Maryland Historical Trust

Maryland Inventory of Historic Properties number: PG:86A-29

Name: CROSS RD TRAIL OVER MATAPONI CREEK

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 __X____
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 Properties MHT Number PG: 86A-29
Historic Bridge Inventory
Maryland State Highway Administration
Maryland Historical Trust

SHA Bridge No. P491 **Name:** Cross Road Trail over Mataponi Creek

Location:
Street/Road Name and Number: Cross Road Trail

City/Town: Cheltenham **Vicinity** _____

County: Prince George's

Ownership: __State X County__Municipal__Other

This bridge projects over: __Road__Railway X Water__Land

Is the bridge located within a designated district: __yes X no

_NR listed district_NR determined eligible district
_locally designated_other
Name of District

Bridge Type:

_Timber Bridge
_Beam Bridge_Truss-Covered_Trestle
_Timber-and-Concrete

_Stone Arch

_Metal Truss

_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

X Concrete
X Concrete Arch _Concrete Slab_Concrete Beam
_Rigid Frame

_Other Type Name_____

Describe Setting:

Bridge P491 carries Cross Road Trail over Mataponi Creek in Prince George's County. Cross Road Trail runs east-west over the eastern flowing Mataponi Creek. The area immediately adjacent to the bridge has light residential development and woods surround the bridge.

Describe Superstructure and Substructure:

Bridge P491 is a single span filled concrete arch bridge. The length of the bridge is 27 feet and has a clear span of 25 feet. The spandrel walls are approximately 5 feet high and 12 feet 6 inches wide. The bridge has a rise of approximately 4 feet from springline to the crown. There is a clear roadway width of 20 feet 2 inches, with an overall bridge width of 21 feet 11 inches. The bridge has a modern post and double w-beam guardrail attached the deck of the bridge. According to a 1997 inspection report, the bridge is in poor condition with a sufficiency rating of 39.6.

There are fractures located in the spandrel walls that run parallel to the barrel of the arch. Additionally, the spandrel walls and wingwalls exhibit moderate surface scaling with exposed aggregate. The tops of the spandrel walls are heavily scaled. The arch appears to be sound concrete exhibiting only light deterioration. There is efflorescence spilling through the joint between the bottom of the arch and the west abutment. Both abutments have heavy efflorescence and a few fine irregular cracks throughout.

Discuss Major Alterations:

At an unknown date the original parapets were replaced with steel guardrails. The bridge was reconstructed in 1973.

When Built? 1927, 1973
Why Built? Unknown
Who Built? State Roads Commission
Who Designed? Unknown
Why Altered? Safety concerns.
Was this bridge built as part of an organized bridge building campaign? No, this bridge was not built as part of an organized bridge building campaign.

<u>Surveyor Analysis:</u>

This bridge may have NR significance for association with:

__A Events __Person
__C Engineering/Architectural

This bridge does not have National Register significance due to the loss of the original parapets and the deteriorated condition of the bridge.

Was this bridge constructed in response to significant events in Maryland or local history?

The advent of modern concrete technology fostered a renaissance of arch bridge construction in the United States. Reinforced concrete allowed the arch bridge to be constructed with much more ease than ever before and maintained the load-bearing capabilities of the form. As the structural advantages of reinforced concrete became apparent, the heavy, filled barrel of the arch was lightened into ribs. Spandrel walls were opened, to give a lighter appearance and to decrease dead load. This enabled the concrete arch to become flatter and multi-centered, with longer spans possible. Designers were no longer limited to the semicircular or segmental arch form of the stone arch bridge. The versatility of reinforced concrete permitted development of a variety of economical bridges for use on roads crossing small streams and rivers.

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 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 1920-1929, 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 I.

As the nation's automotive traffic increased in the early-twentieth century, local road networks were consolidated, and state highway departments were formed to supervise the construction and improvement of state roads. With a diverse topographical domain encompassing numerous small and large crossings, Maryland engineers quickly recognized the need for expedient design and construction through the standardization of bridge designs.

The concept and practice of standardization was one of the most important developments in engineering of the twentieth century. In Maryland, as in the rest of the nation, the standardized concrete types became the predominant bridge types built. In the period 1911 to 1920 (the decade in which standardized plans were introduced), beams and slabs constituted 65 percent and arches 35 percent of the extant 29 bridges built in Maryland. In the following decade, 1921-1930, the beam (now the T-beam) and slab increased to 73 percent and the arch had declined to 27 percent of the 129 extant bridges; in the next decade (1931-1940), the beam and slab achieved 82 percent and arches had further declined, constituting only 18 percent of the total of extant bridges built on state-owned roads between 1931 and 1946.

Although beam and slab bridges became the utilitarian choice, it appears that the arch was selected when aesthetic as well as other site conditions were considered. The architectural treatment of extant arch bridges supports this assessment. Many of these bridges were multiple span structures with open spandrels or masonry facing. Another decorative feature of the concrete arch bridge was an open, balustrade-style parapet. Despite the popularity of ornamental arches and the increase in use of beam and slab bridges, examples of simpler, single and multiple span closed concrete arch bridges with solid parapets continued to be constructed throughout the early twentieth century.

Is the bridge located in an area that may be eligible for historic designation and would the bridge add to or detract from historic and visual character of the possible district?

No, this bridge is not located in an area that is eligible for historic designation.

Is the bridge a significant example of its type?

No this bridge is not a significant example of its type. This bridge is similar to those structures built in the first two decades of the twentieth century. However, its present condition and its lack of original parapets lower its value as an example of type.

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

No this bridge does retain integrity of its character defining elements. The spandrel walls are extremely deteriorated. The wingwalls and the abutments are heavily scaled and spalling. The original parapets are missing.

Is the bridge a significant example of the work of a manufacturer, designer and/or engineer?

No, this is not a significant example of the work of a manufacture, designer, or engineer.

Should this bridge be given further study before significance analysis is made and why?

No, this bridge should not be given further study.

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

Johnson, Arthur Newhall
1899 The Present Condition of Maryland Highways. In *Report on the Highways of Maryland.* Maryland Geological Survey, The Johns Hopkins University Press, Baltimore.

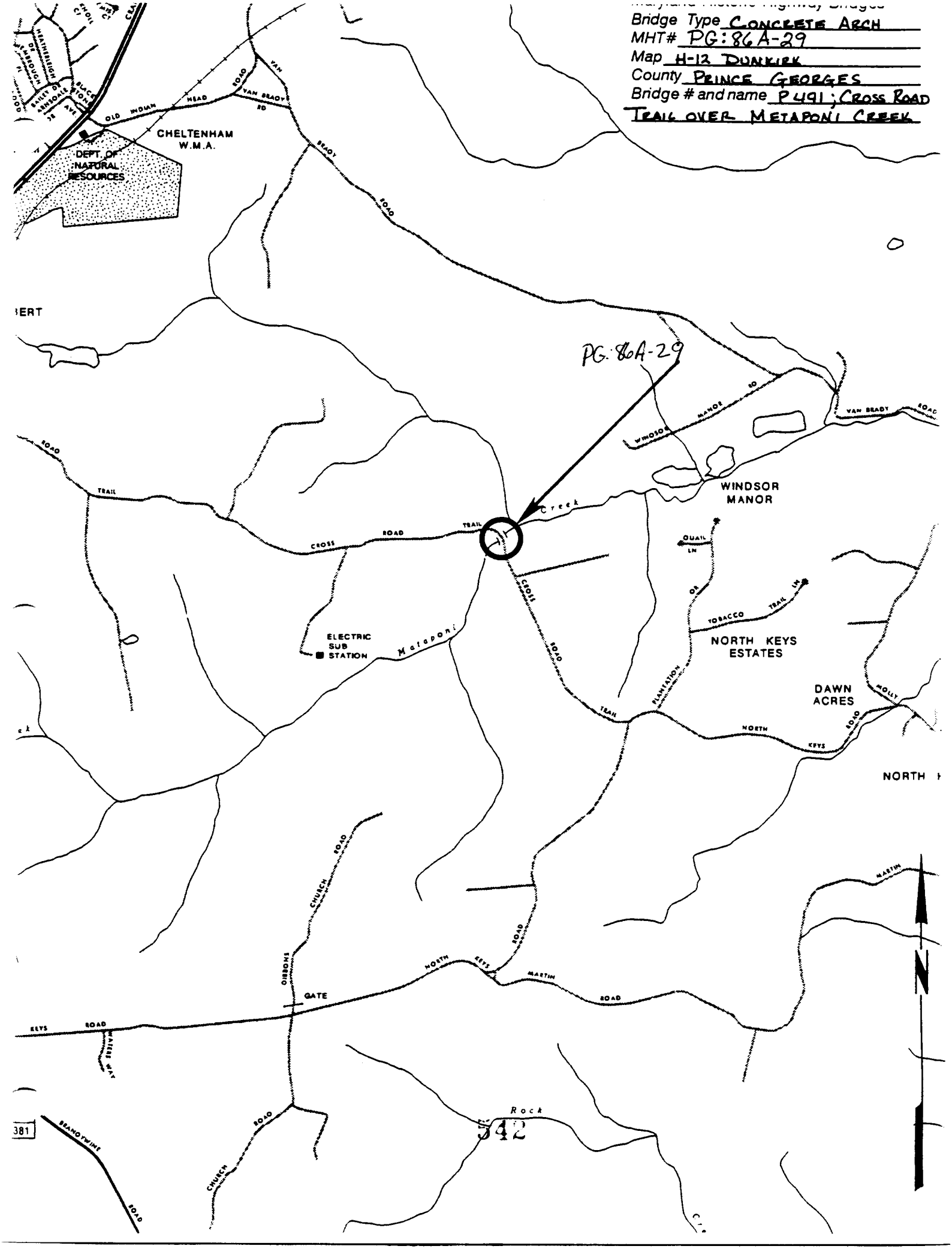
P.A.C. Spero & Company and Louis Berger & Associates
1995 Historic Highway Bridges in Maryland: 1631-1960: Historic Context Report. Maryland State Highway Administration, Maryland State Department of Transportation, Baltimore, Maryland.

Tyrrell, H. Grattan
1909 *Concrete Bridges and Culverts for Both Railroads and Highways.* The Myron C. Clark Publishing Company, Chicago and New York.

SURVEYOR:

Date bridge recorded December 1997
Name of surveyor Wallace, Montgomery & Associates / P.A.C. Spero & Company
Organization/Address P.A.C. Spero & Co., 40 W. Chesapeake Avenue, Baltimore, MD 21204 **Phone number** (410) 296-1635 **FAX number** (410) 296-1670

Bridge Type CONCRETE ARCH
MHT# PG:86A-29
Map H-12 DUNKIRK
County PRINCE GEORGES
Bridge # and name P491; CROSS ROAD TRAIL OVER METAPONI CREEK



1. PG: 86A-29
2. Cross Road Trail over Mataponi Creek
3. Prince George's Co., MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Elevation looking downstream
8. 1 of 4

1. PG:86A-29
2. Cross Road Trail over Matapani Creek
3. Prince George's Co., MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Elevation looking upstream
8. 2 of 4

1. PG: 86A-29
2. Cross Road Trail over Mataponi Creek
3. Prince George's Co., MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Looking North
8. 2 of 4

1. PG: 86A-29
2. Cross Road Trail over Matapani Creek
3. Prince George's Co, MD
4. Wallace, Montgomery & Assoc.
5. 12/97
6. MD SHPO
7. Looking South
8. 4 of 4

9502773

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

Property/District Name: Cross Road Trail Bridge Survey Number: PG-86A-29

Project: Replace Cross Road Trail Bridge over Mataponi Cr Agency: FHWA/PG County

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

Eligibility recommended _____ Eligibility **not** recommended X

Criteria: ___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 available information, the Cross Road Trail Bridge (#P-0491) over Mataponi Creek in Prince George's County does not meet the National Register Criteria for individual listing. The single span bridge was constructed in 1927 as a concrete arch. In 1973 the bridge was substantially altered when a concrete slab was constructed over the arch. This alteration widened, changed the structural characteristics and altered the appearance of the bridge. Thus the bridge as it exists today lacks integrity and is incapable of serving as a representative example of a particular construction type. Due to its lack of integrity, the bridge would not meet any of the National Register Criteria for Evaluation. In addition, it is not known to have been associated with any significant event or person and is not located in any known historic district.

The bridge review committee for the bridge inventory has not yet reviewed this structure, but we are confident that the committee would agree that this bridge is not eligible.

Documentation on the property/district is presented in: Project File

Prepared by:

Elizabeth Hannold — December 29, 1995
Reviewer, Office of Preservation Services — Date

NR program concurrence: ✓ yes ___ no ___ not applicable

Reviewer, NR program — Jan. 2, 1996
Date

Survey No. PG 86A-29

MARYLAND COMPREHENSIVE HISTORIC PRESERVATION PLAN DATA - HISTORIC CONTEXT

I. Geographic Region:

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

V. Resource Type:

Category: Structure

Historic Environment: Rural

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

Known Design Source: unknown

PG: 86A-29

Proposed Bridge

PRINCE GEORGE'S COUNTY
HORIZONTAL CALL CONTRACTS
ARC No. P-0004-92

Project Resume

Replacement of Cross Road Trail Bridge over Mataponi Creek

I. Introduction

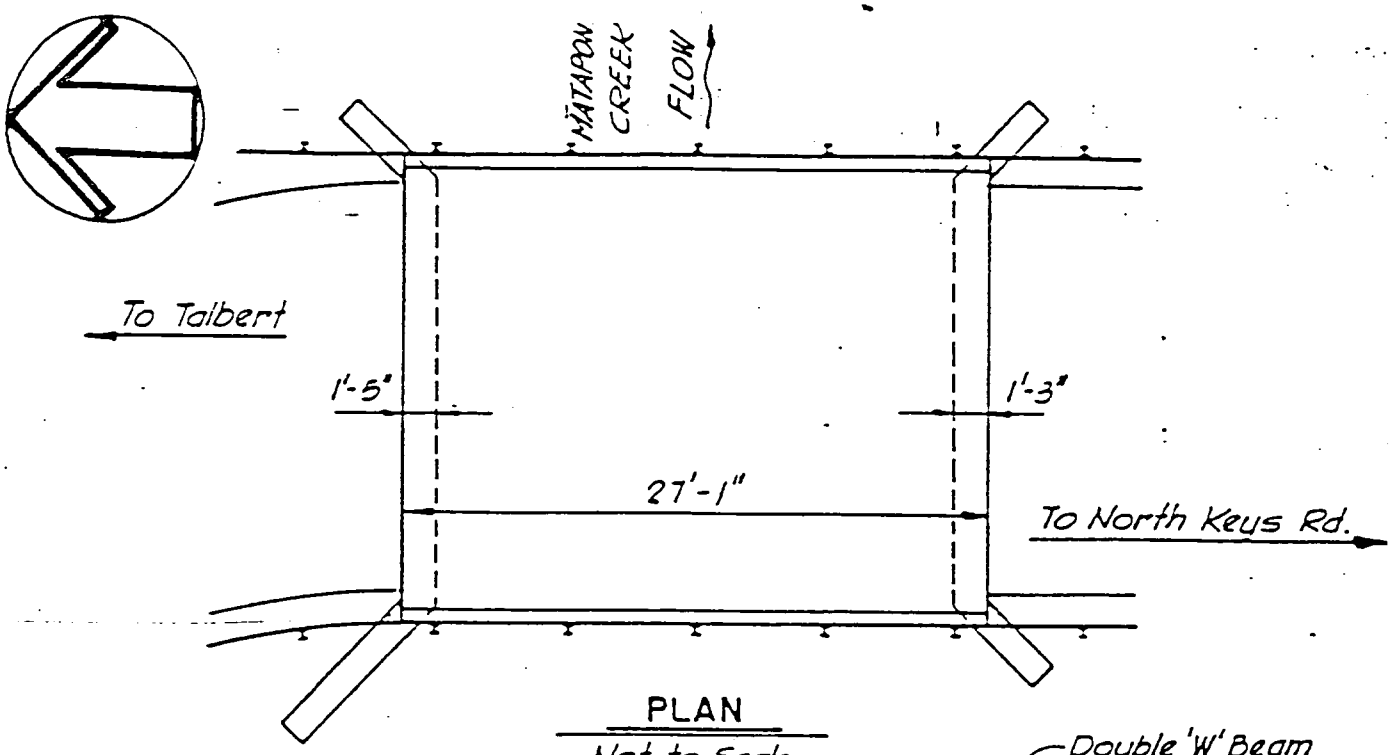
Cross Road Trail is a three mile rural county road located in the south-central portion of the county near the town of Cheltenham. The two-lane 20' wide road extends from Cherry Tree Crossing on the west to North Keys Road, on the east. In a wooded area approximately one (1) mile west of North Keys Road, the road makes a 90° bend and passes over Mataponi Creek. The existing structure consists of a single span (25'-0") concrete slab placed over a previously built concrete arch.

Due to a washout of the roadway embankment adjacent to the east end of the crossing, the bridge is presently closed to traffic. To date, the County has placed barricades on each side of the bridge and has taken the additional effort to re-build the breach in the embankment in order to minimize further erosion of the embankment and to maintain the natural alignment of the creek.

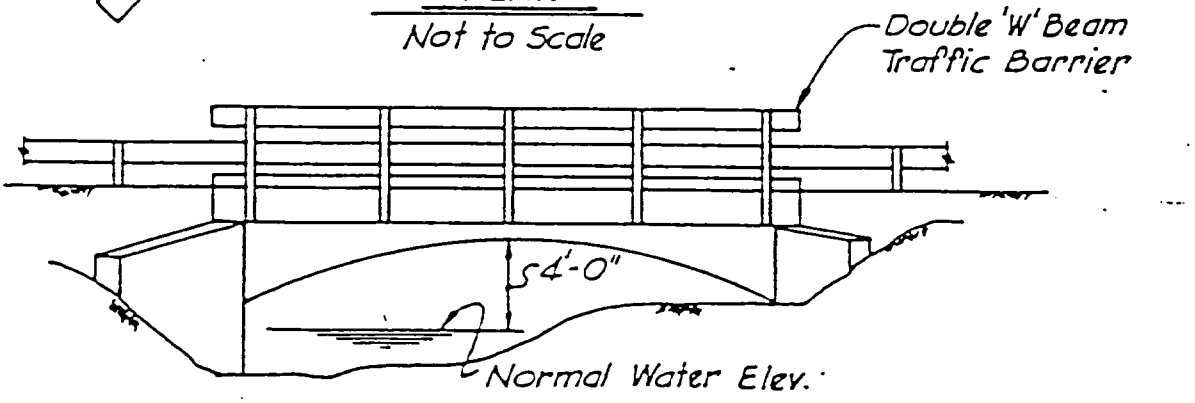
The proposed design will consist of replacing the bridge and rehabilitating the roadway by improving the grade and alignment of the approaches in the vicinity of the bridge. Two horizontal alignment alternates will be studied. Alternate 1 will cross Mataponi Creek at the existing structure location, and Alternate 2 will be located upstream of the existing structure.

For each horizontal alignment, two vertical alignments will be studied. Alternate A will address impacts on existing flows and flooding conditions as a result of designing to meet minimum County (25 year event), AASHTO and Federal requirements. Alternative B will address the results of designing for conveyance of the 100 year storm frequency and constructing the proposed road above the 100-year water surface elevation.

The County has stated that the proposed construction of the approach roadways and the new bridge will be within a 64' right-of-way and that the new bridge section will consist of two - 12' lanes and two - 10' shoulders (maximum). The approach roadway will be designed using a 24' paved travelway and shoulders to meet State and Federal regulations, but not less than 6' in width. The existing ADT is 945 vehicles and the projected ADT for the year 2004 is 989 vehicles. The existing and proposed road functional classification is rural collector with a proposed design speed of 40 MPH.



PLAN
Not to Scale



ELEVATION
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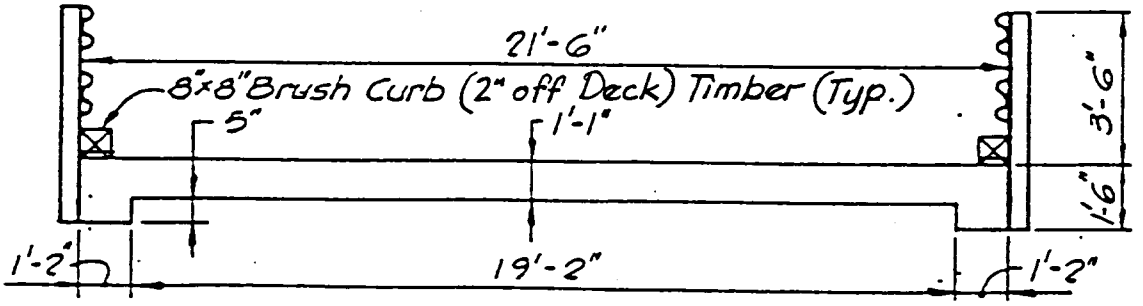

TYPICAL SECTION
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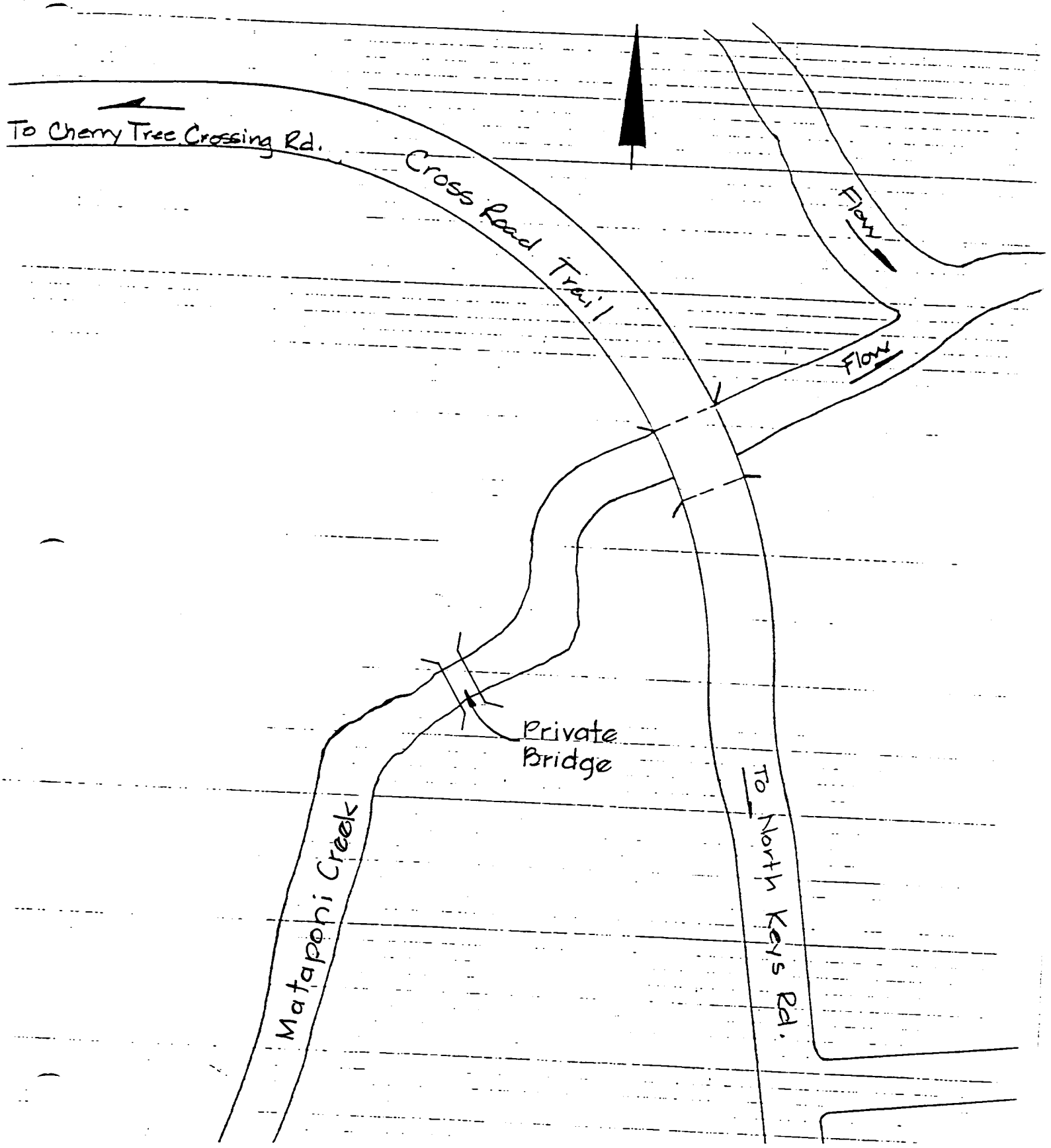
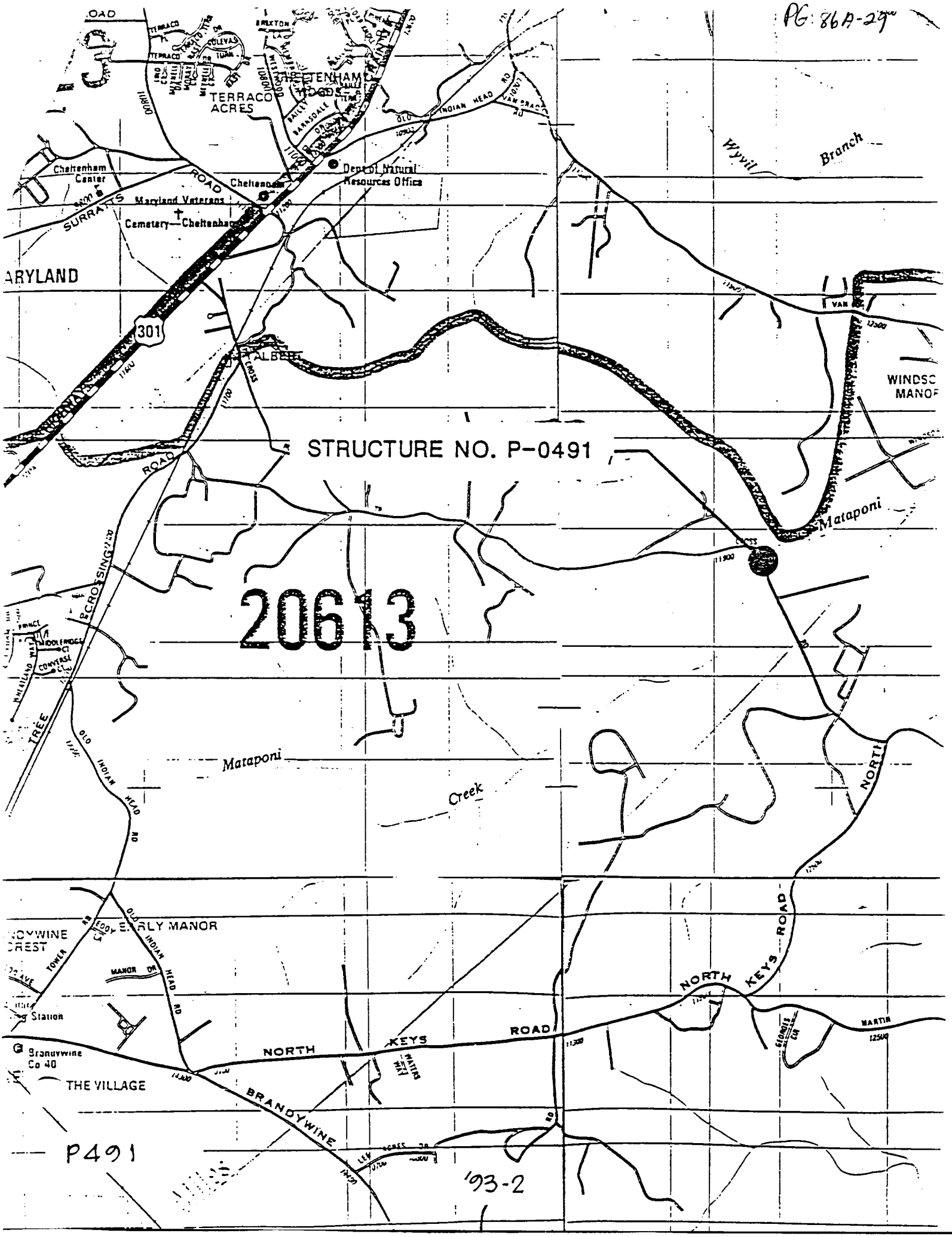
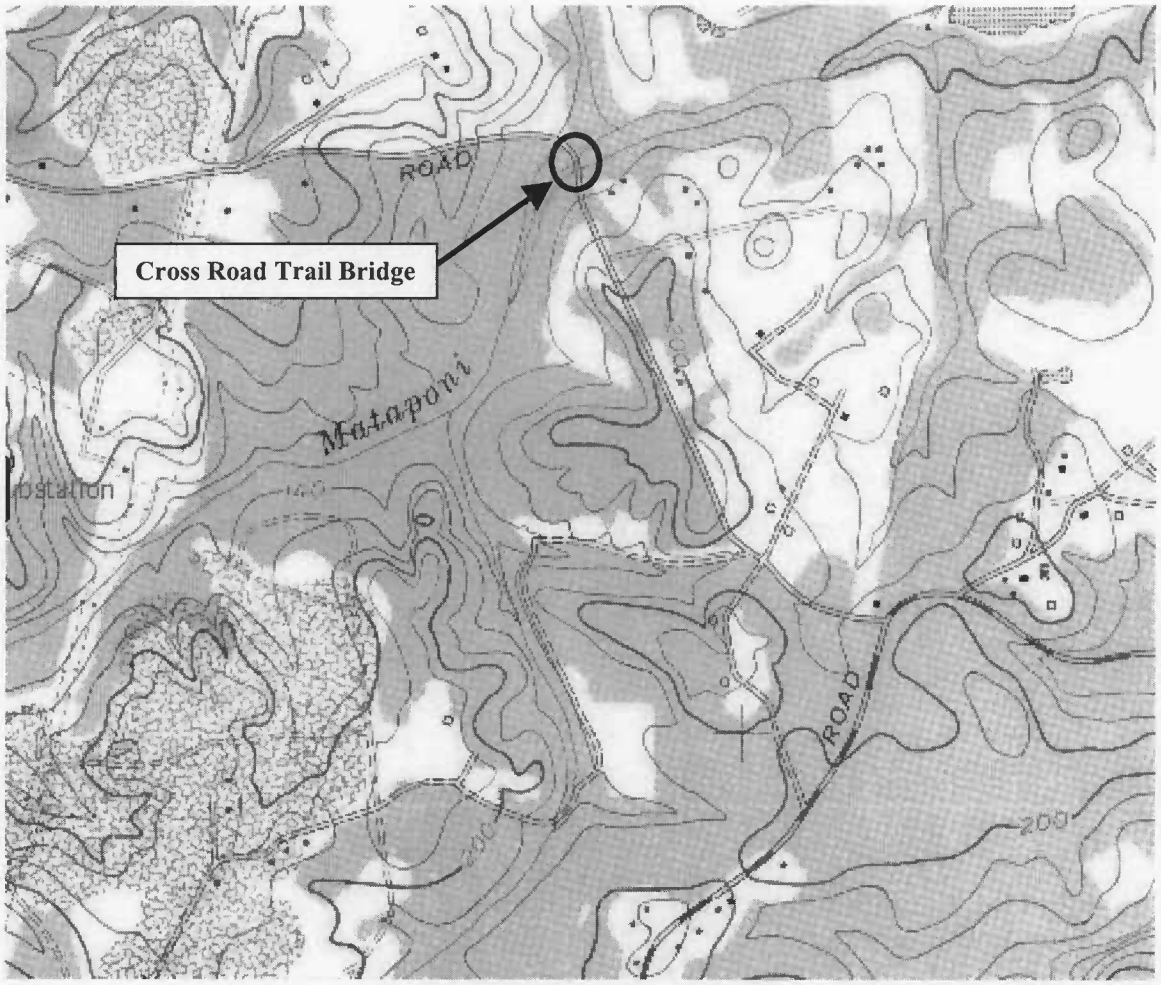

To Cherry Tree Crossing Rd.
Cross Road Trail
Flow
Flow
Private Bridge
Mataponi Creek
To North Keys Rd.

P491

'93-3


PG: 86A-29
STRUCTURE NO. P-0491
20613
TERRACO ACRES
Cheltenham Center
Cheltenham
Maryland Veterans Cemetery—Cheltenham
Dept of Natural Resources Office
SURRATTS ROAD
ARYLAND
301
ALBERT
Wyvil Branch
WINDSC MANOF
Mataponi
Mataponi Creek
CROSSING ROAD
TREE
OLD INDIAN HEAD RD
EARLY MANOR
NORTH KEYS ROAD
NORTH KEYS ROAD
BRANDYWINE
Branduywine Co 40
THE VILLAGE
P491
'93-2

PG:86A-29
Cross Road Trail Bridge (#P-0491)
(Cross Road Trail over Mataponi Creek)
Brandywine Quadrangle



PG: 86A-29

1993 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION

BRIDGE NO. P491 - CROSS ROAD TRAIL OVER MATAPONI CREEK

1. EAST ELEVATION (DOWNSTREAM)

2. WEST ELEVATION (UPSTREAM)

PG: 86A-29

1993 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION

BRIDGE NO. P491 - CROSS ROAD TRAIL OVER MATAPONI CREEK

1. EAST ELEVATION (DOWNSTREAM)

2. WEST ELEVATION (UPSTREAM)

1993 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION

BRIDGE NO. P491 - CROSS ROAD TRAIL OVER MATAPONI CREEK

3. NORTH APPROACH (LOOKING SOUTH)

4. SOUTH APPROACH (LOOKING NORTH)

1993 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION

BRIDGE NO. P491 - CROSS ROAD TRAIL OVER MATAPONI CREEK

5. UPSTREAM (LOOKING WEST)
(NOTE: BRIDGE SHOWN IS NOT P491 BUT A PRIVATE STRUCTURE)

6. DOWNSTREAM (LOOKING EAST)

1993 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION

BRIDGE NO. P491 - CROSS ROAD TRAIL OVER MATAPONI CREEK

7. ARCH SOFFIT AND NORTH ABUTMENT - SPALLING OF SOFFIT AND SPANDREL WALL

8. ARCH SOFFIT & SPANDREL WALL (NORTHWEST) - SPALLING IN ARCH AND ABUTMENT

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1993 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION

BRIDGE NO. P491 - CROSS ROAD TRAIL OVER MATAPONI CREEK

9. WEST SPANDREL WALL & NORTH WEST WINGWALL - SPALLING IN SPANDREL WALL AND ABUTMENT

10. ARCH SOFFIT AND SOUTH ABUTMENT - SPALLING OF SOFFIT

1993 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION

BRIDGE NO. P491 - CROSS ROAD TRAIL OVER MATAPONI CREEK

11. CLOSE-UP OF SPALL IN PHOTO 10

12. WEST SPANDREL WALL (SOUTH END) - SPALLING AT SPANDREL WALL & ABUTMENT

1993 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION

BRIDGE NO. P491 - CROSS ROAD TRAIL OVER MATAPONI CREEK

13. ARCH SOFFIT EAST SIDE - SPALLING

14. ARCH AND NORTHEAST WINGWALL - DETERIORATED WINGWALL

1993 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION

BRIDGE NO. P491 - CROSS ROAD TRAIL OVER MATAPONI CREEK

13. ARCH SOFFIT EAST SIDE - SPALLING

14. ARCH AND NORTHEAST WINGWALL - DETERIORATED WINGWALL

1993 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION

BRIDGE NO. P491 - CROSS ROAD TRAIL OVER MATAPONI CREEK

15. ARCH SPANDREL WALL AT SOUTHEAST WINGWALL - SPALLING OF SPANDREL

16. DECK SLAB AND APPROACH PAVEMENT (NORTH) - DECK SLAB AND APPROACH SETTLEMENT