORICAL TRUST
INTERNAL NR-ELIGIBILITY REVIEW FORM

AL-V-~~B~~-301

Property/District Name: Bridge #1006 Survey Number: ~~AL-A-301~~

Project: Replace Br #1006, MD 36 over Jennings Run Agency: FHWA/SHA

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

Eligibility recommended ___ Eligibility **not** recommended X

Criteria: X A ___B X C ___D Considerations: ___A ___B ___C ___D ___E ___F ___G ___None

Justification for decision: (Use continuation sheet if necessary and attach map)

Based on the information provided by SHA, it appears that Bridge #1006 is not eligible for the National Register of Historic Places. The concrete beam bridge was constructed in 1929. It was built to the 1924 standards for concrete beam bridges up to 36 feet in length. The "T-beam" technology employed was introduced in 1909. The bridge is representative of this bridge type and the T-beam technology of the early 20th century. The type was extremely common and hundereds were constructed througout the state. Bridge #1006 is not eligible for the Register because it lacks integrity. It is in very poor condition with cracking, spalling and section loss in both the superstructure and substructure. Thus, the bridge would not meet the National Register criteria for individual listing. In addition, it is not located in any known historic district.

Documentation on the property/district is presented in: project file, Inventory #AL-A-301

Prepared by: Rita Suffness, SHA

Elizabeth Hannold
Reviewer, Office of Preservation Services

January 5, 1995
Date

NR program concurrence: X yes ___ no ___ not applicable

R. Anderson
Reviewer, NR program

1.5.95
Date

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Survey No. ~~AL-A-301~~

MARYLAND COMPREHENSIVE HISTORIC PRESERVATION PLAN DATA - HISTORIC CONTEXT

I. Geographic Region:

____	Eastern Shore	(all Eastern Shore counties, and Cecil)
____	Western Shore	(Anne Arundel, Calvert, Charles, Prince George's and St. Mary's)
____	Piedmont	(Baltimore City, Baltimore, Carroll, Frederick, Harford, Howard, Montgomery)
__X__	Western Maryland	(Allegany, Garrett and Washington)

II. Chronological/Developmental Periods:

____	Paleo-Indian	10000-7500 B.C.
____	Early Archaic	7500-6000 B.C.
____	Middle Archaic	6000-4000 B.C.
____	Late Archaic	4000-2000 B.C.
____	Early Woodland	2000-500 B.C.
____	Middle Woodland	500 B.C. - A.D. 900
____	Late Woodland/Archaic	A.D. 900-1600
____	Contact and Settlement	A.D. 1570-1750
____	Rural Agrarian Intensification	A.D. 1680-1815
____	Agricultural-Industrial Transition	A.D. 1815-1870
__X__	Industrial/Urban Dominance	A.D. 1870-1930
____	Modern Period	A.D. 1930-Present
____	Unknown Period (___ prehistoric	___ historic)

III. Prehistoric Period Themes:

____	Subsistence
____	Settlement
____	Political
____	Demographic
____	Religion
____	Technology
____	Environmental Adaption

IV. Historic Period Themes:

____	Agriculture
__X__	Architecture, Landscape Architecture, and Community Planning
____	Economic (Commercial and Industrial)
____	Government/Law
____	Military
____	Religion
____	Social/Educational/Cultural
__X__	Transportation

V. Resource Type:

Category: Structure

Historic Environment: Rural

Historic Function(s) and Use(s): Transportation

Known Design Source: State Road Commission Standard Plans

AL-V-301

HISTORIC CONTEXT:

MARYLAND COMPREHENSIVE HISTORIC PRESERVATION PLAN DATA

Geographic Organization: Western Maryland

Chronological/Developmental Period:
Industrial/Urban Dominance 1870-1930 A.D.

Prehistoric/Historic Period Theme: Transportation

Resource Type:

Category: Structure

Historic Environment: Rural

Historic Function (s) and Use (s): Transportation/Structure/Bridge

Known Design Source: None

MARYLAND INVENTORY OF HISTORIC PROPERTIES

Maryland Historical Trust State Historic Sites Inventory Form

Survey No. ALV-B-301

Magi No.

DOE __yes __no

1. Name (indicate preferred name)

historic

and/or common Bridge No. 1006

2. Location

street & number MD 36 over Jennings Run ___ not for publication

city, town Barrelville __x__ vicinity of congressional district

state Maryland county Allegany

3. Classification

Category	Ownership	Status	Present Use	
___ district	___ public	___ occupied	___ agriculture	___ museum
___ building(s)	___ private	___ unoccupied	___ commercial	___ park
__x__ structure	___ both	___ work in progress	___ educational	___ private residence
___ site	**Public Acquisition**	**Accessible**	___ entertainment	___ religious
___ object	___ in process	___ yes: restricted	___ government	___ scientific
	___ being considered	___ yes: unrestricted	___ industrial	__x__ transportation
	__x__ not applicable	__x__ no	___ military	___ other:

4. Owner of Property (give names and mailing addresses of all owners)

name Maryland State Highway Administration

street & number 707 N. Calvert Street telephone no.: 333 1183

city, town Baltimore state and zip code Maryland 21202

5. Location of Legal Description

courthouse, registry of deeds, etc. Courthouse liber

street & number folio

city, town state

6. Representation in Existing Historical Surveys

title N/A

date ___ federal ___ state ___ county ___ local

depository for survey records

city, town state

7. Description

Survey No. ALV B 301

Condition		Check one	Check one
___ excellent	_x_ deteriorated	_x_ unaltered	_x_ original site
___ good	___ ruins	___ altered	___ moved date of move _____
___ fair	___ unexposed		

Prepare both a summary paragraph and a general description of the resource and its various elements as it exists today.

CONTINUATION SHEET 7.1

8. Significance

Survey No. AL-V-B-301 ALV B 301

Period	Areas of Significance—Check and justify below			
___ prehistoric	___ archeology-prehistoric	___ community planning	___ landscape architecture	___ religion
___ 1400–1499	___ archeology-historic	___ conservation	___ law	___ science
1500–1599	___ agriculture	___ economics	___ literature	___ sculpture
___ 1600–1699	___ architecture	___ education	___ military	___ social/ humanitarian
___ 1700–1799	___ art	___ engineering	___ music	___ theater
___ 1800–1899	___ commerce	___ exploration/settlement	___ philosophy	x transportation
x 1900–	___ communications	___ industry	___ politics/government	___ other (specify)
		___ invention		

Specific dates **Builder/Architect**

check: Applicable Criteria: x A ___B x C ___D
and/or
Applicable Exception: ___A ___B ___C ___D ___E ___F ___G

Level of Significance: ___national ___state x local

Prepare both a summary paragraph of significance and a general statement of history and support.

CONTINUATION SHEET 8.1

9. Major Bibliographical References

Survey No. ALV B 301

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Draft Historic Bridges in Maryland: Historic Context Report, November, 1993

10. Geographical Data

Acreage of nominated property less than 1 acre

Quadrangle name Cumberland

Quadrangle scale 1:25,000

UTM References do NOT complete UTM references

	Zone	Easting	Northing		Zone	Easting	Northing
A				B			
C				D			
E				F			
G				H			

Verbal boundary description and justification

Footprint of existing structure

List all states and counties for properties overlapping state or county boundaries

state	code	county	code
state	code	county	code

11. Form Prepared By

name/title	Rita Suffness, Leader, Cultural Resources Group		
organization	MD State Highway Administration	date	July 26, 1994
street & number	707 N. Calvert Street	telephone	333-1186
city or town	Baltimore	state	Maryland 21202

The Maryland Historic Sites Inventory was officially created by an Act of the Maryland Legislature to be found in the Annotated Code of Maryland, Article 41, Section 181 KA, 1974 supplement.

The survey and inventory are being prepared for information and record purposes only and do not constitute any infringement of individual property rights.

return to: Maryland Historical Trust
Shaw House
21 State Circle
Annapolis, Maryland 21401
(301) 269-2438

MARYLAND HISTORICAL TRUST
DHCP/DHCD
100 COMMUNITY PLACE
CROWNSVILLE, MD 21032-2023
514-7600

PS-2746

AL-V- B-301
Bridge 1006
Barrelville, Allegany County

Description
7.1 Continuation Sheet

Bridge 1006 is a 1929 concrete beam (girder) structure crossing Jennings Run along MD 36 in Allegany County. The bridge is located halfway between Barrelville and Mt. Savage, along the main road connecting Frostburg with Cumberland via Mt. Savage and Corriganville. When it was constructed in 1929 its location was identified as Barrelville as few buildings existed in the vicinity and it was closer to Barrelville than to what was considered Mt. Savage.

The structure is located in a rural part of Allegany County in an area of mostly modern residential and commercial structures on the fringes of Mt. Savage in an area primarily built up in the twentieth century.

The bridge measures approximately sixty feet in length, and it is composed of two twenty-seven foot spans with a 24 foot wide roadway. Currently it carries two twelve foot wide lanes and one four foot wide sidewalk, along with two concrete parapets. It retains both the upstream and downstream original parapet walls consisting of three solid piers interrupting four sections of pierced parapets. Large square end panels (expansion joint segment) are located at the east and west termini. The inside faces of middle and end panels have raised rectangular sections. The bridge plaque is mounted on the middle panel of the south or downstream side.

Crumbling concrete is visible around all of the corners and edges of the structure, especially at the base of the parapet wall and at the seams between girders. The heavily spalled surfaces of the parapet walls have been repeatedly repaired, and the middle sections appear to have shifted out of alignment because of the cracking of the structure. The displacement of the wall is so pronounced on the downstream side of the south parapet wall that the felt in the expansion joint which constitutes a fill between the two vertical surfaces of the pierced section and the middle panel is hanging out of the wall.

It was built to the 1924 standards for concrete beam (girder) bridges up to 36 feet in length. The standard plans were developed in response to the demands and stresses placed on the state road network by the great growth in automobile traffic in the first quarter of the twentieth century. The first standard plans were issued in 1912. The 1924 plans, still in use in 1929 and utilized for this structure, incorporated the T-beam girder, a design that Henry G. Tyrrell advocated in 1909.

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Bridge 1006
Barrelville, Allegany County

Description
7.2 Continuation Sheet

According to Maryland's Historic Bridge Context T-beams's were first introduced in 1909 by Henry G. Tyrell, but Maryland did not create a standard plan until 1923. (pages 148 and 159) This bridge actually represents several standards over a six year period. The girder/slab was constructed using 1924 plans for a standard 28 foot girder bridge. However, the original specifications called for a closed parapet as opposed to the open railing which exist on the current structure. The parapets were designed using a 1928 plan establishing the 13 space to 1 expansion joint segment which is common to post 1930 concrete bridges. The parapet gives a feeling of a later design. The wing wall and abutment on the western slope were constructed using a 1924 standard, whereas the wingwall on the eastern slop is from a previous bridge.
The parapets on both sides on the bridge are not supporting members. They are not load bearing and rest upon the slab. These railings are considered character defining elements to T-beam girders. They are represent the transition from the paneled design to the pierced. Beginning in 1928, Maryland used a pierced railing with a 13 open space to 1 expansion joint ratio~~n~~. The problem with Bridge 1006 is the present condition of the parapets. The enclosed photographs (see page 3) shows the deteriorated condition of the northern parapets. The expansion joints are falling out, the majority of the balustrades have spalling, the coping on both sides of the bridge have spalling, and the missing concrete at the expansion joints are causing shifting. The spalling at the base of the balustrade is affecting the decking of the bridge. The parapets need patching and in some cases replacement. Their present condition and continuing deterioration affect the integrity of the bridge.

The design of this bridge occurred during a time when construction standards for T-beams were constantly changing. This bridge's members were constructed from no less than four separate sets of plans. Although built in 1929, the addition of the pierced parapets gives it the look of a younger bridge.

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Bridge 1006
Barrelville, Allegany County

Statement of Significance
8.1 Continuation Sheet

This bridge has been considered under Criterion C, and thus evaluated in the context of structures which may embody distinctive characteristic of a type, period or method construction.

A State Road Commission plaque on the bridge identifies the construction date as 1929. Construction was begun on April 8, 1929 and completed November 30 of that same year. At a cost of $ 11,795.68, this structure was built to replace an earlier and narrower structure which was removed. The roadway and previous bridge had been constructed by Allegany County and when both were transferred to the State Roads Commission in the late 1920's it was necessary to construct a wider bridge in keeping with the planned widening of the roadway. The structure which preceded the existing twenty-four foot wide structure was twelve feet, eight inches wide. This structure was removed and a temporary structure constructed to carry the traffic while the existing structure was built.

According to Maryland's Historic Bridge Context T-beams's were first introduced in 1909 by Henry G. Tyrell, but Maryland did not create a standard plan until 1923. (Context, p. 148, 159) This bridge actually represents several standards over a six year period. The girder/slab was constructed using 1924 plans for a standard 28 foot girder bridge. However, the original specifications called for a closed parapet as opposed to the open railing which exist on the current structure. The parapets were designed using a 1928 plan establishing the 13 space to 1 expansion joint segment which is common to post 1930 concrete bridges. The parapet gives a feeling of a later design. Crews only needed to construct a single wing wall. The wall on the eastern slop is from a previous bridge. The wing wall and abutment on the western slop were constructed using a 1924 standard.

The bridge is in poor condition. Members of both the superstructure and substructure are deteriorated, with cracking, spalling and section loss. Joints are opening up, with a separation of the major concrete sections. The condition of the bridge would necessitate extensive member replacement. A February 1994 inspection reported that the girders within the slab had large spalls and exposed reinforcing metal bars. Some repair work was completed, however this was not the greatest problem of the girders.

The usual slab system is poured as a unit, slab and girders at the same time. Since the slab steel runs over the girder and the prongs project into the slab they become a single load bearing unit. This bridge has two 27 foot spans with six integrated girders. Reinforced concrete girders rest upon concrete abutments and piers of the same strength. The area were the girders met with the substructure is known as the bearing area. This area must transmit the loads to the abutments and piers without exceeding the allowable stress. The bearings of a bridge provide three functions: a) longitudinal movement for expansion and contraction; b) rotating movement due to deflection of the girders; and c) vertical movements due to the deflection or settlement of the substructures supporting the girders.

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Bridge 1006
Barrelville, Allegany County

Statement of Significance
8.2 Continuation Sheet

The girders within Bridge 1006 are losing their bearing strength. A 1993 inspection of the girders showed a loss of 30%. In order to increase the bearing strength of the girders the concrete would have to be removed to gain access to the girders. The destruction of the slab would eliminate a significant member of this bridge. When the slabs are poured a large percentage of this concrete structure would have lost its integrity due to lack of material.

Context- Concrete Beam (Girder) Bridges

Perhaps one of the simplest ways to span an opening is to use a beam. The earliest concrete beam bridges in the nation were deck girder spans that featured concrete slabs supported by a series of longitudinal concrete beams, similar to the traditional timber beam bridges which were widely used in Europe and the United States.

In Maryland, the first mention of the use of concrete occurs in the Maryland Geological Survey's Report on the Highways of Maryland, published in 1899. In his chapter, "The Present Condition of Maryland Highways", Arthur Newhall Johnson noted that "iron bridges...are fast replacing the longer wooden spans". Observing that comparatively few I-beam bridges, "one of the cheapest and best forms for spans less than 25 or 30 feet", had been constructed in Maryland, Johnson recommended a transitional form of reinforced concrete construction, a type never used in Maryland.

A composite design was utilized for the Lancaster Street Bridge over the Central Avenue Sewer in 1902. The city engineers converted the bridge into "the most important and novel" of structures by the use of "Ferro-Concrete, or Armored Concrete" construction techniques. This design, in which metal mesh was used to reinforce the concrete, was the first step in Maryland toward the development of true reinforced concrete construction.

Possibly the first Maryland concrete bridge to feature reinforcing bars was the bridge at Sherwood Station, built in 1903 by Baltimore County. The announcement of the bridge's completion in the Third Report on the Highways of Maryland, stated that it "shows the progressive character of the work...steel concrete form of construction was adopted, which uses reinforced concrete beams instead of simple steel or wooden beams". In addition, the methodology is described as "steel rods are imbedded in the concrete beams to enable them to withstand heavy loads."

The success of reinforced bridge designs led to the adoption by the Maryland Geological Survey of a plan for reinforced concrete bridge construction, as described by Walter Crosby, Chief Engineer. "The general plan has been to replace these (wood bridges) with...concrete bridges" (Second Report on the State Highway Construction for the Period from January 1, 1906 to January 1, 1908, Maryland Geological Survey, on page 379). A step in this plan appears to have been the replacement of the wooden bridge over the Choptank in Greensboro by a 200-foot long, multiple span, reinforced concrete deck girder bridge, completed in 1908.

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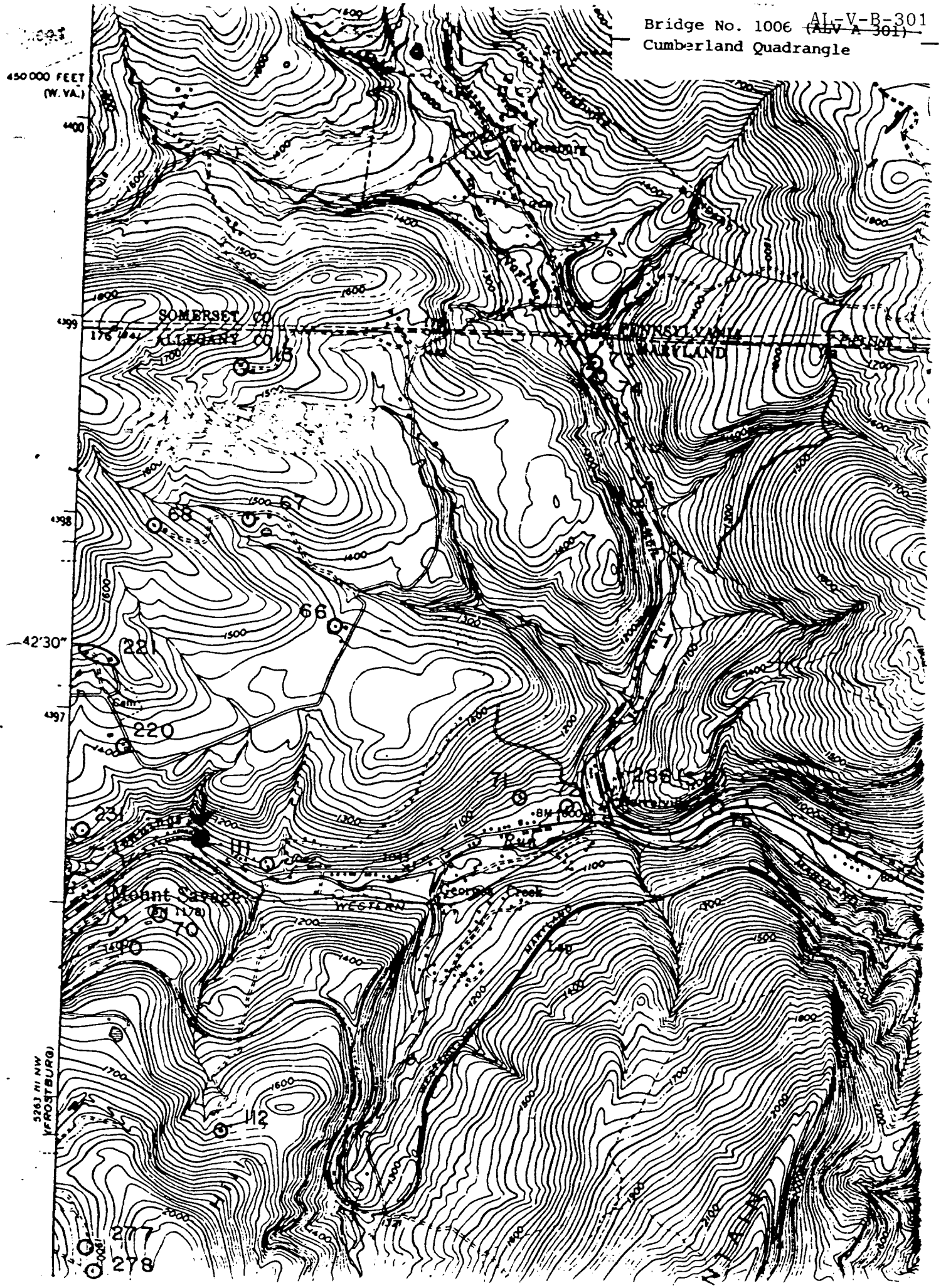
Bridge 1006
Barrelville, Allegany County

Statement of Significance
8.3 Continuation Sheet

Reinforced concrete bridges were favored by the State Roads Commission, created around 1910 to carry on the function started by the Maryland Geological Survey to improve the roads and bridges of Maryland. Road improvement entailed the replacement of large numbers of bridges that were inadequate to the vehicular needs of the State. Reinforced concrete construction had been successfully used to build safe bridges with reduced labor costs but the labor involved in individually designing all bridges would have been prohibitive. A method of reducing design time was critically needed.

The introduction of standards, started in 1909, with the first product appearing in 1912, heralded a system of much utility for the State Roads Commission. Standards were a pre-set formulation governing the amount of concrete, reinforcing metal, etc., for spans up to 36-feet. In the period from 1911 to 1920 beam and slab concrete structures constituted a large percentage of the structures which are currently extant from the period. Bridge 1006 was built to the 1924 standard for concrete beam (girder) bridges up to 36 feet in length. The 1924 plans, still in use in 1929 and utilized for this structure, incorporated the T-beam girder, a design that Henry G. Tyrrell advocated in 1909.

Bridge No. 1006 ~~(ALV A 301)~~ AL-V-B-301
Cumberland Quadrangle



A (V-B-301)
Bridge 1006
Md 36 over Georgia Run
Suffrance 4/94
Md State Hwy
Administration
1/4
Town Creation
Cooking N.E

AL-V-B-301
Bridge 1006
Rd 36 over Jennings
Ran

Supplement 4/94
Rd State Hwy Admin
North Parapet Wall

2/4

ALF A 501
Ind 36 Over Jennings Ave
Br 1006
Supp 1/4 4
Ind State Highway Admin
Upstream (North) Elevation

3/4

AL V A3 01

Cretaceous

Mid 36 one Jumps Run

Supposed 4/94

Mid State Hwy Admin

4/4