Semicircular arches 7 rings thick spring from the thickened portions of the pier; beyond those points the tops of the vaults are constructed in concentric, but segmental, arches, 4 rings thick, backed with concrete, and asphalted with two coats 3 in. thick; 6 ft. openings are left in each pier to establish communication between the several vaults when used as stores.

The preceding type of vault is adopted wherever practicable; at each end of the depot, however, turntables and lines intervene between the vaults and the basement portion of the market wall; and other modifications are necessary at the exits and entrances of the several lines. The whole of the northern side of the depot also varies considerably from the type construction on account of the proximity of the lines of the Metropolitan Railway, which are carried past in a 25 ft. covered way, with a semicircular top 6 rings thick, of which the market wall, thickened to 8 ft., forms one abutment. With this thickness the line of thrust, under the worst condition of loading, lies 2 ft. 6 in. within the too of the wall. Towards the eastern end and the line converges slightly, involving the adoption of a thinner pier; girders are therefore substituted at that point.

Across the mixed gauge lines, the market wall is carried on a box girder about 135 ft. long, supported at three intermediate points on cast-iron columns (Figs. 1 to 5, page 66) of very considerable strength, the largest being 18 in. diameter, and 2½ in. thick, fitted to a bedplate 7 ft. square, which is bolted down to a brick and concrete foundation. The load carried by this column is little short of 400 tons—about ⅞th the weight of one of the Britannia Bridge tubs—and the resulting maximum pressure on the hard clay foundation is somewhat less than 2½ tons per square foot. With the exception of these three columns, and those carrying the road crossing the same pair of lines at the east end of the depot, the whole of the columns are of wrought iron.

The box girder, 4 ft. 6 in. deep, is built of eight angle irons 6 in. x 6 in. x ½ in., riveted by rivets 1 in. diameter and 4 in. pitch, to web plates, varying in thickness from ⅛ in. to ½ in., and to flanges 2 ft. 6 in. wide, varying from ¾ in. to 1½ in. in thickness. Stiffening T-irons 6 in. x 4 in. x ½ in. are riveted at intervals to the exterior and interior faces of the webs, and gussets are secured to the latter stiffeners in such a manner as not to interfere with the painting of the interior of the box girder when considered necessary.

A skew face girder about 56 ft. span and 5 ft. 6 in. deep carries the parapet of the 60 ft. road on the north side of the market, and the space included between this girder and the one last described is covered in with brick arches in cement two rings thick, and about 8 ft. span, springing from the top flanges of ordinary wrought-iron girders, tied together by flat bars at the required intervals.

At the east end of the market a somewhat similar bridge occurs; all the girders, however, are continuous, the one carrying the wall a weight of 8 tons per lineal foot, being 4 ft. 6 in. deep, and the others 2 ft. 6 in. only. On the same side, space is provided for the engines and accumulators for working the Great Western Railway half of the depot; provision was made, however, for the erection of buildings over the frontage portion of this space.

The platforms, of 3 in. rough planking, are protected by wrought-iron nosing, and on the side of the van road by a wood fender and tyne iron guard, at a height of 2 ft. from the 15 in. x 12 in. granite kerb. Dwarf walls 7 ft. centres, carry the joists under the 3 in. planking.

Drainage of the substructure is effected by one main 18 in. barrel drain under the mixed gauge through lines, and by another of similar size under the van road. To these the various pipe drains from the backs of vaults, and pits for hydraulic machinery, are connected.

Massive foundations are put in at each corner of the depot for Mr. Horace Jones’s towers, some 120 ft. high from the bottom of foundations, and 180 brick and concrete foundations are provided for as many wrought-iron columns, carrying the market floor. The latter is formed of brick arches two rings thick, 7 ft. 6 in. span, and 1 ft. 9 in. rise, springing from the bottom flanges of cross girders which are secured to the top tables of main girders placed at about 30 ft. apart. The cross girders are continuous throughout the entire length of the market, except under the centre road, where they are lowered to a level of 4 ft. 6 in. from the surface of the paving to accommodate the gas and water mains passing along that road. A load of two tons per foot run has to be carried by these girders, and the section given is a 2 ft. 6 in. x 2½ in. web, riveted to 15 in. x ⅝ in. flanges, by four angle irons 3½ in. x 3½ in. x ⅝ in. (Fig. 9, page 66).

The main girders are continuous across the entire width of the market, 240 ft., and the intervals at which columns occur vary from 5 ft. to 58 ft.; the ordinary section of these girders (Fig. 8, page 66) is a 3 ft. x ¾ in. web secured to 18 in. x 1½ in. flanges by four angle irons 4 in. x 4 in. x ¼ in. When the span exceeds a certain amount, box girders are substituted, 6 ft. in depth. The load sustained by all these main girders is unusually great, ranging from 7 to 10 tons per foot run.

Wrought-iron columns (Fig. 6), formed of channel iron 12 in. x 3½ in. x 1½ in., and plates 15 in. x 1 in., are adopted in most instances. Under the box girders, however, double columns of analogous section are substituted (Fig. 7, page 66).