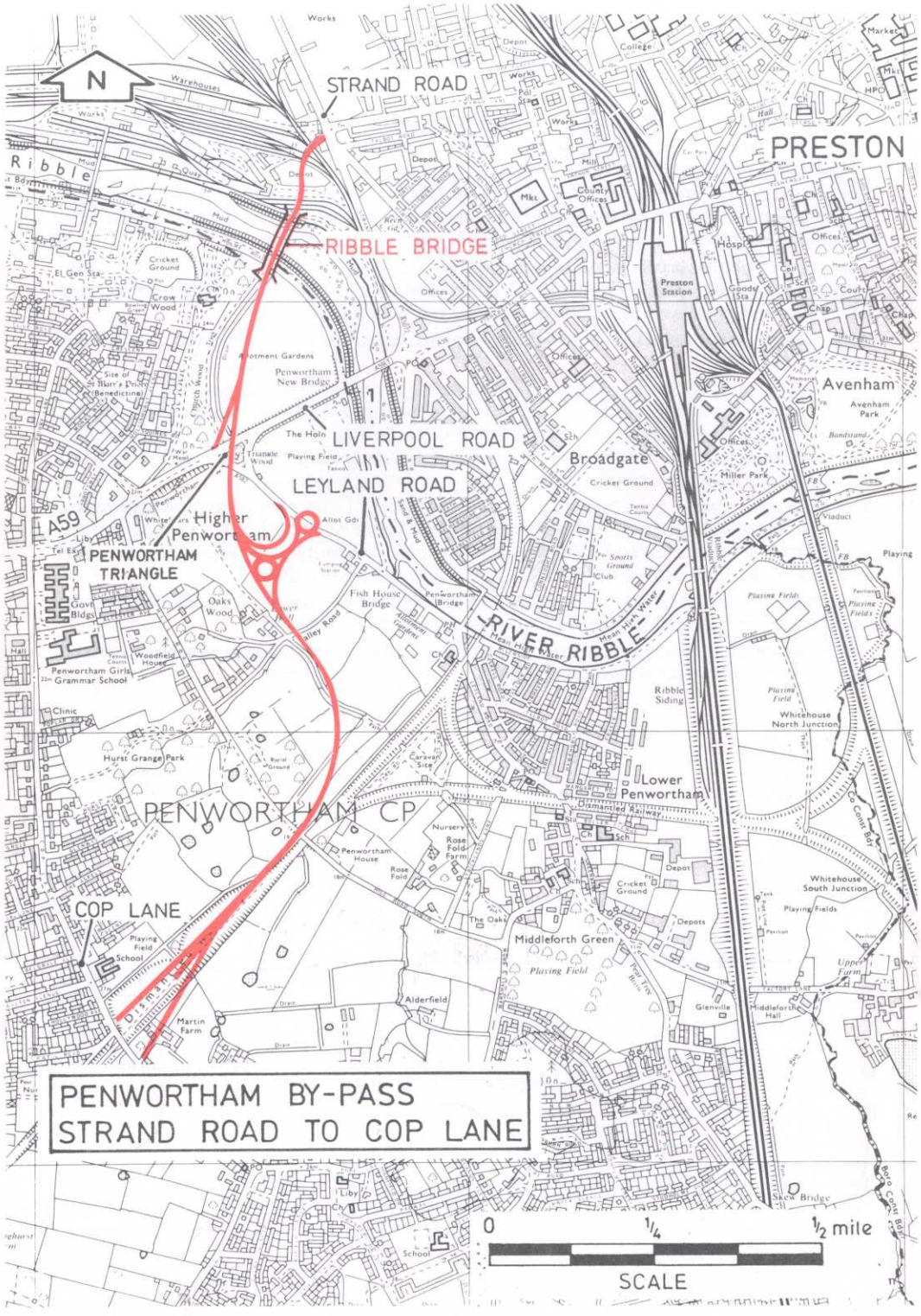

Lancashire County Council

Penwortham By-Pass
Strand Road to Cop Lane

Official Opening
24 May 1985

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Penwortham By-Pass

Introduction

The need for improved communications between Preston and areas south of the River Ribble has long been recognised. As the administrative centre for Lancashire and the main town in the Central Lancashire sub-region the conurbation of Preston has expanded into the adjoining areas of Penwortham, Hutton and Longton.

In addition to the growth of inter-regional traffic the increase in local traffic has led to unacceptable congestion at the road junctions either side of the River Ribble and along the residential and shopping areas of Liverpool Road A59 in Penwortham.

The traffic flow across Penwortham Bridge is only some 10% less than the traffic carried by the M6 Motorway at Samlesbury.

Penwortham By-Pass will ultimately provide a dual two-lane carriageway route between Ringway in Preston Town Centre and Longton By-Pass A59 at Longton, a distance of 6.5 km (4.1 miles).

It will thereby afford considerable relief, with consequent reduction in accidents, along the existing route. The By-Pass will also provide a connection with the Central Lancashire Development Corporation's Western Primary Route of which 4.4 Km has been constructed and construction of the first phase of the remaining 3.5 Km has commenced. The By-Pass will be constructed in stages.

Strand Road to Cop Lane

The section of the By-Pass to be opened, between Strand Road and Cop Lane, will serve to alleviate traffic congestion on the road network in the area, in particular at the existing crossing of the River Ribble. Facilities are provided for a direct access between the By-Pass and the Preston Dock Estate which is being redeveloped by the Preston Borough Council.

The scheme includes an embankment approach to new bridge crossings of the Dock Railway and Access Road and the River Ribble. This section of the By-Pass has four traffic lanes. The Ribble Bridge crosses over Holme Road on the south bank of the river and the route continues on an embankment following the toe of the escarpment, to a 3-span prestressed concrete bridge which carries the By-Pass over Liverpool Road A59 at Penwortham Triangle. A contiguous bored pile retaining wall has been constructed to accommodate a slip road which will allow in-bound traffic from Liverpool Road to join the By-Pass.

Beyond Penwortham Triangle the route continues on an embankment, reducing in height, to connect to a major junction with Leyland Road A582. This junction incorporates a looped slip road to facilitate the flow of traffic southbound along Liverpool Road A59. From the Leyland Road junction the By-Pass continues as a single carriageway road to pass beneath reinforced concrete bridleway bridges at Valley Road and Hill Road South. The route then utilizes the line of a disused railway cutting to pass beneath the Martin's Farm Footbridge, a reinforced concrete structure, and then connects to Cop Lane. A new bridge has been constructed over the former railway cutting to carry Cop Lane and this will enable the route to be extended to accommodate the Western Primary Route and the extension of the By-Pass to New Longton at a later date.

An extensive landscaping scheme forms an integral part of the project which involves the planting of over 35,000 trees and shrubs. A proportion of the planting has already been completed.

Construction of the Ribble Bridge was commenced in advance of the main By-Pass works under a separate £2.2M Contract with Harbour and General Works (Stevin) Ltd and this was completed in December 1984.

The main contract works were commenced in November 1983 by the Sir Alfred McAlpine & Son (Northern) Ltd / Fairclough Civil Engineering Ltd Consortium under a £5.8M Contract.

Ribble Bridge

Description

This is a prestressed concrete bridge of three, varying depth, continuous spans of 40m 70m and 40m. The deck width is approximately 17m between parapets to accommodate a single 4-lane carriageway and side verges.

The end supports are carried on steel H-piles driven to the Bunter sandstone rock as approximately river bed level. The tapered-wall river piers are founded in the rock below river bed level. The piers and end supports are faced with natural stone.

The superstructure comprises twin hollow box spine girders with the top flanges connected to provide continuity transversely across the width of the deck. The top flanges are also extended laterally to form side cantilevers to the bridge deck.

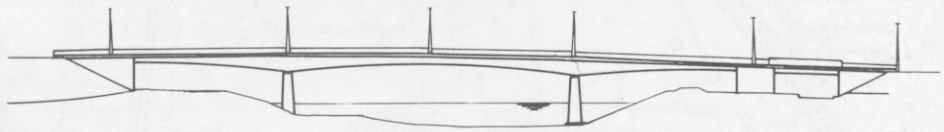
Longitudinal post-tensioning is by strand and by Macalloy bars within the area of the flanges.

The river span was constructed on the cantilever principle involving concreting the box spine girders in-situ in successive lengths of 3.5m, each increment or segment being stressed back to the previously constructed work by the Macalloy bars. Two specially designed steel truss cantilever gantries, one for each box spine girder, were moved forward on rails on the deck to support each segment during its construction.

The side spans were constructed in-situ on falsework. Temporary props were provided at the mid-span positions. These were activated on removal of the falsework. As the main span cantilevers were extended beyond the river piers the prop loads reduced to zero, due to the effects of the cantilever, after which the props were removed.

On completion of the cantilevering sequence from each river pier a 1.0m wide closing segment was cast and post-tensioned to provide longitudinal continuity.

The Road and Bridgeworks have been designed and the contracts prepared and supervised by the County Surveyor and Bridgemaster.



UPSTREAM ELEVATION.