10. NAME(S) OF STRUCTURE

State Bridge Number 424

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

27B:29-36A 28B:2

28B:2

12. SOURCES

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Spero, Paula A. C. Metal Truss Bridges in Virginia. ((Charlottesville, Virginia: Virginia Highway & Transportation Research Council, 1978-1981).

Hagley Library. Edge Moor Iron Company Records.

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

Delaware State Archives. New Castle County Road Commissioners Records, 1750-1940.

Delaware DOT records: contract files.

Plans on file at Delaware DOT: Contract #87-570-15

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 424

2. LOCATION

Road 446 over Wiggins Mill Road
Townsend, New Castle County, Delaware

3. DATE(S) OF CONSTRUCTION

4. USE (ORIGINAL/CURRENT)

Vehicular

5. RATING

MT

6. CONDITION

Good

7. DESCRIPTION

State Bridge Number 424 is a 34'-0" riveted Warren pony truss, divided into three panels. The top and bottom chords and diagonals are fabricated from double 3½" x 3½" angles; posts are 3½" x 3½" angles. Transverse floor beams are located at each panel point; they extend beyond the truss to support angle "A" braces for the posts. Longitudinal beams comprise both girders and doubled 4"x10" timbers, supporting a timber deck of 4"x8" boards. Constructed at a 15-degree skew, the bridge has abutments and flared wing walls of semi-coursed rubble masonry. It carries one lane of traffic on a 14'-8" wide deck.

8. HISTORICAL DATA

Delaware Department of Transportation records indicate that Bridge 424 was built in 1884, replacing a bridge of unknown type. "Rebuilt 1884 J.T. Taylor, L.C. Com." is inscribed in the southwest wing wall. The Edge Moor Bridge Works of Wilmington, Delaware fabricated the superstructure. Bridge 424 is an intact surviving example of a number of Edge Moor pony trusses built in New Castle County between 1880 and 1900. Another surviving example is Bridge 66 (Breck's Lane Bridge). Located on the banks of the Delaware River just north of Wilmington, the Edge Moor Iron Company was incorporated in 1869 as an iron rolling mill for the manufacture of iron for general purposes. Under the direction of president William Sellers, the company evolved into a manufacturer of structural iron and steel for bridges, viaducts and roof work. In 1873, the Edge Moor Bridge Works was established for the fabrication of bridges. In 1879, the company diversified by including boilers as one of their products. The Edge Moor Bridge Works was operational until 1900 when it was acquired by the American Bridge Company of New Jersey. Edge Moor was one of twenty-four bridge companies purchased by J. P. Morgan's American Bridge Company in 1900. At that time, American Bridge purchased the 14 acre parcel from the Edge Moor Bridge Works and assumed control of the bridge manufacturing operations while the Edge Moor Iron Company concentrated on the production of Galloway Boilers. American Bridge operated the bridge division at Edge Moor for a time, but then consolidated its holdings at its Ambridge, Pennsylvania location. The Edge Moor Iron Works continued as a manufacturer of boilers and tanks until its liquidation in 1933. The Bridge Works fabricated bridges for locations throughout the East, such as over the East River in New York City, the Susquehanna River near Harrisburg, Pennsylvania and the Pennsylvania Railroad Bridge over Schuylkill River in Philadelphia.

9. SIGNIFICANCE

State Bridge 424 is significant as one of six remaining metal truss bridges still carrying vehicular traffic in Delaware. Although few metal truss bridges remain in Delaware, Delaware Department of Transportation photographic archives from the 1920s illustrate approximately ninety metal truss bridges in New Castle County. Additionally, this pony truss is an intact example of an early truss type built throughout New Castle County by a prominent Delaware bridge company. In its Warren pony truss configuration employing standardized members, Bridge 424 is typical of the small spans erected along local roadways in rural areas throughout the country in response to increasing traffic in the late nineteenth and early twentieth century. The pony truss type offered several advantages in this application. It was adaptable to a wide variety of site conditions, its structural behavior was scientifically understood, and its prefabricated components made it easy and economical to manufacture, ship, and erect. Structures like Bridge 424 played a vital role in the economic development of rural areas during the last quarter of the nineteenth century and well into the twentieth, as local transportation networks underwent the initial phases of development. The Warren truss was patented in 1848 by two British engineers, James Warren and Willoughby Monzoni. The original form of a Warren truss was a series of equilateral triangles and as such represents one of the earliest truss types. Later modifications included subdivision by verticals or addition of alternate diagonals.