which flows through it, is taken by two cast-iron girders of the section shown in Fig. 1, Plate XXXI., and placed 15 ft. 6 in. apart from centre to centre. They are 4 ft. 3 in. in depth, and 2 ft. 4 in. wide, across the bottom flange, which has an available area of 70 square inches. They are 32 ft. long overall, and have a bearing of 1 ft. 6 in. at each end, where they rest upon piers 4 ft. 6 in. thick, which form the side walls of the railway at that place. Upon these main girders, cross girders, curved to the radius of the invert plates, rest, these cross girders being each secured by two $\frac{1}{2}$ in. bolts passing through the web of the main girder.

There are four of these cross girders altogether, and they are shown in the enlarged section, Fig. 7, as well as in elevation, Fig. 4, and plan, Fig. 2, where it will be seen that they are not at right angles to the main girders, but skewed so as to be parallel with the centre line of the railway. This was done because there was not sufficient headway for engines and carriages to pass under their bottom flanges, and they are spaced at sufficient distances apart to allow of 15 in. clearance between them and the upper part of the carriages.

There are five invert plates, two of which are 5 ft. 9 in. wide, two 8 ft. 3 in. and one 2 ft. 8 in.

The widest plates are stiffened in three places with ribs 12 in. deep and 1 $\frac{1}{2}$ in. thick (Fig. 7), placed longitudinally, so as not to interfere with the flow of sewage. There are three of these plates in the width of the sewer, and Fig. 1, the upper half of Fig. 2, and Fig. 3, show their arrangement and the connexions between the cross girders and themselves. It will be seen on an inspection of Figs. 1 and 2, that the widest plates have two brackets cast on to them on each side, which rest on the main girders.

The side plates of the tube are at right angles to the axis of the sewer, and are made in lengths of 3 ft. 5 in., with 1 in. metal. The upper plates (Fig. 2) are $\frac{1}{2}$ in. thick and 3 ft. 5 in. long, and there are four of them in the width. The whole of the platos laterally and longitudinally are provided with flanges 5 in. wide, by which they are connected together by bolts 1 in. diameter, placed 6 in. apart. All surfaces are truly planed, and the joints made good with iron cement.

The end plates are cut to the same shape as the invert, where the union with the brickwork is effected, and a flange 4 $\frac{1}{2}$ in. deep runs round the whole of the tube, to form a key. It will be seen in Figs. 1 and 2, as well as in Figs. 5 and 6, that four wrought-iron brackets are bolted to the top flange of each main girder, and to the upper flange of the side plates of the tube, to steady the whole structure. With the exception of these brackets and the connecting bolts, the work is of cast iron throughout, this material being less liable to corrosion than wrought iron, and as the tube is thoroughly protected, and cannot be exposed to any sudden strain, the only danger in the use of cast iron is provided against.

A relieving arch of 18 ft. span covers the tube and carries the weight of the roadway. A section of this arch is shown in Fig. 1. The strength varies from three rings of bricks at the crown to eight rings at the haunches, and the arch is, moreover, strengthened by 2 ft. 3 in. counterforts placed 3 ft. 9 in. apart, the spaces being made up with concrete.

There being no available space to divert the course of King's Scholars' Pond sewer during the construction of the tube, it became necessary to carry the sewage through a temporary channel of a greatly reduced area, and to build the tube round it.

This was done: the sewer being closed (with the exception of an opening 6 ft. square) by two brick walls placed about 40 ft. apart, and the sewage being conveyed through a wooden trough 6 ft. deep and 6 ft. wide. Around this trough the tube was constructed, and, when the latter was complete, the trough was removed, together with the intercepting walls.

The Victoria Station of the Metropolitan District Railway adjoins, as we have said, the terminus of the same name. It is 536 ft. 6 in. long by 30 ft. 5 in. wide, and the platforms are each 15 ft. wide. The station building has three floors—one at the platform level, a mezzanine floor upon which the booking-offices are situated, and an upper floor above the street level. The walls are faced on the inside with Suffolk bricks, and panelled, and a very good effect has been obtained, both in this and the other stations on the Metropolitan District line, by making the arches over the panels project 1 in. beyond the regular face of the wall. The roof of the station consists of a series of wrought-iron arched ribs, the thrust being received by castings built into the side walls, and secured by bolts passing through to washer-plates at the back.

At the Victoria Station the foundations of the walls are 29 ft., and the level of the rails is 24 ft. below the surface of the ground, and on one side of the station a well was sunk 15 ft. below the rail level. The 18 in. culverts, which we have mentioned as being formed down the centre of the line, communicate with this well, and all that portion of the line which slopes downward to the Victoria Station is consequently drained into it. The water is raised from the well by a small pumping engine provided for the purpose. The pumping stations at Sloane-square, South Kensington, and the Temple are also similar.

From the Victoria Station the line continues in ordinary covered way as far as Ebury-street, with the exception of two open portions, one at Eccleston-place and the other at Elizabeth-street, each about 120 yards long, with retaining walls 26 ft. high, strengthened.