## A NEW TYPE OF SEWER PIPE.

Until the present time engineers in England and the United States have recognized the fact that some form of vitrified clay segment blocks for large sewers would be a most desirable material with which to construct large sewers and as a result of this fact many styles of segment sewer blocks have been invented. None have been successful for the reason that those which could be made economically of clay did not have any provision for end joints.

Those inventions which did provide for satisfactory form of end joints were of such a shape that they could not be made economically of clay. Therefore with the solution of the only objection that has arisen by providing a ship-lap joint for the ends of the blocks, which will hold a sufficient quantity of mortar so that a tight joint can be made and retained, the American Sewer Pipe Company of Akron, Ohio, have solved the problem and are presenting a successful vitrified salt glazed segment sewer block.

These blocks are made in one and two foot lengths, also in three different types, for construction of sewers ranging



Fig. 1.

from 30 inches to 108 inches in diameter; detailed description of each being shown in the enclosed table.

The material from which these blocks are manufactured are the celebrated Akron shale and Ohio River clays, which are acknowledged to be among the best adapted to the requirements of sewer construction, and when made in relatively thin sections, attain a perfect vitrification. In these blocks all the walls are of a thickness to which these clays best lend themselves for a perfect vitrification.

The outside surface of the blocks, being the part with which the sewage comes in contact, is the part requiring the highest glaze and it is possible to secure almost absolutely perfect glaze.

A test of Type A Block showed a crushing strength of 3,040 pounds per square inch, pressure being applied at weakest point, viz., between webs.

The end joint is made in the style of the ship-lap joint and is made possible by a web or system of webs, which provides backing for the mortar and an annular space is secured which, when filled with mortar, produces a tight sanitary joint

The mortar joints on the dove-tailed sides are scratched to assist in retaining the mortar. The blocks are made as large as can be conveniently handled and have an inside area of approximately 270 square inches each, thus eliminating, in a large measure, the objectionable feature of numerous joints.

The outer openings in the hollow block system of sewer construction are

well adapted to carrying surface water and are also of special value to the contractor, when constructing a sewer in a wet trench, as, after the invert is laid a drain is effected which carries a large amount of water and leaves a perfectly dry sewer for construction of the arch. This obviates the necessity of laying under drains.

In soil-where it is possible the trench is excavated as near the shape of the outer



Fig. 2.

shell of sewer as possible, and the bottom of invert block laid ahead for drainage purposes and to proper line of grade. The successive tiers are thoroughly tamped at the back. A template is used as high as the spring line, after which a form for the arch is required and for which a collapsible



Fig. 3.

form has been designed which greatly facilitates the work. The male and female dove-tailed joints are so constructed that only the key block requires slipping in endwise. All other blocks drop into place on the side. After forms have