

10. NAME(S) OF STRUCTURE

State Bridge Number 576

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

73A:30-36A

74A:3-15



73A:36

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).

Scientific American 130 (May 1924):319.

Spero, Paula A. C. A Survey and Photographic Inventory of Concrete and Masonry Arch Bridges in Virginia. (Charlottesville, Virginia: Virginia Highway & Transportation Research Council, 1984).

Wilmington Evening Journal Every Evening, 22 February 1919; 7 December 1921; 23 December

1921; August 9, 1921; 17 August 1921; 1 September 1921.

Wilmington Evening Journal, 6 February 1943.

The Wilmington Sunday Morning Star, 28 May 1922.

Delaware State Archives. New Castle County Engineer Records.

Delaware State Archives. New Castle County Levy Court. Specifications, Proposals, Contract and Bond files.

Delaware State Archives. Washington Street Bridge Commission, Agency history, DE Archives

Delaware State Archives. New Castle County Road Commissioners Records.

Plans on file at Delaware DOT: Contract #83-071-05, 64-040-15

13. INVENTORIED BY:**AFFILIATION**

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

8. HISTORICAL DATA (continued)

bidding on the Washington Street Bridge, he gave his address as the Office of the Construction Division of the Army, in care of the Officers' Club of Washington, D. C. His proposal for this project included an assurance that he would secure an honorable discharge from the Army in order to devote his full attention to the bridge; by 1920, he had established an office at 200 Fifth Avenue, New York City. The Commission's invitation to bid was distributed on May 26, 1919, and stipulated: "A substantial, durable bridge is essential, but the location and the desire to give the structure or its surroundings a memorial character make imperative careful consideration of the aesthetic features of the design." Davis responded enthusiastically by telegram two days later: "very much interested in your proposition just rec'd . . . bridge site magnificent; possibilities great; am delighted to receive your invitation and accept it with pleasure." The design of Torbert and Davis was accepted by the Commission on August 14, 1919. The Commission found all the construction bids too high, and revised the specifications to describe a narrower structure. New bids were requested, and the Commission accepted the proposal of the Walsh Construction Company of Davenport, Iowa and Syracuse, New York on February 19, 1920 for a contract price of \$747,743.15. Work commenced on August 21, 1920. The personal financial resources of Chairman Alfred I. DuPont were placed at the disposal of the Commission at several critical junctures in the project. He advanced \$90,000 to cover architectural and engineering fees, to avert the delay of up to 18 months which could be introduced by a bond issue, and guaranteed the payment of \$300,000 to the contractor when the estimated cost exceeded the \$500,000 authorized by the County. DuPont also offered to underwrite the additional cost of executing the balustrades and pylons in Litholite cast stone rather than concrete to achieve an improved appearance; the use of this material increased the cost by \$22,252. The bridge was opened to traffic on November 24, 1921; streetcar operation began on December 7, and the structure was fully operational by December 23, 1921. Cosmetic work continued into the new year, and the formal opening was deferred until Memorial Day, 1922. At that time, a major event was planned to mark the dedication of the structure. Speakers included General James Harrison Wilson, Judge George Gray, and Colonel Frank S. Cocheu. Bridge Commissioner John S. Russell also spoke. The Right Reverend Philip Cook, Episcopal Bishop, delivered the invocation, and The Right Reverend John J. Monaghan, Bishop of the Roman Catholic Church, gave the closing prayer and benediction. After the dedication, an extravagant spectacle depicting the history of the Brandywine in allegory was presented. At the close of the proceedings, the bridge was formally handed over to New Castle County by the Commission, and the memorial tablets were unveiled, followed by a parade of 1200 young girls across the bridge, strewing flowers on the water. The Washington Street Bridge replaced a wrought iron and steel deck truss constructed in 1893, fabricated by the Edge Moor Bridge Works of Wilmington, Delaware and erected by Delaware Construction Company for a cost of \$87,000. The North Side Improvement Company, incorporated in 1891 with the intention of developing "for the best class of residences," the highlands north of the Brandywine, had influenced the Levy Court to build the initial bridge. The deck truss was limited to light traffic. To increase traffic capacity, a single trolley car line was added to the bridge in 1901. By 1919, increasing development and concomitant traffic, including that associated with World War I industrial mobilization, rendered the old bridge functionally obsolete, and plans were developed to replace it with a new structure which would accommodate a double streetcar track with a 40-foot roadway. The total cost of the new bridge was \$864,438.54, of which the Wilmington & Philadelphia Traction Company contributed \$41,362.74. The sidewalks, balustrade, and light fixtures were repaired in 1983-84 under contract #83-071-05.

DATE

April-November 1988

HABS/HAER INVENTORY

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

1. NAME(S) OF STRUCTURE

State Bridge Number 576
Washington Street Bridge

2. LOCATION

Washington St. over Brandywine Creek
Wilmington, New Castle County, Delaware

3. DATE(S) OF CONSTRUCTION

1922

4. USE (ORIGINAL/CURRENT)

Vehicular

5. RATING

CA

6. CONDITION

Fair: Heavy spalling and cracking of underside of slab, ribs and arches in areas.

The Washington Street Bridge (State Highway Bridge No. 576) is a multiple span monumental concrete arch bridge. The main span, an open spandrel arch, is 250 feet long. There are two arch spans flanking the center arch; both are solid spandrel arches. The approach spans are 70' long and 85' long. The roadway is 40'-0" from curb to curb and 14'-0" sidewalks run down either side. The substructure is concrete. The bridge is highly embellished, with a rusticated surface treatment simulating stone, cast stone urn-shaped balustrades, cast iron light standards, and monumental pylons carrying bronze tablets and ornamental bronze lanterns, and topped with carved eagles. The main span arch has incised "voussoirs" and a "keystone". There are eight ornamental pylons located in line with the railings; the four larger shafts, 40' tall, are located over the piers of the main span, and the smaller 23.5 foot shafts mark the portals. The eagles mounted on the larger pylons are carved from Onondaga Litholite. The pylons at the main span carry bronze tablets commemorating the Revolutionary War; the War of 1812; the Mexican, Civil, and Spanish-American Wars; and two tablets commemorating the World War, one with names of the battles in which Delaware Troops fought, and the other inscribed with the names of men from the State of Delaware killed in the World War. The bridge is further elaborated with quotations from Washington, Lincoln, Theodore Roosevelt, Lowell, Tennyson and Ruskin. A stairway at the southwest corner of the bridge leads to the river below.

Delaware Department of Transportation records state that Bridge 576 was built in 1921. It was dedicated on Memorial Day of the following year, to the "sons of Delaware who joined forces of their country in the Great World War." The Washington Street Bridge Commission was created by an act of the General Assembly in March, 1919 to select a design for a new bridge across the Brandywine (30 Delaware Law, Chapter 99, March 1919). The officers of the Commission were Alfred I. DuPont, chairman, and Albert Stetser, secretary/treasurer, accompanied by three commissioners: John S. Rossell, Benjamin F. Shaw, and Isaac C. Elliott. Frederick W. Carpenter of Cornwall, New York served as the Commission's executive officer and consulting engineer. The Levy Court of New Castle County empowered the Commission to issue bonds in the denomination of \$1000 to raise a sum not exceeding \$500,000 for the "erection, construction and completion of the bridge and its approaches." The Commission was granted full authority to acquire land for New Castle County, purchase materials, and enter into contracts. Preliminary surveys and data were prepared by Charles E. Grubb, New Castle County Engineer. Upon release of a preliminary design study, the local newspaper termed the project "the first successful effort to combine an artistic treatment of a municipal bridge with structural solidity and dignity." The preliminary design was developed by John E. Greiner of Baltimore; a competition was held to secure the final design, and such prominent engineers as Greiner, Daniel Luten, and the firm of Harrington, Howard and Ash of Kansas City all submitted entries. The selected design was the product of the collaboration between consulting engineer Benjamin H. Davis and architect Vance W. Torbert. Davis, who maintained an office in the Whitehall Building in New York City at the time the bridge was built, specialized in the design of major structures in reinforced concrete. He had worked for the United States Railroad Administration from 1906 to 1910, as Concrete Bridge Engineer for the construction of the Delaware, Lackawanna and Western Railroad. During that period he designed the Delaware River Bridge and the Falls Kill Bridge on the Lackawanna Railroad of New Jersey, and the Paulinskill Viaduct on the cut-off line between Hopatcong and Slateford. He is also credited with a highway bridge over the Schuylkill River at Conshohocken, Pennsylvania, constructed by the Philadelphia and Reading Railroad Company, and the Market Street Memorial Bridge (1926-29) in Wilkes-Barre, Pennsylvania. Architect Torbert graduated from the Drexel Institute, Philadelphia, and was associated for eight years with the nationally-prominent architectural firm of Carrere & Hastings in New York City. Upon establishing his own practice, Torbert designed an Annex to the Aura Grata Cathedral of the Ancient Accepted Scottish Rite, Brooklyn, New York (1915), did residential work at the exclusive suburb of Tuxedo Park, New York, and remodeled two buildings in New York City for the Whiting Patterson Paper Company (1917). In 1918 he entered military service, and was promoted to the rank of Captain in the Quartermaster Corps the following year. His association with Davis prior to the Washington Street Bridge project included collaboration on large concrete bridges at Allentown, Pennsylvania; Richmond, Virginia; Chattanooga, Tennessee; and the Central Bridge in Lawrence, Massachusetts, all major monumental structures which cost between \$400,000 and \$1,000,000 to construct. At the time of

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The Washington Street Bridge is significant technologically, as the only open-spandrel concrete arch bridge surveyed in Delaware, and architecturally, for the high artistic value of its monumental design. It derives additional significance from its association with the movement to memorialize the soldiers killed in the first World War. During the immediate postwar period, memorial sentiment ran high, spawning a proliferation of mass-produced "doughboy" statues on town greens and courthouse squares across the nation. The Washington Street Bridge combined the functions of an appropriate memorial and a practical transportation improvement; the economic benefits of this combination were noted in a 1924 article in Scientific American: "... the cost of making a purely utilitarian bridge further serve as a war memorial was, in this case, approximately \$56,550, this being less than 8 per cent of the entire cost of the structure. A memorial bridge daily serving the needs of a community yet at the same time commemorating the unselfish services of these citizens who rallied to the aid of their country in her hour of need, offers to cities and towns a fitting and economical solution of their war memorial problems." The same article pointed to the technological significance of the bridge, identifying the main span as "probably the longest, low-rise, skew arch span in the United States, if not in the world." The Washington Street Bridge was followed by numerous counterpart memorial bridges in other states, including the Market Street Bridge in Wilkes-Barre, Pennsylvania (1926-29), also designed by Benjamin H. Davis, and the Soldiers and Sailors Memorial Bridge in Harrisburg, Pennsylvania (1926-30).