

street railway rails had to pass through the expansion joint, the detailing of this joint proved a little intricate. The expansion joints at the abutments are the usual apron plate type, with an asphalt joint between the concrete of

bronze plate inset into the top of it, while another bronze plate inset into the under side of the bearing plate of the girder completes the expansion bearing. At the fixed ends the bronze plates are omitted. The bearings for the

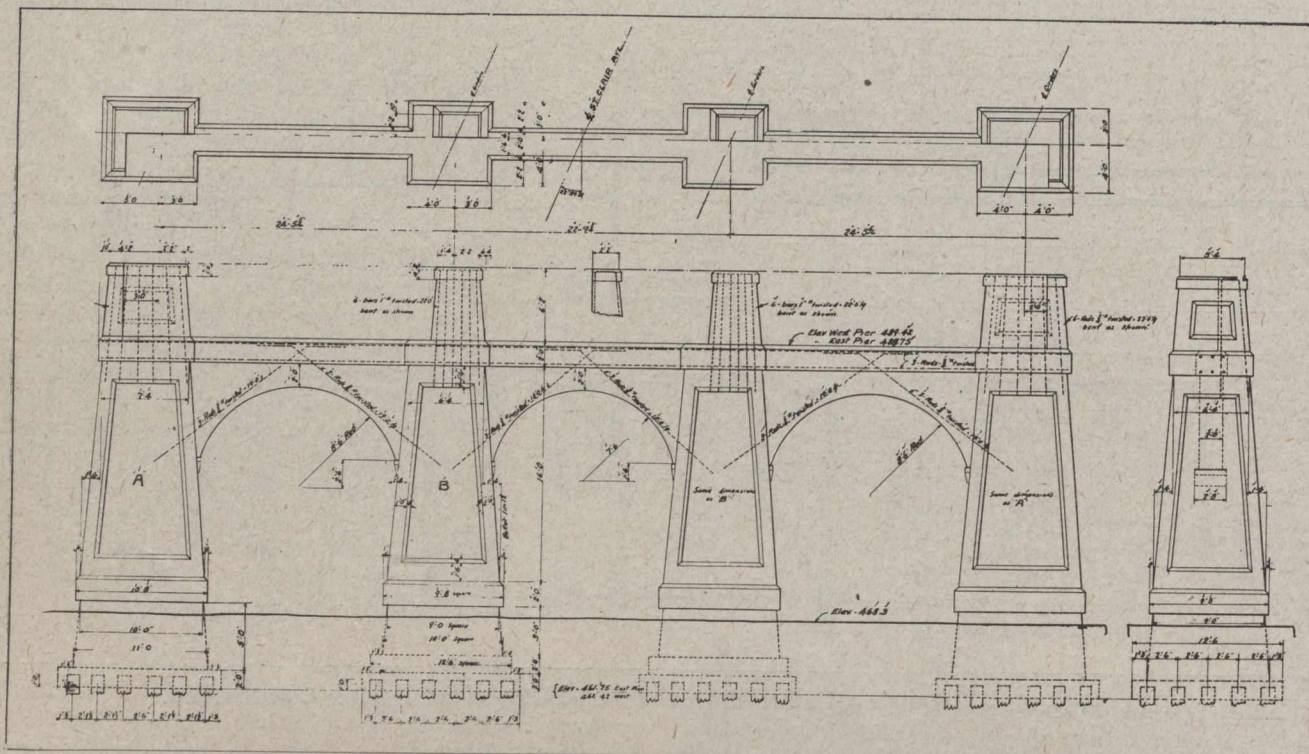


Fig. 8.—Details of Concrete Piers.

the bridge floor and the concrete base for the pavement of the approach.

Structural steel catch basins are provided at various points in the bridge floor; these are connected to the creek below by 4-in. drain pipes. The sides of these catch basins have a batter of 3 in 12 to destroy the expanding

40-ft. girders are the ordinary steel plate type. This type of bronze plate expansion joint has given very good satisfaction so far.

In the design of the fence we were confronted with these two conditions—to make a strong fence and to make it pleasing in appearance. There have been several accidents lately in which the bridge fence was the only thing between a motor car and the ravine below, and the policy of the city now is, to build good stout fences on their bridges. The fence, as built, consists of 18 in. at the top of scroll work made of  $1\frac{1}{4}$  in. x  $\frac{1}{4}$  in. bars and 27 in. of 45° lattice work at the base, made of  $1\frac{1}{4}$  in. x  $\frac{1}{4}$  in. bars, and is 4 ft. high. A Carnegie handrail tee section No. 154 with one  $1\frac{1}{4}$  in. x  $1\frac{1}{4}$  in. x  $\frac{1}{4}$  in. angle underneath to connect the scroll work to, composes the top chord, a  $2\frac{1}{2}$  in. x 2 in. x  $\frac{1}{4}$  in. angle separates the scroll from the lattice work and a  $2\frac{1}{2}$  in. x 2 in. x  $\frac{1}{4}$  in. angle 3 in. from the sidewalk slab completes the fence. 5 in. x 3 in. tees at 13.6 lbs. at 7 ft. 6 in. centres are used for fence posts. The scroll work and latticing were so designed as to be continuous in appearance at the fence posts.

The steel work was fabricated and erected by the McGregor & McIntyre Co. The transportation of this heavy steel from their plant on Shaw St. to the bridge site over the city streets, a distance of two miles, was admirably solved by the presence of good sleighing. The 100-ft. girders were loaded, flatwise, on two heavy sleighs, the tractive force being supplied by a large six-ton motor truck and a hoisting engine. When the motor truck

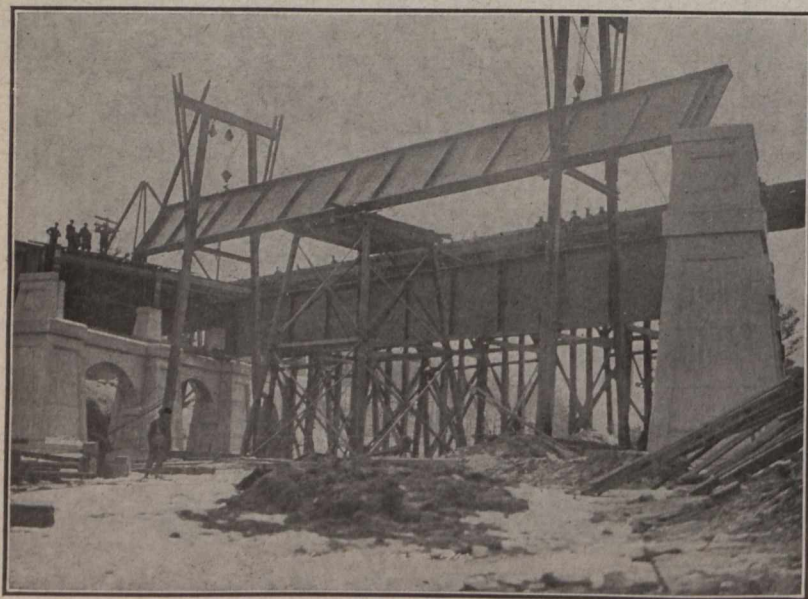


Fig. 9.—Erection of One of the Inner Hundred-foot Plate Girders.

force of ice, if the basin happened to be full of water in cold weather.

The pier members of the 100-ft. girders at the sliding ends consist of a cast steel bed plate with a phosphor