

Maryland Historical Trust

Maryland Inventory of Historic Properties number: QA-493

Name: 17034/MD 405 OVER GERMAN FRANCH

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 <u> X </u>	Eligibility Not Recommended <u> </u>
Criteria: <u> A </u> <u> B </u> <u> C </u> <u> D </u>	Considerations: <u> A </u> <u> B </u> <u> C </u> <u> D </u> <u> E </u> <u> F </u> <u> G </u> <u>None</u>
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. QA-493

SHA Bridge No. 17034 Bridge name MD 405 over German Branch

LOCATION:

Street/Road name and number [facility carried] MD 405 (Price Station Road)

City/town Price Vicinity X

County Queen Anne's

This bridge projects over: Road Railway Water Land

Ownership: State County Municipal Other

HISTORIC STATUS:

Is the bridge located within a designated historic district? Yes No

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 :

Concrete Arch Concrete Slab Concrete Beam Rigid Frame

Other Type Name _____

DESCRIPTION:

Setting: Urban _____ Small town _____ Rural X _____

Describe Setting:

Bridge No. 17034 carries MD 405 (Price Station Road) over German Branch in Queen Anne's County. MD 405 runs east-west and German Branch flows north-south. The bridge is located in the vicinity of Price, and is surrounded by woods and farmland.

Describe Superstructure and Substructure:

Bridge No. 17034 is a 2-span, 2-lane, concrete slab bridge. The bridge was originally built in 1931. The structure is 40 feet long and has a clear roadway width of 28 feet. The out-to-out width is 32 feet. The concrete slab is 2 feet, 3 inches thick, and it has a bituminous wearing surface. The structure has pierced, concrete parapets and the roadway approaches have steel guard rails. The substructure consists of two (2) concrete abutments, and one (1) concrete, intermediate pier at mid-length, and there are flared, concrete wing walls. The bridge is posted for 58,000 gross vehicle weight, and has a sufficiency rating of 51.7.

According to the 1996 inspection report, this structure is in poor condition. The concrete slab has patches and small potholes and the bituminous surface has transverse, map, longitudinal, and alligator cracking. The concrete abutments, pier, and wing walls have major gunnite repair with spalling and cracking and erosion at the water line. The parapet wall has vertical and map cracking with light to moderate scale. There are some areas of spalling and a small area with exposed reinforcing bars.

Discuss Major Alterations:

At an unknown date, repairs were made to the abutments, pier and wing walls with gunnite. The structure has had no major alterations.

HISTORY:

WHEN was the bridge built: 1931 _____

This date is: Actual X _____ Estimated _____

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

Other (specify): State Highway Administration bridge files/inspection form

WHY was the bridge built?

The bridge was constructed in response to the need for a more efficient transportation network and increased load capacity.

WHO was the designer?

Unknown

WHO was the builder?

Unknown

WHY was the bridge altered?

N/A

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

There is no evidence that the bridge was built as part of an organized bridge building campaign.

SURVEYOR/HISTORIAN ANALYSIS:

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

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

The bridge is eligible for the National Register of Historic Places under Criterion C, as a significant example of concrete slab construction. The structure has a high degree of integrity and retains such character-defining elements of the type as the concrete slab, integral parapets, abutments, pier, and wing walls.

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 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.

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 away 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.

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.

In 1933, a new set of standard plans were introduced by the State Roads Commission. 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 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 capacity.

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 had a significant impact on the growth and development 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 the historic/visual character of the potential district?

The bridge is located in an area which does not appear to be eligible for historic designation.

Is the bridge a significant example of its type?

The bridge is a potentially significant example of a concrete slab bridge, possessing a high degree of integrity.

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

The bridge retains the character-defining elements of its type, as defined by the Statewide Historic Bridge Context, including the concrete slab, parapets, abutments, wing walls, and pier.

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

This bridge is not a significant example of the work of a manufacturer, designer, and/or engineer.

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

No further study of this bridge is required to evaluate its significance.

BIBLIOGRAPHY:

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

Ketchum, Milo S.

1908 *The Design of Highway Bridges and the Calculation of Stresses in Bridge Trusses.* The Engineering News Publishing Co., New York.

1920 *The Design of Highway Bridges of Steel, Timber and Concrete*. Second edition. McGraw-Hill Book Company, New York.

Lay, Maxwell Gordon

1992 *Ways of the World: A History of the World's Roads and of the Vehicles That Used Them*. Rutgers University Press, New Brunswick, New Jersey.

Maryland State Roads Commission

1930a *Report of the State Roads Commission for the Years 1927, 1928, 1929 and 1930*. State of Maryland, State Roads Commission, Baltimore.

1930b *Standard Plans*. State of Maryland, State Roads Commission, Baltimore.

Taylor, Frederick W., Sanford E. Thompson, and Edward Smulski

1939 *Reinforced-Concrete Bridges with Formulas Applicable to Structural Steel and Concrete*. John Wiley & Sons, Inc., New York.

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 2/25/97

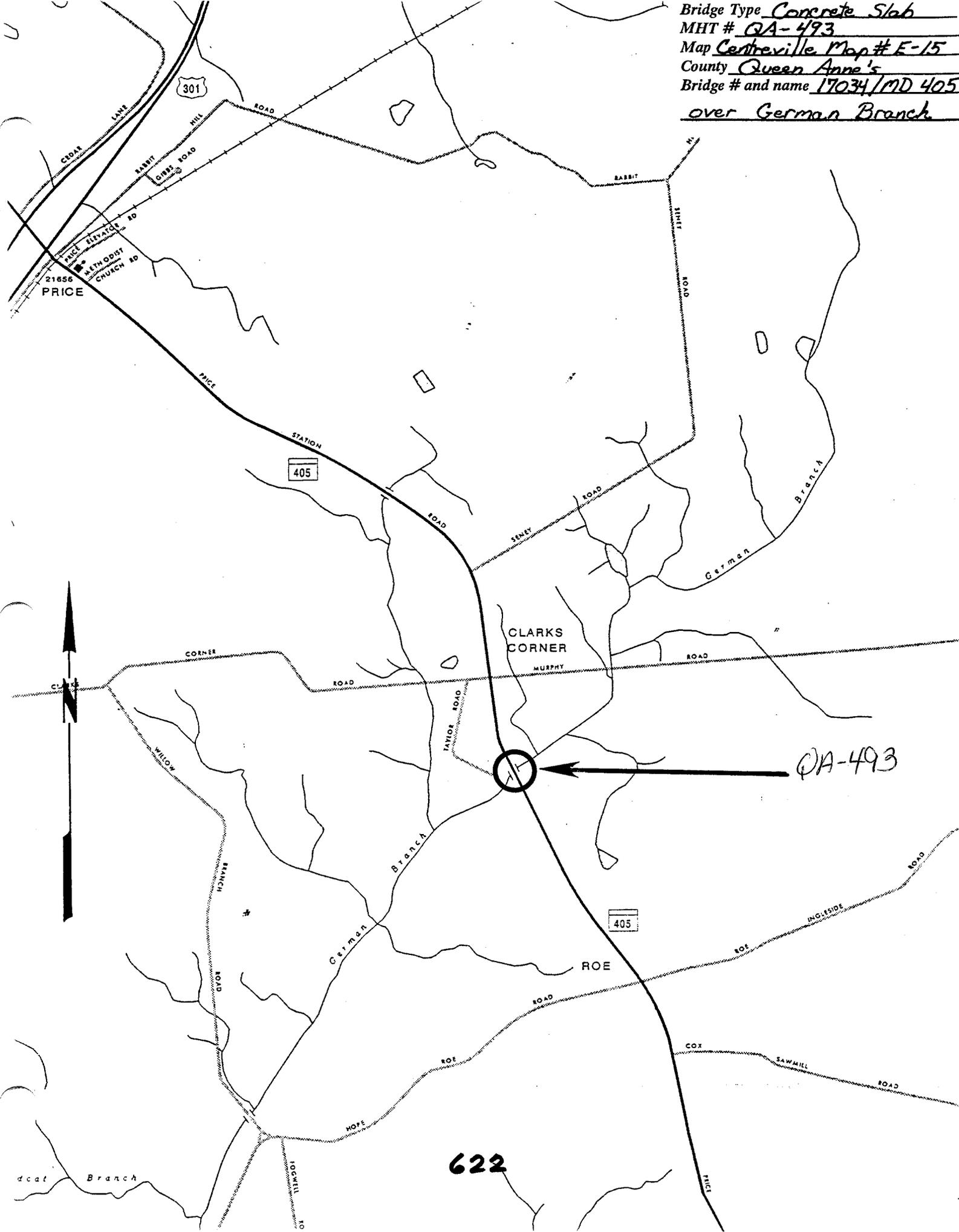
Name of surveyor Caroline Hall

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

Phone number (410) 296-1685

FAX number (410) 296-1670

Bridge Type Concrete Slab
MHT # QA-493
Map Centreville Map # E-15
County Queen Anne's
Bridge # and name 17034/MD 405
over German Branch



QA-493

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TRUCK LIMIT 25	WHEEL LIMIT 580 GVW
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1. QA-493
2. MD 405 over German Branch (17034)
3. Queen Anne Co, Md.
4. Caroline Hall
5. 3/97
6. MDSHIPO
7. roadway approach
8. 1 of 6



1. QA-493
2. MD 405 over German Branch (17034)
3. Queen Anne Co., Md
4. Caroline Hall
5. 3/97
6. MDSHPD
7. roadway approach
8. 2 of 6



1. CA-493
2. MD 405 over German Branch (17034)
3. Queen Anne Co., Md.
4. Caroline Hall
5. 3/97
6. MIDSHPO
7. west side
8. 3 of 6



1. QH-493
2. MD 405 over German Branch (17034)
3. Queen Anne Co., Md
4. Caroline Hall
5. 3/97
6. MDSHPO
7. east side
8. 4 of 6



1. QA-493
2. MD 405 over German Branch (17034)
3. Queen Anne Co., Md.
4. Caroline Hall
5. 3/97
6. MDSHPO
7. detail of substructure
8. 5 of 6



1. QA-493
2. MD 405 over Geiman Branch (17034)
3. Queen Anne Co., Md.
4. Caroline Hall
5. 3/97
6. MDSHPO
7. detail of parapet wall
8. 6 of 6

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

Property/District Name: Bridge 17034, MD 405 over German Branch Survey Number: QA-493

Project: Repair of Bridge 17034, Queen Anne's County Agency: SHA

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

Eligibility recommended _____ Eligibility not recommended

Criteria: A B C D Considerations: A B C D E F G None

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

Based on information provided by SHA, Bridge 17034 does not meet the National Register Criteria for individual listing. The 1931 two span concrete slab bridge is one of approximately 120 concrete girder bridges extant on Maryland's highways which were constructed in or before 1931. The bridge was built to a standard design, is not known to possess any engineering significance or to be associated with any significant event or person. In addition, it is not located in any known historic district.

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

Prepared by: Rita Suffness

Elizabeth Hannold December 18, 1993
Reviewer, Office of Preservation Services Date

NR program concurrence: yes no not applicable
R. Anderson 12-21-93
Reviewer, NR program Date

Survey No. QA-493

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

V. Resource Type:

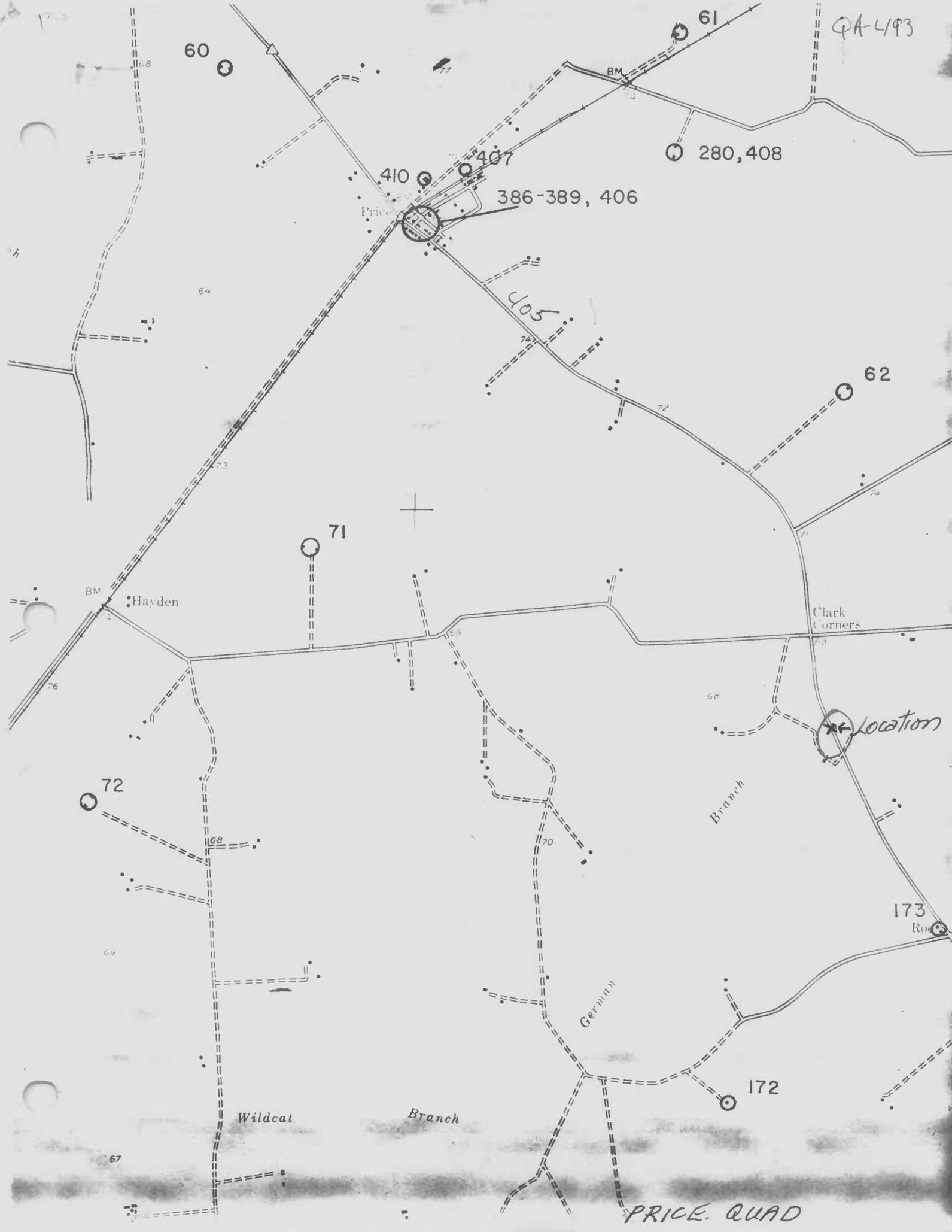
Category: Structure

Historic Environment: Rural

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

Known Design Source: NA

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BRIDGE No. 17034

QA-493

Md. 405 over German Branch
upstream elevation

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Bridge No. 17034

QA-493

Md. 405 over German Branch

downstream elevation