

a rigid connection between column and girder, the following provisions were made: Special anchor bars were embedded in the column and extended down into the bracket. The twin plywood girders were erected on both sides of these anchor bars, leaving a 7 in. space between them. Three 1½-in. bolts were placed in the top and bottom chords and carried through the looped anchor bars. Concrete was then poured in the 7 in. opening between girders, thus providing a rigid corner connection.

Timber erection finished in two weeks

Erection of the complete timber construction took only about two weeks, as the arches were fabricated and shipped at the rate of seven per day. Brown & Matthews were the general contractors. All timber construction was fabricated by Unit Structures in Peshtigo, Wis. The Ranger Aircraft Engines Division of Fairchild Engine & Airplane Corp. was represented by W. E. Myott.

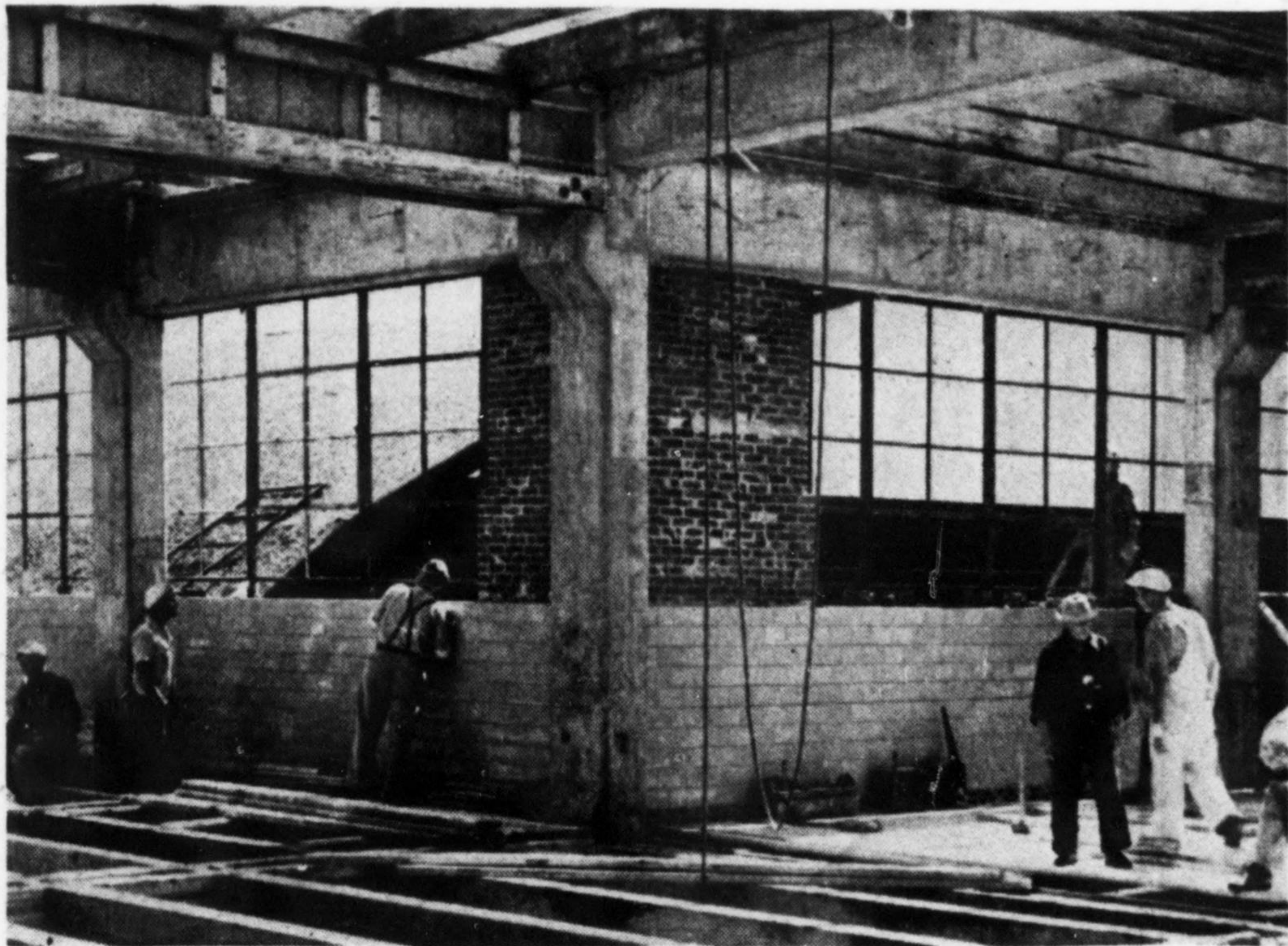


Fig. 6. Plywood girders, supporting the second floor and roof of the office building, are rigidly connected to cast-in-place concrete columns. Concrete beams support brick spandrel walls containing steel sash.

Plans and specifications for these buildings were prepared by Albert

Kahn Associated Architects and Engineers, Inc., Detroit.

Indiana Highway Bridges Designed To Carry Two Lanes of 40-Ton Trucks

Incorporating the most progressive methods of design, these Indiana state highway bridges are capable of carrying two lanes of 40-ton trucks. Completed last year over White River (left) and Fall Creek (right), the structures are on Indiana State Highway 534 now used as an access road to Fort Benjamin Harrison and intended, after the war, to bypass traffic around Indianapolis to the south and east.

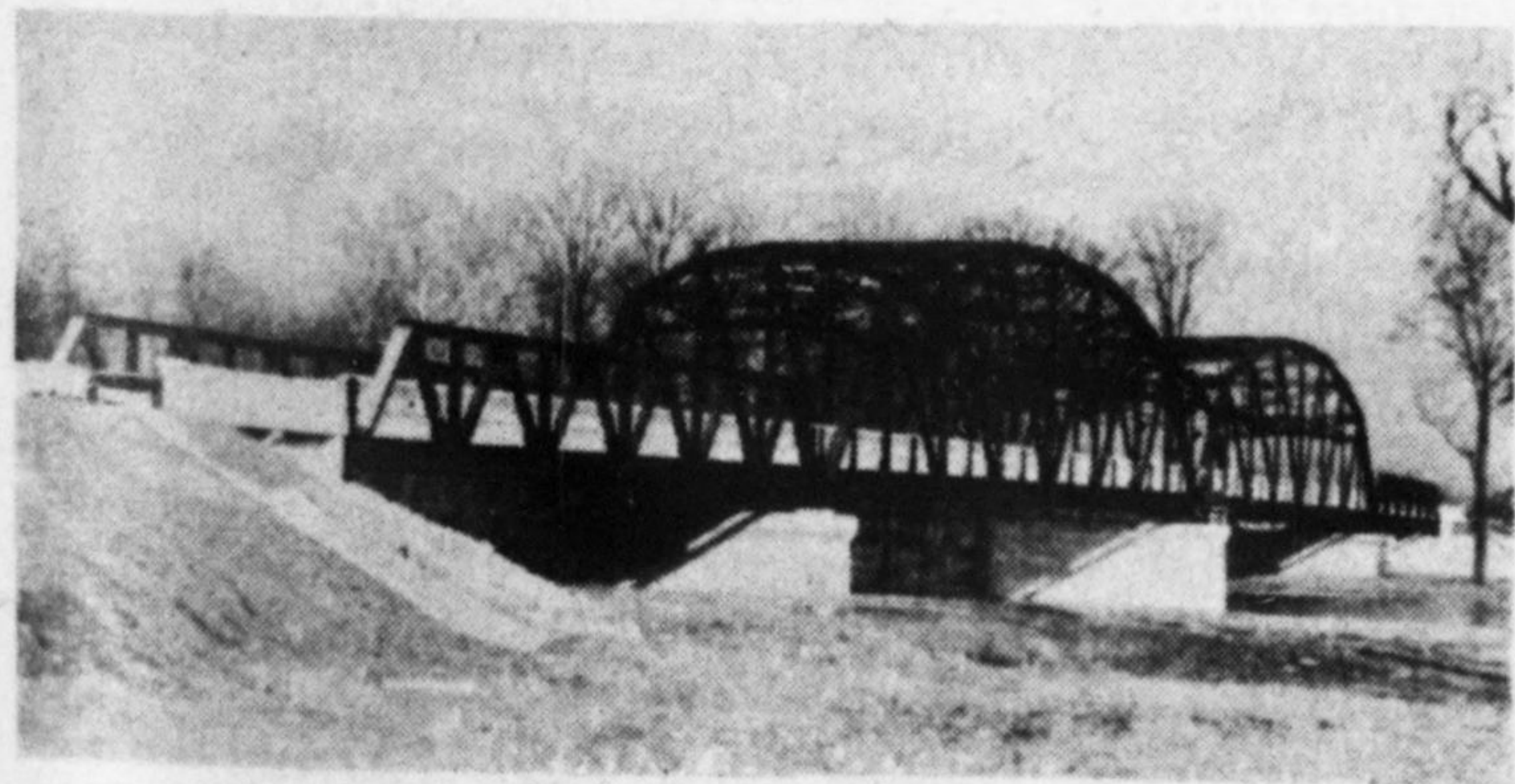
Additional strength was provided in the structures by designing them for an H-20 loading, with impact and

live-load distribution calculated according to the 1941 A.A.S.H.O. specifications, with the provision that whenever the live load and impact stress in a member exceeds stress due to dead load only, the live load is doubled (H-40) and the member is designed for a unit stress 50 percent greater than allowed for H-20 loading; thus providing for emergency 40-ton truck loads without exceeding the elastic limit of the structures. Additional calculations indicate a 90-ton load carried on caterpillar treads similar to those of the heavy army

tanks can be moved safely across the structures provided such a load is properly routed and proceeds slow enough to eliminate all effects of impact.

Both structures have a 28-ft. clear roadway with 2-ft. sidewalks on the truss spans and 2½-ft. sidewalks for the arch bridge. The steel bridge has two 9-ft. and two 174-ft. truss spans, while the other bridge includes two 40-ft. and three 80-ft. filled, spandrel arches built on a concave, or depressed vertical curve.

Contract for the truss spans was held by the B. E. Curry Building Corp., Bloomington, Ind. and the arch structure was constructed by Smith and Johnson Contractors of Indianapolis. Designs were prepared by the State Highway Commission of Indiana.



These bridges are designed to carry 90-ton caterpillar tread army trucks if moved slowly to avoid effect of impact.