

FULL DOCUMENTATION SUPPORT FOR  
A DETERMINATION OF NO ADVERSE EFFECT

Submitted Pursuant to  
36 CFR Part 800.5(d)(1)(ii)  
and in accordance 36 CFR Part 800.8(a)

for

Rehabilitation of State Bridge Number 69  
Adams Dam Road (N232) over Wilson Run  
Rockland, New Castle County, Delaware

State Contract No. 97-071-01  
Federal Aid No. EBROS-N232(1)

Prepared by: Michael C. Hahn, AICP  
Delaware Department of Transportation  
Environmental Studies Section

Prepared  
for  
Federal Highway Administration

November 1997

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### REFERENCES CITED

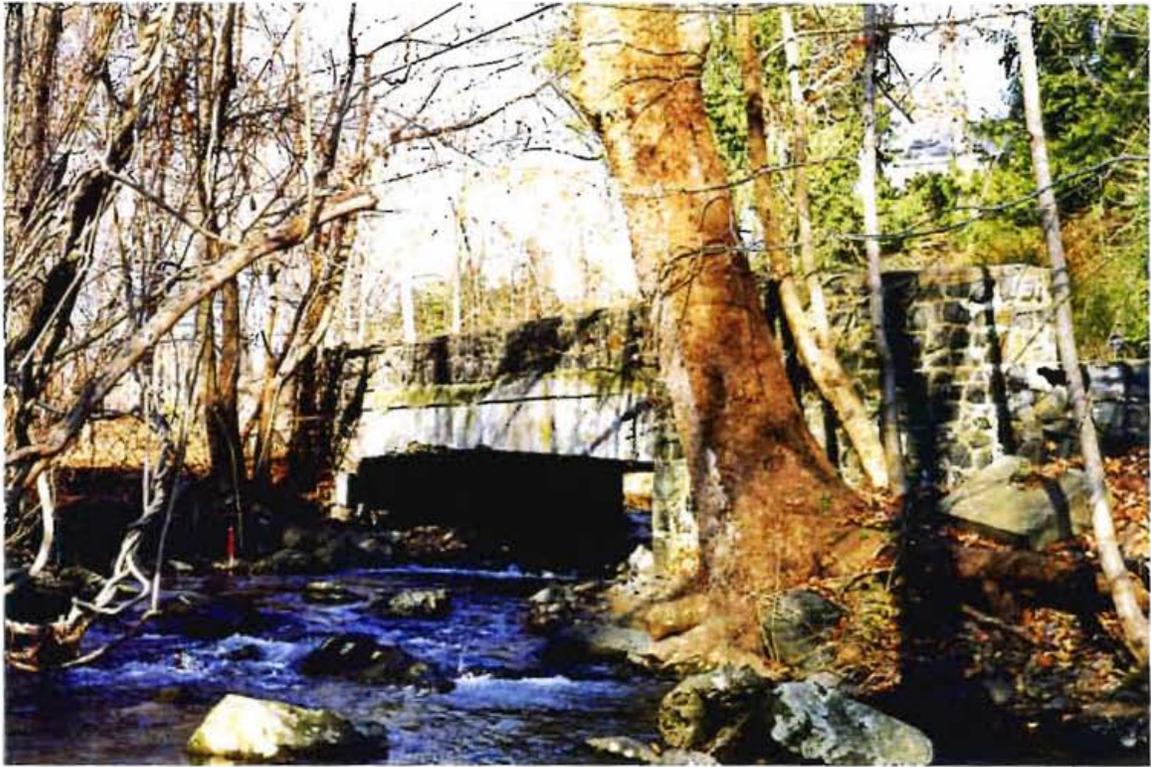
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Bridge 1-69 along Adams Dam Road looking northwest



Bridge 1-69 along Adams Dam Road looking southeast



Bridge 1-69 looking north



Bridge 1-69 looking south

## I. INTRODUCTION

The proposed undertaking is the rehabilitation by partial replacement of State Bridge Number 69. The structure is a small single span bridge that carries Adams Dam Road (N232) over Wilson Run. The project is located north of Wilmington (in Rockland), New Castle County, Delaware. The attached photographs and location map illustrate the project and location area of potential effect.

The Federal Highway Administration is the lead federal agency involved with this project. As such, the project is as follows:

The project involves minor rehabilitation and partial replacement of the bridge deck and superstructure in order to maintain a safe and adequate crossing for vehicles, bicyclists, and pedestrians. The scope of work is based on bridge inspection reports, test boarings of the deck, and professional and structural and engineering assessments.

## II. DESCRIPTION OF PROPOSED UNDERTAKING

State Bridge No. 69 is an concrete girder bridge with a single span of 35'-6" (10.82 meters)(maximum). The 1934 bridge is built with a dangerous 30 degree skew. The bridge travel way carries two lanes of vehicular traffic. Because of the skew, the 20' (6.09 meters) deck varies in overall travel width. The bridge characterizes no shoulder, off-set, guardrail, or sidewalk area. The project is also characterized by steep slopes, wooded areas, and surrounding residential homes. The Bandywine Creek State Park is immediately north and nearly adjacent to the bridge location.

The structure consists of 16" X 24" (40.64 cm X 60.96 cm) rectangular concrete beams supported by random rubble abutments with U-shaped random rubble wing walls. The parapet walls are constructed with random rubble with a center section that is characterized by pointed arched openings. The parapets are also topped with peaked copings and are framed by raised end posts with pyramidal caps. The matching wing walls extend up the parapet height. The concrete fascia has a single scored horizontal line and is shaped as a shallow segmental arch.

Structurally the concrete deck is severely spalling, cracking, flaking, and rusting. Bridge inspection reports document that the superstructure is in poor condition with heavy cracking and leaching of the deck. Concrete beams, specifically the fascias, are deteriorated beyond any type of structural or cosmetic repair. The concrete deck underneath is also severely spalling. There is loss of mortar from various stone masonry work. There is evidence of scouring at the abutments which are within and along the stream channel.

Rehabilitation plans call for the replacement of the superstructure (i.e. deck and supporting beams, and parapets (just on the deck). Settlement/cracking and voids in the

abutment walls will also be addressed, where warranted, by repointing and remortar.

Where necessary, stone masonry within other abutment walls and parapets shall be repointed. Areas that have been subject to impact damage or voids will be repaired in-kind, too. All re-mortaring and stone shall be arranged to match existing designs, strength, composition, color, and texture. Mortar joint widths and joint profiles shall also be duplicated. In performing some of these operations, all removed stone and cracking mortar shall be removed by selected hand tools.

The new reinforced concrete deck will be supported by new reinforced concrete I-beams (not steel-encased concrete beams) that will lie on partially rebuilt abutment walls. The rebuilt parapets on the new deck will have a solid stone facing, as opposed to open sections. Concrete capping design for rebuilt parapet walls will be replicated to original design and configuration.

Other incidental work shall involve relocation of several utility poles. However, this work shall be accomplished and undertaken by others. This requires most, if not all, new right-of-way strips in the project area. This work will be limited to tree branch cutting, tree and/or rock clearance.

Minor right-of-way is also needed to perform the necessary work in order for DelDOT/FHA to repair and maintain Wilson Run's retaining wall to channel stream flow. However, no earth movement or ground disturbance (offsite/adjacent) will occur as rehabilitation is limited to on-deck roadway or minor river bank/wall areas which have already been heavily disturbed, cut, flooded, and/or cleared.

The only altered cosmetic feature of the bridge will be the complete stone facing of the parapets. Specifically, there will be no pointed arched openings of the deck's parapets. This is due to modern safety, design, and long-term maintenance reasons that determined the incorporation of arched openings were not ideal in this location.

However, when complete, the necessary work will safeguard the structural, load, design, and carrying capacity while avoiding any type of major bridge replacement that would significantly affect the entire aesthetic or engineering details of the bridge. The much needed rehabilitation will also assure a safe and convenient passage for vehicles as well as pedestrians, recreationists, and nearby transit users.

By providing the necessary rehabilitation, the remaining historic, architectural/engineering details, design, and materials will be enhanced and preserved for continual function. If repairs are not initiated soon, the deck and structural loads will deteriorate until bridge closure or failure.

Except for the differences in parapet facing, the project is considered to be a cosmetic and structural rehabilitation. Overall, the bridge will not be undertaking

significant functional, and/or aesthetic changes.

### III. IDENTIFICATION AND DESCRIPTION OF HISTORIC PROPERTIES

As per 800.8(a)(3), efforts to identify historic properties included project initiation, consultation, and numerous scoping meetings with the DE SHPO. As a result, DelDOT and DE SHPO not only identified State Bridge No. 69 as being an individual historic structure, but identified the project area as lying within the Rockland Historic District.

The significance of the bridge lies in the fact that the bridge is a concrete girder with stone ornamentation. Survey results indicate that this masonry ornamentation of the concrete girder type was built only in New Castle County (for Delaware bridges), apparently in response to the picturesque surroundings characteristic of the area and perhaps to evoke historical associations with the turnpike era of the nineteenth century, when toll roads radiating around Wilmington, DE were carried on masonry structures. Several similarly embellished bridges were built by the Levy Court of New Castle County in the early 1930's; upon taking over responsibility for all road and bridge construction throughout the state in 1935, the State Highway Department continued the practice. Bridge Engineer A.G. Livingston of the State Highway Department was a champion of these stone-faced bridge, which were built in wooded, often park like settings; Livingston's notes and other documents indicate his strong feeling that a structure's surroundings should influence its form, and that the stone masonry was an appropriate response to the landscape of upper New Castle County. Notes on the drawing for State Bridge No. 70, another masonry embellished steel girder bridge constructed in the area in 1934, provide insight into the inspiration for this treatment: "the site shows exposed rock thickly located around the entire vicinity; construction should conform as closely as possible to the surrounding county." The embellishment of State Bridge No. 69 is also similar to State Bridge No. 70, constructed nearby in the same year. This bridge is also an unusually embellished example of the common concrete girder bridge type. Appendix A summarizes this historic significance.

As a result of the Delaware Historic Bridge Survey and Evaluation, conducted in 1988, State Bridge No. 257 was considered individually eligible for the National Register of Historic Places under Criteria C.

The project limits for State Bridge No. 69 also lie within the Rockland Historic District. This District was originally added to the National Register of Historic Places in February 1972, but the nomination is incomplete by present standards. Boundary limits are vague and property descriptions are inconsistent. In 1991, there was a proposed amendment to the nomination. However, the proposed amendment nomination has not been reviewed by the Delaware Review Board for Historic Preservation or been accepted/recognized by the DE SHPO. Nevertheless, with both the original and proposed nominations, the project area for State Bridge No. 69 remains within the boundary limits.

The Rockland Historic District represented one of the earliest and longest functioning mill areas of along the Brandywine Creek. John Gregg and Adam Kirk had a grist mill on the west bank of the Brandywine Creek in 1724. Starting with the smaller tributary's water power used in the 18th century for mills that were family run for local needs, it progressed to the 19th century mills using the full river's power and meeting the demands of a national market. The first fulling mill of Delaware was built in the Rockland Historic District in 1733, and in the early 1800's the stone mill that stands on the West bank housed some of the earliest cotton-spinning machinery in the US.

Within the Rockland Historic District, little remains from its first stages of industrial development except ruins. Rockland followed a typical village pattern of continued adaption, change, and abandonment in response (or as a result) to market demands, technology, and transportation advances. The layout of Rockland is essentially a series of roads converging at the Brandywine Creek with a large mill at the center. The extant structures are only a fragment of the once larger mill village and date in large part from the second half of the nineteenth century. Yet the vernacular nature of the remaining extant structures, show a continued use of forms established in the eighteenth century, giving somewhat deceivingly early appearance. It is this continuity of layout (mills along a creek and linear development along the roads) and the use of traditional building materials and forms which give the Rockland Historic District its historical association and place among the industries along the Brandywine Creek.

There have been changes to the Historic District since it was originally nominated. Condominiums have been built next to the main Mill pond, and presently there are plans for more to be built (not near the project area, but within the District). The majority of industrial buildings have been demolished as well. Characteristics of the Rockland Historic District were documented in the 1972 nomination and the 1991 revised nomination (Appendix B). The District was found (or is considered) significant under Criterion A and C, industry and architecture.

#### IV. SUPPORT FOR A DETERMINATION OF NO ADVERSE EFFECT

Due to the proposed rehabilitation plans of State Bridge No. 69, the FHWA undertaking has an effect as defined under 36 CFR Part 800.9(a). However, this effect is not considered adverse.

As defined under 36 CFR 800.9(b), Criterion 1, the proposed undertaking may have an effect upon State Bridge No. 69, in that rehabilitation of the bridge may alter characteristics which may qualify the property of inclusion in the National Register of Historic Places. However, the proposed undertaking meets the exceptions to the Criteria of Adverse Effect.

As defined at 36 CFR 800.9(b), Criterion 1, the proposed undertaking will have an effect upon State Bridge No. 69, and the Rockland Historic District in that rehabilitation of

the bridge and removal and replacement of the entire deck alters characteristics which may qualify the property and District for inclusion in the National register of Historic Places. However, the proposed undertaking meets the exceptions to the Criteria of Adverse Effect. With respect to 36 CFR 800.9(c)(1), the values possessed by the deck configuration type can be substantially preserved through completion of appropriate research (in this instance, documentation to the standards of the Historic American Buildings Survey/Historic American Engineering Record). With this, the National Park Service has already been contacted in reference to the appropriate research and all procedures will be administered.

The remaining criteria of adverse effect under 36 CFR 800.9(a) do not apply. Under Criterion 2, the proposed work will not result in the isolation of the property or alteration of the character of its setting. This also includes the District.

Under Criterion 3, the project will not introduce visual, audible or atmospheric elements that are out of character with the property. This also includes the Rockland Historic District.

The proposed work will not perpetuate deterioration of the bridge or District under Criterion 4.

Under Criterion 5, the proposed work will not result in the transfer, lease or sale of the property or District.

The newly introduced feature, the stone facing of the replaced parapet walls is aesthetically pleasing and will not detract from the historic integrity of the bridge or District. In effect, the stone facing will nearly duplicate existing configurations, except for the openings. The stone shall match size and configuration.

In terms of other conditional measures, excess soils and construction debris will be disposed in a manor that will not disturb or potentially destroy any potential archaeological sites. An approved disposal site will be coordinated jointly between the DE SHPO and DeDOT. DeDOT does not object to this minor condition since it is regular contract stipulation within most of its federalized projects.

Based on the foregoing analysis and attached information, it is our opinion that State Bridge No. 69, a structure considered eligible for the National Register of Historic Places, will suffer no adverse effect as a result of the proposed rehabilitation work. In addition the Rockland Historic District will suffer no adverse effect, too.

#### V. DELAWARE STATE HISTORIC PRESERVATION OFFICE (DE SHPO) VIEWS AND OTHER INTERESTED PARTIES

Copies of various meeting/scoping minutes, the project initiation with the DE SHPO, and a public workshop notification, demonstrate government and public

involvement with an outreach program regarding this Determination of No Adverse Effect. These copies are attached.

At the public workshop, no historic preservation concerns or objections were raised. The only issue mentioned at the public workshop was the continued incorporation of a stone facing within the parapet walls, rather than the selection of solid concrete.

There has been no comments or concerns expressed with any of the other identified historic resource in the area with respect to the proposed rehabilitation work. There are no historical societies or interested persons within the project's region and state that have expressed concern for the proposed undertaking. In all, interested parties and the general public seem satisfied with the project.

#### REFERENCES CITED

P.A.C. Spero & Company

1991 *Delaware Historic Bridges: Survey and Evaluation*. DelDOT Historic Architecture and Engineering Series No. 89. Delaware Department of Transportation, Dover, Delaware.



Delaware Department of Transportation  
**Anne P. Canby**  
**Secretary**

RECEIVED

JUN 11 1997

DEPT. OF TRANSPORTATION  
DESIGN

PUBLIC WORKSHOP  
BRIDGE 69 on Adams Dam Road  
(N232) over Wilson Run  
CONTRACT #97-071-01

The Delaware Department of Transportation (DelDOT) announces a public workshop for the proposed superstructure replacement of Bridge 69 on Adams Dam Road (N232) over Wilson Run, New Castle County. The meeting will be held on June 24, 1997 between the hours of 4:00pm and 8:00pm at the Brandywine Creek State Park, Park Office & Nature Center, Adams Dam Rd., Wilmington, DE.

The proposed work includes the replacement of existing beams with pre-cast prestressed box beams. Existing stone parapet will be replaced with concrete cored stone faced parapet.

Interested persons are invited to express their views in writing, giving reasons for support of, or opposition to the proposed. Comments will be received on site or can be mailed to DelDOT's External Affairs Office, P.O. Box 778, Dover, DE 19903. If requested in advance, DelDOT will make available the services of an interpreter for the hearing impaired. If an interpreter is desired, please make the request by phone or mail.

For further information contact the Office of External Affairs at 1-800-652-5600 (in DE) or 302-739-4313 or write to the Office of External Affairs at the above address.

**PUBLIC NOTICE**

September 12, 1997

302/739-4644

Ms. Joan Larrivee, Deputy Director  
State Historic Preservation Office  
15 The Green  
Dover, DE 19901

**RE: BR 1-69, Semi-final plans  
Determination Level; Project initiation  
State Contract No. 97-071-01; Federal Aid Project Number: EBROS-N232(1)**

Dear Ms. Larrivee:

Submitted for your review and initiation last week were the semi-final plans for the above referenced project. Your staff has already been involved in scoping meetings and review with this historic bridge project. As a federal undertaking, our Department has reviewed the project plans and proposals. DeIDOT via FHWA is establishing project initiation with your office. However, we are hesitant in determining effect levels with your office and prefer a joint consultation for the appropriate course of action. During our bi-weekly meeting of September 24, 1997 please be prepared to discuss plans and effect determination levels for the bridge, project area (Rockland Mills Historic District), and potential archaeological site. Thanks for your professional time and judgement.

If there are any questions on this, please contact Michael Hahn of my staff.

Very truly yours,  
OFFICE OF PLANNING

Joseph T. Wutka, Jr.  
Assistant Director of Planning

JTW/mh

cc: Robert Kleinburd, FHWA, Reality Officer  
Raymond Harbeson, Chief Engineer  
Eugene Abbott, Director of Planning  
Chao Hu, Deputy Director of Preconstruction  
Muhammad Chaudhri, Bridge Design Engineer  
Therese Fulmer, Manager, Environmental Studies

APPENDIX A

HABS/HAER Inventory Card for Bridge 69

# HABS/HAER INVENTORY

See "HABS/HAER Inventory Guidelines" before filling out this card.

## 1. NAME(S) OF STRUCTURE

State Bridge Number 69

## 2. LOCATION

Adams Dam Road over Waterway  
Tavistock, New Castle County, Delaware

## 3. DATE(S) OF CONSTRUCTION

1934

## 4. USE (ORIGINAL/CURRENT)

Vehicular

## 5. RATING

CG

## 6. CONDITION

Good

State Highway Bridge 69 is a concrete girder bridge with a single span of 35'-6" (maximum). It is built on approximately a 30 degree skew. It is 40'-0" wide (at widest point) and carries two lanes of traffic. The structure consists of 16" x 24" rectangular concrete beams supported by random rubble abutments with U-shaped random rubble wing walls. The parapet is also constructed with random rubble. It consists of a center balustrade with pointed arch openings, topped with peaked coping and framed by raised end posts with pyramidal caps. The wing walls extend to parapet height. The concrete fascia has a single scored horizontal line and is shaped as a shallow segmental arch.

Delaware Department of Transportation records include drawings dated December 8, 1933 documenting the configuration and construction details of this structure. These drawings, prepared for the Levy Court by the Office of the County Engineer, indicate the scheme for placement of reinforcing steel within the concrete core of the masonry-faced bridge. Photo archive records at Delaware Department of Transportation confirm that the bridge was constructed in 1934, replacing an earlier steel pony truss bridge on rubble masonry abutments.

State Bridge Number 69 is a concrete girder bridge with stone ornamentation. Survey results indicate that this masonry ornamentation of the concrete girder bridge type was built only in New Castle County, apparently in response to the picturesque surroundings characteristic of the area and perhaps to evoke historical associations with the turnpike era of the nineteenth century, when toll roads radiating around Wilmington were carried on masonry structures. Several similarly embellished bridges were built by the Levy Court of New Castle County in the early 1930's; upon taking over responsibility for all road and bridge construction throughout the state in 1935, the State Highway Department continued the practice. Bridge Engineer A. G. Livingston of the State Highway Department was a champion of these stone-faced bridges, which were built in wooded, often parklike settings; Livingston's notes and other documents indicate his strong feeling that a structure's surroundings should influence its form, and that the stone masonry was an appropriate response to the landscape of upper New Castle County. Notes on the drawings for Bridge 543, a masonry-embellished steel girder bridge constructed in the area in 1934, provide insight into the inspiration for this treatment: "the site shows exposed rock thickly located around the entire vicinity; construction should conform as closely as possible to the surrounding country." The embellishment of Bridge 69 is similar to that of Bridge 70, constructed nearby in the same year. This bridge is an unusually embellished example of the common concrete girder bridge type.

7. DESCRIPTION

8. HISTORICAL DATA

9. SIGNIFICANCE

10. NAME(S) OF STRUCTURE

State Bridge Number 69

11. PHOTOS (W/ FILM ROLL & FRAME NO.) AND SKETCH MAP OF LOCATION

43B:28A-36A



43B:28A

Mack, Warren W. "A History of Motor Highways in Delaware", in Reed, Henry Clay, Delaware: A History of the First State, vol.2, pp.535-550 (NY: Lewis Historical Publishing Co., 1947).

Delaware State Program. Delaware State Highways; The Story of Roads in Delaware... [Newark, Delaware: Press of Kells, 1919].

Federal Writers' Project. Delaware: A Guide to the First State. (New York: Viking Press, 1938).

Delaware State Archives. State of Delaware, New Castle County Levy Court, Specifications, Proposals, Contract and Bond. ms., State Archives, Dover, DE.

Delaware State Archives. New Castle County Road Commissioners Papers, various years 1750-1940, ms. State Archives, Dover, Delaware.

Delaware DOT records: photo archives, contract files

Plans on file at Delaware DOT: Contract #BNC-73

13. INVENTORIED BY:

AFFILIATION

DATE

P.A.C. Spero & Company with Kidde Consultants for Delaware DOT

April-November 1988

APPENDIX B

Rockland Historic District Nomination Form

APPENDIX C

Letter of Comment from DE SHPO



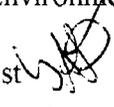
STATE OF DELAWARE  
DEPARTMENT OF STATE  
DIVISION OF HISTORICAL AND CULTURAL AFFAIRS  
HISTORIC PRESERVATION OFFICE  
15 THE GREEN  
DOVER • DE • 19901-3611

TELEPHONE: (302) 739 - 5685

FAX: (302) 739 - 5660

January 26, 1998

**MEMORANDUM TO:** Therese M. Fulmer, Manager, Environmental Studies, DelDOT

**FROM:** Gwenyth A. Davis, Archaeologist 

**SUBJECT:** Rehabilitation of Bridge 1-69 (carrying Adams Dam Rd./Wilson Run) project; Rockland, New Castle County; State Contract No. 97-071-01; Federal Aid Project Number EBROS-N232(1); No Adverse Effect Determination

Attached please find a copy of the DE SHPO's concurrence with the No Adverse Effect determination concerning the above-referenced project. Fairly standard conditions are placed on this concurrence, with modifications due to the National Park Service's change in policy regarding HAER recordation. If DelDOT has any objections to these conditions, please notify us as soon as possible.

I have also looked over the NAE documentation itself, and find it complete and in keeping with our previous conversations about the project design. The only question I had about the plans concerns item 15 in the Project Notes (Sheet 3). Is an anti-graffiti coating really necessary here? We would prefer that this item be deleted from the contract. Minimally, you should avoid using a glossy type of coating (e.g., as employed at the Routes 92 & 100 project).

Thank you for your consideration of these comments. If you have any questions, please do not hesitate to call me.

Enclosure

cc: Joseph Wutka, Asst. Director of Planning, DelDOT  
Michael C. Hahn, Senior Highway Planner, DelDOT



STATE OF DELAWARE  
DEPARTMENT OF STATE  
DIVISION OF HISTORICAL AND CULTURAL AFFAIRS  
HISTORIC PRESERVATION OFFICE  
15 THE GREEN

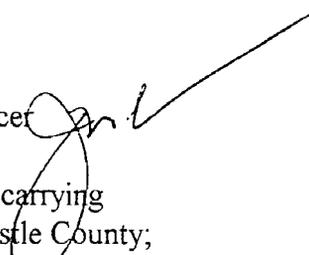
TELEPHONE: (302) 739-5685

DOVER • DE • 19901-3611

FAX: (302) 739-5660

January 26, 1998

**MEMORANDUM TO:** Joseph T. Wutka, Assistant Director, Planning, DelDOT

**FROM:** Joan N. Larrivee, Deputy State Historic Preservation Officer 

**SUBJECT:** Effect on Resources of the Rehabilitation of Bridge 1-69 (carrying Adams Dam Rd./Wilson Run) project; Rockland, New Castle County; State Contract Number 97-071-01; Federal Aid Project Number EBROS-N232(1)

In accordance with the Advisory Council's regulations (36 CFR 800.9) and in consultation with the DE SHPO, the Federal Highway Administration (FHWA), through its designee, the Delaware Department of Transportation (DelDOT), has applied the Criteria of Effect and Adverse Effect to those properties within the above-referenced project area which are eligible for, or listed in, the National Register of Historic Places. These properties are: Bridge 1-69, and the Rockland Historic District. The FHWA has determined that the project will have No Adverse Effect on these historic properties.

We have reviewed DelDOT's Documentation of No Adverse Effect, which describes the reasons for making this determination, and we concur with the findings contained therein. This concurrence is conditioned on the following:

1. DelDOT has submitted to the DE SHPO photographic and historical documentation of the Bridge, in keeping with the guidelines of HAER; the DE SHPO will provide comments on the documentation package within 30 days of the receipt date (i.e., on or before February 19, 1998); if the DE SHPO requires no further photographic work, the project may proceed; if the DE SHPO determines that additional photographic work is necessary, DelDOT will ensure that this work is completed prior to beginning construction on the Bridge;
2. DelDOT will provide the DE SHPO with an opportunity to review and comment on the materials and methods employed for the stone facing and repointing work on the bridge;
3. DelDOT will notify the DE SHPO of any significant changes to the project methods, materials or design, particularly affecting more visible areas of the bridge (i.e., decorative details), and allow the DE SHPO sufficient time to comment prior to implementing such changes; and

Memorandum to J. Wutka  
January 26, 1998  
Page 2

4. DelDOT will instruct its contractor to provide, through the DelDOT District office, the DE SHPO with location information on proposed disposal site(s) for project-related materials, and to cooperate with SHPO staff if on-site inspection of disposal locations is necessary, prior to using such locations.

FHWA may submit this letter to the Advisory Council with the appropriate documentation, pursuant to 36 CFR 800.5(d)(1)(i) and in accordance with 36 CFR 800.8(a)(5). Thank you for your cooperation concerning this historic property. If you have any questions, please do not hesitate to call.

cc: Robert Kleinburd, Federal Highway Administration  
Laurie Mutz, Philadelphia District, U.S. Army Corps of Engineers  
Michael C. Hahn, Sr. Highway Planner, DelDOT  
Valerie Cesna, Preservation Planner, New Castle Co. Dept. of Land Use  
Jennifer Lukens, Coastal Zone Management Program, DNREC  
Laura Herr, Wetland and Aquatic Protection Branch, DNREC

*Serry Fulmer, DelDOT-Planning*

HISTORIC AMERICAN ENGINEERING RECORD  
STATE BRIDGE NO. 69

HAER No. DE-

**LOCATION:** Adams Dam Road (Road 232), spanning Wilson Run, Rockland vicinity, Christiana Hundred, New Castle County, Delaware

USGS *Wilmington North, DE-PA* Quadrangle  
UTM Coordinates: 18.450640.440550C

**DATE OF CONSTRUCTION:** 1934

**BUILDER:** New Castle County

**PRESENT OWNER:** Delaware Department of Transportation

**PRESENT USE:** Highway bridge

**SIGNIFICANCE:** Embellished with a stone parapet pierced by pointed-arch openings as well as stone wing walls, State Bridge No. 69 is an unusually decorative representative of the common concrete-girder bridge type. Random rubble stone masonry was characteristic of northern New Castle County's bridges as well as the area's rural dwellings, mills, and barns. County engineers designed and built many bridges in this area during the early 1930s, with the intention of making the spans picturesquely evocative of the county's traditional architectural landscape. State Bridge No. 69 is also a contributing resource within the Rockland Historic District, a National Register of Historic Places (NRHP)-listed district representing an eighteenth- and nineteenth-century mill community.

**PROJECT INFORMATION:** A November 1996 evaluation of State Bridge No. 69 resulted in a recommendation of replacement or rehabilitation. This recordation project was undertaken pursuant to an agreement between the Delaware Department of Transportation (DelDOT) and the Delaware State Historic Preservation Office. State Bridge No. 69 was recorded in December 1997 by the Cultural Resource

STATE BRIDGE NO. 69  
HAER No. DE-  
(Page 2)

Group, Louis Berger & Associates, Inc., East Orange, New Jersey, for DelDOT. Photography was performed by Rob Tucher, Senior Photographer. Research was conducted by Philip E. Pendleton, Architectural Historian.

## **DESCRIPTION**

Built in 1934, State Bridge No. 69 is a single-span concrete-girder bridge constructed on abutments of random rubble stone masonry with U-shaped random rubble wing walls. Located in Christiana Hundred in New Castle County, the bridge carries Adams Dam Road (Road 232) over Wilson Run, a tributary stream flowing into Brandywine Creek. The bridge's larger environment is suburban in character, with a relatively low density of residential and historic industrial buildings. The near presence of a large county park extending northward along Brandywine Creek confers a sense of rural landscape. The immediate setting of the bridge is thickly wooded, with a mansion-like residential property just up the slope to the north but screened by trees. Nearby, across Brandywine Creek from State Bridge No. 69, is the Rockland Mills complex, a historic textile-milling establishment that has been rehabilitated as an office park. State Bridge No. 69 is a contributing structure within the NRHP-listed Rockland Historic District.

State Bridge No. 69 is 35 feet, 6 inches in length and 40 feet in width (at the widest point), and carries two lanes of traffic. It is built on a skew of approximately 30 degrees. The concrete superstructure of the span consists of five girders of varying dimensions, reinforced by steel I-beams. The deck and fascia of the span are composed of poured concrete, and the deck is topped with asphalt. The fascia is designed as a shallow segmental arch and is trimmed with a single scored horizontal line. The bridge's parapet is built of random rubble masonry, designed as a balustrade pierced by pointed-arch openings, topped by peaked coping and framed by raised end posts with pyramidal caps. The bridge's random rubble wing walls rise to the height of the parapet.

## **HISTORY OF STATE BRIDGE NO. 69**

State Bridge No. 69 was constructed in 1934 for the New Castle County government as a replacement for an earlier bridge. As of December 1997, State Bridge No. 69 was slated for extensive rehabilitation that would probably involve replacement of the concrete superstructure and stone masonry parapet, and substantial repairs to the stone masonry abutments.

State Bridge No. 69 is situated at Rockland in Christiana Hundred, in the watershed of Brandywine Creek. The settlement of this vicinity by people of Swedish and English heritage commenced in the late seventeenth century. Northern New Castle County in general was known for the suitability of its soil for growing wheat, the Mid-Atlantic region's principal early export crop. The presence of fall-line topography along this segment of Brandywine Creek, and along its small tributaries such as Wilson Run, provided noteworthy opportunities for the employment of waterpower by gristmills and other hydraulic industrial facilities. It is at Rockland that Brandywine Creek begins its marked descent to sea level, falling 124 feet in 5 miles. With the additional local influence of the Quaker entrepreneurial spirit, these factors of topography and the

abundant availability of wheat gave rise to a unique concentration of the flour-milling industry on Brandywine Creek (Webster 1971).

A gristmill, run by Adam Kirk and John Gregg, was in operation at Rockland in 1724. It was located on the west bank of Brandywine Creek, using water from Wilson Run and probably located near the site of State Bridge No. 69. In 1733, the gristmill was joined by Delaware's first fulling mill, built for Jonathan Strange. In 1794, Brandywine Creek itself was dammed at Rockland, with Caleb Kirk, then proprietor of the gristmills and fulling mills on the west bank, sharing the expense with William Young, a newly arrived Scot who erected the mill of the Delaware Paper Company on the east bank of Brandywine Creek the following year. This was evidently the origin of the Rockland mill building complex that survives as of 1997. After the paper mill burned in 1814, Young concentrated on the production of cotton and woolen textiles. Young's textile operation thrived for a time, but went bankrupt in 1849. The firm of Jessup and Moore took over the Rockland Mills in 1860, returning to paper production. In 1971, the paper mill was still being conducted by Concel, Inc., but it ceased operation at some subsequent date. The Kirk family's mills on the west bank had closed in about 1820. The Rockland Historic District, listed in the NRHP in 1972, encompasses the Rockland mill complex and a number of former millowners' and workers' dwellings situated on both banks of Brandywine Creek (Webster 1971).

The 1849 Rea and Price map of New Castle County depicted Adams Dam Road in place, with an evident bridge spanning Wilson Run at the location of the present State Bridge No. 69. This road was probably established as a public thoroughfare in the early eighteenth century, to enable the passage of customers from the northward to the Kirk and Gregg gristmill (Rea and Price 1849). The surviving records of the New Castle County government concerning bridges are far from complete, hence little is known of the present State Bridge No. 69's predecessors. The historic bridge survey published by DelDOT contained a pre-1934 photograph of the span that was replaced by the present bridge (P.A.C. Spero & Company 1991). This immediate predecessor was a steel pony-truss bridge built on stone abutments (P.A.C. Spero & Company 1991:126). It appears to have been of similar design and construction to State Bridge No. 424, constructed in 1884 on Wiggins Mill Road in New Castle County by the Edge Moor Bridge Works, a Delaware bridge-building firm that constructed many Warren pony-truss spans for the county during the late nineteenth century.

The construction of State Bridge No. 69 was one small element in a sustained program of road improvement that transformed the Delaware landscape in the quarter-century between 1917 and 1942. T. Coleman duPont, one of the state's wealthiest citizens, had commenced highway improvements in 1911 under his own volition, obtaining a charter from the state and building a modern road in Sussex County from Selbyville to Georgetown. Following duPont's lead, the state legislature enacted the Highway Act of 1917, establishing the State Highway Department, and successive measures to raise highway funds. By 1926, "every town and hamlet in the state was connected to the state highway system with a hard surfaced road," according to Warren

Mack, a former chief engineer for the State Highway Department. Between 1926 and 1935, the highway authorities concentrated on developing a system of improved secondary highways to better facilitate local transportation in the countryside and in northern Delaware's growing suburban areas. New Castle County constructed some 200 miles of hard-surfaced road during this period. The state pressed on with a major program for the improvement of secondary roadways after 1935, when the legislature directed the State Highway Department to take over administration of the three counties' approximately 2,600 miles of county roads. The construction of new bridges formed a major aspect of the 1935-1942 road improvement project, with over 250 built during the seven-year period (Mack 1947:539-49).

The building of the present State Bridge No. 69 in 1934 was a harbinger of the extensive program of bridge construction for secondary highways that would take place throughout the state over the following eight years. New Castle County had evidently determined to begin its own advance in this area. Bridges Nos. 70, 456, and 543 were also built in New Castle County during 1934. With regard to primary records, the 1934 construction date for State Bridge No. 69 is known from its December 8, 1933, engineering drawings and from a notation in the DelDOT photo archives confirming the replacement of its predecessor bridge in 1934 (HABS/HAER 1988). Although the 1933 engineering drawings bear the imprint of the New Castle County Levy Court, mention of the bridge's construction in the Levy Court's minutes could not be found, nor does a file with regard to State Bridge No. 69 exist in the Delaware State Archives collections that originated in the office of the New Castle County Engineer (New Castle County Records). As a consequence of this gap in the records, the identity of the firm that built the bridge for New Castle County is unknown. A DelDOT bridge inspector, surveying State Bridge No. 69 in 1972, noted that the structure appeared "like new deck [had been] placed on old abutments and widened using wing walls," suggesting that conversion of the bridge from single-lane to two-lane service was a prime motive in the bridge's 1933-1934 redesign and rebuilding (DelDOT Maintenance Files).

A hallmark of the bridge improvement program undertaken by the New Castle County government in the early 1930s was the intentional picturesque quality, meant to be evocative of the county's traditional architectural landscape, that infused many of the structures built. Random rubble stone masonry was characteristic of northern New Castle County's bridges as well as the area's rural dwellings, mills and barns. The county engineering staff applied stone masonry embellishment to concrete and steel bridges in the northern part of the county, a practice continued in northern New Castle County by State Bridge Engineer A.G. Livingston after 1935, when the State Highway Department took over responsibility for all bridge and road construction in the state (HABS/HAER 1988). With the pointed-arch apertures of its parapet, State Bridge No. 69 is an unusually decorative representative of the common concrete-girder bridge type.

A statewide survey of bridges conducted in 1955 found State Bridge No. 69 to be in thoroughly sound condition. A 1969 inspection noted slight spalling in the concrete that was not so advanced as to require treatment at that date. The 1972 inspection was the first to recommend

minor repairs, to be made to the bottom of the south abutment due to scour and erosion at that location. In November 1996, the overall condition of the bridge's concrete deck was evaluated as "poor;" therefore, State Bridge No. 69 was recommended as a potential "candidate for a deck replacement." The bridge was later placed on the statewide bridge replacement/rehabilitation list (DelDOT Maintenance Files).

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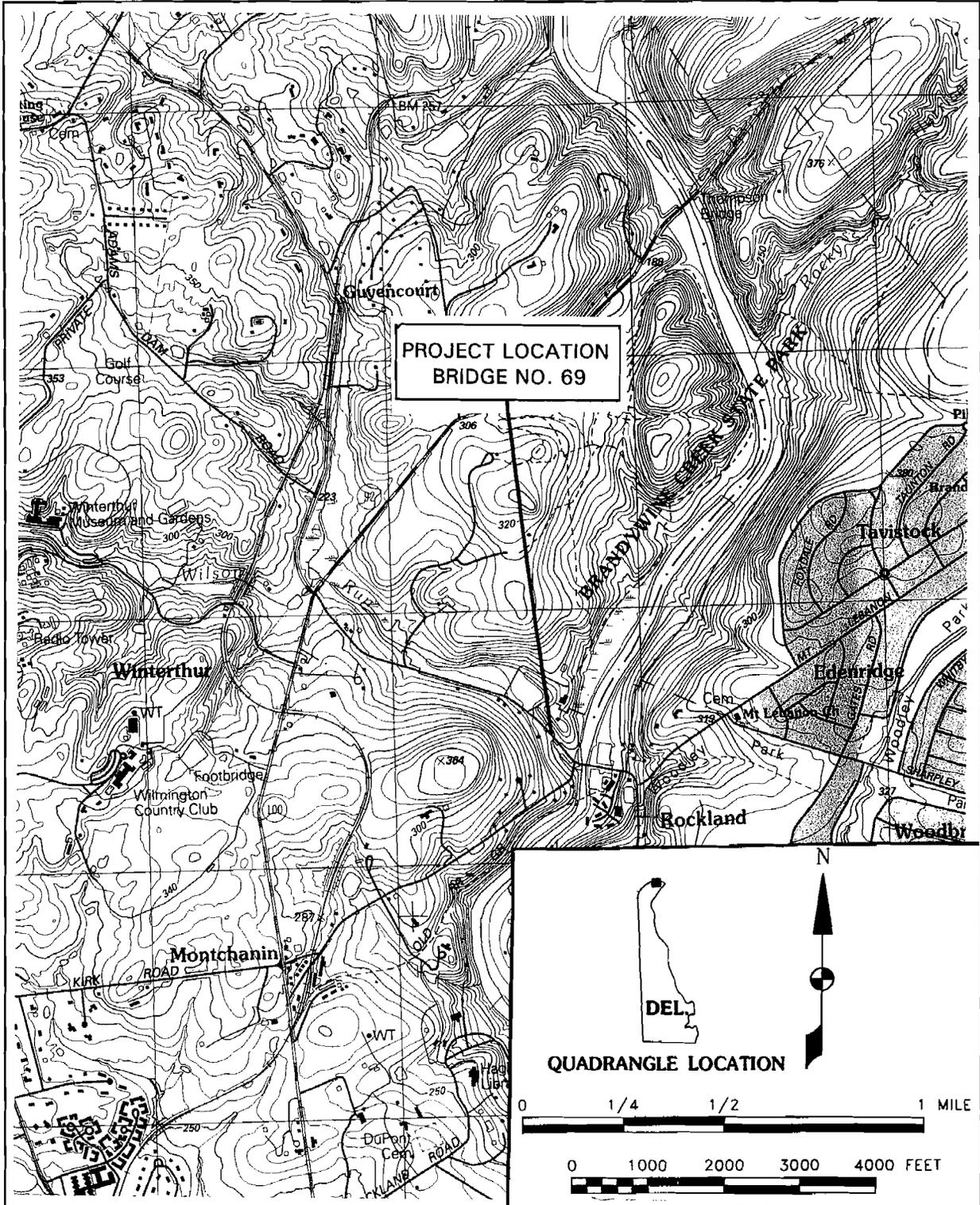
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Location Map

SOURCE: USGS 7.5 Minute Quadrangle, Wilmington North, Del.-Pa. 1993



# HISTORIC AMERICAN ENGINEERING RECORD

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STATE BRIDGE NO. 69  
Adams Dam Road (Road 232), spanning Wilson Run  
Rockland vicinity  
New Castle County  
Delaware

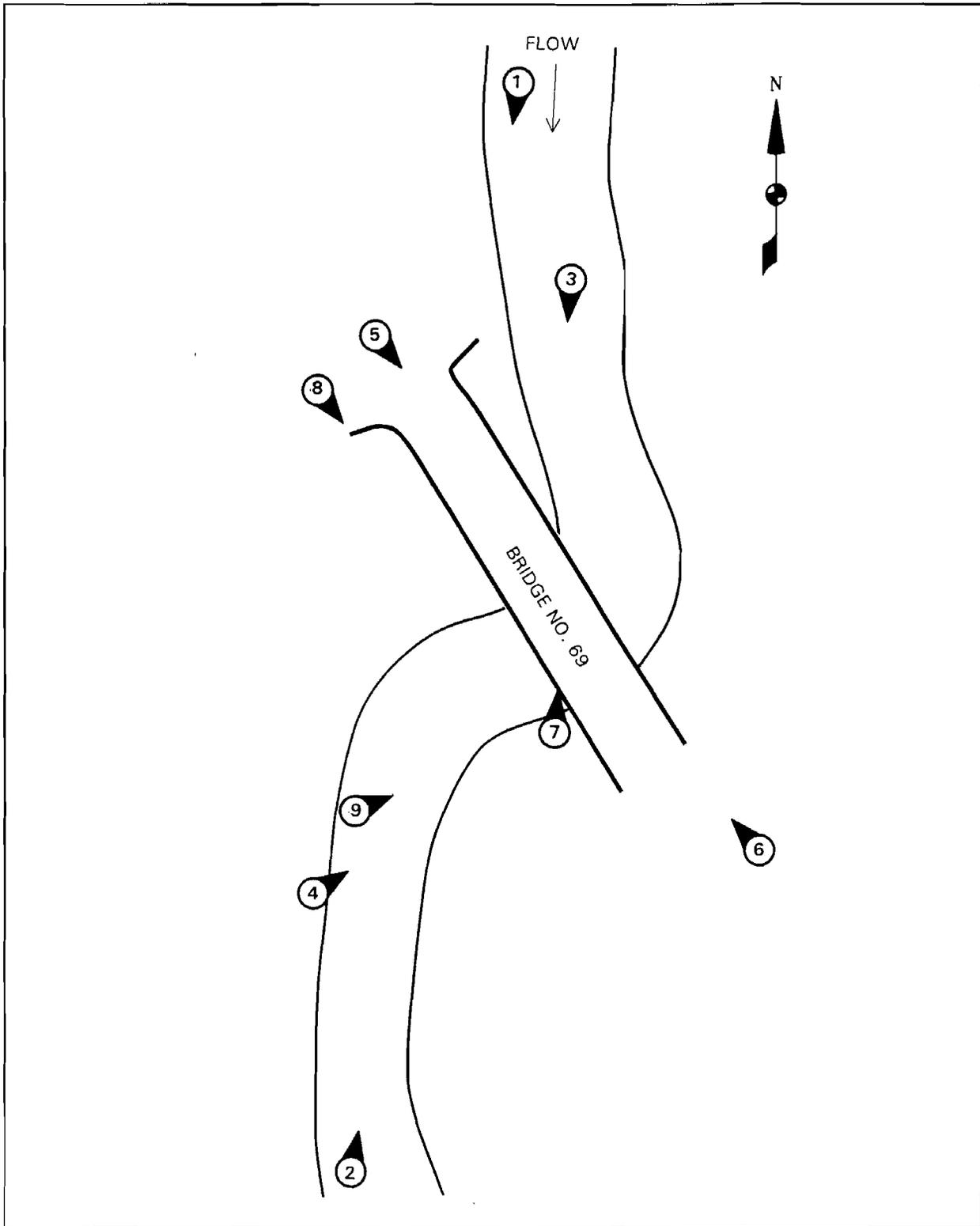
HAER No. DE-

Photographer: Rob Tucher

December 1997

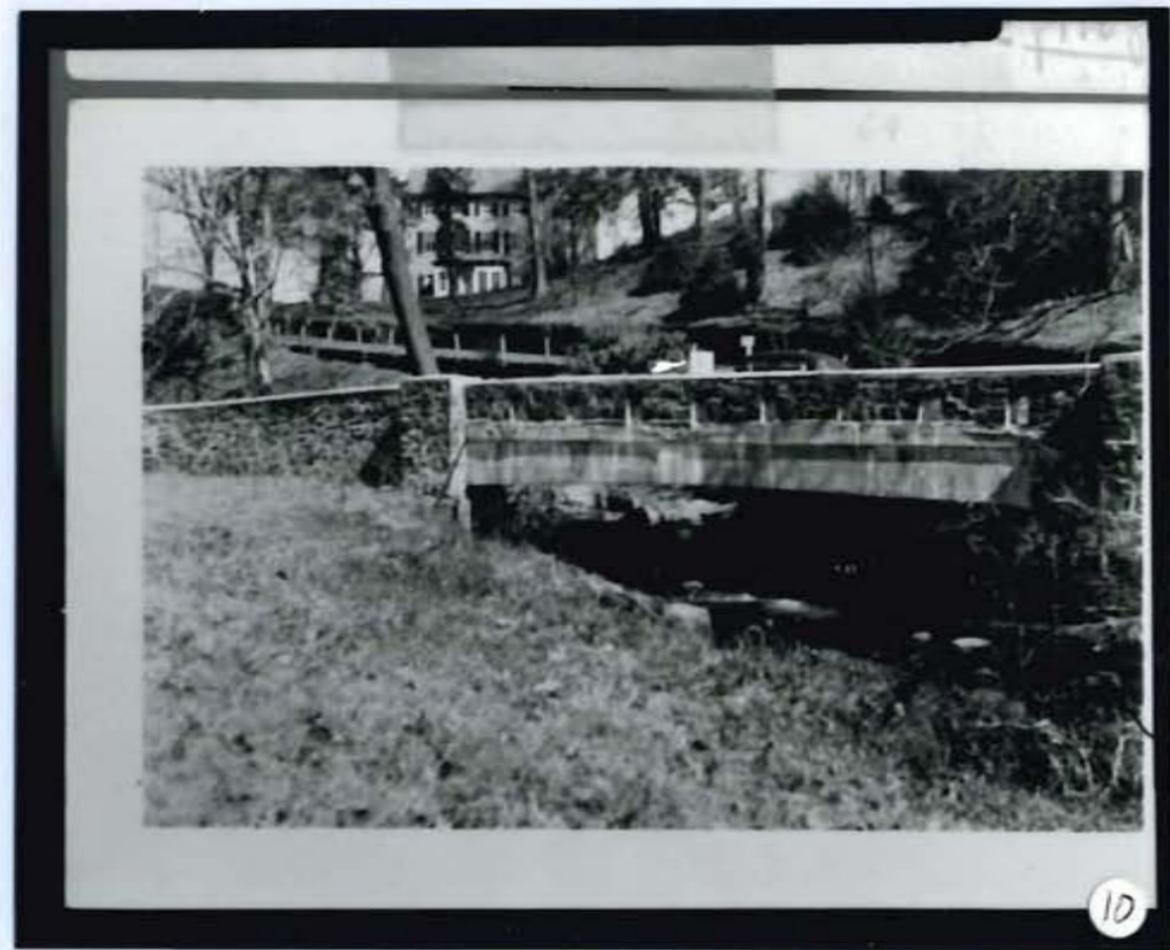
- DE- - 1 GENERAL VIEW, LOOKING SOUTH
- DE- - 2 GENERAL VIEW, LOOKING NORTH
- DE- - 3 OBLIQUE VIEW OF NORTHEAST ELEVATION, LOOKING SOUTH
- DE- - 4 SOUTHWEST ELEVATION, LOOKING NORTHEAST
- DE- - 5 GENERAL VIEW, LOOKING SOUTHEAST
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- DE- - 7 OBLIQUE VIEW OF UNDERSIDE OF SPAN SHOWING GIRDERS AND ABUTMENTS, LOOKING NORTH
- DE- - 8 DETAIL OF PARAPET AND WING WALL, LOOKING SOUTHEAST
- DE- - 9 DETAIL OF PARAPET SHOWING DECORATIVE OPENINGS, LOOKING NORTHEAST
- DE- -10 1955 VIEW OF BRIDGE. ORIGINAL ON FILE AT DELAWARE DEPARTMENT OF TRANSPORTATION, DOVER.
- DE- -11 PHOTOCOPY OF ENGINEERING DRAWING, *BRIDGE NO. 69, LEVY COURT, NEW CASTLE COUNTY, OFFICE OF COUNTY ENGINEER, WILMINGTON, DELAWARE*, DECEMBER 8, 1933. CONTRACT NO. BNC-73, DELDOT PLAN FILES. ORIGINAL ON FILE AT DELAWARE DEPARTMENT OF TRANSPORTATION, DOVER.

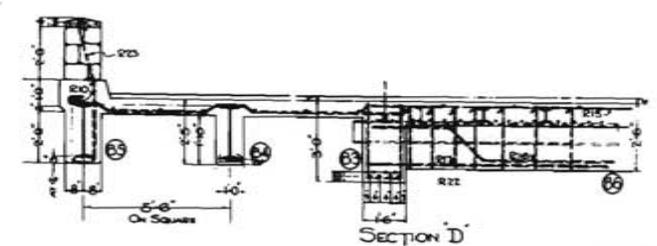
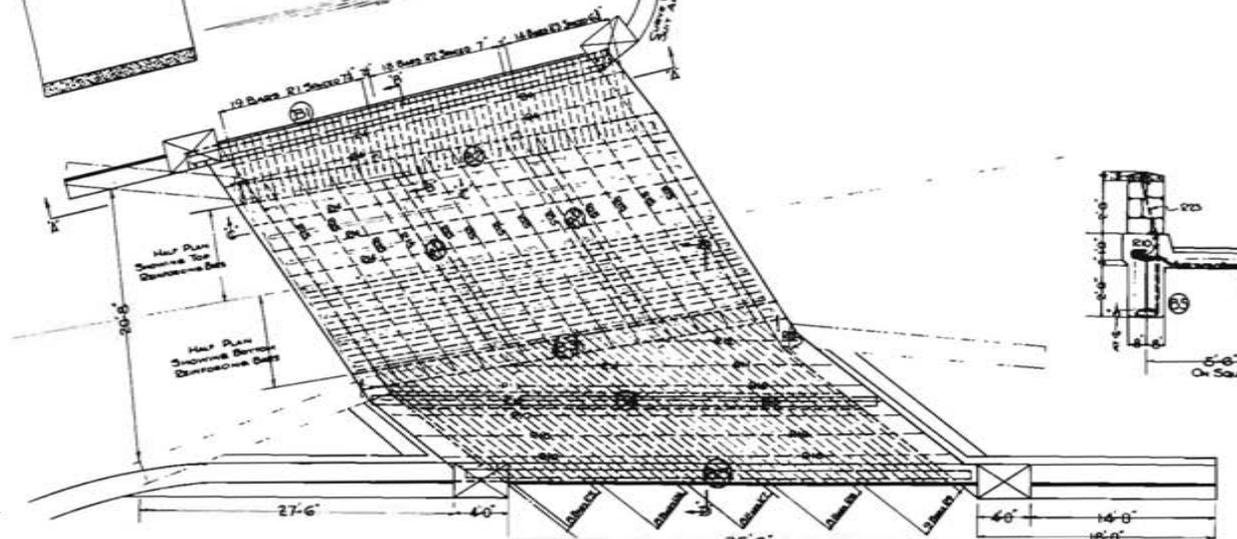
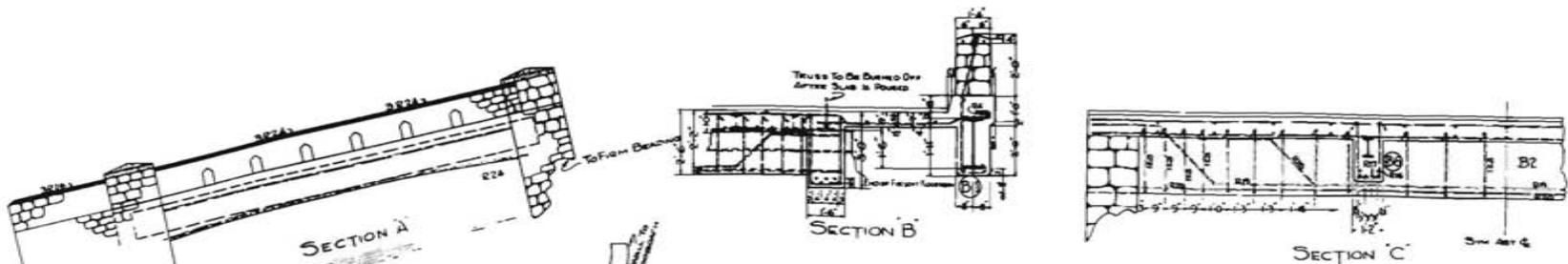
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**BRUCE # 69**

LEVY COURT  
NEW CASTLE COUNTY  
OFFICE OF COUNTY ENGINEER  
WILMINGTON, DELAWARE

DRAWING NO. 22011-10  
DATE 10/1/54  
BY J. B. BRUCE  
CHECKED BY J. B. BRUCE  
APPROVED BY J. B. BRUCE  
COUNTY ENGINEER