



Plan 4.—Lachine Bridge, C.P.R. Stresses, Material and Typical Details, 270 ft. Deck Truss Span.

while launching was 1,300 tons. During each of the operations, all the regular trains were allowed to pass on the adjoining spans, which necessitated stopping the floating operations, because the work of signalling and superintendence was interfered with. The difference between the net time and the gross, was occupied in overhauling cables, taking up slack, and in dismantling some of the steelwork connected with the special truck or buggy when it reached the last panel of the 270 ft. span. At this point, it was necessary to remove certain steelwork which became no longer necessary on account of the load being shifted, from a 3 point to a 1 point bearing. A diagram of this buggy is shown on plan 5. The perfection of the control under which the span was at all times, is exemplified by an incident which occurred during one of the floating operations. The span had reached a point 3 ins. short of its correct

location, and after the necessary signalling over the intervening distance of nearly 800 ft. the Lidgerwood engine driver made exactly the 3 ins. movement called for, no more and no less. This is remarkable considering the tonnage being handled. As has already been stated, the 408 ft. spans were skidded upon the deck of the adjacent 270 ft. deck spans, and after each pair of the large spans (on one track) were floated into correct location they were at an elevation approximately 12 ft. higher than their permanent levels. This required that they be jacked down to their correct bridge seat levels, which was done by means of 150 ton jacks and blocking, the end floor beams having been designed for this purpose as were also the end cross beams of the 270 ft. spans. The 240 ft. spans were also provided with special end bracing to enable them to be jacked up on the piers, if necessary, during erection. The

time occupied in erecting the steel was as follows:—  
 March, 1911.—Erection started at north end.  
 May 28, 1911.—New 120 ft. spans moved into upstream alignment replacing old 240 ft. span between piers 6 and 7.  
 July 6, 1911.—Traffic diverted to downstream track between piers 6 and 7.  
 Nov. 12, 1911.—New downstream span between piers 10 and 11 slewed over, thereby releasing old spans between piers 7 and 11.  
 Mar. 31, 1912.—Span 10-11 moved into upstream alignment allowing erection to proceed on downstream spans 10-11.  
 June 18, 1912.—Span 14-15, and 15-south abutment erected.  
 July 13, 1912.—Downstream spans 10-11 and 11-12 erected.  
 Nov. 4, 1912.—Downstream 408 ft. span 13-14 floated.

Nov. 22, 1912.—Downstream 408 ft. span 12-13 floated.  
 April, 1913.—Started taking down old spans between pier 11 and south abutment.  
 June 10, 1913.—All old steel dismantled.  
 Sept. 18, 1913.—Upstream 408 ft. span 12-13 floated.  
 Oct. 6, 1913.—Upstream 408 ft. span 13-14 floated.  
 Nov. 4, 1913.—All new steel erected and double track put into service.  
 The total weight of metal work in the old bridge was about 4,100 tons, in the new it was 14,231 tons. The total quantity of masonry and concrete in the original piers and abutments was approximately 12,400 cubic yards. In the additions to old piers and in new piers there were 13,300 cubic yards. The total length of the bridge and height above watermarks were not changed, and are indicated on the plates. The number of rivets in the new bridge is ap-