

Bridges for the Chicago Track Elevation.

The general style and the details of the floor construction of the bridges for the Chicago track elevation are shown in the engravings which we present this week. They apply to the bridges spanning 60-ft. streets without intermediate columns, and comprise an end view and cross section, a longitudinal section and floor plan, and details of the floor-beams, hanger plates, rails, rail bolts, etc.

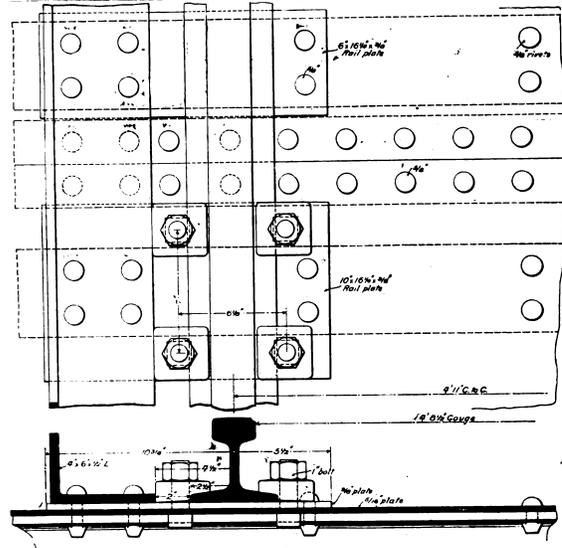
The five trusses making up a four-track bridge are alike in sectional area and details, so that additional tracks can be provided without reinforcement or change. They rest at each end on a wall plate one inch thick, and securely anchored to the masonry. The webs of the girders are 1/2 in. thick, reinforced at the top and bottom chords to 1 1/4 in. The top chord is made up of 6 in. angles, 3/4 in. thick, and cover-plates, 16 in. x 3/4 in. The bottom chord is similar to the top chord, except the first lower cover-plate, which is 21 in. wide, so that a riveted connection can be obtained with the lower flanges of the floor-beam hanger plates for the purpose of obtaining side stiffness. The upper corners of the girder are rounded, and the top chord angles are spliced at the tangent points. The first top cover-plate is spliced at each end by the second, but all other chord members, and the entire lower chord, is made without splice. The girders, when erected, will have a 1/8 in. camber in the floor for the purpose of drainage.

The floor is made up of 36 10-in. by 36-lb. I-beams for each track. These beams are cut at each end to an angle of about 60 deg., as is shown in the detail plan of the floor beam and connections. The hanger plates are 9 1/2 in. by 7/8 in., riveted in the shop to each end of the floor beams by means of angle lugs riveted to the webs. These floor beams are riveted to the girders in the field, with five rivets connecting each hanger to the web, and with two rivets to the 21-in. lower chord cover-plate for side stiffness. A continuous sheet of 7/8 in. steel plates is

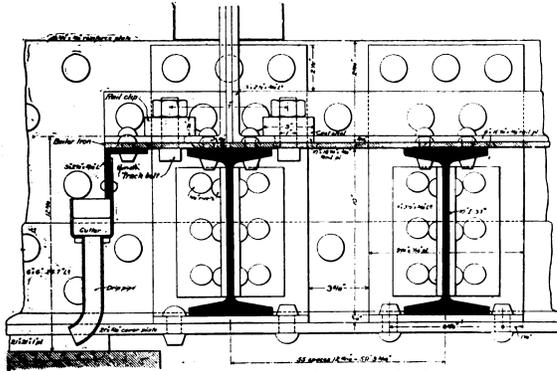
This form of floor has some advantages over other floors heretofore used. Its lightness, combined with great strength, and the absence of pull upon any rivets rendering the construction particularly stiff and durable, are both particularly desirable features. It might appear from the details of floor-beam connection that the floor-beams rested upon the extension of the first, lower chord, cover-plate, but this is not so, as the entire weight is taken up by the rivets in the hanger plates.

Minnesota Railroad Commissioners' Report.

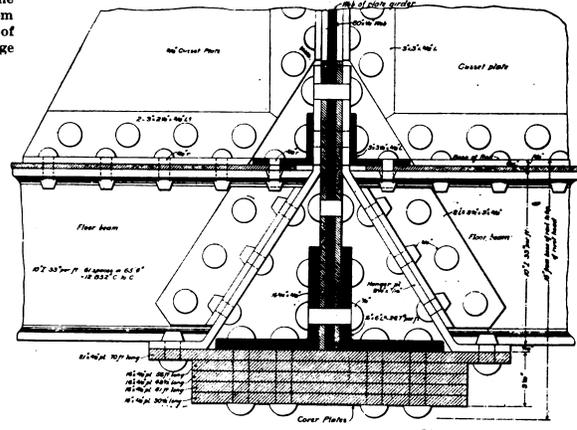
The Railroad and Warehouse Commissioners of Minnesota, W. M. Liggett, George L. Becker and Ira B. Mills, have issued their report for the year ending Nov. 30, 1894. The length of railroad in the state is 5,912 miles, an increase during the year of 49 miles. The statistics, which are for the year ending June 30, purport to be for the State of Minnesota, though it was not stated on what basis the amounts are separated from the totals for the whole of each road reporting. Large



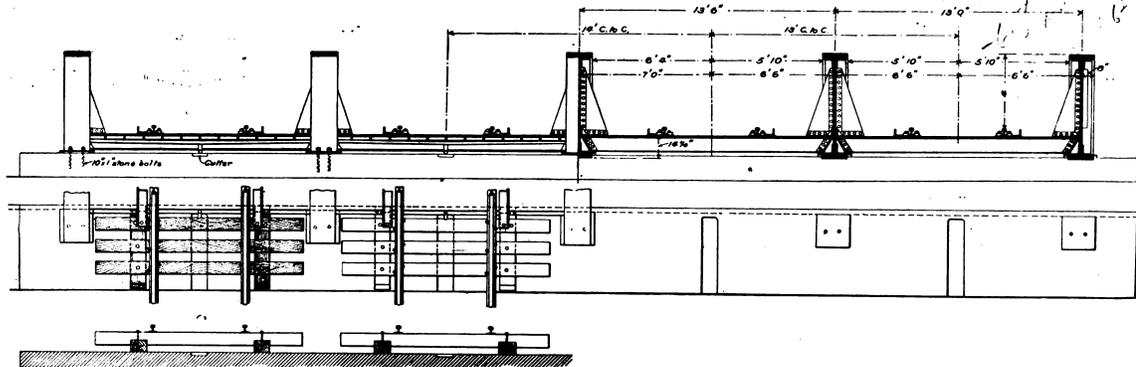
Details of Rail, Rail-Bolts and Guard Rail.



End View of Floor Beams, Showing All Details.



Details Showing Floor Beam and Gusset Plate.



General Plan, End View and Cross Section of Bridges—Chicago Track Elevation.

placed on the floor beams, and riveted to them as shown. It is riveted to the webs of the girders by means of an angle iron, and is spliced at the joints with 5 in. by 3/4 in. lap-plates, placed below the surface, as shown in the engravings. This form of floor is strong and durable, and, at the same time, light and simple in construction. The beams, by deflecting, will form an elastic and easy road-bed.

Drainage is provided for by the camber of the floor, and at each end by a 1/2-in. sheet steel gutter, fastened to the floor plates by a 3-in. x 2 1/2-in. x 1/4-in. angle. From this gutter the water drains into a groove cut into the coping of the masonry, as shown in the engraving, and from here into the street.

Upon the plate-covering of the floor, and riveted to it and to the floor-beams, as shown, are laid the rail plates and the guard rail. The rail plates are alternately arranged for rail fastenings, and for rail bearings only.

The material throughout will be soft steel, except the clip washers, which are of annealed cast steel.

decreases are shown, as in nearly every other state. The percentage of operating expenses to gross earnings was, however, a trifle less than for 1893, the figures for 1893 being 59.50, and for last year 59.04. The number of employees in Minnesota in 1894 was 18,550, a decrease from the previous year of 6,618.

The number of complaints made to the Commission has been less than in any other year since its organization. The relations between the public and the railroads are more harmonious than in former years, and in the matter of furnishing cars equitably to farmers for sending grain direct to large markets without the intervention of third parties, the railroads have evinced a commendable readiness to comply with the state law.

Where railroads have discharged station agents at small places on account of the falling off in business, the Commission has required compliance with the law to keep waiting-rooms open, warmed and lighted, for half an hour before and after each passenger train. The laws concerning the construction of private sidings to eleva-

tors and the erection of grain warehouses on railroad land at small stations are still in a state of uncertainty, though no great trouble has been experienced during the past year. One case under these laws is still pending before the state courts.

On Sept. 8 the Commissioners ordered a reduction in the rates on grain over the Great Northern on the complaint of Elias Steenerson, but the railroad appealed to the District Court, and the case is still pending.

One passenger, 39 employees and 53 other persons were killed during the year, and 43 passengers, 366 employees and 64 other persons were injured.

North Dakota Railroad Commissioners' Report.

The Railroad Commissioners of North Dakota, Peter Cameron, N. P. Raasmussen and B. B. Stevens, have issued the fifth annual report of that office. The fiscal years have lately been changed, and this report therefore covers an odd term. Like some other similar reports,