An ideal geographical situation, in relation to the industrial centres of the country.

Suitable land along the banks of the estuary for the development of industrialism.

The Need of the Moment.

With the memorandum is issued a map showing the site of the proposed tidal water power in relation to the chief industrial areas. The Birmingham and South Wales districts, of course, are most immediately affected, but just north of the Birmingham and Coventry areas are those from Nottingham to Leeds, and from Stafford to Liverpool and Manchester and beyond. The study of the whole project was undertaken by the Ministry "in view of the necessity for immediate increased railway communication between South Wales and other parts of the Kingdom; the long-felt need of access over the Severn Estuary for vehicular traffic; and the possibility of combining these with a large scheme for cheaper power for industrial purposes."

These studies, which have been worked out by the Civil Engineering Department of the Ministry, have resulted in the formulation of a comprehensive scheme, on a site further down the River Severn than the Beachley scheme, and of a very much greater potentiality, which provides:

Over half a million horse-power during a ten-hour day, with

A peak-load capacity of over a million horse-power at an estimated cost for generation at present-day prices of

A little over a halfpenny per Board of Trade unit.

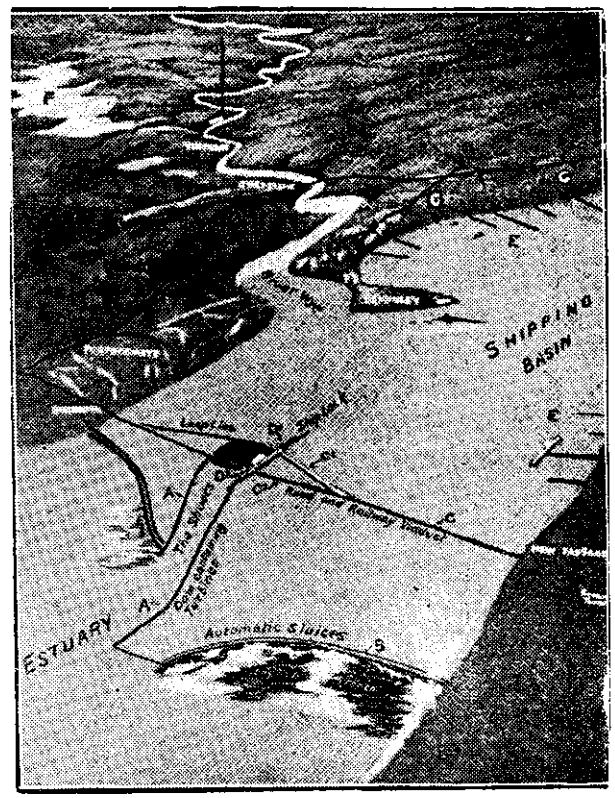
The largest horse-power of any scheme now in existence is the 385,500 of the Amalgamated Niagara Falls Company.

An incidental advantage of the scheme would, it is urged, be the annual saving of three to four million tons of coal, and "its execution would mean the employment for a period running into years of an army of men of all grades, both technical and labouring, whose numbers could not fail to run into many thousands."

Some of the Provisions.

The scheme provides for a level road for vehicular traffic over the Severn, which would obviate a detour for all traffic between Newport and Bristol of about 50 miles by way of Gloucester. It also provides for the quadrupling of the Great Western Railway Company's line, when required, between the West of England and South Wales, at a considerably less cost than could be achieved in any other way. It also creates a locked basin of over 27 square miles for shipping purposes on the Upper Severn above the line of the Severn Tunnel, a very large portion of which would be suitable for the accommodation of vessels of the largest size, and usable at all states of the tide. This portion of the scheme, by bringing the great shipping further up the estuary and nearer to the existing industrial areas, would materially shorten the distance and lessen the cost of transit to inland places such as Birmingham.

The problem of allowing shipping to pass up and down the river without interfering with or interrupting the passage of trains across the bridge over the river would be met by the provision of a locking basin capable of taking the largest ships on the line of the navigable channel and intersecting the barrage. The ships would be led into and worked



Key to Reference Letters on Photograph.

A.A.—Concrete dam containing turbines driven by impounded water and generating electricity. **B.**—Automatic flap sluices operated by tide, for impounding rising tidal water. **C.**—Road and railway viaduct. **C1 & C2**—Alternative loop for diversion of railway traffic to ensure continuous railway working. **D1. D2.**—Ship lock. **E.E. &c.**—Piers and wharves for shipping as required. **F.**—Salt water lake for accumulating water power against neap tide deficiencies, and times when tides are such that the turbines are not working. **G.G.**—Riverside areas lending themselves to industrial development.

Note.—North of Tintern and indicated by a vertical line is the site of power house, in proximity to F.

through this locking basin by electric locomotives, somewhat similar to those in use on the Panama Canal.

The railway and road traffic would be passed over either end of this basin by means of lifting bridges operating in such a way as to ensure that there is no delay either to railway, road, or river traffic. This is effected by duplicating the railway into the form of a loop where it crosses the locking basin, and so controlling and interlocking the arrangements as to allow continuous free passage for the railway or road traffic on one or other branches of the loop with safety.