length of the tube over all is 136 ft. 10 in., and its cross section is 5 ft. by 2 ft. 3 in. The plates in the tube are $\frac{1}{4}$ in. thick throughout, and all the joints are made good in the usual manner, with tape and red lead, and rivetted with $\frac{7}{8}$ in. rivets placed 2 in. apart. The inside cover plates are strips $4\frac{1}{2}$ in. by $\frac{5}{16}$ in., and the outside covers are of **T**-iron. At the top and bottom flanges double cover plates, 6 in. by $\frac{5}{16}$ in., are placed. The corners are made good, and the flanges at the ends of the tube are formed with angle irons, in the usual manner. On the underside of the tube, where it rests upon the bedstones at the piers and abutment, a $\frac{3}{8}$ in. plate is rivetted for the whole area of the bearing surface. On the intermediate pier there is a fixed bearing on the bedstones, but on the east and west abutment the tube is free to slide upon cast-iron bedplates, which are of $1\frac{1}{2}$ in. metal, and 3 ft. long by 2 ft. wide, having on the upper sides four fillets, on which rest the bedplates attached to the girder. The cast-iron bedplates are attached to the brickwork of the abutment with four $1\frac{1}{4}$ in. holding-down bolts built into the brickwork. At each end of the tube there are special castings by which the attachment is made to the 3 ft. mains, with a rectangular opening, 2 ft. 3 in. by 5 ft., at one end, converted in a circular opening of 48 in. diameter at the other. Where the castings unite with the tube at each end of the bridge there is fixed, to allow for expansion, an india-rubber ring, 3 in. wide and 1 in. thick, bolted into the joint between the flanges of the castings and the end angle irons of the tube, secured by bolts $1\frac{1}{8}$ in. diameter, placed at intervals of about 9 in. The whole of the outside of this tubular main is covered with 1 in. matched-boarding, grooved and tongued, and fastened to the ironwork by $\frac{3}{8}$ in. tapped screws. On the inside of the boarding, between the iron and the wood, the space is filled with a thickness of asphalted felt, and the ironwork, felt, and boarding are payed over both inside and outside with coal tar and lime put on hot, and then sanded. The timber sheathing on the bottom of the tube is protected with sheet iron $\frac{1}{8}$ in. thick, and fastened to the tube for its whole length, to protect it from damage which it may otherwise incur from sparks ejected by passing locomotives.

One more type of special construction of a simple nature may be shortly described. The mains in passing along the Barking-road are intercepted by the low-level line of the Great Eastern Railway, and there being insufficient room between the top of the covered way and the road level to admit of their passage, however distorted in shape, it was necessary to give the 4 ft. mains a dip and pass them underneath the rails, the side walls of the covered way being pierced for the purpose, and the permanent way being supported on longitudinal timbers where the mains cross.