

**Lime Tanks.**—These tanks are of steel plate construction, three in number, 12 ft. 6 ins. in diameter and 13 ft. high. They have an agitating device driven by three 5-h.p. motors. There are two lime solution pumps in connection with these tanks of the single suction type with a 3-inch discharge especially designed for a 7% solution and pumping a thick, gritty liquid. They have a pumping capacity of 40 gallons per minute against a 45-ft. head. These pumps are also operated and controlled at the operating room as well as at the tanks, and are driven by two 2-h.p. motors.

**Mixers.**—There are two concrete mixers with a mixing capacity of 40 cu. ft. each for mixing the lime solution which is dumped into a trough in front of the tanks and flows through a screen of a ¼-in. mesh into the lime tanks. These mixers are driven by two 20-h.p. motors. The floor at grade 300 is sloped to a grade of 1 in 20 to drain the floor to a sump. In this sump is placed a vertical submerged pump with a pumping capacity of 200 gallons per minute against a 15-ft. head, and a suction of six feet. It is slow speed and automatic in operation. The pump and motor have a combined efficiency of 35% driven by a 3-h.p. motor.

**Wash Water Pumps.**—There are two of these pumps of the single stage centrifugal type with an eight-inch discharge, having a capacity of 1,600 gallons each per minute

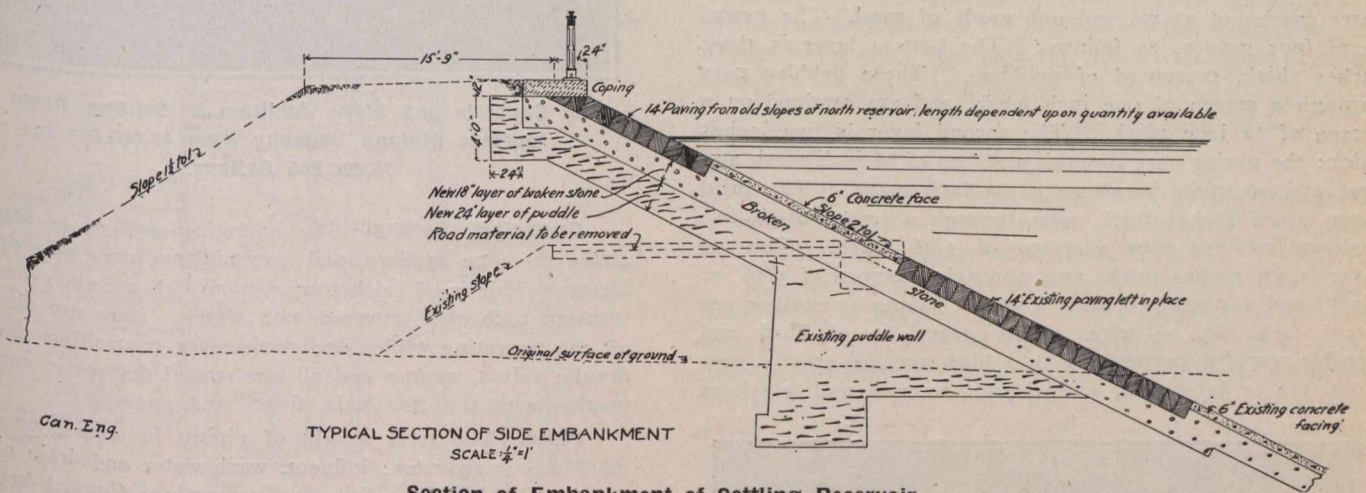
and certain maximum difference of not over six inches in the rise and fall of the water in the tank.

**Sample Pumps.**—There are twelve of these pumps of ¼ h.p. each with a pumping capacity of two gallons per minute against a 20-ft. head. These pumps are situated on brackets secured to the walls of the operating gallery, one under each of the 12 operating tables. They take their suction from the corresponding influent pipes near the filter gallery wall, and are controlled by switches on the corresponding table.

**Lime Crusher.**—The lime crusher has a capacity of 15 tons per hour, the crushed lime to pass through an iron ring of one inch in diameter.

**Concrete Storage Bins.**—These bins, twelve in number, are for the purpose of storing the alum, lime and hypochlorite. The various chemicals are conveyed from these bins by a bucket with a recording gauge to register the weight. The bucket travels along a suspended track to the lime, alum and hypochlorite tanks. The concrete to the storage bins is heavily reinforced with steel work. The concrete was of the 1:2:4 mix and cost \$9.00 per cubic yard. The forms to this work came rather high, averaging 9 cents per square foot.

**Chemical Feed Tanks.**—These tanks are situated on floor grade 328, and consist of the lime, hypo. and alum



Section of Embankment of Settling Reservoir.

against a 50-foot head. These pumps are for the purpose of feeding the wash water tank with water to wash the filters. The water is taken from the clear water basins as it is necessary to wash with filtered water. Upward wash is used, the wash water flowing into the drain provided. These pumps are intermittent in action and are each controlled with an electrical controlling apparatus which will automatically stop when the water reaches a certain elevation in the wash water tank. These pumps are driven by two 40-h.p. motors.

**Flushing Pumps.**—These pumps are of the two-stage, 50-h.p. centrifugal type, with a pumping capacity of 500 gallons per minute when flushing, and operated against a pressure of 100 lbs. per sq. in. They are driven by a 50-h.p. motor.

**Pressure Tank Pumps.**—These pumps also take water from the clear water basins and deliver water to a small steel tank in the tower of the head house. They are of the single suction type, discharging 30 gallons per minute against a head of 80 feet. They are operated by two 3-h.p. motors. These pumps are intermittent in service and are started and stopped by means of floats placed in the tank. Each float operates a Cutler Hamar series relay self-starter. It starts and stops the corresponding pump with a positive

water, and are controlled by a set of lime, alum and hypo. controllers.

The offices, laboratories, preparation rooms, lockers, lavatories and bath rooms are on this floor grade 328.

**Ash Storage.**—The ash storage is located on floor grade 340.

**Controlling Chamber.**—This chamber is 28 ft. by 7 ft., in which is situated a venturi meter to gauge the flow of the water from the raw water basin. The chemical supply is admitted at this stage, controlled and governed by a device in connection with the venturi meter. The controlling chamber and venturi meter is of concrete.

**Mixing Chamber.**—This chamber is 141 ft. by 47 ft., is connected to Nos. 1 and 2 controlling chambers, and is divided into 47 spaces by wooden baffles for the water to flow around; these baffles being fixed with an alternate space at the ends. This chamber is of concrete at 1:2:4 mix, and cost \$6.00 per cubic yard.

**Centre Passage.**—This passage is 7 ft. wide, 192 ft. long, and separates the mixing and controlling chambers from the coagulating basins, and has an upper and lower compartment. The water passes into the lower portion to the coagulation basins, and returns over a skimming weir into the upper portion of the centre passage to the filters.