Soft steel shall have an ultimate strength of 54,000 to 62,000 lbs. per sq. in., with an elastic limit not less than half the ultimate strength & a minimum elongation of 25% in 8 ins. This steel must bend double, when cold, to close contact without sign of fracture on the outside.

Rivet steel shall have an ultimate strength of 50,000 to 58,000 lbs. per sq. in. & an elongation of 25%, & shall stand the bending test above specified.

Medium steel shall have an ultimate strength, when tested in samples of the dimensions given above, of 60,000 to 68,000 lbs. per sq. in., an elastic limit of not less than half the ultimate strength, & a minimum elongation of 22% in 8 ins.

This steel must stand bending 180° to a curve whose inner radius is 1 1-2 times the thickness of the sample, without cracking on the convex side, either when cold, hot, or after being heated to a cherry red & cooled in water of 60° F.

Eye-bars of 8 sq. ins. of area or less must elongate 15° in a gauged length of 20 ft.; must show a minimum elastic limit of 30,000 lbs. per sq. in., & develop a minimum ultimate strength of 58,000 lbs. per sq. in. For eye-bars of greater area, not exceeding 20 sq. ins. in section nor 2 ins. in thickness of bar, a reduction will be allowed to a minimum requirement of 56,000 lbs. ultimate strength, 29,000 lbs. elastic limit, & an elongation of 10% in a gauged length of 10 ft.

Eye-bars tested to destruction & fulfilling

Eye-bars tested to destruction & fulfilling the above conditions shall be accepted even though they break in the head, if not over one-third of the bars tested break in this manner.

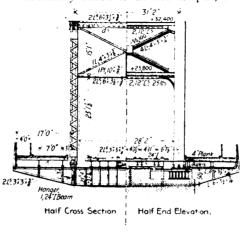
Pins made of either soft or medium steel shall, on specimen test pieces cut from finished material, fulfil all the requirements of the grade of steel from which they are rolled, ex-

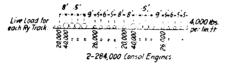
cepting the elongation, which shall be decreased 5% from that specified.

Pins up to 6 ins. diameter shall be rolled. Pins exceeding 6 ins. in diameter shall be forged under a steam hammer striking a blow of at least 5 tons. The blooms to be used for this purpose shall have at least three times the sectional area of the finished pins.

After pins have been manufactured to diameter, they shall be carefully & uniformly heated to a medium orange color in a closed furnace, & not in contact with the fuel, after which they shall be buried the diameter is one-half larger than the original hole, without cracking the metal.

All holes for field rivets, excepting those in connections for lateral & sway bracing, shall be accurately drilled to an iron templet, or





Wheel Load Diagram

reamed while the connecting parts are temporarily put together.

The several parts composing a riveted member shall be so accurately punched & reamed, that upon being assembled, connecting holes shall be truly opposite. If they are not they may, if the inaccuracy does not exceed 1-16

not be allowed, except to form loops of laterals, counters, sway rods or unimportant details.

The eye-bars shall be annealed, & must be perfectly straight before boring, & must be free from all flaws or defects & of full thickness in the necks. Welds in the body of these bars will not be allowed. The heads of these bars must be so proportioned & made that when tested to destruction, the bars shall break in the body of the original bar rather than at any part of the head or neck, & shall be made by upsetting, rolling or forging into shape.

Bars which are to be placed side by side in the structure shall be bored at the same temperature & of such equal lengths that on being piled on each other the pins shall pass through the holes at both ends without driving.

The pins shall be turned accurately to gauge & shall be straight or smooth; chord pins up to 4½ ins. diameter shall fit the pin holes within 1-50 in.; for pins of a larger diameter the clearance may gradually be increased to 1-32 in. for pins of 6 ins. diameter & over. Lateral pins shall fit the pin holes within 1-32 in.

The open sides of all compression members shall be stayed by batten plates at the ends, & diagonal lattice work at intermediate points. The batten plates must be placed as near the ends as possible, & shall in length be not less than the greatest width of the member, or 1½ times its least width. The size & spacing of the lattice bars shall be proportioned to the size of the member.

The trusses shall be given a camber, by making the panel lengths of the top chord longer than those of the bottom, in the proportion of $\frac{1}{8}$ in. to every 10 ft.

portion of \(\frac{1}{6} \) in, to every 10 ft.

The shop painting will include 1 coat of paint to all inaccessible parts, \(\frac{1}{6} \) 2 coats after erection, all other parts being given 1 coat of raw linseed oil. Pin holes \(\frac{1}{6} \) planed surfaces will be coated with white lead and tallow. In the field the structure will be given 2 coats of paint.

All paint will consist of 12 lbs. pure red lead, & 10 oz. lamp black per gallon of paint, thoroughly mixed with rawlinseed oil.

The carrying capacity of the reconstructed bridge will be 11,000 lbs. per running ft., as a gainst the present capacity of 2,240 lbs. per running ft.

Six of the trusses are being manufac-tured by the Dominion Bridge Co. at Lachine, Que., 10 by the De-troit Bridge & Iron Works, Detroit, Mich, & 9 by the Union BridgeCo., New York City. The whole 25 spans will be erected by the Detroit Bridge & Iron Works.

| Top | 36 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |

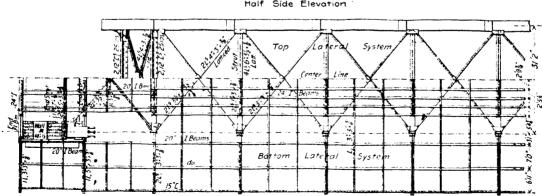


FIG. 4.—DETAILS OF TRUSS SPANS FOR VICTORIA JUBILEE BRIDGE.

in warm, dry sand or ashes until cool.

All pins more than 5 ins. diameter shall be

bored through the center.

Punched rivet holes, pitched two diameters rom a sheared edge, must stand drifting until in., be still further reamed to bring them exactly into line.

The heads of eye-bars & enlarged ends of rods shall be made by upsetting or forging into shape. Welds in the body of the bar will

The Chief Engineer, in response to our enquiry as to when the work will be completed, says he is unable to answer with any degree of certainty, but he hopes it will be finished this year.