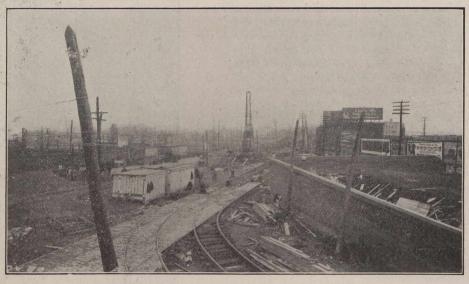
## QUEEN STREET BRIDGE, TORONTO.

At the Engineers' Club of Toronto, on December 15th, an interesting address upon the "Method of Construction of the Oueen Street Bridge, Toronto," was given by Mr. R. E. Chadwick, Bridge Engineer, city of Toronto. Mr. Chadwick showed many interesting views of the work as it is at present. Mr. Chadwick said, although the alteration at been met with which had not been at all reckoned on.

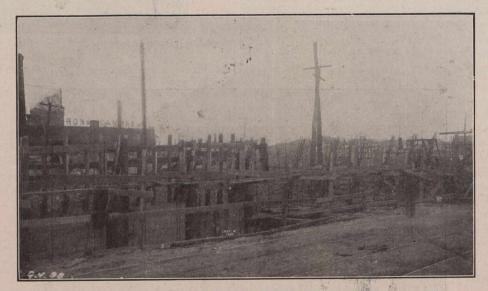
sible that serious difficulty will be encountered in the above ground work owing to the change in the weather. The great difficulty in this work has been the fact that it has had to be carried on in the midst of traffic, and furthermore, telegraph, telephone, car wires, car lines, and electric light wires have had to be moved about. Sewers have had to be temporarily supported, bridged, and underground difficulties have



General View of Work Showing Diverted Traffic.

Queen Street has been only recently undertaken, the change In excavation, the abutments of an old bridge of which there has been under consideration for a long time. The bridge is seems to be no record was found near the Don's former calculated to carry traffic of 30-ton cars. Some had stated course, 15 feet below the surface. A great deal of the earth that 40-ton cars should be here provided for, but at present in in this section where excavation and pile driving was neces-Toronto the heaviest loaded car is only about 25 tons. When sary, was a sort of muck land, in which if any depth of the Grand Trunk Railway has completed its present city construction work, and this work is complete, all level crossings up to the Humber will be done away with. The first work on the bridge was on the west abutment. A reinforced con- lowed. The most interesting feature of the alterations near

excavation was made the sides would speedily crumble in. In order to avoid this, the plan of excavating a few feet and then driving the pile, and thus continuing the process was fol-



Placing Reinforcement for Retaining Walls.

work below ground is still in rapid progress, but it is pos- swung around. The weight of the bridge is about 300 tons.

crete wall has been constructed upon the King Street side, the Don probably was the moving of the bridge. The plan and a similar wall is being constructed upon the Queen Street proposed by Mr. McCuigan to move the bridge was the plan side of the approach. In this wall construction, square clutch followed. In this falsework was used, piles were driven 12 bars were used as reinforcements. The concrete was a feet. Three lines of rails were used, a bed of solid rail-road 1:21/2:5 mixture. Broken stone was at first used, but it has ties laid, and stringers were laid on top. Block and tackle now been substituted by a good grade of gravel. Concrete were used, the bridge was moved parallel at first, then was