ceiving hoppers in the roof, and through running traps to the sewers. All the large buildings are covered with a built up roofing, composed of felt and asphalt, covered with gravel. All windows throughout the plant have ⅛ in. thick ribbed glass, and the skylights are glazed with ⅜ in. wire glass. As additional protection against heavy snow loads on the roof, the skylights are carried on steel ribs, with rolled copper sheathing to carry the glass. Copper is used throughout for all flushing gutters and ventilators.

Mercury arc lights are being used for the principal interior shop illumination, with lamps and reflectors hung high in the shops. This form of illumination is satisfactory, giving an easy, even light, with no sharp shadows. In addition, there will be plug receptacles in all the buildings, at frequent intervals, for the attachment of cable lights. Daylight illumination is especially well provided for by ample window areas, and wide skylights, giving a maximum interior light distribution. The interior of all the shops will be finished in white, enhancing the interior lighting arrangements.

High and low pressure steam, and water, tracks, one between each pair of shop tracks, and along each side, a 16 ft. gallery. In the scheme now under construction, the transfer table type of construction has been adopted, located on the west side of the midway, at the north end, with the easterly of the two shops adjoining the midway. The two shops will each be 120 by 200 ft., with an intervening 75 ft. transfer table, and 100 ft. approach tracks to the buildings, which are therefore 275 ft. apart. Each shop will have 9 working tracks, in as many bays, at 20 ft. centres, with an additional empty bay at the north end of the building.

The shops are the standard construction, of concrete lower wall, carrying a brick upper wall, spanned by steel trusses in the divisional line of each bay. Each bay is entered by double doors from both sides, through 12½ by 16½ ft. openings. Both ends of the buildings have galleries, that at the north end, 14 ft. above floor level, and extending over one bay, and that at the south end 24 ft. 8 ins. above the floor, extending over two bays. Both platforms are carried on the walls and 5 steel columns in the line of the truss above, and are composed of 4 in. reinforced concrete flooring

The east end of the north balconies carries a 12 ft. heating fan, the discharge duct from which leads down to a 5 ft. square concrete heating duct under the floor, extending across the north end of the shop, with longitudinal ducts of similar construction, leading off along each side wall, and along the central row of columns, all under the floor. In the side walls, between each of the doors, there is an outlet moulded in the concrete wall, and along the central row of columns, between each bay, there is a double discharge head. The north balcony also contains the lavatory, which is located on the west end. Both galleries are reached by stairs, centrally located in the end walls, but the south balconies in addition have a 6 by 10 ft. lift, of 2 tons capacity, situated between the two end bays, near the east side. The natural illumination of the shops is good, as in addition to the skylights, there is ample window accommodation in the doors and end walls.

Cars are brought into the shop over the transfer table, which operates the length of the shops, and extends beyond the north end to a through track along the north side of the grounds, over which the passenger

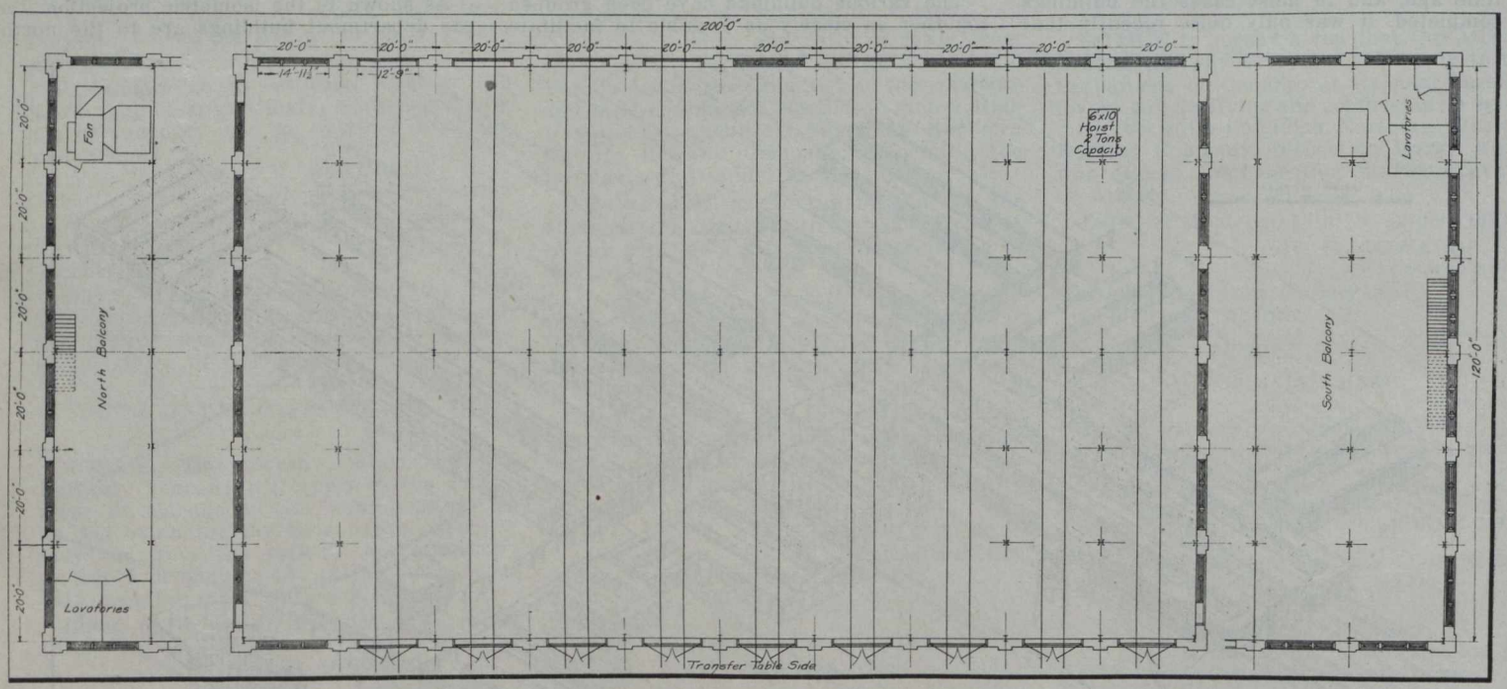

Fig. 2. Plan of Main Floor and Galleries of One of the Two Passenger Car Buildings.

compressed air, and drinking water are distributed about the plant, as explained in an article descriptive of the power house in Canadian Railway and Marine World, Oct., 1913. A tunnel extends the length of the midway, carried on the wall of which are all the mains from the power house, with connections leading from the tunnel to the various shops. On entering the buildings, the piping is carried on the trusses and steel work of the shop. Fuel oil is distributed in piping to such shops as require it. An extensive fire protective system is in use, comprising yard piping, with fire hydrants and hose houses at convenient intervals throughout the grounds. All the electric travelling cranes throughout the shops are operated on 3 phase alternating current, which is transmitted directly from the power house.

The Passenger Car Shop differs from the arrangement in the initial layout, which comprised one building, 115 by 260 ft., on the west side at the north end of the midway, and had four working tracks the length of the shop, each of which could accommodate four cars, making a capacity of 16 cars. There were also to be two service carried on steel I beams. The ground flooring comprises a bed of 6 ins. of bituminous concrete, surfaced with 3 in. yellow pine.

Under all but the south two bays, the side walls are carried to a height of 46 ft. 4 ins., with a clear height under the trusses of 24 ft. 8 ins., which gives a 10 ft. 8 in. headroom on the north end balcony. The walls in the two south end bays are carried to a height of 55 ft. 10 ins., with a height to bottom of trusses of 37 ft., which with the gallery at a level of 24 ft. 8 ins. above the floor, gives a clearance on the latter of 10 ft. The gallery at the north end is low, as there is no working track beneath, but at the south end, greater elevation is required to clear the cars below. The steel roof trusses, at 20 ft. centres, are carried on the walls, and on central columns, of which there is a row down the centre of the shop between the working tracks. These truss columns also act as the central columns of the end galleries. The central depth of the trusses is 8¼ ft., dropping to 4 ft. 5 ins. at the side walls. Down the centre of the roof is a monitor, 29 ft. wide, and 10 ft. high, surmounted by a row of 24 in. copper ventilators, one over each bay.

cars may be brought from either end of the yard. The transfer table is electrically operated, and the trolley arrangement has been ingeniously devised so as to minimize danger from accidental contact. This feed wire is carried in a channel in one of the walls, the contact shoe being so arranged that it bears upward against the feed wire, the latter carried in the top of the channel.

The Freight Car Shop is immediately to the south of the passenger car shop, abutting on the midway. It is of standard construction, concrete lower wall, surmounted by brick, and spanned by steel trusses, and is 195 by 600 ft., making it second only to the locomotive shop in size. It is divided through its length into three 65 ft. bays, by two rows of columns, supporting the roof trusses, which divide the shop crosswise into 24 ft. sections.

The side bays have a clear height from the floor to the lower chord of the roof truss of 20 ft., the truss itself having a depth of 9 ft. over the row of columns, sloping off to 5 ft. along the wall. In the central bay, there is a clearance of 30 ft., the truss having a depth at centre of 7 ft., sloping in both directions to a depth of 5 ft. over the