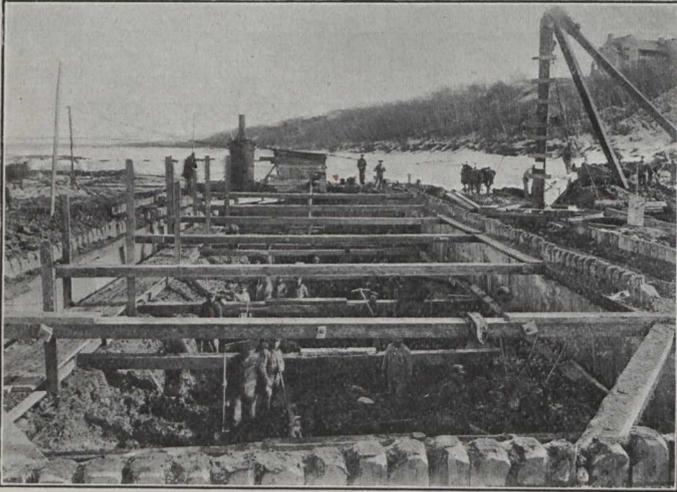


8-foot cantilevered sidewalks. The total length of the structure, including retaining wall and approaches, is 1,490 feet. The bridge proper is about 1,250 feet long.

Tenders for the construction closed July 15, 1913. The R. J. Lecky Company, of Regina, were the lowest and successful tenderers. The work was let on the unit



Typical River-pier Excavation, Showing double Line of Coffers-dams With Puddle Between.

price basis and their price for the unit quantities was about \$240,000.

As in all work done by the Board of Highway Commissioners, cement and reinforcing steel are supplied by

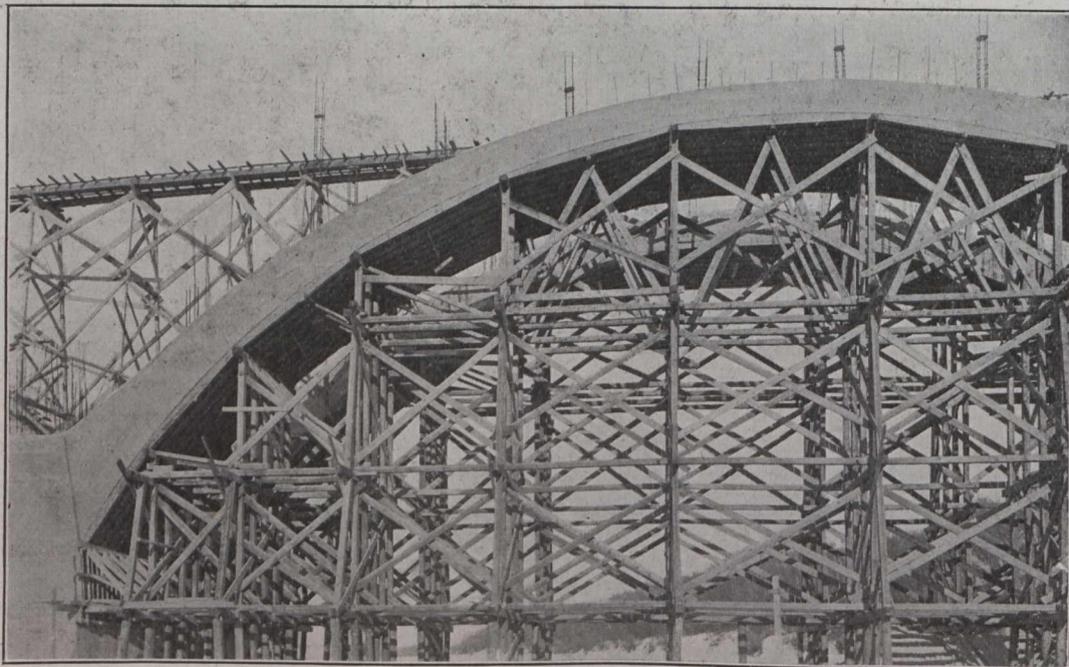
The loading adopted provided for 100-ton cars on each of two street car tracks, with loading from a 25-ton traction engine on the two 14-foot roadways on the remaining floor surface. Loading for sidewalks was taken as 150 pounds per square foot.

The allowable working stresses give 600 pounds per square inch as the maximum compression in the concrete, including temperature stresses. The range of temperature adopted was from 50 degrees to 90 degrees F.

The excavation for foundations revealed, after the first few feet, a hard blue clay. The original design required pre-moulded concrete piles under the shore abutments and piers. The sub-soil proved of such good quality that it was decided to use piling only under the retaining walls, in approaches, and under a small part of the east abutment. Wooden piling was used in these places.

Boring tests were made under all completed excavations and invariably revealed the same hard blue clay. A bearing platform was also used in foundation tests. Known weights were placed on a platform for 48 hours. This loading platform was supported by a bearing surface one foot square and periodic readings with a level were taken for any change in elevation. The tests were satisfactory and showed a safe margin for bearing power of the soil. Foundation pressures vary but are always less than four tons per square foot.

The arches were figured by the analytical method described in "Principles of Reinforced Concrete Construction" by Turneure and Maurer. No two arches were of the same rise and the heavy grade of 2.88% made the loading eccentric. The high range of temperature assumed (from 50 degrees below to 90 degrees above zero) made the temperature stresses a big factor and in some



Detail of Centering One of the 150-foot Arches.

the Board. These added to the contract price bring the cost of the bridge, exclusive of paving, to about \$400,000.

An agreement was entered into between the City of Saskatoon and the Board. The city agreed to pay one-third of the cost of the work. Construction was to be carried on under the Board, but the work was to be open to inspection by the city.

arches temperature provided more stresses than all other stresses combined. This 140-degree range is thought to be the largest yet assumed in the design of any reinforced concrete arch.

The first sod was turned in August, 1913, and the river piers were begun in December. The work was continued throughout the winter.