The formation of the banks in the vicinity did not admit of the river being temporarily diverted, except at enormous cost. The foundations of the structure had therefore to be excevated, and the first courses laid in from 3 to 4 feet of awift running ice cold water.

Plate...... is a reduced copy of the working plan of the dam. It will be seen that the structure is of continuous cribbing, stone filled, planked and sheet piled. It consists of three principal parts, viz., the north abutment, the Tumbling Way, and the south abutment.

The north abutment is located well inland; owing to the tendency of the river in high floods to over-run its channel, and spread over the low lying land in the vicinity. For the purpose of description it may be subdivided into the following heads: The abutment proper, the well chambers, the settling pond, the pipe outlet, and the north wing.

The abutment proper is a right rectangular prism 41', 2" × 20' × 18', 9", constructed of round timbers, laid in alternate courses of cross ties and longitudinals, dove tailed at the angles, and forming 28 cribs, which are filled up with heavy stone filling and coarse gravel, the latter being rammed into all interstices between the stones and under the timbers. A space equivalent to 4 oribs in the exact centre of the abutment is floored and walled, from the foundation upwards, with double 2" planking over-lapping. A perfectly watertight chamber 10', 6" × This chamber is subdivided into two smaller and 7', 10" is formed. equal ones by parallel walls, 4" apart, of double 2" planking overlapping, and placed at right angles to the length of the main chamber. These constitute the well chambers, by means of which the water from the reservoir formed by the dam is conveyed into the mains. An influent conduit of double 2," planking overlapping 15", 51, long, and of area aufficient to admit a larger volume of water than can be discharged by the mains, connects the first of these chambers with the settling pond, and consequently with the reservoir in front of the dam. In the 4" space between the double central walls, close to the floor of the chambers, are placed double fish screens of the same area as the influent conduit, and so arranged that they can be easily removed, one at a time, for the purpose of cleaning. The first or outer screen is coarse, being of No. 12 copper wire, woven into meshes 1 inch square. The second or inner screen is finer, being of No. 15 copper wire, 6 meshes to the inch. The rear of the second chamber is pierced exactly opposite the fish screens to admit the provided by inch fivetted steel pipes, the mouths of which are opened or closed at will by means of timber gates aliding in vertical uprights attached to the walls of the chamber.

Two trap doors cover the top of the chambers, and over all, resting on the top courses of the abutment, is built a compact water proof shed $12, \times 13' \times 13'$. This shed serves for a tool house, as well as effectually preventing the access of strangers to the gates which control the mains.

In front of the influent conduit is a triangular shaped settling pond, measuring 15½ feet at the ba-e, 16 feet from base to apex, and 14', 2" deep. It is constructed of longitudinal timbers and cross ties, laid one above the other, the whole being firmly bolted to the face of the abutment. At the apex the ends of the longitudinals are dreased, so as to fit closely, and bolted together. The triangular space between the apex and the apex ross ties is filled with large boulders, for the purpose of giving weight to the structure, and retaining it in position.

At the base of the pond, the entrance of water into the influent conduit is controlled by means of a timber gate, sliding in vertical runners bolted to 'the sheet piling on the face of the abutment. Immediately behind this gate covering the mouth of the conduit is placed a cast iron grating with 4 inch openings. The water from the river has free access to the settling pond through the spaces between the longitudinal timbers of the walls. The main object of its construction is to prevent logs and finating debris from accumulating in front of the influent conduit. It will thus be seen, that, in order to reach the mains, the water must first enter the settling pond, then pass through the iron grating at the mouth of the influent conduit, then, by means of that conduit, enter the first well chamber, they through the double fish screens in the central wells, into the second chamber, and finally into the mains in the pipe outlet. The pipe outlet at the rear of the north abutment is a crib continua-