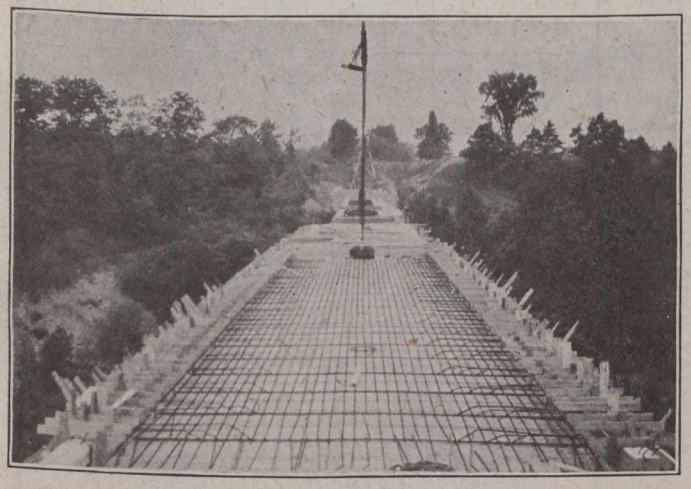
The web members consist of a double system of angles and bars, forming 5-ft. panels. Samples of damaged members of girders that had been subjected to similar service showed satisfactory strength. Under a uniform live load of 100 lbs. per sq. ft., the maximum stress per square inch was found to be 13,100 lbs.

The girders were hauled (from the station to the site) lying flat on house-moving trucks placed at about the quarter points. They were moved by a team with block and tackle. They were set up on the west bank and the new brace frames and laterals were then assembled and riveted.

The lower part of the piers was 10 by 20 ft. without batter, and the upper half was battered to 6 ft. by 16 ft. 8 ins., with large openings as shown in the accompanying illustrations. The upper half of the pier was cast in three sections, breaking above the struts. The piers were reinforced against temperature stresses only, except the struts and knee-braces, which were heavily reinforced against wind stress.

The launching of the girders without falsework was probably the most interesting feature of the work. A pilot (or pair of triangular trusses 60 ft. long, with cross bracing)



REINFORCING IN PLACE FOR FLOOR SLAB

was used to carry each girder across its span. The pilot was bolted onto the end of each girder in turn as they were placed, and was securely tied to the shoe plates. The pilot was handled by the cableway and connected as soon as the girder was out far enough to allow the end of the pilot to rest upon the next pier. The accompanying illustrations clearly show how the pilot was used.

A pair of 30-ton steel rollers were placed on the forward pier to reduce friction, consequently reducing strain on the piers. The girders were moved on greased rails, with shoe plates bolted under the girders, with plank between to take up the bearing of the rivet heads. The motive power was supplied by the carriage of the cableway, through a series of block and tackle.

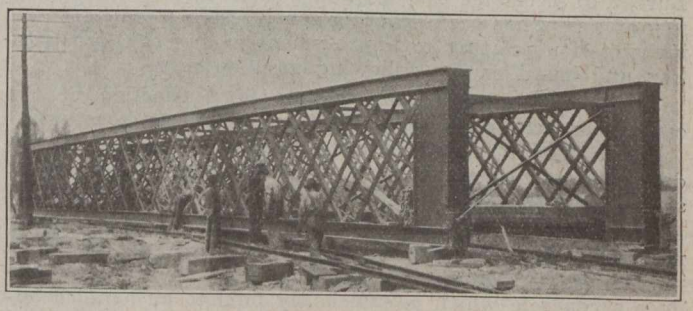
The first girder was pulled from the west abutment by passing steel cable around same, through the weep holes, the others being pulled from the forward end of the last girder placed.

The girders were moved down the slope to the west abutment on a timber skidway and rails.

On account of the proximity of the cable-tower to the west abutment, and also to avoid damaging the ballast wall, a timber bent (in concrete foundation) was built about 6 ft. in front of the abutment, on which to balance the first girder and also to turn it into the line of the bridge.

Timbers (12 by 12-in.) were placed on top of each pier to a height of about 6 ft., which reduced the slope upon which each girder moved off the preceding one. After a girder had been moved into position, it was jacked down to its final level. The next girder was then brought down, run out over those in place, and jacked down in similar manner. The illustrations show various stages of this operation. In order to provide an even bearing for the masonry plates under the uncertain camber of the girders under load, temporary bearing was taken on a 4-in. strip of steel and was afterwards grouted.

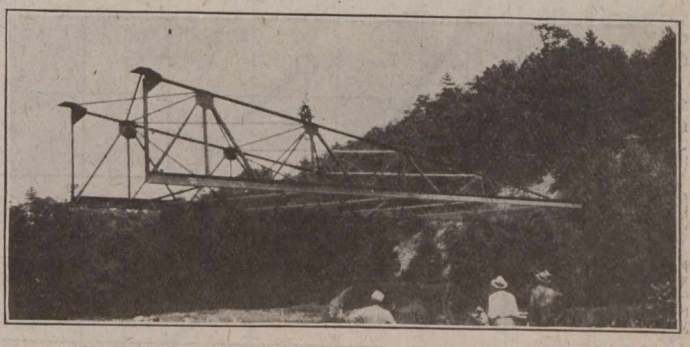
As soon as the last of the girders had passed over the west span, the form-work for the deck was commenced. The deck consists of reinforced concrete floor beams on panel points 5 ft. centre to centre, with a 7½-in. slab. The girders are at 13 ft. 6-in. centres, while the deck is 20 ft. clear of curbs. The curbs were cast with the deck, leaving a



SKIDDING GIRDER TO ABUTMENT

chase on top to take the concrete pre-cast panels of the railing. These panels were 2½ ins. wide. Reinforcing rods for the posts were left projecting. The panels were hauled up by the cableway and were set up in position, forms for posts and upper rails were clamped around them, and they were then concreted. At the ends of the girders, expansion was provided for by the panels and rails sliding in slots in the posts. In the floor, a steel plate with two angles was used.

The bridge is now open for traffic. The work was done on a cost-plus basis, and the total expenditure was about $110,000. J. F. Little is warden of Halton county, and Chas. Readhead, chairman of the bridge committee; A. S. Forster was warden in 1918, and Mr. Readhead in 1917. The Ontario Department of Highways will pay 60% of the cost. W. A. McLean, deputy minister of the department, appointed A. Sedgewick, and later Jas. A. Bell, to represent the provincial government on the work. As previously stated,



THE "PILOT," WHICH ELIMINATED FALSEWORK

Norman McLeod, Ltd., were the contractors. Bowman & Connor, consulting engineers, Toronto, were the engineers for the county. The contractors were represented on the work by R. F. Smith as resident engineer.

J. C. Reilly, acting secretary of the Association of Canadian Building and Construction Industries, recently returned to Montreal after a trip to the Pacific coast. He reports a feeling of general optimism among the builders in the west, regarding the opportunities for the coming season. Even in the districts which suffered heavily from the drought, there seems to be considerable building in prospect. In Winnipeg Mr. Reilly was the guest of the Builders' Exchange at the annual banquet, 160 being present. He also addressed the exchanges in Regina, Saskatoon and Moose Jaw, and visited Vancouver and Victoria. In Calgary a new builders' association has been formed and is doing splendid work, and in Edmonton an association is being organized.