

THE LOCK AND CANAL

The Lock has been located in a curved reach of the river, on the convex shore, in order to secure better protection from ice drift during floods, and also to take advantage of slack water for vessels in manœuvring for entrance.

The Lock between ends of extension walls is 290 feet in length, and 215 feet in length between hollow quoins, width 45 feet between vertical walls and total lift, or difference between elevation of lower and upper pools, 21 feet. A navigable depth of at least 9 feet at periods of lowest water will be maintained. The Lock is built entirely of concrete, some 17,000 cubic yards having been employed for this purpose. The foundations are on the local magnesian limestone of Trenton formation. The walls of the Lock are 37 feet in height and have a base width of 20 feet.

The side wall culvert system of filling has been adopted, there being a 5 ft. by 6 ft. culvert in each side wall with 8 ports of $2\frac{1}{2}$ feet diameter leading into the body of the Lock from each culvert. The filling and emptying valves are located above and below each set of Lock gates and are automatic cylindrical valves, adapted from the Fontaine cylindrical valve used in France.

These valves are of special interest inasmuch as the working parts are not subject to pressures due to head and the valve will be therefore easy to manipulate under the maximum head of 21 feet.