

sheds, cranes, railways, etc. The Portishead and Avonmouth Docks are situated at the mouth of the river, about five miles below the city. There are five graving docks at Bristol, and a floating pontoon dock and one masonry graving dock at Avonmouth.

The new works at Avonmouth received Parliamentary sanction in 1901, and the first sod was cut by His Royal Highness the Prince of Wales on March 5th, 1902.

*Principal Features.*—The general plan is shown on Fig 1, from which it will be seen that a very large area of land was acquired in proximity to the new works to provide for future extensions and the erection of factories. Before the docks were completed, flour mills and other industrial works were already in course of construction, showing that, if proper facilities are provided, commercial enterprise at once follows.

The entrance channel or outer harbour is formed by two piers, 1,200 feet and 900 feet long, respectively, with a width between the pier heads of 700 feet, narrowing to 250 at the entrance lock.

The entrance lock is large enough to take any vessel yet built for the Navy or Mercantile Marine. Its dimensions are 875 feet by 100 feet, divided by an intermediate pair of gates into sections of 300 feet and 575 feet long, respectively. There is a depth of 46 feet of water on the sill at mean spring tides.

The main basin of the wet dock is 1,120 feet by 1,000 feet, with two branches, each 1,800 feet long by 300 feet wide, and another branch 700 feet by 250 feet wide, from which latter there is a connection called the junction cut, 550 feet by 85 feet between the new and old docks.

To the north of the entrance lock the new graving dock is situated, and this has also been designed with a view to modern naval requirements, altar courses having been constructed at a low level in order to suit the great beam and square midship section of modern armoured ships. It is 875 feet long by 100 feet wide at entrance, and the floor is divided by an intermediate caisson into sections of 547 feet and 328 feet, respectively, with 34 feet of water over the sill at ordinary spring tides. The pumping plant is capable of emptying the dock in two hours.

Along the foreshore of the River Severn a great rubble wall or reclamation embankment, 6,000 feet long, was constructed, behind which for a width of about 2,000 feet the reclaimed land has been laid out for railway terminals.

Similarly, alongside the River Avon, from the south pier to the old dock entrance, another rubble wall was constructed, having for 700 feet of its length a concrete monolith toe, 25 feet wide, sunk to a depth of about 40 feet below low water.

*Construction General.*—The course to be pursued in the construc-