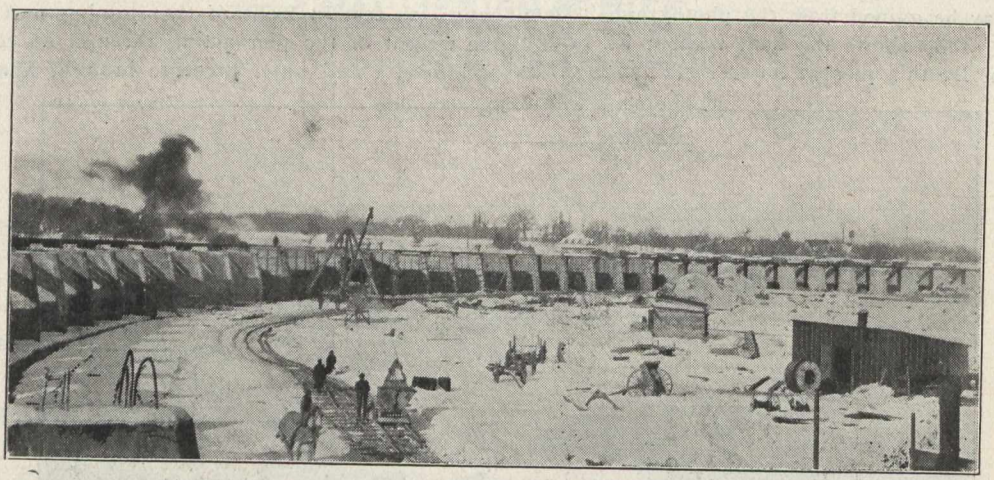
and ran the length of the pier. A space between each pair of channels allowed the vertical reinforcement to pass from the under side where the upset ends of the rods were secured by nuts and washers to the channels, through and up with centres 6 inches from outside of pier to beneath the nosing plate and bridge floor, where the rods were bent in a semi-circle, like hairpins, and came down to be secured underneath the pair of channels on the opposite side of the pier. In the upstream portion or that above the stop-log posts, the vertical rods were 1¼-inch round at 6-inch centres, while below the posts, or downstream, they were ¾-inch round and 9-inch centres. Running outside of these upright rods were ⅜-inch horizontal round rods spaced at 16-inch centres and wired to the vertical members. There were also nine ¾-inch rods in the rounded ends of the nose, which were bent up parallel to the latter; a like number of ⅝-inch rods were used in the downstream ends. These rods were set in the foundation matrix and not connected with the system of anchors. Above elevation 46.00 ⅞-inch rods, 21 feet long, in sets of three were put in horizontally to bind the upstream and downstream portions together.

To protect the concrete on the face of the upstream batter from the pounding of ice or logs, ½-inch rounded nose plates 11 feet 7½ inches long were securely anchored to the concrete backing.

A double system of stop-log checks was thought advisable. This member was composed of eight 12-inch channels at 25 lbs., eight 3 × 2½ × 7-16 angles with ½-inch plates and anchors. The total weight of post per pier was 9,517 lbs.

The sills were each a 15-inch channel at 33 lbs., and were placed at elevation 37.00. They were solidly bedded by forcing 1 : 2 mortar through 1½-inch holes in the upper surface of the channels. They were also anchored by 1¾-inch bolts.

With the 1 : 2 : 4 concrete surrounding the steel reinforcement, the pier became a permanent structure securely bound to the solid bed-rock on which it rested.



Construction, December 16th, 1909.

An additional rigidity was imparted by the reinforced bridge floor, which united the tops of the piers. This floor was 23 feet 5½ inches wide and 15 inches deep. It was reinforced by ¾-inch straight round rods at 6-inch centres on the bottom and by ½-inch rods on top at 6-inch centres. The web reinforcement consisted of ¼-inch stirrups wired to right angles to the main reinforcement in the top and bottom tension members; ¼-inch rods at 14-inch centres, ran at of slab. The floor was divided into two parts by the stop-log opening, which was 4 feet 5 inches wide. This opening was divided in the centre into two parts by two 12-inch channels at 20.5 lbs., separated by bolts and piping. This left 19 inches for each stop-log way. The two sides consisted of a 3 × 3 × 7-16 angle on a 12-inch channel at 20.5 lbs. anchored to the floor slabs. The angles were so placed as to form checks for a wooden covering of the opening. The upstream portion of floor carried the winch rail, poles for winch wire, etc., while the downstream carried the other

Reinforcement in Piers.