all railway traffic is stopped at a safe distance from the bridge—all of these operations being carried out from the signal tower, which commands a view up and down the canal even when trains are passing over the bridge.

The structure is also provided with a system of lights, as required by the Board of Railway Commissioners, for the protection of shipping on the canal. The new type of bridge gives a much clearer view along the track than formerly, as there is no overhead lattice work projecting above the rail level.

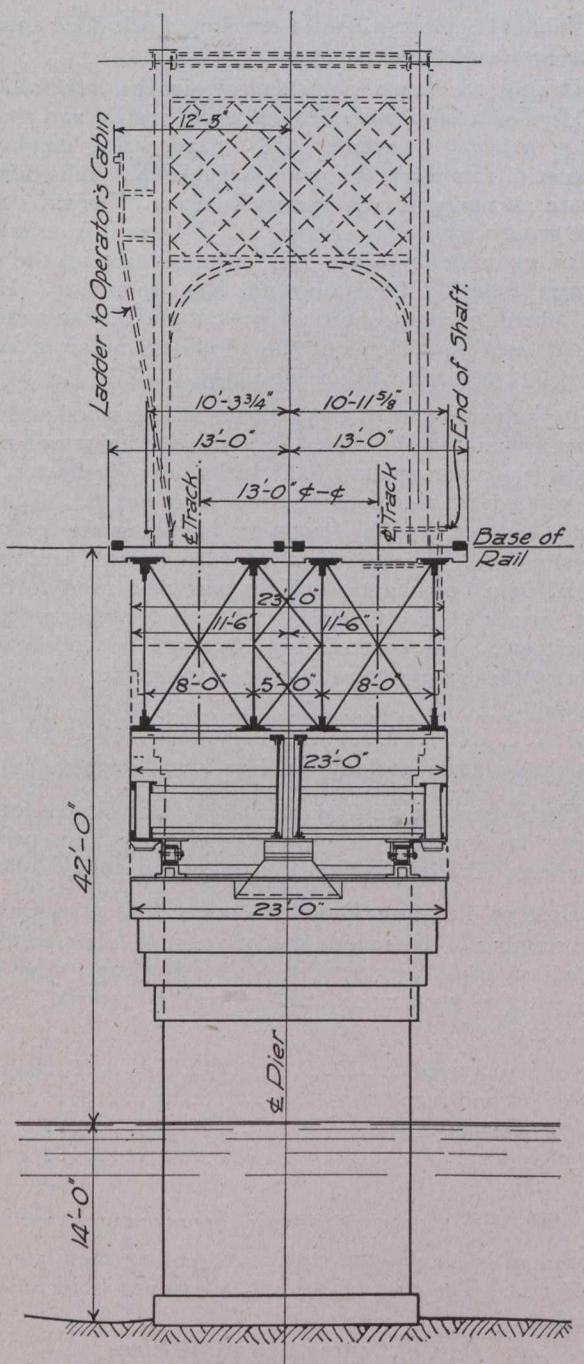

Fig. 3.—Sectional Elevation of New Bridge and Its Relation as Regards Height to Old Structure.

The bridge was designed by the railway company's engineers and the extensions to the substructure were carried out by the John S. Metcalf Company, while the steelwork was manufactured and erected by the Dominion Bridge Company.

STRENGTH OF SAND-LIME BRICK.

The strength of sand-lime brick depends upon a firm bonding of the sand grains through the agency of lime. A mixture of sand and lime is pressed into bricks, which are then subjected to the action of steam under pressure, for several hours. A chemical union takes place between the lime and the quartz of the sand, forming hydrated calcium silicate. The sand used should not be too coarse. That passing through a twenty-mesh screen and composed of grains ranging in size down to minute particles is desirable. In other words, the sand grains should be so graded in size as to leave very little interstitial space. The strongest bricks are made from sharp sand which is free from inert minerals, such as clay, iron oxide, mica, etc. The clay and iron oxide are particularly objectionable since they are liable to mask the grains of quartz and thus prevent the union of the lime and quartz. Ten per cent. of clay substance should be set as the extreme limit. Feldspar is less objectionable, but in large proportions is undesirable as it reduces the strength of the brick.

CANADIAN MECHANICS FOR BRITISH WORKSHOPS.

Last week Mr. George N. Barnes, M.P. for Glasgow, and Mr. W. Windham, of the Board of Trade, Great Britain, arrived in Ottawa to confer with the Dominion Government concerning skilled mechanics to go to the United Kingdom for employment in the manufacture of war munitions. Some 30,000 mechanics are needed, and the British Government comissioned these gentlemen to come to Canada and engage every qualified and skilled mechanic it was possible to secure, with the approval of the Canadian Government. It is proposed to pay the transportation of such men, and their return transportation also, if they remain six months. The men are wanted to handle metal and work lathes of all kinds and to engage in the assembling of parts. Those who go will be paid the highest wages prevailing in the districts to which they go, and they will only go to the best districts. They will be employed only in the Government factories and by the firms who are engaged on war contracts.

In an interview Mr. Barnes stated that the situation in England had vastly improved from the standpoint of production of war materials, though a great many men of all kinds were needed in the manufacture of gun carriages, arms, shells, etc. The laboring classes were as anxious as any to see the war brought to a successful and speedy conclusion, and were impressed with the importance of the work upon which they were engaged.

This is borne out by a letter received by us the other day from Ed. Bennis & Co., Limited, London, one of the firms exempted from recruiting in consequence of being engaged on war contracts. A letter was addressed to each employee calling attention to the large contracts in hand for mechanical stokers, coal elevators, conveyers, ash-handling plants, etc., for a number of ammunition and powder factories that were being put up with all possible speed by the Government. These contracts amounted to about 80% of the work in hand, and were under stringent guarantees as regards delivery. Each employee was asked to attend to his duties regularly and consciously, avoiding broken time, and enabling the management in every possible way to execute the work within the times