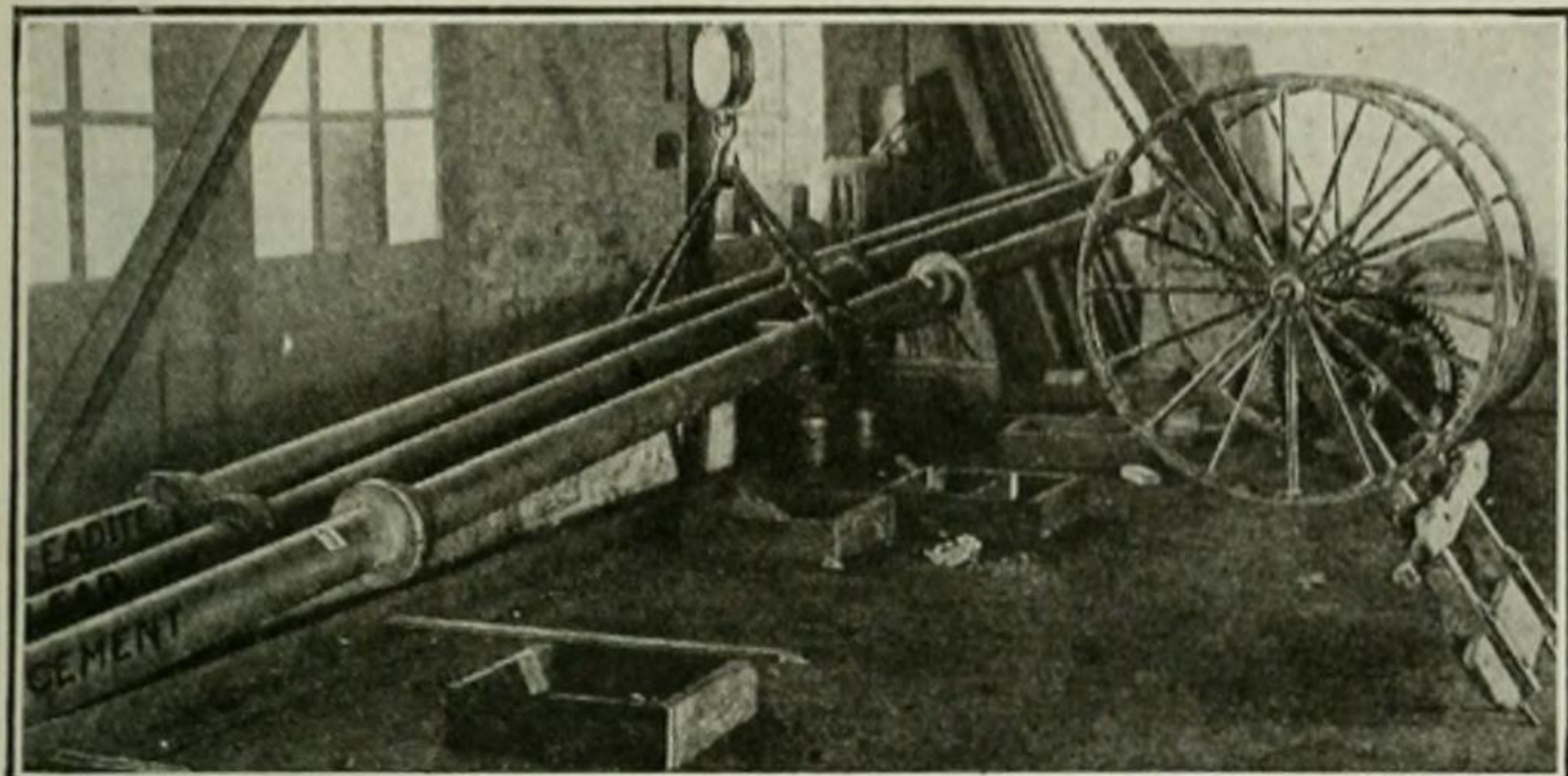


3. *Lead and Leadite Joints* can be made in any season and under adverse conditions, while cement is under a disadvantage in winter and in wet trenches.

4. *Lead and Leadite Joints* permit the water to be turned on and the line put in service immediately, while cement requires a period of preliminary setting.

5. *Cement Joints* are very hard to gouge out.



CEMENT, LEAD- AND LEADITE-JOINTED 3-IN. CAST-IRON PIPE UNDER DEFLECTION TEST

6. *The Sulphur Fumes of Leadite* might become very oppressive in a confined working space.

These tests were made by men thoroughly conversant with the use of lead who were staunch in its support until the rising price made the substitutes look attractive. St. Louis is now preparing to lay a considerable amount of small pipe with cement joints and if lead does not drop appreciably before winter we will probably try leadite during the freezing weather.

Cantilever Bridge of Concrete

Monolithic Structures Supported on Piers—Heavy Abutments Not Required—Clear Channel Span of 51 Ft.

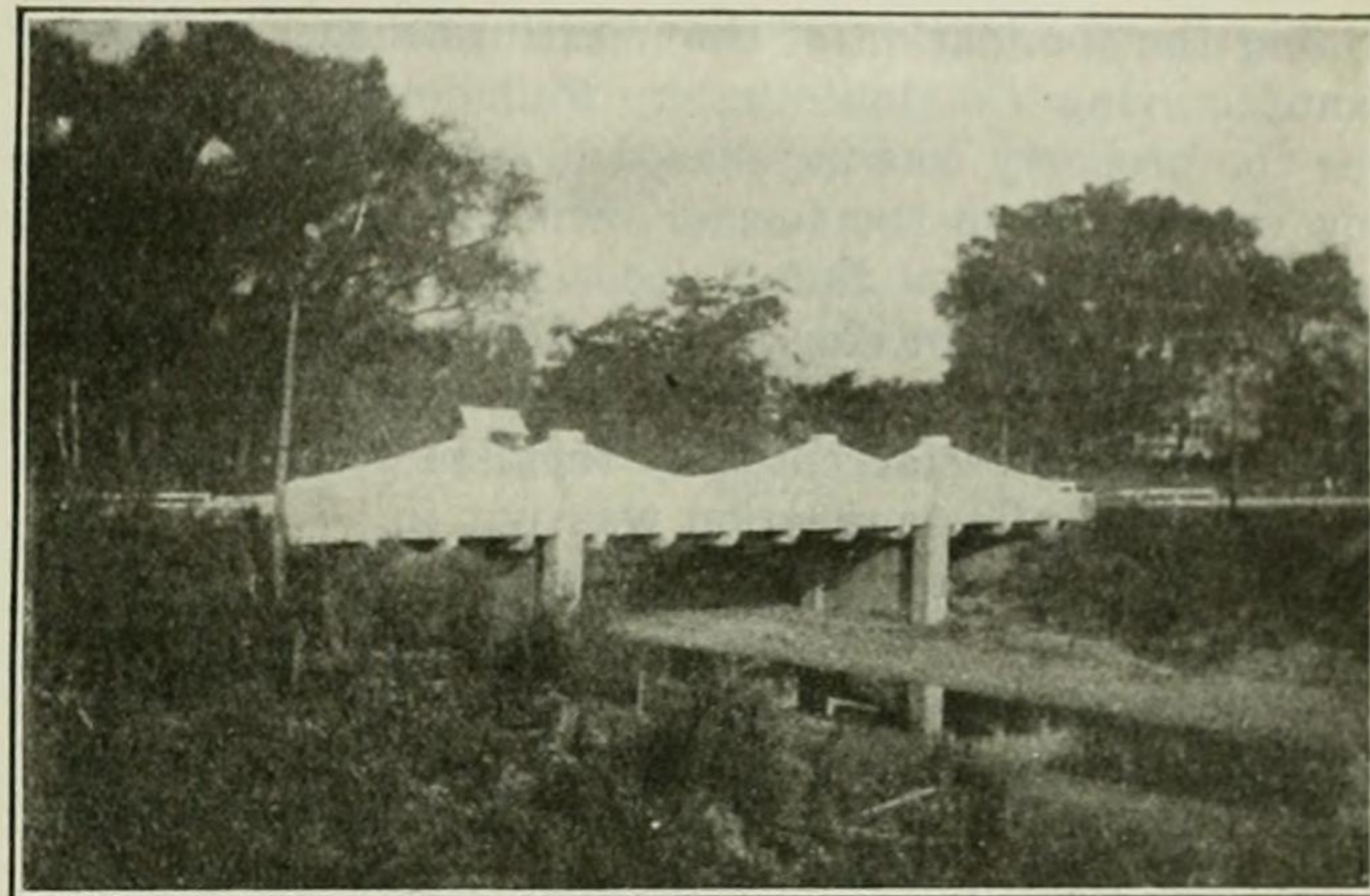
BY PAUL M. HENRY

Bridge Engineer, Ohio State Highway Department

IN CONNECTION with the improvement of the Newark-Mt. Vernon intercounty highway in Ohio, two reinforced-concrete bridges of an interesting design have been built. One is over the Clear Fork and the

other over the Lake Fork, in Licking County. Both bridges are of the reinforced-concrete cantilever type of 54-ft. span, the only difference in them being in the height of their piers.

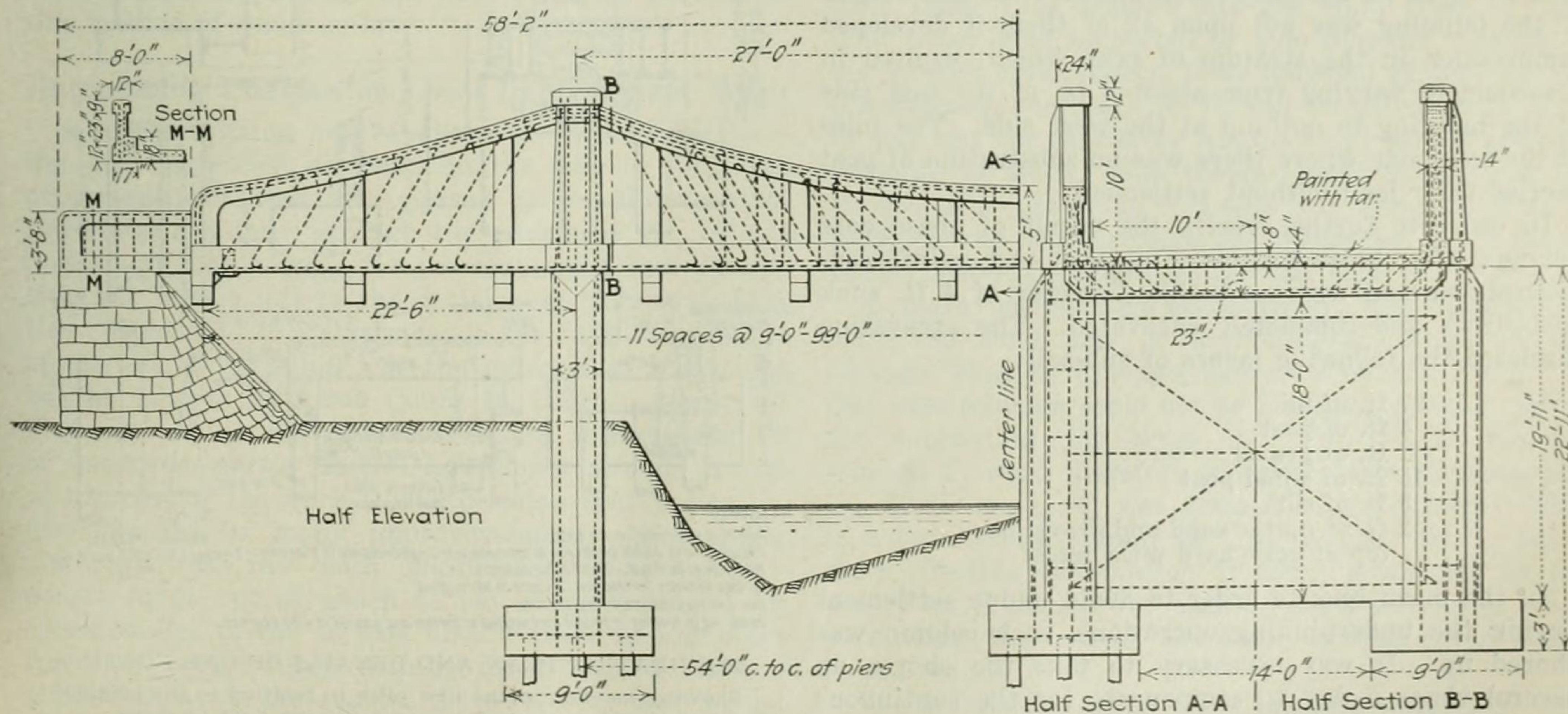
The bridges were designed to carry a 15-ton truck. The floor-beams carry the floor and load and transfer it to the girders at the floor-beam points as concentrated loads. Influence lines were used to determine loadings for maximum stresses. To avoid the use of construction joints in the main structure the floor and two main girders of each bridge were poured in one



CANTILEVER CONCRETE BRIDGE FOR OHIO HIGHWAYS

operation. The approach slabs at each end of the structures were poured later. The top of the floor-beam at each end of the cantilever was provided with a half-round groove 4 in. deep, for the entire width of the roadway, to support the approach slab. This groove was painted with a coat of bituminous material before the slab was poured. The design called for the outer end of this slab to rest on the fill, but in construction it was provided with a shallow foundation 3 ft. deep and 1½ ft. thick.

The Newark Paving & Construction Co. which had the contract for the entire improvement, both road and bridges, sublet the bridges to B. C. Patterson at approximately \$13,000 each.



ELEVATION AND CROSS-SECTION OF CONCRETE CANTILEVER BRIDGE AT LAKE FORK, LICKING CO., OHIO