When the excavation was completed a temporary timber trestle was built to accommodate the civic street railway and pedestrian traffic. The railway was not ready to operate till several weeks after the trestle was completed.

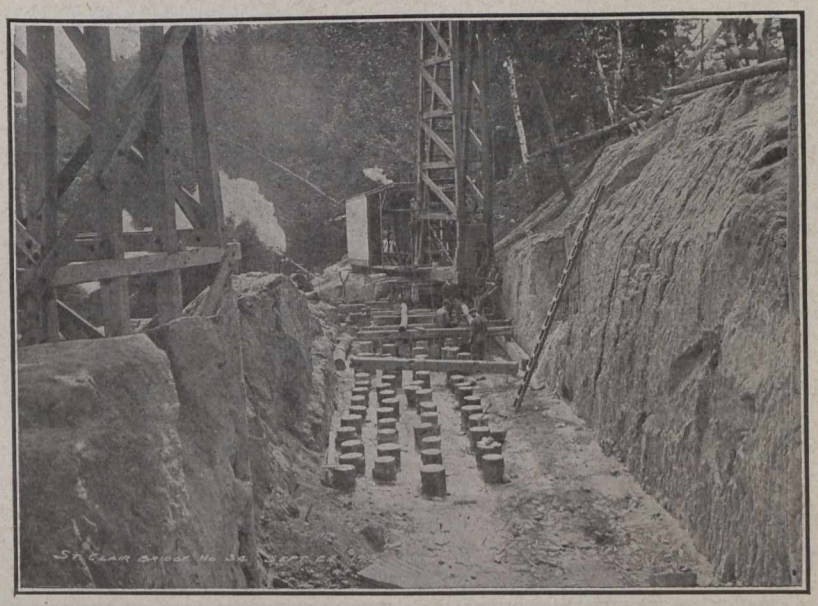

Fig. 2.—Piling in West Abutment, Showing Piles Cut Off.

This trestle was so constructed that the new bridge could be built without interfering with the street railway traffic. This was accomplished by bridging over the spaces occupied by the piers and abutments with steel beams, which could be easily removed when it was necessary for the pile driver to pass through; this was always done at night when few cars were running. The two street railway tracks were merged into a gauntlet track on the trestle (as shown in Fig. 1). This construction did away with the necessity of the cars stopping and turning a switch at the ends of the trestle, and brought the cost of the trestle down to a minimum. The operation of this gauntlet proved very satisfactory, very little inconvenience resulting to the operation of the car line. The city did all this preliminary construction by day labor.

The specifications for the permanent bridge were the City of Toronto's and Ontario Railway and Municipal Board's specifications. The item of most interest in the specifications is the loadings assumed. (See Fig. 4.)

The ground on which the permanent bridge was to be built is all filled-in-material and below that rather soft soil; it was necessary, therefore, to resort to piling for a proper foundation. Piles were supplied according to the following specifications: "Piles shall be of white oak, of straight, live timber, free from cracks, shakes, rotten knots, or other blemishes. They shall be so straight that a straight line taken in any direction and run the length of the pile shall show that its centre is at no point over four inches out of a straight line. They shall show an even, gradual taper from end to end and must not be in diameter less than eight inches at the point and not less than sixteen inches at the butt. The ends shall be cut square, the body barked and all knots trimmed smooth."

The pile driver used was an Arnott 4-ton, double-acting steam hammer, with the following dimensions: Stroke 21 in., diam. of piston 9½ in., steam pressure (working) 60 pds. per sq. in., the energy of each blow figures out to be 10,000 ft.-pds., 110 blows per minute

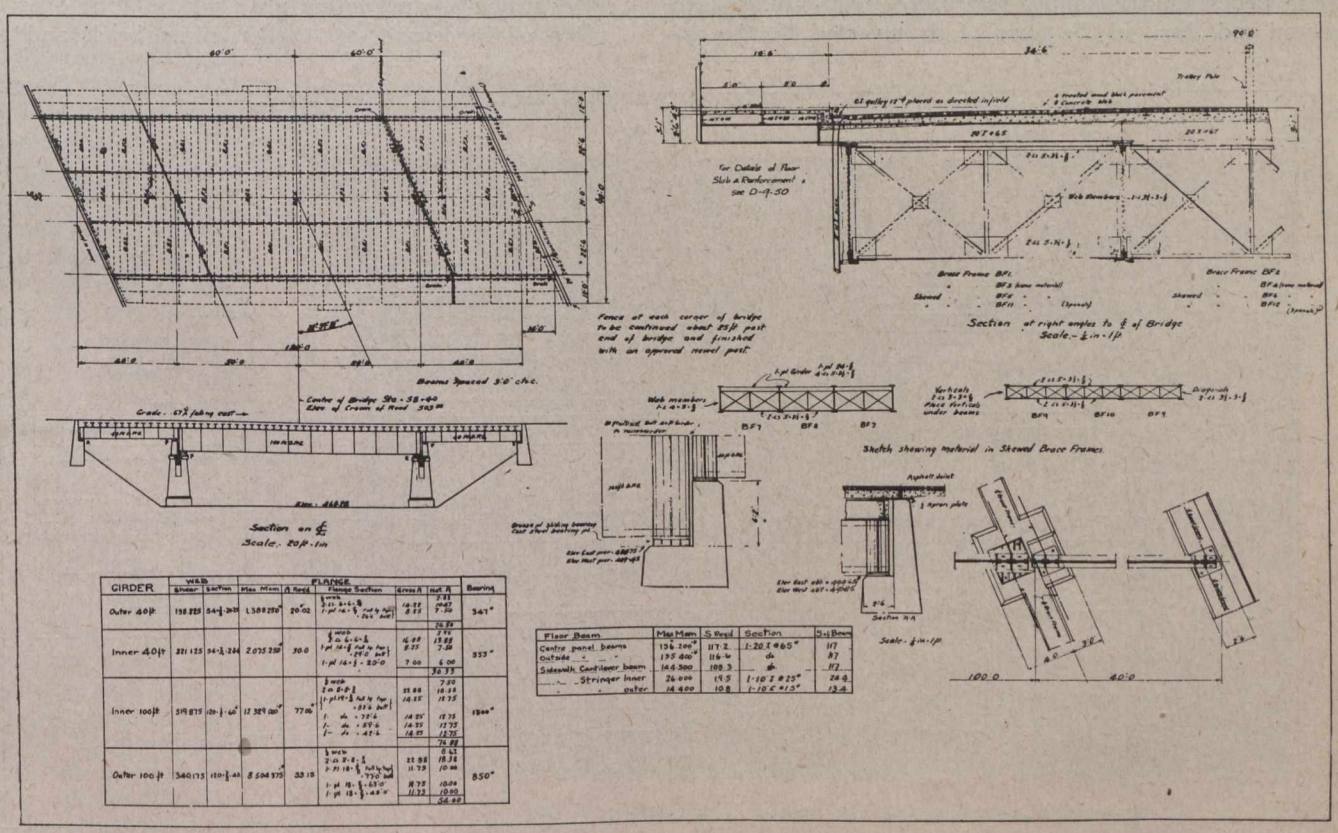

Fig. 3.—General Design of Bridge.