

OF THE TOWERS OF SUPPORT.

The towers of support in the river in average twelve feet deep at low water, are to be built hollow, see sheet N^o. 2, and so proportioned that the weight which comes upon them from the cables shall be transmitted over the surface of the bare.

So far as the examinations on the ground developed the formation of the bed of the river, it appeared to be compact rock covered with a light coating of gravel and largish boulders. From the nature of the rock, which is slate interspersed with lime stone, fissures of any very considerable magnitude are not likely to be met with; on the contrary the bed of the river is most likely to be very solid and generally an even plane at the sites for the towers, sloping towards the middle of the river.

The rise of the tide is on an average twenty feet, and the foundations being set in twelve feet of water at low tide, it becomes an undertaking of no ordinary magnitude to place foundations securely which are intended to sustain the enormous weights which these are to carry.

Various methods have been employed with more or less success in similar undertakings in England, France and the United States, and perhaps that which is most highly approved of is the construction of coffer-dams.

In England this method was for many years the only plan used, recently however others have been employed.

When rock is met with near the surface of the bed in deep water, a difficulty almost insurmountable presents itself to the construction of ordinary coffer-dams, as there is little or no hold for the piling.

Owing to the very great pressure the case of the towers have to sustain, the *Caisson* plan so successfully used by the French and in the United States, is here objectionable.