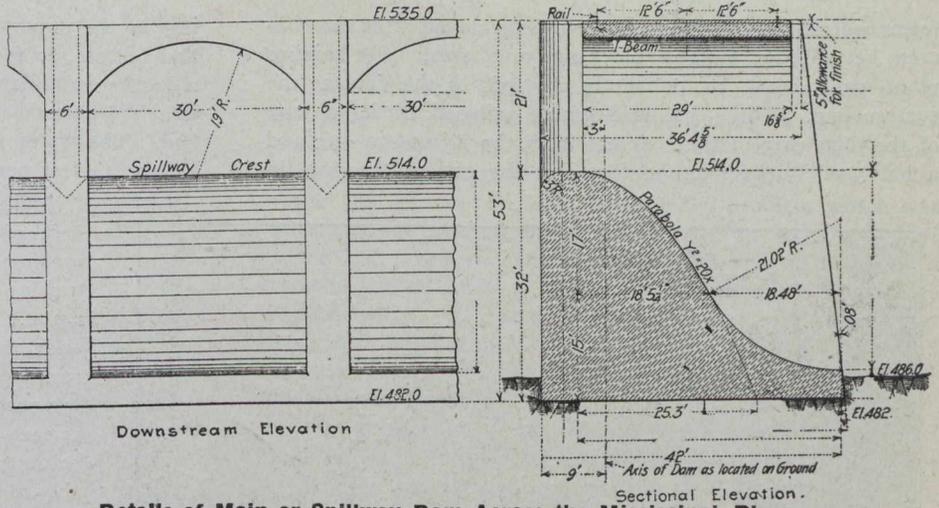
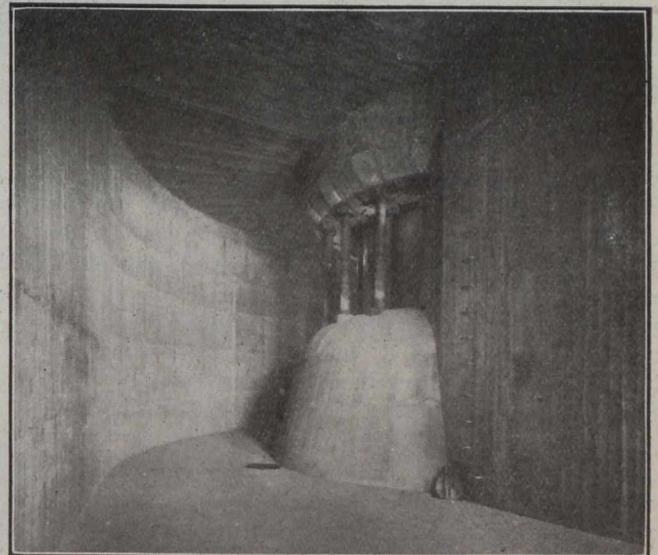
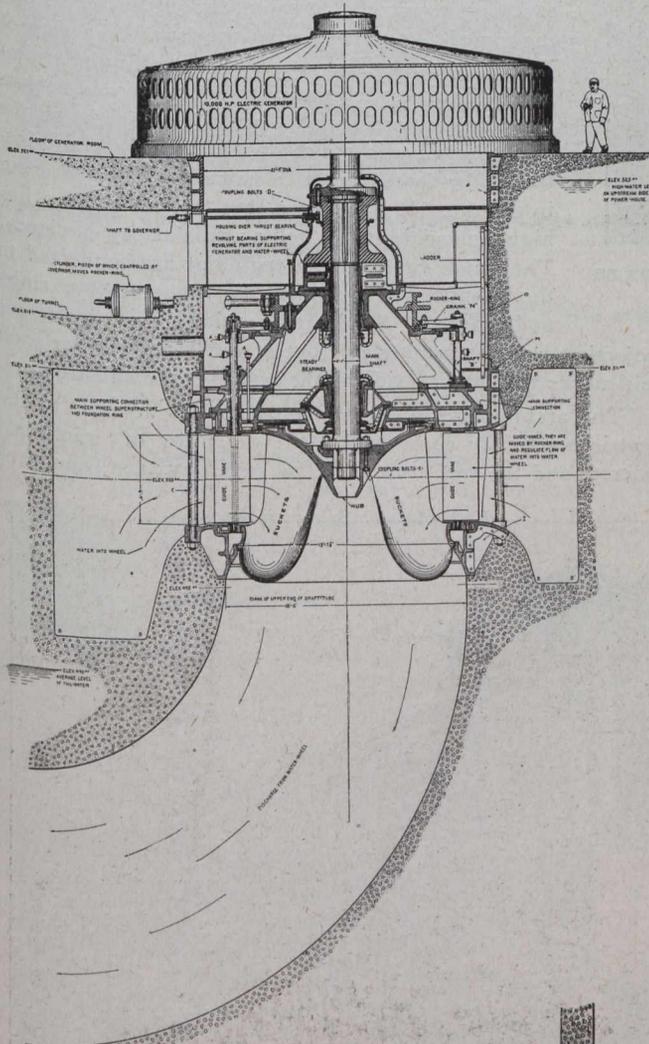


several hundred feet long built ahead of the progress of the concrete dam itself, section by section as the work advanced. In this cofferdam section was made the excavation to key the dam into the bed-rock. Holes 4 inches in diameter and 30 feet deep were drilled to test for seams and pockets of softer material. Tests of these drill holes were made in three ways: They were dried and carefully inspected later for any moisture; they were put under air pressure after being sealed at the top and the attached gauge examined for any loss of air; the penetration of the drill as an ordinate to time was carefully plotted and a regular curve required. The failure of the test hole to withstand these severe tests was



Details of Main or Spillway Dam Across the Mississippi River.

member of each pier-form were two holes to fit over two dowel pins projecting from castings set in small concrete piers. There was a main frame for each up-stream and for each down-stream leg of the forms of each pier, and it was in the bottoms of these that



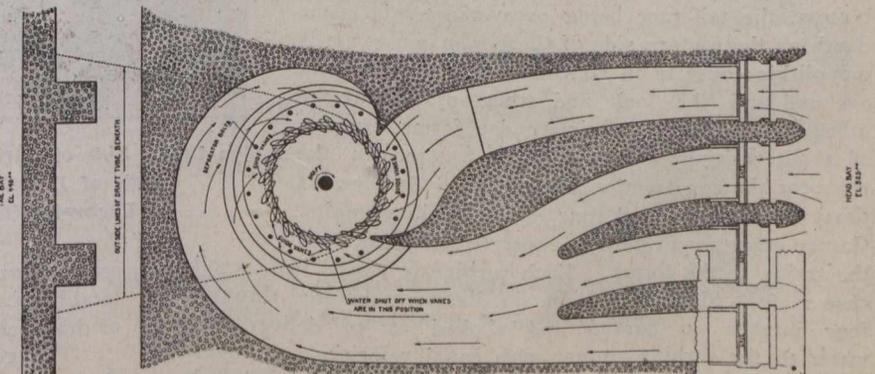
Part of Scroll Case with Turbine Installed, Surrounded by Guide-vanes.

the sockets fit the dowels in the base plates. By careful instrument work, these base plates were accurately located in alignment. After that, the members of the forms and their connecting bolts and stay bolts controlled the alignment of the forms and the subsequent concrete casting. The arch

Centre Section of Main Turbine on Transverse Axis of Power House.

cause for special excavation and investigation, although this was practically not necessary in the entire length of the dam.

Steel forms were used in casting the dam, eight being in use at one time and the rear-most being constantly moved to the front, so that there was no delay on account of the concrete workmen waiting on the form riggers. The parts of each form were made interchangeable with the others. In the bottom



Plan Showing Method of Conducting Feed Water from Head Bay to Guide-vanes in Front of Runners.