

**10. NAME(S) OF STRUCTURE**

State Bridge Number 239

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

15A:26-33



15A:29

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).

Carter, Dick. The History of Sussex County. Georgetown, Delaware: Community Newspaper Corp., 1976.

Hancock, Harold Bell. The History of Sussex County, Delaware. [s.l. : s.n.] 1976.

Delaware State Archives. Sussex County Road Papers 1875-1940.

Delaware DOT records: Annual Reports; contract files.

Plans on file at Delaware DOT: Contract # 229

12. SOURCES

**13. INVENTORIED BY:**

**AFFILIATION**

**DATE**

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

April-November 1988

# HABS/HAER INVENTORY

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

## 1. NAME(S) OF STRUCTURE

State Bridge Number 239

## 2. LOCATION

Route 46 over Deer Creek  
Middleford, Sussex County, Delaware

## 3. DATE(S) OF CONSTRUCTION

1932

## 4. USE (ORIGINAL/CURRENT)

Vehicular

## 5. RATING

SG

## 6. CONDITION

Fair: Some scour of abutment concrete, large deterioration of north corner of west abutment

State Highway Bridge Number 239 is a 36'-0" concrete encased steel girder span, carrying two lanes of traffic with a width of 28'-0" curb to curb. The bridge was constructed at a 30-degree skew, on concrete abutments with U-shaped wing walls. The deck is supported by 9 steel I-beams (encased in concrete), each measuring 1'-11" by 1'-6", spaced at 3'-8" intervals. A corbeled band runs along the top of the wing walls and parapet; the concrete parapet features incised rectangular panels, a corbeled cap, and is broken into two sections by a middle block.

Delaware Department of Transportation records indicate that Bridge Number 239 was built in 1932 under State Highway Department Contract 229 (Federal Aid Project 97). This project involved the construction of a concrete road between Gum Crossroads and Middleford, a distance of 3.74 miles. John R. Hitchens supervised the project in the field under the authority of Chief Engineer A.G. Livingston. Continental Contracting Company, Inc. of Baltimore was awarded the contract for the road for \$59,595 on February 9, 1932. Original drawings, dated January 1932, show steel reinforcement and a substructure design consisting of concrete footings on timber piling. The cost of the bridge materials amounted to \$3725. The concrete employed crushed stone from Pennsylvania, local sand, and Whitehall cement; Kalman Steel Company of Youngstown, Ohio provided the reinforcing steel. Bridge 239 was built on a realigned portion of the road; it replaced an earlier bridge, also an I-beam span, on the old road. During construction, it was determined that the length of the timber pilings needed to be increased over that indicated in the plans, in order to achieve adequate bearing; this difficulty was commonly encountered in the sandy soil of Sussex County. In contract correspondence, the resident engineer observes, "I do not believe we have ever constructed a bridge in Sussex County using the length of piles planned. In every case we found them too short." The final construction inspection was conducted on July 14, 1932 and revealed that "all work has been completed in a first class and satisfactory manner and the bridge is open to traffic." The bridge was designed to carry a 15 ton truck.

State Bridge No. 239 is a typical example of a girder bridge type commonly constructed by the State Highway Department during the period 1926-1935. This period was characterized by the consolidation and improvement of the primary road system, and the development of the secondary road system throughout Delaware by the State Highway Department. The construction of a realigned concrete-surfaced road in this area of rural Sussex County represents the Department's program of improvements to the secondary system. Steel girder bridges were built prolifically across the United States from the late nineteenth century throughout the twentieth century. By the end of the nineteenth century, the girder bridge was established in all its forms: plate girders, I-beams and concrete encased I-beams. All steel girder types continued in use into the twentieth century, with span potential increasing from 100 feet in 1900 to 150 feet by 1930. Most steel girder bridges surveyed in Delaware were small, single spans. Bridge 239 is a good, representative example of a single span concrete encased steel girder bridge which is completely articulated in concrete, making it visually indistinguishable from a concrete beam or slab bridge. The solid concrete parapet is detailed with a typical decorative rectilinear design used by the Department in the 1920s and 1930s.