

were accordingly let for the construction and delivery of the 6-foot conduit and the necessary valves and expansion joints. The conduit was specified to be of  $\frac{1}{2}$ -inch "Railway Bridge" steel, rivetted together in 60-foot lengths, having 5" x 5" x 1" steel flanges drilled for forty-four  $\frac{1}{4}$ -inch bolts with lead gaskets, each length of pipe to be tested to a pressure of 25 lbs. per square inch and to be coated both inside and out with mineral rubber asphalt at a temperature of 300 degrees. It was constructed in Pittsburgh, as were also the expansion joints; the valves, of which there were two 6-foot and two 5-foot, being built by the Bertram Engine Works of Toronto. As nearly all the material was delivered on the site of proposed work by September of 1904, tenders were called for the laying of the conduit and the work awarded to Mr. Frank Simpson, of Toronto. The plant used consisted of one land clam shell dredge or derrick; one floating clam shell dredge; a dipper dredge (not much used); a pile driving scow of unusual construction; a couple of scows for divers to work from, and a pontoon for lowering the pipe in place, constructed of two of the 60-foot lengths of steel conduit with buttons on each end, made perfectly watertight and held in place by means of wooden saddles placed at intervals transversely with a space between of sufficient width to enable a length of pipe to be floated in, the buttons taken off and the pipe lowered in place by winches.

The contractor commenced work at the north side of the shore crib (where the land clam shell was built), uncovering the branch on the north side of the shore crib provided for this extension, so that a flexible joint could be connected to start the conduit in the direction required; the trench was at this point about 15 feet deep from the surface of the ground and about 80 feet wide on top and not less than 12 feet on the bottom. The material consisted of sand and gravel, chiefly sand. The excavation was specified to be carried down 2 feet below the grade line of the bottom of conduit and at the joints not less than 5 feet, to enable the divers to screw up the bolts and nuts on the under side as well as to enable the inspector to examine the same. As soon as the excavation had advanced sufficiently, the pile driver was brought up and work commenced on driving the pile bents upon which the pipe was laid. The bents were spaced 20 feet between centres. The piles were 10 feet long and spaced 6 feet centre to centre and held together with a 12 x 12 cap 6 feet long, rag bolted to the head of each pile. Each set was brought up and placed in the lowering frame, a piece of pipe attached to hose of sufficient length and connected with the force pump, was lashed alongside each pile and as soon as the frame carrying the bent rested on the bottom and was in proper alignment, the pumping began. In