

10. NAME(S) OF STRUCTURE

State Bridge Number 112

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

40A:33-36

41A:3-18



40A:34

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).

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

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: Annual Reports; contract files.

Plans on file at Delaware DOT: Contract # BNC-70, 72-120-03, 72-090-11

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 112

2. LOCATION

Yorklyn Road over Red Clay Creek
Hockessin, New Castle County, Delaware

3. DATE(S) OF CONSTRUCTION

1929

4. USE (ORIGINAL/CURRENT)

Vehicular

5. RATING

MT

6. CONDITION

Excellent: Slight surface rust at a few locations, railing is bent in spots.

State Highway Bridge 112 is a 75'-0" steel riveted Warren pony truss, divided into five panels. The top chords and inclined end posts are double 10" channels riveted together by a cover plate at the top and laced at the bottom; the diagonals and bottom chords are made of 5"x3½" angles with stay plates. Vertical posts are built-up members incorporating 2½" x 3" angles. The timber deck is supported on six transverse girders spanned by ten longitudinal I-beams; it carries two lanes of traffic with a curb-to-curb width of 20'-0". There is a sidewalk with wood decking cantilevered off the east elevation with an ornamental steel railing. The superstructure is supported on concrete abutments with U-shaped wing walls; the wing walls rise above the level of the roadway to create concrete end blocks decorated with an incised panel. Bridge plates at either end document the date of construction.

Delaware Department of Transportation records state that Bridge 112 was built in 1929 by authority of the New Castle County Levy Court. It was designed by the County Engineer's office and plans are on file at Delaware Department of Transportation. The configuration and details are illustrated and correspond to the existing configuration. The structural steel was fabricated by the Belmont Ironworks of Philadelphia, Pennsylvania, as was the handrail, which was specified standard "Harvard Design" or equivalent. Charles E. Grubb served as County Engineer during design and construction. The 1929 structure replaced an earlier bridge and incorporated portions of the previous substructure. The specifications called for reuse of the abutments from the previous structure, if feasible. Bridge 112 is nearly identical to Bridge 216, the Chambers Rock Road White Clay Bridge, historically called the Thompson's Station Bridge, constructed during the previous year.

State Bridge 112 is significant as one of the six intact historic metal truss highway bridges 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. In its Warren pony truss configuration employing standardized members, Bridge 112 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 metal truss bridge 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 112 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, as seen in Bridge 112, or addition of alternate diagonals.