

Maryland Historical Trust

Maryland Inventory of Historic Properties number: VI. 27-22

Name: 15024/MD 1820 over Buckhorn Branch

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 _____	Eligibility Not Recommended <u>X</u>
Criteria: <u> </u> A <u> </u> B <u> </u> C <u> </u> D	Considerations: <u> </u> A <u> </u> B <u> </u> C <u> </u> D <u> </u> E <u> </u> F <u> </u> G <u> </u> None
Comments: _____ _____ _____	
Reviewer, OPS: <u>Anne E. Bruder</u>	Date: <u>3 April 2001</u>
Reviewer, NR Program: <u>Peter E. Kurtze</u>	Date: <u>3 April 2001</u>

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

MHT No. M:27-22

SHA Bridge No. 15024 Bridge name MD 182 over Buckhorn Branch

LOCATION:

Street/Road name and number [facility carried] MD 182

City/town Norbeck

Vicinity X

County Montgomery

This bridge projects over: Road _____ Railway _____ Water X Land _____

Ownership: State X County _____ 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 _____ 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 No. 15024 carries MD 182 (Layhill Road) over Buckhorn Branch in Montgomery County. MD 182 runs east-west, while Buckhorn Branch flows from the north to the south. The bridge is located in a rural section of Montgomery County and is surrounded by farmland.

Describe Superstructure and Substructure:

Bridge No. 15024 over Buckhorn Branch in Montgomery County is a single span standard concrete slab bridge built in 1931. The clear span length is 20 feet between the abutments and the total bridge length is 23 feet, with a clear roadway width of 27 feet between the curbs. The bridge is currently not posted. The superstructure, consisting of the roadway, slab and parapets, is in good condition. The concrete slab is 1'-9" in depth with a 4" bituminous roadway surface. The open concrete parapets have end blocks, an articulated coping and a pierced railing design with an 11 open space to 1 expansion joint ratio. W-beam guardrails were added to the roadway at an unknown date and attached to the parapets at the end blocks.

The substructure consists of the abutments and wingwalls. All substructure components feature molded chamfering and the wingwalls are flared. There is slight cracking, spalling and efflorescence on all surfaces.

Discuss Major Alterations:

W-beam guardrails were added to the roadway at an unknown date. They attach to the bridge at the parapet end blocks. SHA files in October 1995 indicated that design calculation shows the bridge is in its operating stress range and needs annual inspections.

HISTORY:

WHEN was the bridge built: 1931

This date is: Actual _____ X _____ Estimated _____

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

Other (specify) _____

WHY was the bridge built?

By 1930, Maryland's primary and secondary roads and bridges had become inadequate to the huge freight trucks and volume of passenger cars in use.

WHO was the designer?

State Roads Commission

WHO was the builder?

State Roads Commission

WHY was the bridge altered?

To increase the safety of the bridge

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

Yes, post World War I improvements to primary and secondary roads.

SURVEYOR/HISTORIAN ANALYSIS:

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

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

According to MHT USGS survey maps, previously determined ineligible.

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 1903-1904 with the formation of the Joint Committee on Concrete and Reinforced Concrete of the American Society of Civil Engineers.

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 Commissions 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 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 been inadequate to the huge freight trucks and volume of passenger cars in use, with major improvements occurring in the late 1930's. 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).

In 1930, 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 the load bearing capacities. The reinforcing bars increased in thickness. Visually, the 1930 design can be distinguished from its predecessors by the pierced concrete railing that was introduced at this time.

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?

Although built during the post World War I construction phase, this bridge did not greatly effect the area surrounding it. The structure did not increase settlement or industry.

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 is eligible for historic designation.

Is the bridge a significant example of its type?

No, this structure is not a significant example of its type.

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

No, this structure does not retains its integrity because of its deteriorated state.

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 the work of the State Roads Commission.

Should the bridge be given further study before an evaluation of its significance is made?

No, this structure should not be given further study. Although it reflects the state's post war construction needs of an expanded secondary roads system, its current condition has placed its integrity in doubt.

M: 27-22

BIBLIOGRAPHY:

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

SURVEYOR:

Date bridge recorded 8/95

Name of surveyor Leo Hirrell

Organization/Address P.A.C. Spero & Co., 40 W. Chesapeake Avenue, Suite 412, Baltimore, MD 21204

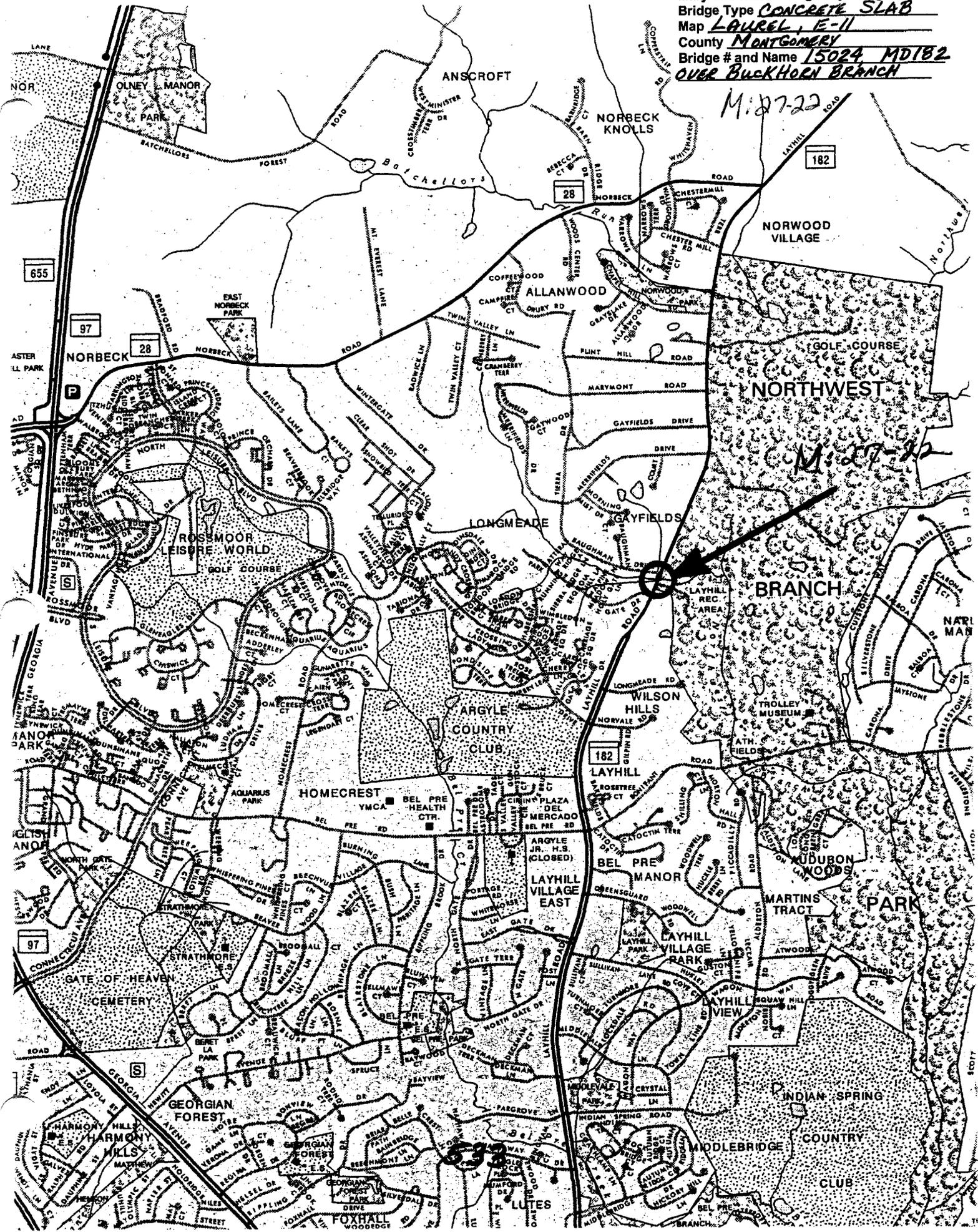
Phone number (410) 296-1635

FAX number (410) 296-1670

Maryland Historic Highway Bridges
Bridge Type CONCRETE SLAB
Map LAUREL, E-11
County MONTGOMERY
Bridge # and Name 15024 MD182
OVER BUCKHOEN BRANCH

M: 27-22

M: 27-22



Maryland Historic Highway Bridges
Bridge Type CONCRETE SLAB
Map LAUREL, E-11
County MONTGOMERY
Bridge # and Name 15024 MD182
OVER BUCKHOEN BRANCH

M127-22

182

28

182

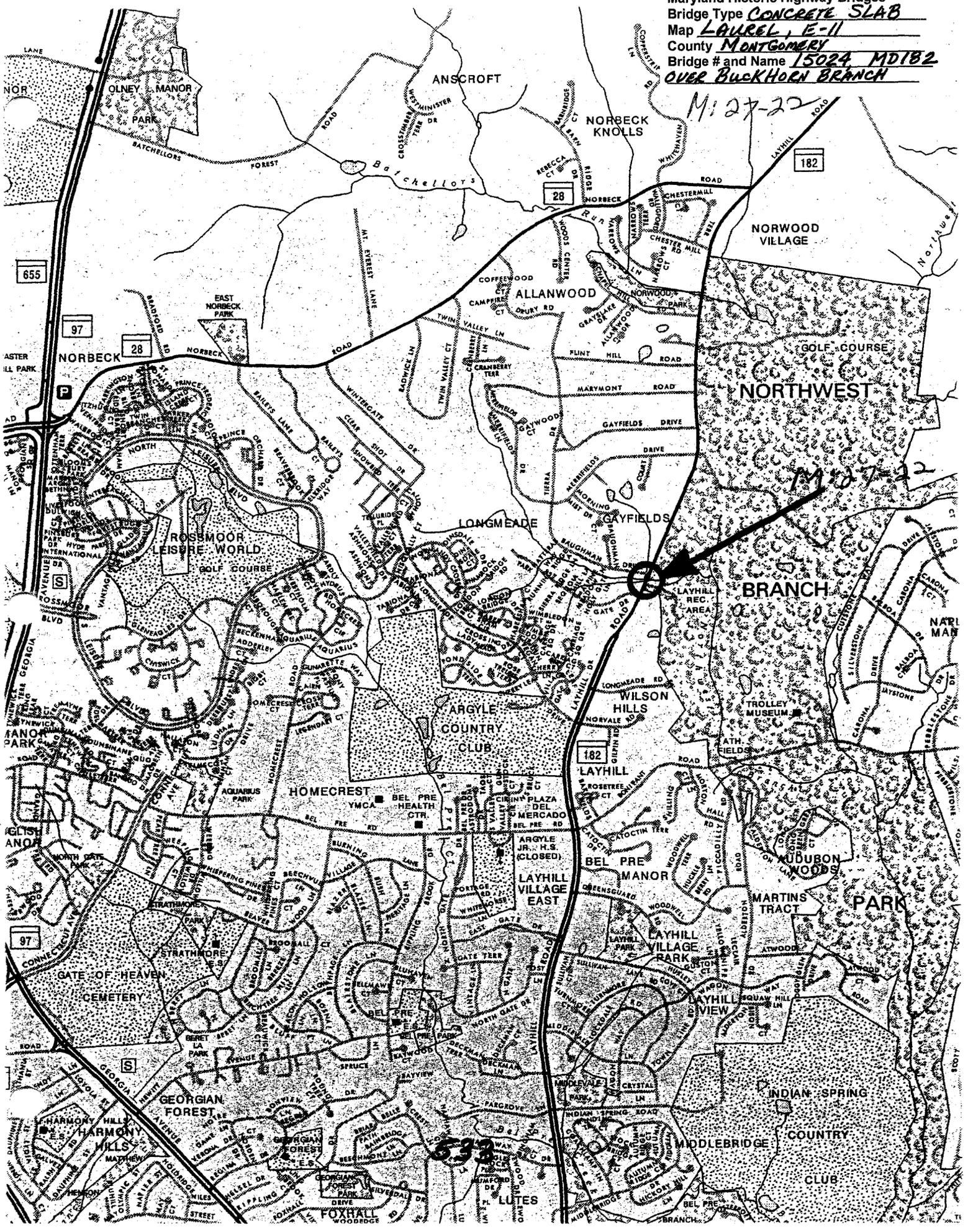
655

97

97

182

632





Inventory # M: 27-22

Name 15024 - MD 182 OVER ^{BUCKHORN NORTHWEST} BRANCH OF ~~ROAD~~ ^{BRANCH}

County/State MONTGOMERY / MD

Name of Photographer FRANK JULIANO

Date 2/95

Location of Negative SHA

Description APPROACH NORTH

Number 1 of 35 ⁴



Inventory # M:27-22

Name 15024- MD 182 OVER BRANCH OF ^{Buckhorn} ~~BRANCH~~ ^{NORTHWEST} ~~BRANCH~~

County/State MONTGOMERY / MD

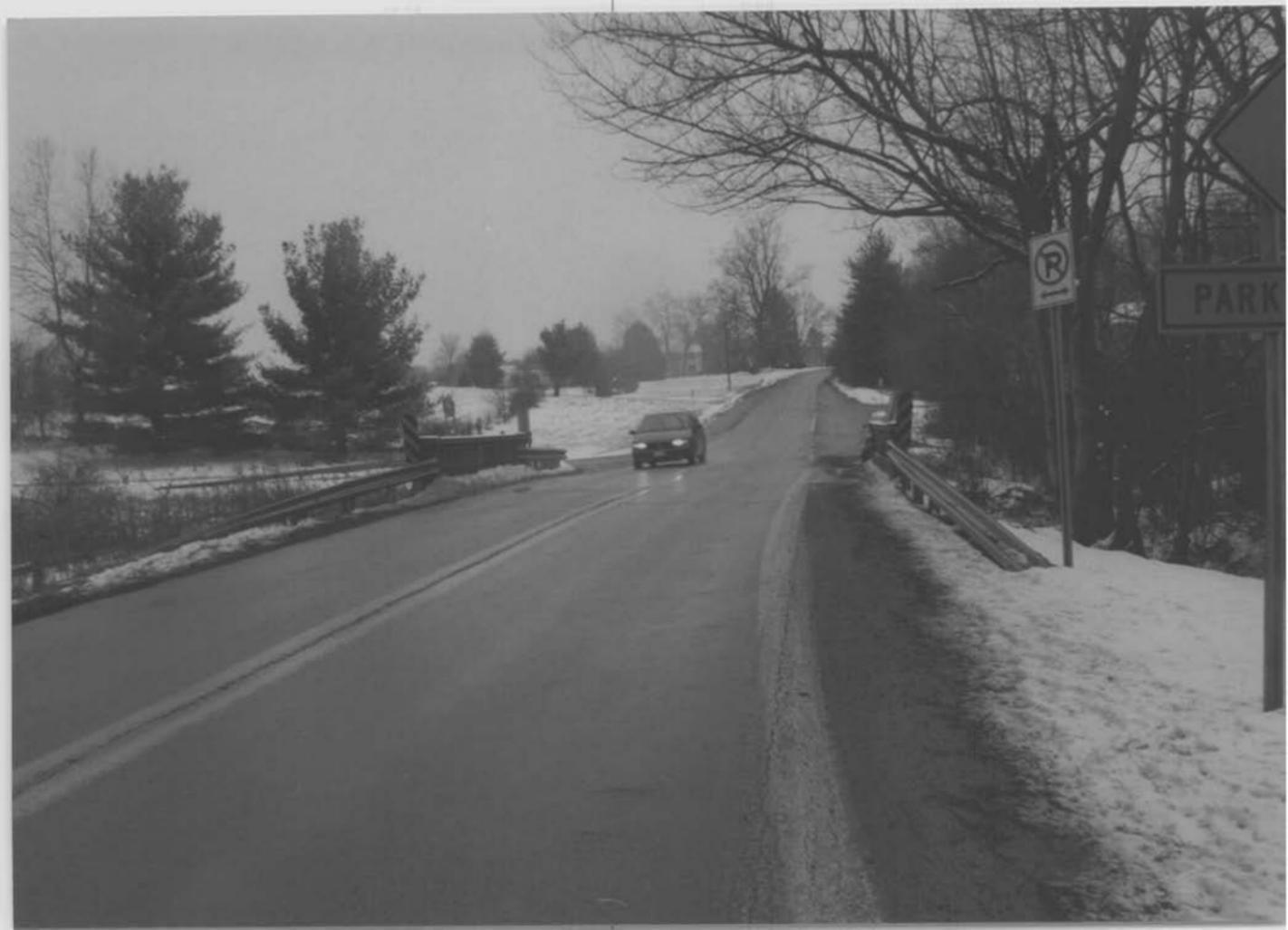
Name of Photographer FRANK JULIANO

Date 2/95

Location of Negative SHA

Description ELEVATION ~~W~~ EAST

Number ² ⁴ 24 of 35



Inventory # M: 27-22

Name 15024 - MD 182 OVER ^{Buckhorn}
~~BRANCH OF~~
NORTHWEST BRANCH

County/State MONTGOMERY / MD

Name of Photographer FRANK JULIANO

Date 2/95

Location of Negative SHA

Description APPROACH SOUTH

Number ³ ⁴
25 of 35



Inventory # 27-22

Name 15024-MD 182 OVER ^{Buckhorn}
~~NORTHWEST~~ ^{BRANCH OF} BRANCH

County/State MONTGOMERY / MD

Name of Photographer FRANK JULIANO

Date 2/95

Location of Negative SHA

Description ELEVATION WEST

Number ⁴ ~~26~~ ⁴ of 25