metal, the handrail with two $\frac{1}{2}$ -inch diameter rods and each spindle with one $\frac{3}{8}$ -inch square twisted rod.

Construction was commenced in the summer of 1914 and completed in the fall of the same year. Coffer-dams drop hammer, the leads of which were sloped to the required batter. After the removal of the jet the piles were given a few blows of the hammer to secure the required penetration. On several occasions a pile, adjacent to the

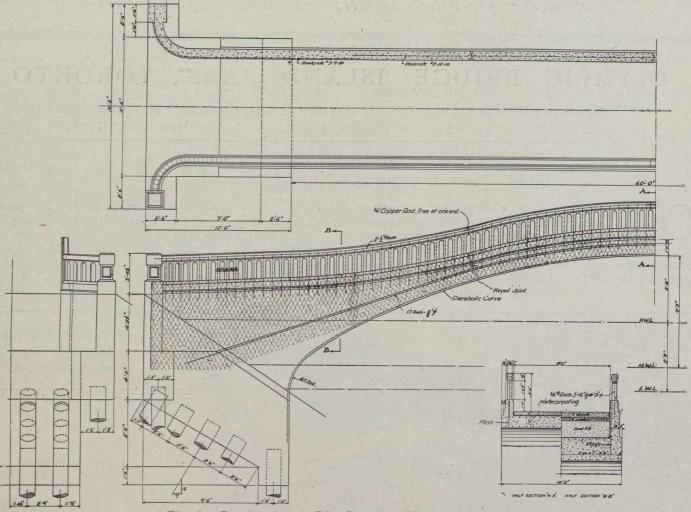


Fig. 3.—Details of Arch Rib, Spandrel Walls and Abutment.

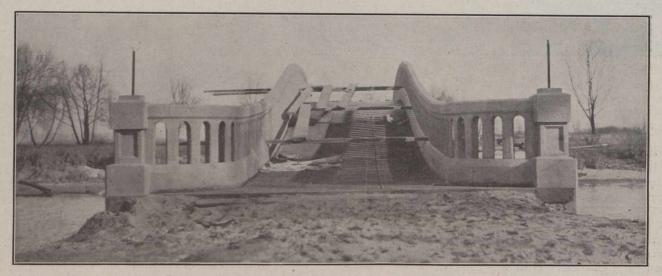


Fig. 4.--End View of Bridge During Construction.

were built around each abutment and three pile bents (Fig. 7) were driven to support the arch centering and form work. The piles were sunk into place, the soil being sand, by means of a water jet aided with a light pile being jetted, would pop out of the water, the jet evidently having loosened the sand surrounding it. This method of pile driving was found to be very satisfactory.

606