



LANCASHIRE COUNTY COUNCIL.

HIGHWAYS AND BRIDGES COMMITTEE.

LIVERPOOL—SOUTHPORT COUNTY ROAD A565.  
FORMBY BY-PASS.

OFFICIAL OPENING

TO BE PERFORMED BY

*The Right Honourable The Earl of Derby*

K.G., P.C., G.C.B., G.C.V.O.

ON

SATURDAY, DECEMBER 10<sup>TH</sup>, 1938.

COUNTY ALDERMAN P. MACDONALD, J.P.,  
VICE-CHAIRMAN OF THE COUNTY COUNCIL,  
CHAIRMAN OF THE HIGHWAYS AND BRIDGES COMMITTEE.

P. SCHOFIELD,  
COUNTY SURVEYOR AND  
BRIDGEMASTER.



THE RIGHT HONOURABLE THE EARL OF DERBY  
K.G., P.C., G.C.B., G.C.V.O.

*Lord Lieutenant of Lancashire.*

*[Portrait by Vandyk, London]*

LANCASHIRE COUNTY COUNCIL.

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LIVERPOOL—SOUTHPORT COUNTY ROAD A565.  
FORMBY BY-PASS.

The present Liverpool—Southport Road in the vicinity of Formby is narrow and tortuous, and the built-up nature of this Township precludes the possibility of improving to any appreciable extent the existing road, which in recent years has become an important route carrying a large amount of traffic to the resorts of Southport and Ainsdale.

In view of these circumstances the Highways and Bridges Committee concluded that only by means of an entirely new road could the exigency of traffic requirements be effectively dealt with, and in 1928 the location of a provisional by-pass route was considered and incorporated in Formby Urban District Town Planning Scheme. The suggested width was 60 feet, but this was later increased to 75 feet. Restrictions imposed by the Government's national economy proposals prevented further consideration being given at that time to a scheme of this magnitude with the result that the preparation of details was held in abeyance. The Highways and Bridges Committee were fully cognizant of the rapid increase in the volume of traffic and in order to temporarily ameliorate the situation the existing road through Formby village was widened at several acute bends.

An abstract from Traffic Census returns for 1928 and 1938 gives some idea of the growth in volume of traffic, particularly pleasure traffic, on this road during the past ten years :—

| Class of Vehicle.              | Average Daily Number of Vehicles. |       |
|--------------------------------|-----------------------------------|-------|
|                                | 1928.                             | 1938. |
| Motor Cycles . . . . .         | 560                               | 242   |
| Motor Cars . . . . .           | 1,688                             | 3,112 |
| Motor Omnibuses . . . . .      | 170                               | 180   |
| Other Motor Vehicles . . . . . | 203                               | 392   |
| Horse-Drawn Vehicles . . . . . | 70                                | 23    |
| Pedal Cycles . . . . .         | 530                               | 2,291 |
| TOTAL . . . . .                | 3,221                             | 6,240 |

In June, 1934, the question of a new road was again the subject of discussion by the Highways and Bridges Committee, and it was agreed that the County Surveyor should prepare and submit a scheme for by-passing Formby.

In the light of experience and having regard to the volume of potential traffic it was found desirable to revise the general design of the scheme previously proposed. Segregation of traffic was considered essential and the plans prepared and finally approved by the Ministry of Transport provided for a width between fences of 120 feet, with dual carriageways 22 feet wide, a central reservation of 22 feet, cycle tracks 9 feet wide, and footpaths 6 feet wide, with grass margins.

The length of the new road is 4 miles, of which a short length of 240 yards is within the Southport County Borough.

The estimated cost, including the River Alt Bridge, was £195,463, towards which the Ministry of Transport indicated a grant of 60 per cent. on 17th April, 1936.

The nature of the land over which the road passes is flat, and varies in level from 11 feet to 30.5 feet above Ordnance Datum. The land in the vicinity of the River Alt is arable and the drainage is partly pumped; other areas are liable to flooding. The lowest level of the new road is 14.80 feet above Ordnance Datum, which permits the surface water drainage discharging directly into the River Alt. The subsoil is sand, clayey sand, and a small section of peat.

Commencing near North End Farm, in the Township of Ince Blundell, the new road leaves the present Liverpool-Southport Road A565, crosses the River Alt by a new bridge and intersects the old road at right-angles, at which point a roundabout has been constructed 150 feet in diameter. The new road then passes to the east of Formby and Freshfield and crosses Altcar Road B5195, at which point the distance between the outer kerbs is 87 feet, providing ample turning space and safe halting accommodation in an increased central reserve width of 43 feet. Sufficient land has been acquired at this junction to enable a roundabout to be constructed when the cross traffic justifies this form of control. At Deansgate Lane the new road again intersects the old, where a second roundabout 150 feet in diameter is provided, and then crosses Eight Acre Lane, Top Wham Lane, and the southerly boundary of the County Borough of Southport, terminating at its junction with the existing road near the Cheshire Lines Railway Bridge within the County Borough of Southport.

It is a point of interest that along the line of the existing road which will be superseded by the new road, 15 right-angle bends have to be negotiated in a distance of little over four miles.

The junctions of the new road with existing roads have received special attention, and the lay-out of the roundabouts is representative of the best in modern design and safety. A clear illustration of the general lay-out of the road is to be found in the typical cross section on the plan attached hereto. It will be noted that the provision of a generous central reservation separating the two main carriageways would permit each of these to be widened to 30 feet as and when the necessity arises.

Work was commenced on April 9th, 1937, and the average number of men employed was 75. The bulk of the General Contract work was completed by September, 1938.

The carriageways have been constructed of concrete, 12 inches thick (which forms the running surface), laid on a consolidated bed of clinker ballast 9 inches thick. Bottom reinforcement has been used on the near-side traffic lane of each carriageway. The concrete has been formed in bays approximately 46 feet in length with a tongued and grooved longitudinal joint near the centre of each carriageway. The transverse joints are stepped and expansion joints are provided at 92 feet intervals, the intermediate joints being constructional only.

Splayed kerbs are provided on each side of the central reserve as a safety measure. The near-side kerbs adjoining the cycle tracks are 10 inches by 4 inches and are laid direct on the extremity of the concrete carriageway slabs. Permanent traffic lines have been formed by means of grooves in the concrete, 3 feet long, and spaced 6 yards apart. Each groove contains three road studs, the intervening space being filled with mastic asphalt. The traffic line on the westerly carriageway is denoted by steel road studs, but for the easterly carriageway rubber road studs have been used, one in each groove being of the depressible reflex type. This alternative treatment will enable a comparison to be made between the two types of traffic lines under varying conditions.

Cycle track construction consists of a 6 inches consolidated foundation of clinker ballast covered with a binder course of tarmacadam  $1\frac{1}{2}$  inches thick over which is laid a  $\frac{3}{8}$ -inch layer of sand carpeting, squeegeed with bituminous compound and covered with  $\frac{3}{16}$ -inch gauge green chippings, evenly distributed and lightly rolled to produce a matt, non-skid surface finish. The near-side concrete kerb of the cycle tracks is set sufficiently low to prevent cycle pedals from coming into contact with it and the off-side timber kerb is fixed flush with the surfaces of the cycle track and adjacent grass margin so that it can be over-run in the case of an emergency.

The footpaths are constructed in a similar manner to the cycle tracks except that the foundation of clinker ballast is 3 inches thick and the squeegeed surface of the sand carpeting is covered with  $\frac{1}{8}$ -inch gauge pink chippings.

The slopes of embankments, cuttings, central reserve, margins and verges have been liberally sown with grass seeds. Trees and flowering shrubs, of species appropriate to the environment, will be planted at an early date in the margins and along the central reserve. These will present a pleasing appearance when fully grown and the shrubs in the central reserve will considerably reduce the glare from headlights of vehicles using each carriageway. The varieties of trees and shrubs have been selected, and the lay-out for planting prepared by the Council for the Preservation of Rural England, in collaboration with the Roads Beautifying Association.

The sub-base of the new road is drained with agricultural tiles and porous pipes connected to purpose-made inlets of the main carriageway gullies. Efficient drainage of the carriageways is effected by means of side-entrance gullies, and on exceptionally flat gradients a small longitudinal channel, connected to the gullies, has been formed in the surface of the concrete to assist the drainage. Cycle tracks are drained by flush mounted gratings fixed on concrete gully blocks, which are perforated for the drainage of the sub-base, and empty direct into the main carriageway gullies. Iron gully covers are set behind the kerbs for inspection and cleaning purposes and brick-built manholes have been provided at suitable points throughout the main drainage system.

All cross-roads and junctions with existing roads have been adequately sign-posted and appropriate symbols erected in accordance with Ministry of Transport requirements.

Internally illuminated "KEEP LEFT" bollards with 6 inches letters are fixed in central islands of roundabouts on the centre-line of approach carriageways, and smaller bollards with 3 inches letters are erected on island refuges at single-carriageway entrances. The larger bollards are also fixed in the central reserve at both commencing and terminating points of dual carriageways, also at Hightown Lane and Altcar Road junctions. The method of illuminating roundabouts is under consideration with a view to obtaining an efficient light distribution over the whole of the carriageway area and to form a conspicuous indication of the presence of a roundabout. Experiments in connection with the lighting of roundabouts will confirm the suitability of the arrangement proposed, after which it will be necessary to give further consideration to the question of similar treatment for all roundabouts.

## LITTLE ALT CAR BRIDGE.

The bridge carries the new road over the River Alt at a point a little west of the old Alt Bridge. It provides the full roadway width of 120 feet. It is a reinforced concrete bridge of portal frame design, the end bays, however, are of steel plate girder construction on mass concrete abutments and provide the required pipe bay accommodation.

In elevation, therefore, the appearance is that of a steel girder bridge. This feature in design is occasioned by the fact that the bridge is skew to the river.

Owing to the poor nature of the ground the design of the foundations for the portal frame presented considerable difficulty, as little reliance could be placed on the material at the backs of the portal bases catering for the induced horizontal thrust.

It was therefore considered advisable to provide normal reinforced concrete bearing piles with horizontal ties across and under the river bed.

The general design and dimensions of the frame are as follows :—Square span 50 feet, skew span 54 feet, rise 3 feet, thickness at crown 21 inches—at springing 4 feet 9 inches.

The base, 5 feet wide by 3 feet 6 inches thick, is carried on a double row of 14 inches by 14 inches piles at 5 feet centres. The ties are 14 inches by 10 inches at 10 feet centres.

With regard to construction, the main difficulty was the placing of the ties, as the volume of water to be dealt with precluded the adoption of end dams and a flume.

A main central wooden pile dam was first driven, with pockets in plan about 4 feet by 4 feet on the line of each tie. The portal base and ties on one side of the river were then placed. The ends of the ties in the centre of the river were left with the bar reinforcement projecting about 2 feet, the bars being screwed to take flanged couplings.

At a later stage, with the centre dam still in position, the pockets were reversed to allow of a connection being made between the ties already fixed and the remaining halves on the other side of the river.

The wing walls are faced with, and the parapet walls built of, red sandstone, the contrasting copings, stringcourse and bedstones being of Derbyshire stone.

The class of workmanship has been very satisfactory.

The bridge has been completed at an approximate cost of £18,000.

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The whole of the works (except surfacing) have been executed by the Contractors, Messrs. W. Turner (Ardwick), Ltd., of Manchester, in a very expeditious and efficient manner, and the total estimated cost of £195,463 will not be exceeded. The surfacing of road junctions, cycle tracks, footpaths and crossings has been satisfactorily carried out by Messrs. Cawood, Wharton & Co., Ltd., Leeds.

The following are the Contractors to whom other portions of the works have been sub-let:—

Little Altcar Bridge.—Messrs. Williams, Tarr, Ltd., Warrington.

Steelwork for new Bridge.—Messrs. Francis Morton & Co., Ltd., Garston.

Sand carpeting.—Penmaenmawr and Trinidad Lake Asphalt Co.

Traffic lines.—H. & B. Construction Co., Ltd. (Fixing of road studs).

The planting of trees, shrubs and road-side boundary hedges, together with the fixing of rabbit-proof netting on the field-side protection fence and field-entrance gates, will be carried out at an early date under separate contract.

The new by-pass road has now become part of the Class I. County Road A565 from Liverpool to Southport, and the portion of the old County Road from the southerly roundabout, through Formby and Freshfield to the northerly roundabout is now Class II. route, B5424. The remainder of the original main road, all of which lies to the east of the by-pass has been declassified and will merely serve as an occupation road for access to the property bordering thereon.

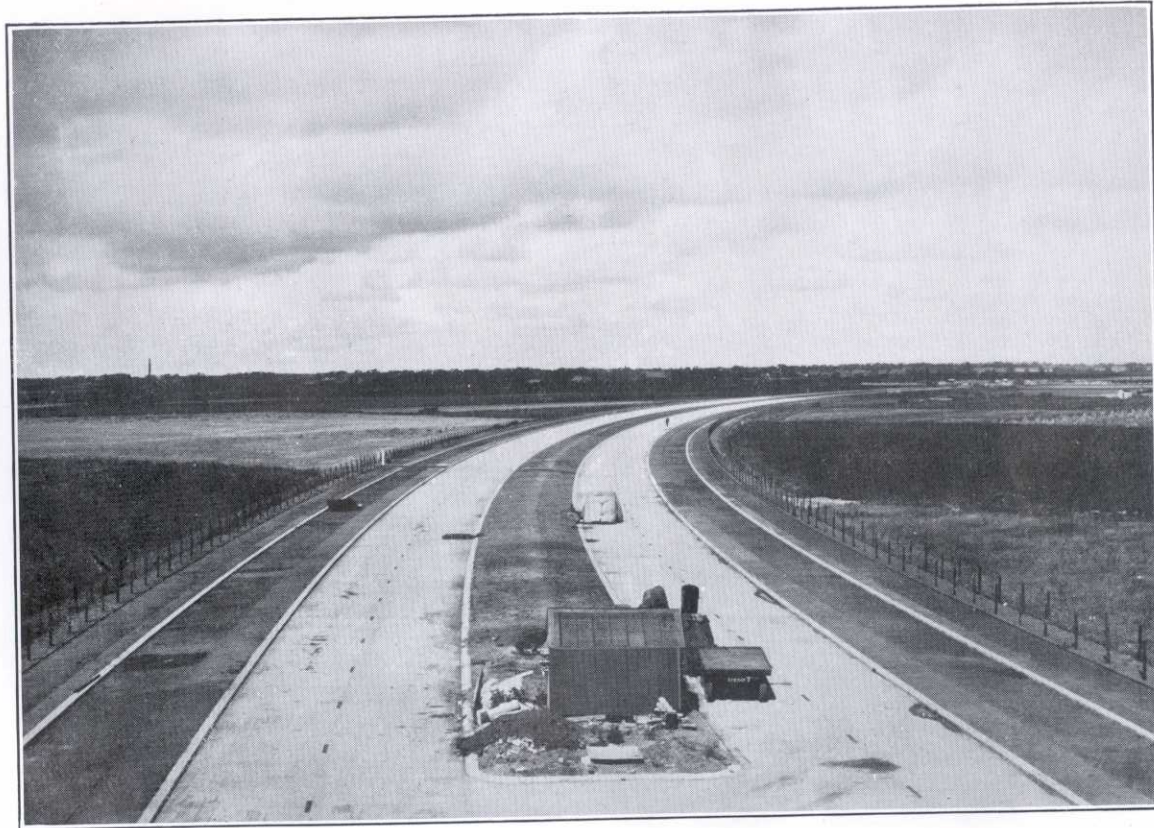


A provisional line has been located for the future continuation of the Formby By-pass to the South. From its present termination at North End Farm the line passes through Ince Woods and Thornton to beyond the Cabbage Inn at Buckley Hill and crosses the Leeds and Liverpool Canal near Swift Bridge, intersecting the Dunnings Bridge-Litherland new road at the Boundary Road roundabout, finally joining the existing road near Ford Station, at which point direct communication with A59 and B5192 exists. In addition to Boundary Road, roundabouts are planned to be constructed at existing road junctions near the Nag's Head Hotel, Thornton, and the Cabbage Inn at Buckley Hill. Special consideration is being given to the location of the most suitable line having regard to the desirability of preserving the fine belt of trees at Ince Blundell.

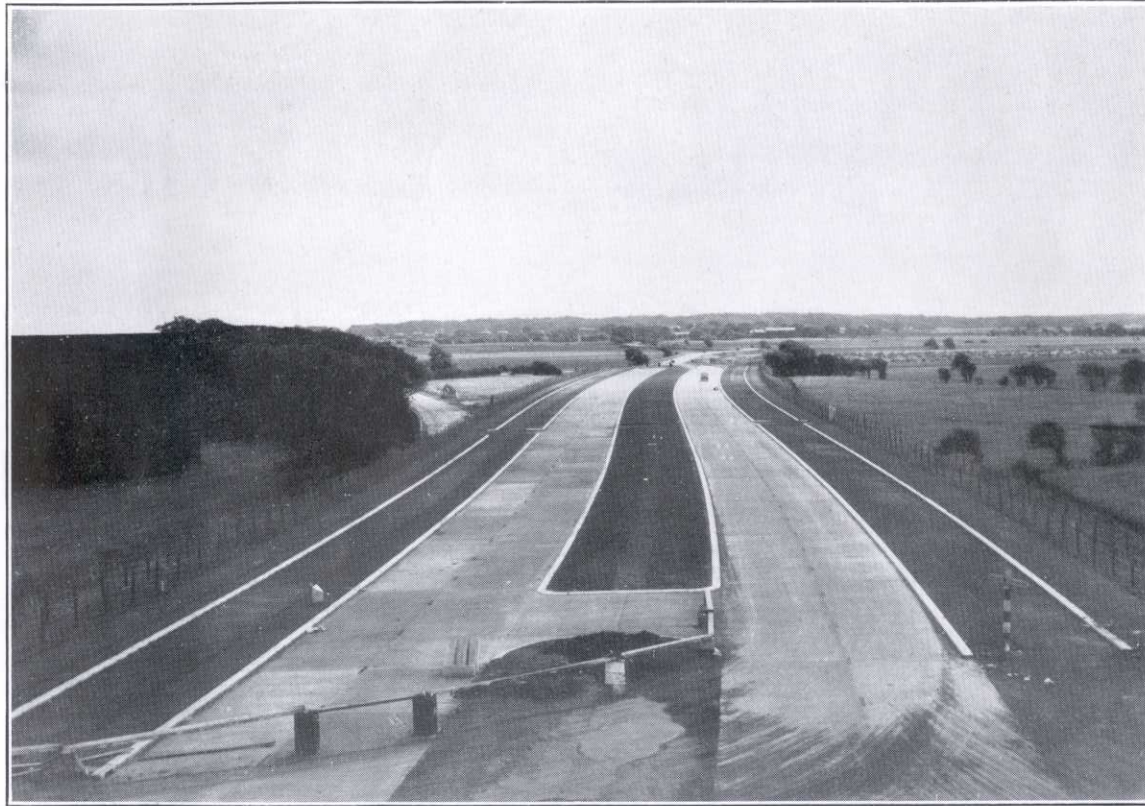
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#### DATA.

|   |                                     |
|---|-------------------------------------|
| Length of old route superseded by new By-pass . . . . . | 4.72 miles.                         |
| Length of new By-pass Road . . . . .                    | 4 miles.                            |
| Maximum Gradient . . . . .                              | 1 in 357.                           |
| Minimum Radius . . . . .                                | 3,367 feet (6 ins. superelevation). |
| Diameter of Roundabouts . . . . .                       | 150 feet.                           |
| Date of Commencement of Works . . . . .                 | April 9th, 1937.                    |



View of Road from North End Lane looking north. Construction in progress.



Road (in course of construction), showing southerly portion of the By-pass.



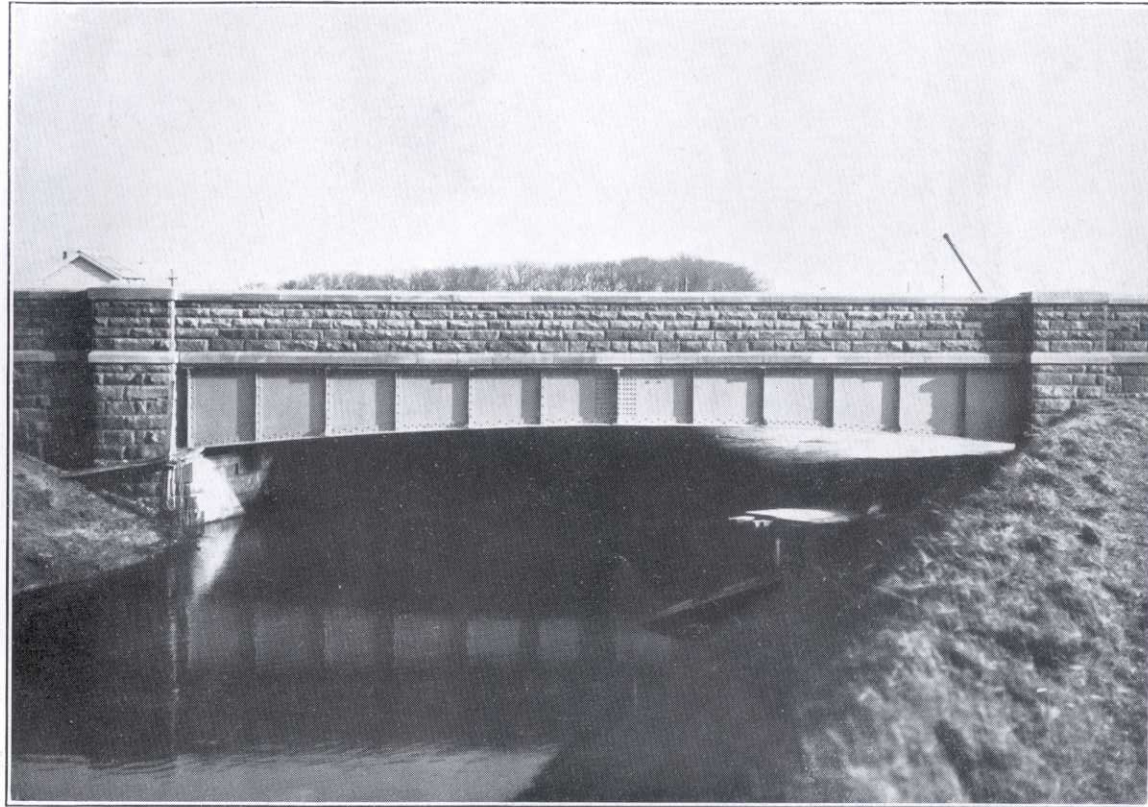


View from Alt Bridge looking south. Construction in progress.

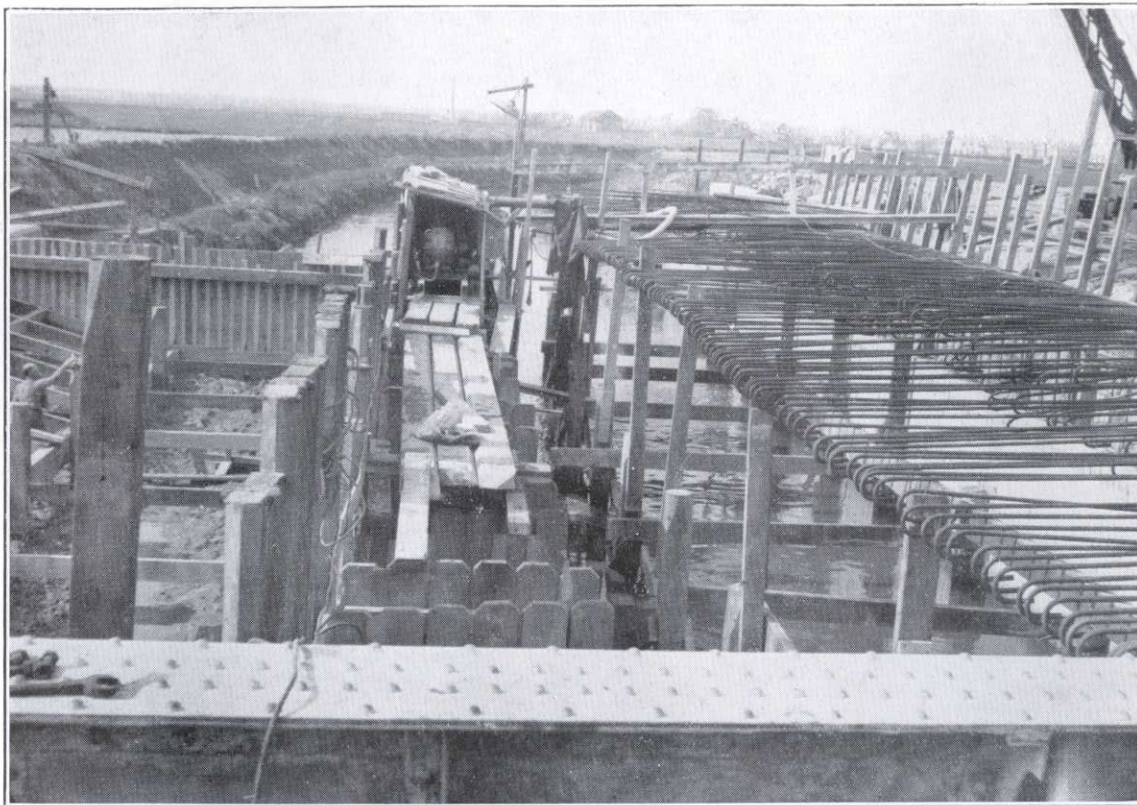


Road (in course of construction), showing northerly portion of the By-pass.



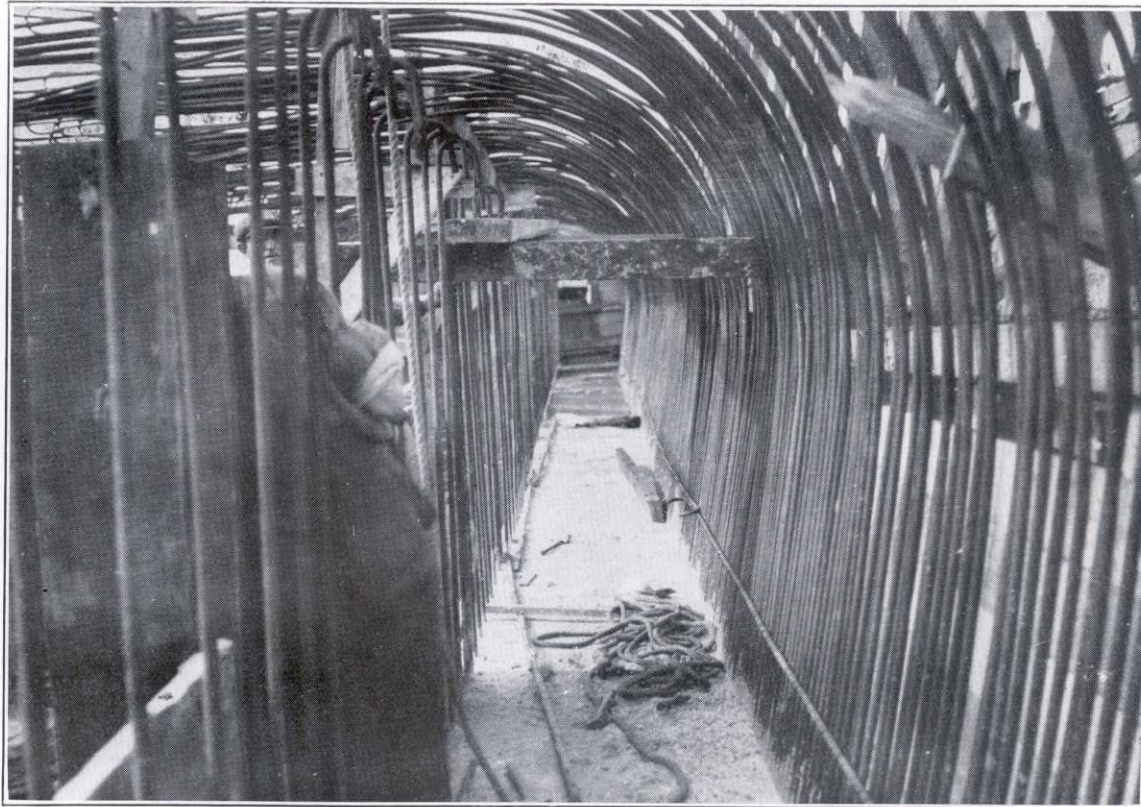


Westerly face of Alt Bridge.



ALT BRIDGE

Photograph (during construction) showing centre dam with pockets left for connecting ties.



ALT BRIDGE

Photograph (during construction) shewing portal frame reinforcement in position.



LANCASHIRE COUNTY COUNCIL

FORMBY BY-PASS

