Maryland Historical Trust

Maryland Inventory of Historic Properties number: HO-651

Name: HO-29/Fridelphia Mill Rd over Patuxent River

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. HO-651

SHA Bridge No. HO 29 Bridge name Triadelphia Mill Road over Patuxent River

LOCATION:

Street/Road name and number [facility carried] Triadelphia Mill Road

City/town Dayton Vicinity X

County Howard

This bridge projects over: Road ___ Railway___ Water X Land _____

Ownership: State _____ County X 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 ___ 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** _____ **Rural** X

Describe Setting: Bridge HO 29 carries Triadelphia Mill Road over a tributary of the Patuxent River. It is located in a generally wooded area near the Triadelphia Reservoir. The stream flows towards the southeast.

Describe Superstructure and Substructure:

Bridge No. HO 29 is a reinforced concrete slab bridge built c.1930, with a span length of 21.5 ft. and an overall structure of 23.0 ft. There is a 20.4 ft. clear roadway width between concrete parapets and a bituminous concrete wearing surface on the bridge. The substructure consists of concrete abutments and wingwalls. The parapets are open and have end blocks with decorative panelling. According to recent inspection reports the overall condition of the superstructure is satisfactory. Both ends of the south concrete parapet exhibit spalls at the guiderail connection. The pavement joint at the east abutment exhibits a 3/4 in. open crack.

According to recent inspection reports the overall condition of the substructure is satisfactory. The north corners of both abutments exhibit moderate sized spalls at the wingwalls joints. The channel has two scour holes approximately 2 ft. deep at the northeast wingwall and along the west abutment, no undermining is evident.

Discuss Major Alterations:

No major alterations have been made to this bridge.

HISTORY:

WHEN was the bridge built 1930s

This date is: Actual **Estimated** X

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

Other (specify): County inspection files

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 has not been altered.

Was the 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 1930's.

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. 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.

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 significantly affected the development and growth 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 historic/visual character of the potential district?
No, this bridge is not located in an area which is eligible for historic designation.

Is the bridge a significant example of its type?
No, this bridge is an undistinguished example of a standardized concrete slab bridge built according to 1930 plans.

Does the bridge retain integrity of important elements described in the Context Addendum?
Yes, this structure retains the integrity of its character-defining elements as well as its location, design, setting, materials, workmanship, feeling and association.

Is bridge a significant example of work of a manufacturer, designer and/or engineer?
No, this bridge is an undistinguished example of a standardized concrete slab bridge built according to 1930 plans.

Should the bridge be given further study before an evaluation of significance is made?
No further evaluation is necessary to determine National Register significance.

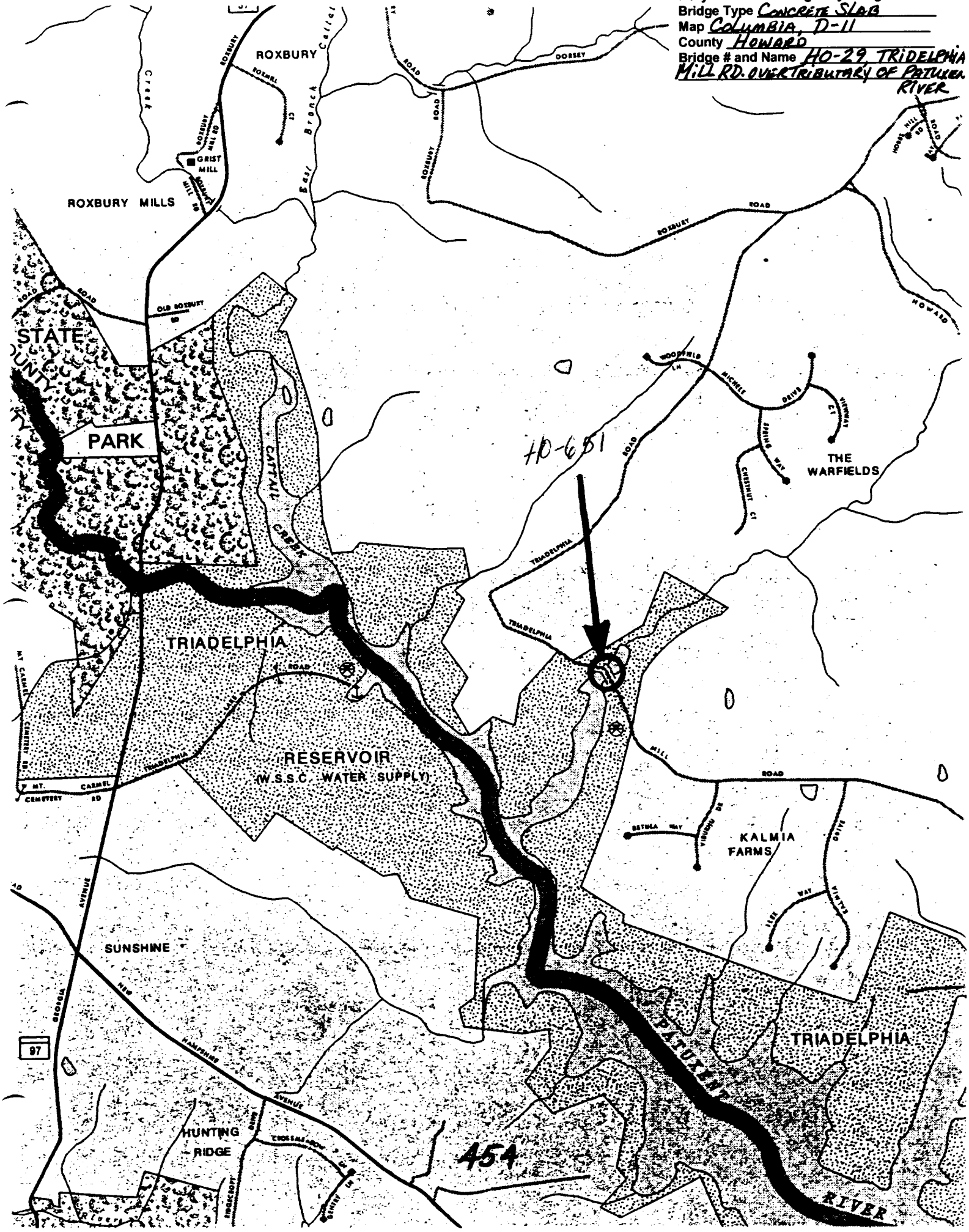
BIBLIOGRAPHY:

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

SURVEYOR/SURVEY INFORMATION:

Date bridge recorded 8/95
Name of surveyor Leo Hirrell
Organization/Address P.A.C. Spero & Company, 40 W. Chesapeake Avenue, Baltimore, MD 21204
Phone number (410) 296-1635 **FAX number** (410) 296-1670

Maryland Historic Highway Bridges
Bridge Type CONCRETE SLAB
Map COLUMBIA, D-11
County HOWARD
Bridge # and Name HO-29, TRIDELPHIA MILL RD. OVER TRIBUTARY OF PATUXENT RIVER



Inventory # HO-651

Name HO 29 - TRIADELPHIA MILL RD OVER PATUXENT RIVER

County/State HOWARD / MD

Name of Photographer DAVID DIEHL

Date 2/95

Location of Negative SHA

Description SOUTH APPROACH LOOKING NORTHWEST

Number ~~23~~ 1 of ~~31~~ 4

Inventory # HO-651

Name HO29 - TRIADELPHIA MILL RD OVER PATUXENT RIVER

County/State HOWARD / MD

Name of Photographer DAVID DIEHL

Date 2/95

Location of Negative SHA

Description NORTH APPROACH LOOKING SOUTHEAST

Number ~~29~~ 2 of ~~31~~ 4

Inventory # HO-651

Name HO29 - TRIADELPHIA MILL RD OVER PATUXENT RIVER
County/State HOWARD / MD
Name of Photographer DAVID DIEHL
Date 2/95

Location of Negative SHA

Description WEST ELEVATION LOOKING
NORTHEAST

Number ~~3~~ 4 of ~~3~~ 4

Inventory # HO-651

Name HO29 - TRIADELPHIA MILL RD OVER PATUXENT RIVER
County/State HOWARD / MD
Name of Photographer DAVID DIEHL
Date 2/95

Location of Negative SHA

Description EAST ELEVATION LOOKING NORTHWEST

Number ~~25~~ 3 of ~~31~~ 4