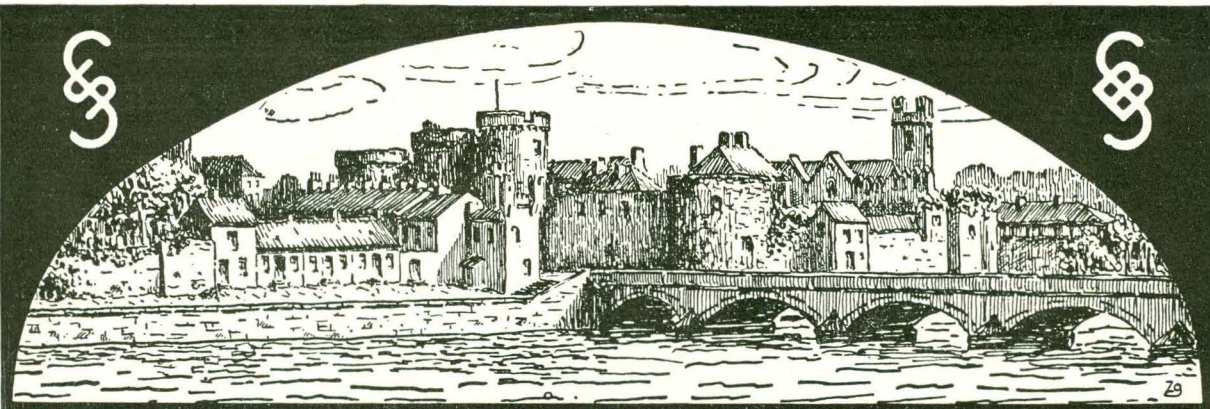




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PROGRESS ON THE SHANNON

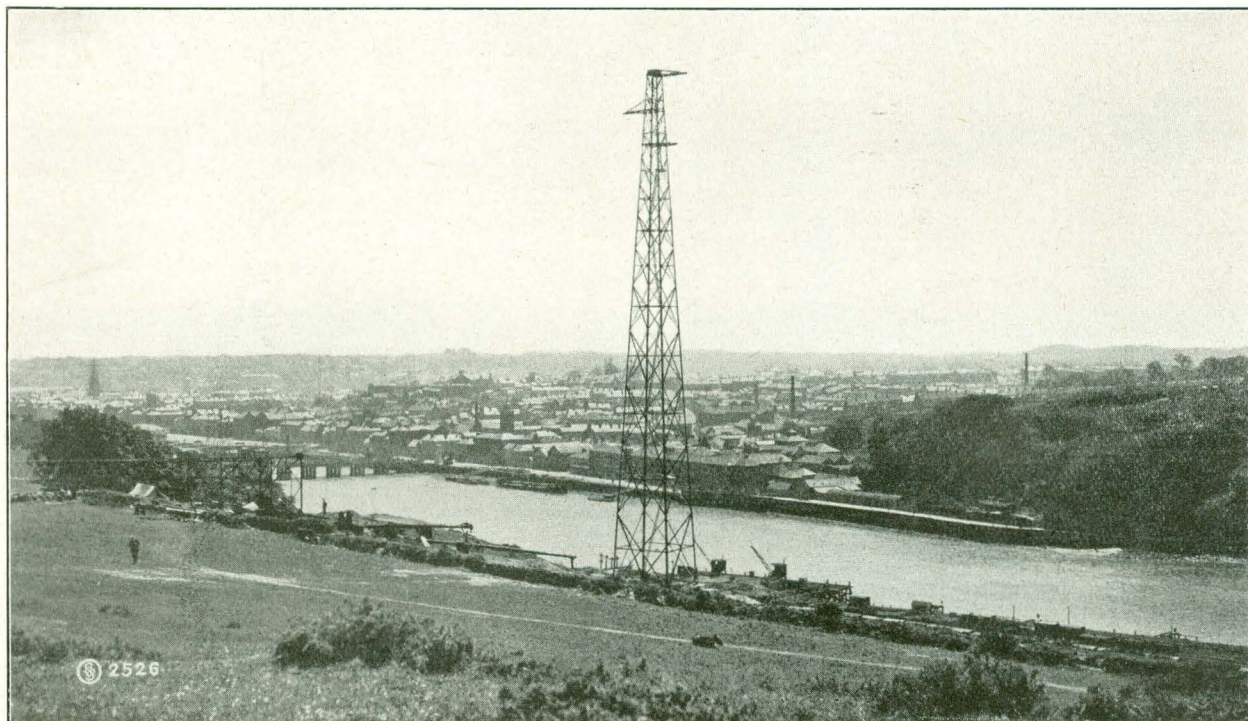
2nd YEAR
AUGUST 1928
NUMBER 11

Electrical part of the Shannon Scheme

High Tension Transmission Lines (Continuation)

Crossings over railways, communication lines, canals or navigable waterways are constructed with the shortest possible spans between the crossing-poles. The minimum clearance required between the power- and communication lines is 6 ft. = 1,83 m on

the 38 kV lines and 9 ft. = 2,75 m on the 110 kV lines. The distance between the lowest point of conductors and the railway level is 7 m on the 110 kV and on the 38 kV lines. The minimum clearance between power lines and waterways is in compliance with

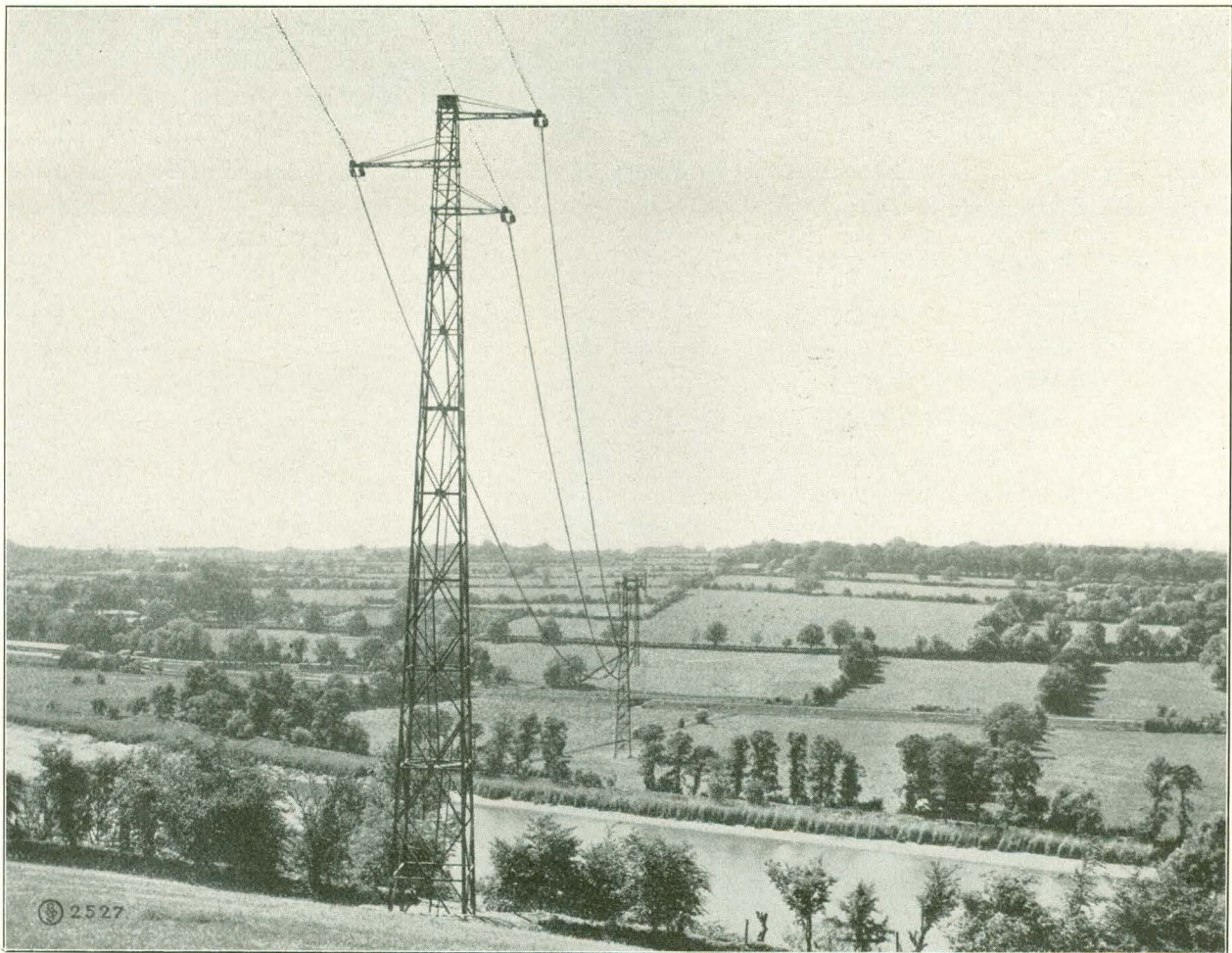


River Suir crossing pole near Waterford, 45 m high above ground level



38 kV Crossing over the River Barrow seen from New Ross

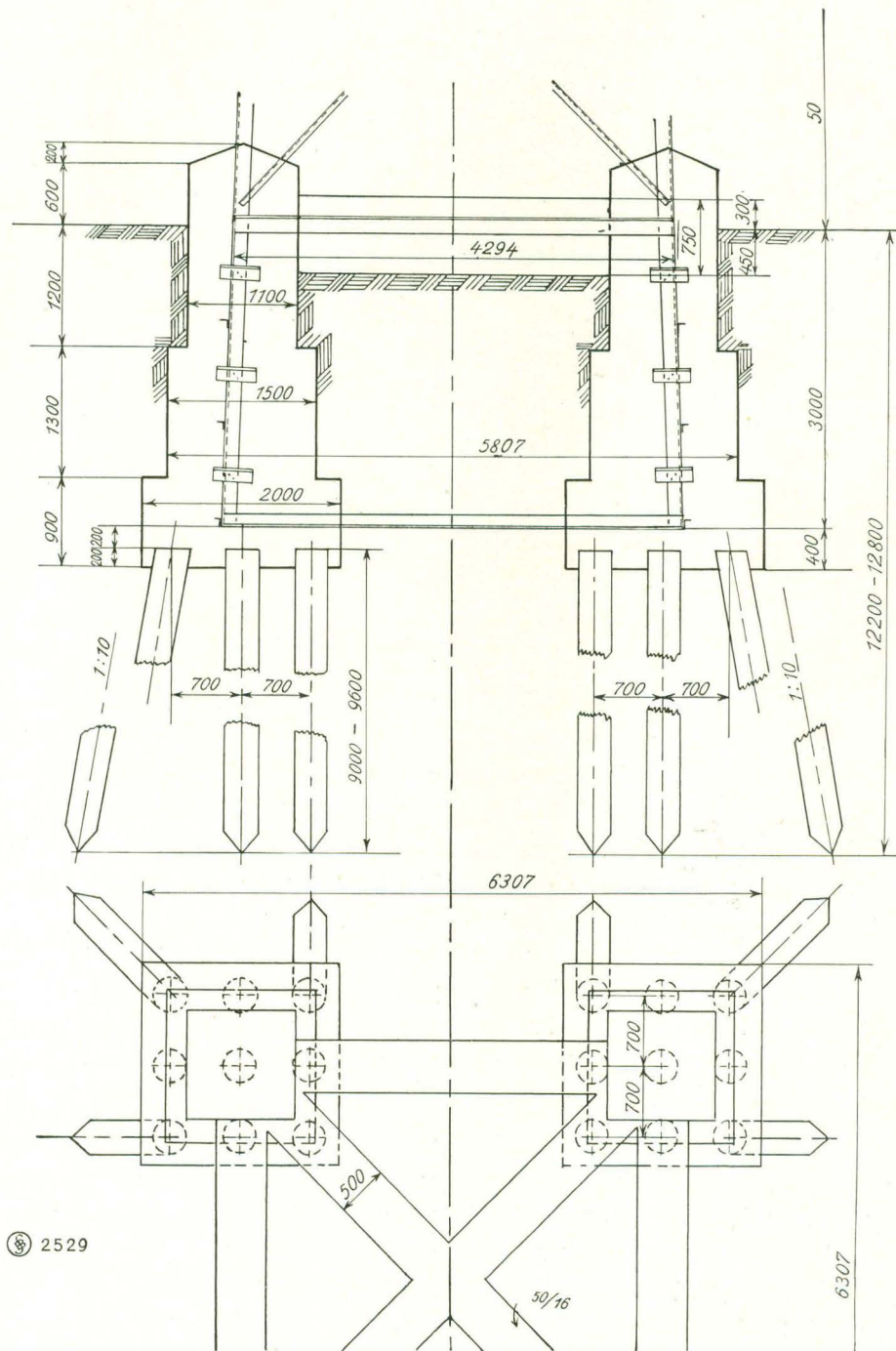
the regulations issued by the River and Canal Authorities. Thus a clearance of 7 m is left over ordinary canals while that over the River Suir, a navigable river near Waterford, must be 150 ft.=



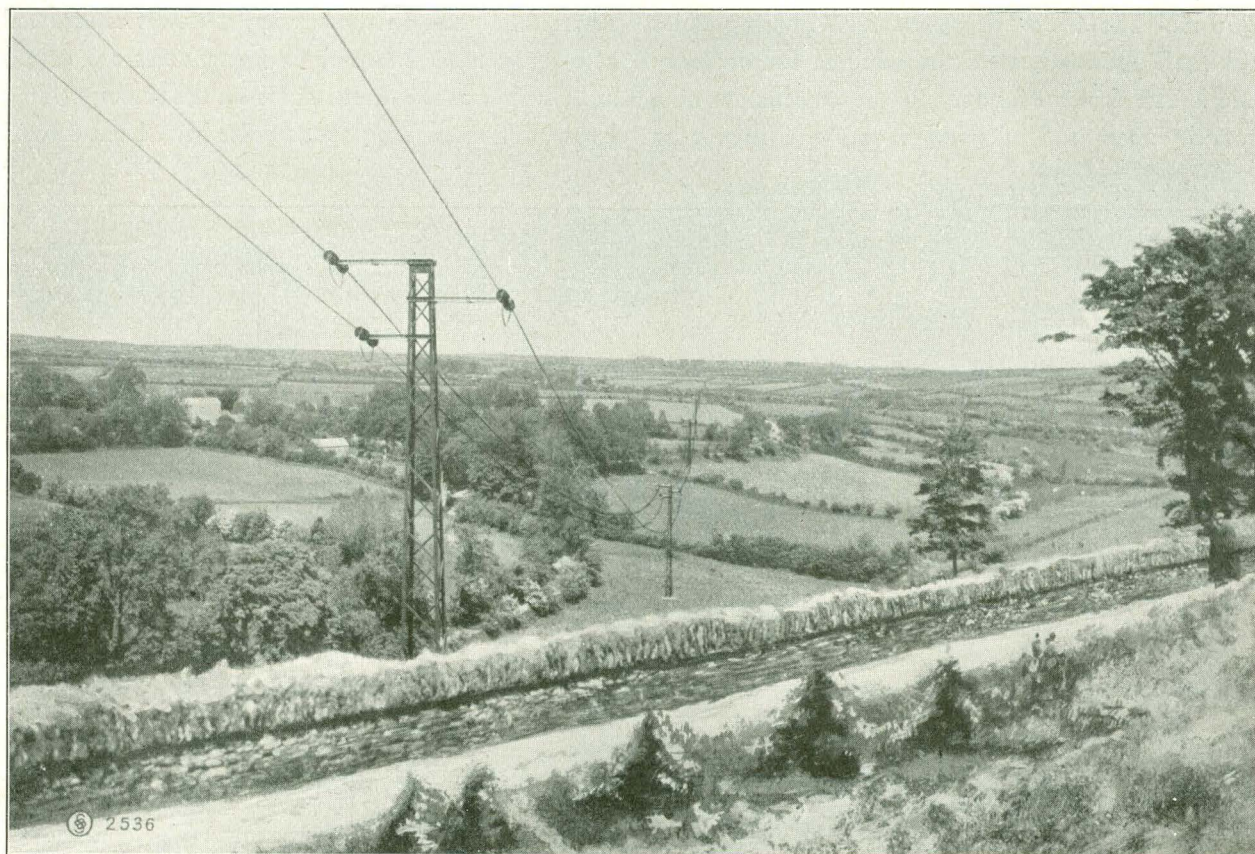
38 kV Crossing over the River Barrow at New Ross

45,70 m. The factor of safety for Crossing Poles and their foundations is the same as for ordinary poles. The factor of safety in the conductors of a crossing span is 5, dependent on the maximum

admissible stress in the copper, which is established at 8 kg/sq. mm. Normal Crossing Poles are of the same height as the Strain Poles on the corresponding lines. For extra long spans poles have been erected



Foundation of the middle crossing pole at New Ross



Strain pole of the 38 kV line Glenmore—New Ross

having a height up to 50 m above ground level, as in the case of the 38 kV Crossing over the River Suir at Waterford where a span of 470 m occurred necessitating the use of Crossing Poles 45 m high above ground level (see Pict. 1). Pictures 2 and 3 illustrates a very interesting Crossing over the River Barrow at New Ross, where two spans exist, one over the River, having a length of 373 m, the other over a railway being 250 m long. The bronze conductors, cross-section 95 sq. mm, are strained on the two outer Crossing-Poles and suspended by double chains of suspension insulators from the central crossing pole, which latter pole, in this instance, stands in boggy and swampy ground. The bearing foundation is constructed on 36 large wooden piles driven by a ram into the ground to a depth of about 12,5 m. The average upper diameter of the piles is 35 cm. Crossings between 110 kV-lines and 38 kV lines, which are being

constructed in the same manner as Railway Crossings, are also worthy of note. The 110 kV conductors pass over the 38 kV conductors with the prescribed minimum clearance of 5 m between the lowest point of the 110 kV conductors and the highest point of the 38 kV conductors. In fulfilment of this condition, for instance, Poles near Athy on the 110 kV line Dublin—Limerick crossing the 38 kV line, have a height of 28 m above ground, and are, moreover, set on wooden sleepers fastened by channel-irons on the base.

The conductors are transposed so that, at stated intervals, each conductor changes its position on two transposition poles in the same order and at practically the same distances. These intervals on the said 110 kV 6-conductor lines are 40 km, and on the 38 kV three-phase line 80 km, respectively.

A description of the actual erection of the line will be given in a later article.