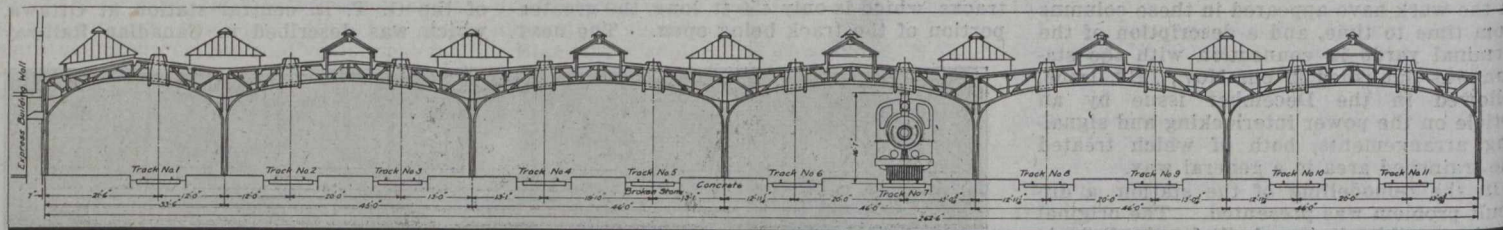


in the roof directly over the smoke stack taking care of the locomotive exhaust, the blast passing directly to the outside through this duct. This low roof, short span construction is said to make possible the elimination of half the weight of steel usually involved in a large balloon roofed shed, and in

central portion of which is practically parallel with the upper member of the truss. Between columns, the structure is tied together with a four pannelled truss of similar design, 4 ft. deep, composed of parallel top and bottom members except at the columns, where the lower member is a two centre curve, the

free from the injurious effect of the locomotive exhaust fumes, which in the usual high arch roof have such a disastrous effect on the life of the shed. Where the duct crosses the arch trusses, the latter is also encased in reinforced concrete, which is tied in place by 8 embedded $\frac{3}{4}$ in. U bolts, the



Cross Section of Trainshed, Windsor St. Station Montreal, Looking towards the Station.

addition, has the advantage of being easily extended in either direction from the very nature of its unit construction.

A plan and cross section of the complete trainshed are given herewith, as well as a detailed cross sectional view of one of the arches, which is typical of the lot. To one familiar with the usual Bush shed, this will present some features from which it differs. Usually, the two tracks in each arch are side by side, with the usual clearance between. In this instance, the tracks are separated with an intervening trucking platform, bringing the track centres further apart, and in consequence raising the elevation of the under side of the roof spans. The more general Bush shed practice is to make the roof spans in the form of shaped plate girders, of a somewhat shallower construction than in this instance, which, added to the lesser height due to the tracks being closer together, makes the usual design seem lower set. These two features of the Windsor St. shed design give a more open effect, the roof being considerably higher. In this case, the roof spans are made up of formed lattice girders.

All the spans are 46 ft., with the exception of those over track 1, and tracks 2 and 3, the latter span being 45 ft., slightly less than the normal, while the former is a single track arch, and is 33½ ft. wide over the greater portion of its length, narrowing slightly in the outer three spans. These spans are spaced at approximately 28 ft. centres, the distances varying slightly to meet local difficulties.

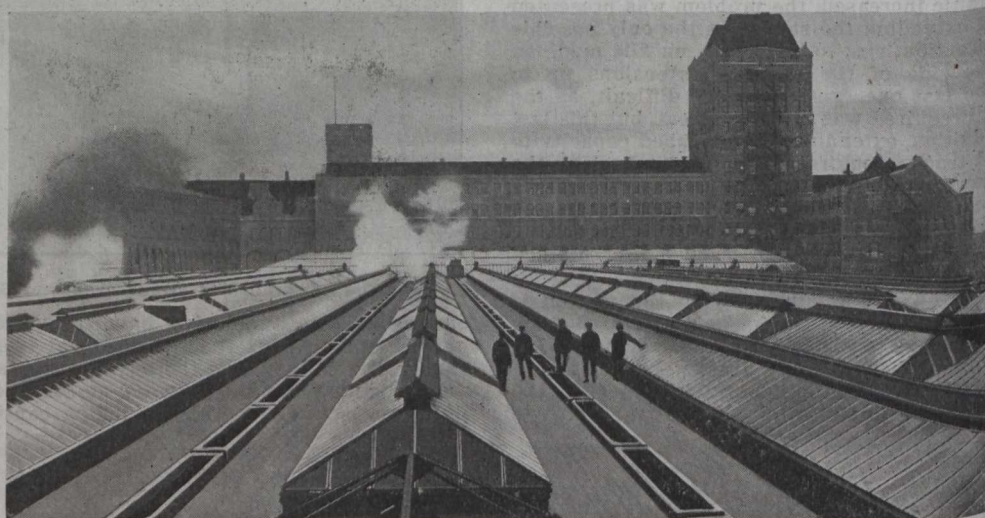
The spans are built up of angles principally, of the usual light roof construction,

curves for these trusses and the cross trusses all rising from the springing line, which is 11 ft. 1 in. above the base of rail.

Down the centre line of the arched trusses, there are peaked roof skylights, 8½ ft. wide, extending the length of the shed. This skylight has 1¾ ft. walls, and is 4 ft. 2½ ins.

lower edge of this joint being higher than that of the duct sides, and rounded, so that the gases will not escape under the edges of the latter into the shed.

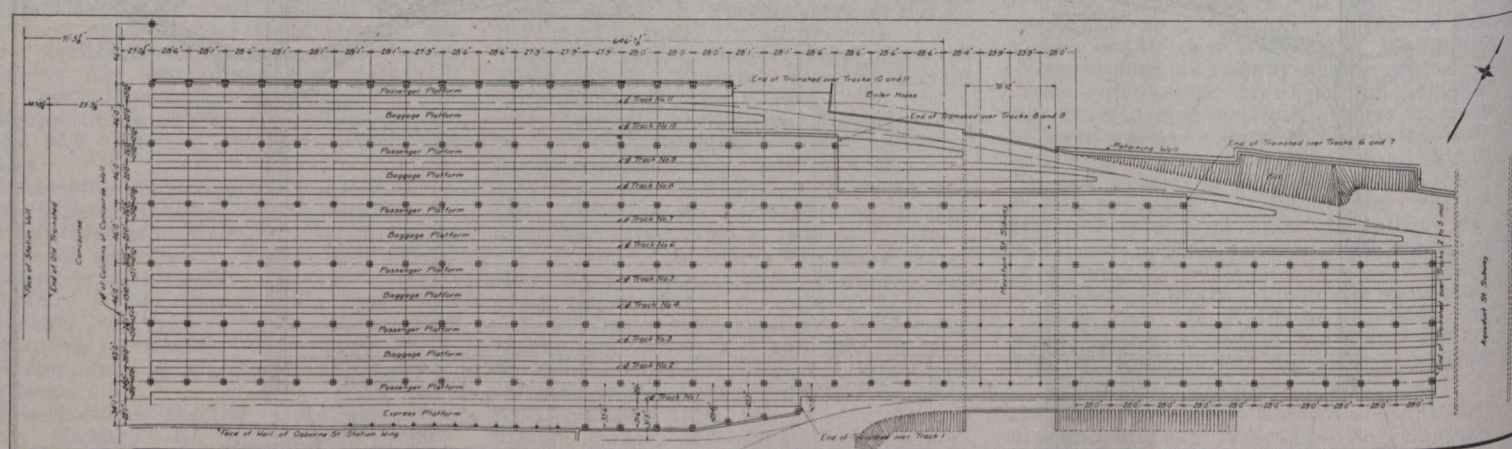
The roof proper is of reinforced concrete, 3 ins. thick. This is carried on the longitudinal column trusses, the duct trusses, and



Skylights on Trainshed, Windsor St. Station, Montreal.

high at the peak, with a glazed roof, and a monitor running the length of the skylight. Similar but larger peaked roof skylights, 12 ft. wide, and 48 ft. long, extend over every two sections along the rows of columns. These are similarly glazed, and have the

four 15 in. 33 lb. channels, the latter encased in concrete. The reinforcing rods are $\frac{1}{4}$ in., spaced 2 ft. centres longitudinally, and from 6 to 8 ins. crosswise, and tied together at every second joint. The walls of the skylights are also made of reinforced



Plan of Trainshed, Windsor Street Station, Montreal.

the girder having a depth of 3 ft. 8 ins. at the centre, increasing to 5 ft. 2 ins. over the columns. The upper edge of the truss is straight, sloping from a central height above base of rail of 21¾ ft., to a 19 ft. 10 ins. over the columns. The inner edge of the truss is a seven centred curve, the

same monitor peak elevation as the central skylights.

The smoke duct framings are lattice girders, made up of angles, and are 3½ ft. deep, one each side of the track centre line. They are completely encased in reinforced concrete, which keeps all the steel work

concrete.

The design of the roof is quite different from the usual Bush type. In the latter, the roof is flatter, with the skylights approximately parallel with the roof surface, and raised about 12 ins. above that surface. In this design the walls of the upper por-