

an elevation of 94 ; the sheet piles were driven down as the work proceeded, and the water kept out by a steam-pump.

Three pile-drivers were then mounted over the pit, and the bearing piles of the foundation driven ; these were 90 in number, and their average penetration was a little more than 30 feet. The drivers were at first worked by horse-power, but this was found unprofitably slow, and two of them were afterwards worked by steam. This done, the pit was again pumped out on the 16th of December, and the excavation carried a foot and a-half lower. The sand was dug away from the outside of the sheet piling for eight or ten feet, to relieve the pressure, but it was found difficult to excavate much faster than it flowed in on the inside ; the water also came in in such quantities that the two centrifugal pumps were required to keep it down. The piles were then cut off with axes and the heads worked smooth ; they were capped with flattened sycamore sticks, on which a second course of timber was laid, which was planked with four inch oak plank, finishing at an elevation of 94.7. On this the masonry of the pier was begun on the 3d of January, 1868. The pier was built up at once, the pit around it being filled with riprap.

PIER No. 7.

As early as February, 1867, an excavation was made in the side of the bank, at the site of this pier, and in this the foundation piles were driven at once. They were 73 in number, and their average penetration 27 feet ; their driving occupied about a month, from the 27th of February to the 27th of March. The excavation was then resumed around the piles, but after a week's work the men were driven out of the pit by the rising water of the April flood. The water continued too high for the work to be resumed till after the summer floods ; when it fell in August no trace of the foundation could be seen, the piles having been completely covered by the deposit of sand. The pier was therefore located anew, an excavation made at the site, and the buried piles dug out, in nowise injured by their premature inhumation. A rough enclosure of sheet piling was driven, and the excavation continued below ; the water came in rapidly, working its way through the porous soil, and making the excavation