



LANCASHIRE COUNTY COUNCIL



CITY OF LANCASTER

GREYHOUND BRIDGE LANCASTER

OFFICIAL OPENING

ON WEDNESDAY, 29th NOVEMBER, 1972

by

COUNTY ALDERMAN W. D. COOPER, J.P.
CHAIRMAN, LANCASHIRE COUNTY HIGHWAYS
AND BRIDGES COMMITTEE

THE RIGHT WORSHIPFUL THE MAYOR
OF LANCASTER
COUNCILLOR Mrs. D. HENDERSON





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- County Alderman Sir Fred Longworth, D.L.,
(Vice Chairman of the County Council)
- County Alderman J. G. Barber-Lomax, C.B.E.,
T.D., J.P., D.L.,
(Chairman of the Finance Committee)
- County Alderman J. Selwyn Jones, O.B.E., J.P., D.L.,
(Vice Chairman of the Finance Committee)

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County Alderman W. D. Cooper, J.P.

Vice Chairman

County Alderman Ellis Wood, O.B.E., J.P.

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T. Lord	A. F. Williamson

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W. Brown	W. Howarth
D. Crabtree	P. Hull
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N. C. Goldrein	G. Woods

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Clerk of the County Council

J. R. Ingram, C.Eng, F.I.C.E., M.R.T.P.I., F.Inst.H.E.
County Surveyor and Bridgmaster



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Councillor Mrs. D. Henderson

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A.R.I.C.S., M.R.T.P.I.
City Engineer and Surveyor

Greyhound Bridge, Lancaster

Introduction

Greyhound Bridge, formerly carried the Green Ayre - Morecambe Railway over the River Lune. The object of the Greyhound Bridge scheme is to relieve congestion at Skerton Bridge and the surrounding road system by providing an additional crossing of the River, utilising the former railway bridge.

Skerton Bridge carries the London-Carlisle Trunk Road A.6 over the River Lune in Lancaster and, apart from the motorway bridge carrying M.6, two Class III road bridges and a private bridge, it is the only vehicular crossing of the Lune between its mouth and Kirkby Lonsdale about 21½ miles upstream.

As a result, notwithstanding the relief offered by the M.6 motorway, traffic congestion in the area around Skerton Bridge is a daily occurrence at peak hours aggravated during the holiday season by traffic to and from Morecambe and Heysham.

Consideration has been given on several occasions in the past to the widening of Skerton Bridge, but Skerton Bridge constructed in 1787 at a cost of £1,400 is an ancient monument of considerable architectural merit. Widening by re-building the existing face of the bridge would have been very expensive and even then might have been subject to controversy. Furthermore, widening of the bridge itself would not be a complete solution to the problem due to the major road junctions near to each end of the bridge which aggravate the congestion.

The best solution, therefore, was the provision of an additional crossing of the River Lune and the abandonment of the railway and availability of Greyhound Bridge and adjacent railway land presented an excellent opportunity of providing the additional river crossing.

The New Gyratory Scheme

The object of the scheme is to produce a Gyratory system using Greyhound Bridge as the route from Lancaster to Morecambe or the North and the unaltered Skerton Bridge for one way movements in the reverse direction. (See Fig. 1) The following description of traffic movements may help to amplify the foregoing -

Traffic from Lancaster to Morecambe leaves Parliament Street at new traffic signals, crosses Greyhound Bridge and keeps left to join Morecambe Road A.589.

Traffic from Lancaster to A.6 e.g. Camforth proceeds as for Morecambe, but forks right after crossing Greyhound Bridge, proceeds up Morecambe Road to the junction with Owen Road A.6 (where the traffic signals are removed) and turns left towards the north.

Traffic from Lancaster to Caton proceeds as it did prior to the opening of Greyhound Bridge utilising the existing one way system in Parliament Street.

Traffic from Morecambe to Lancaster proceeds up Morecambe Road, crosses Skerton Bridge and negotiates the one way system as it did prior to the opening of Greyhound Bridge.

Traffic from the north to Lancaster also crosses Skerton Bridge and negotiates the one way system as formerly.

Traffic from Caton to Lancaster proceeds as formerly.

Traffic from Caton to Morecambe negotiates the one way system as formerly, but instead of turning right to Skerton Bridge it negotiates the new traffic signal system in Parliament Street and crosses Greyhound Bridge.

The Roadworks

The roadworks consist entirely of unidirectional carriageways. Between Parliament Street and the head of Greyhound Bridge the carriageway tapers from a maximum width of 59 feet to 30 feet on Greyhound Bridge where three traffic lanes are provided. Beyond the bridge where a slip road

provides access from Lune Street four traffic lanes having a total width of 48 feet are provided, but beyond the fork where the Morecambe and northbound traffic separate the carriageways are of two lane width (24 feet) only.

A footway is provided along the left-hand side of the road looking in the Morecambe direction, this being 6ft. wide on Greyhound Bridge and 5ft. wide from Greyhound Bridge towards Morecambe. This latter footway is situated at the foot of an embankment sloping down from the carriageway protected by vehicle barriers at the top of the slope.

The City Council plan to carry out a tree and shrub planting scheme, types of trees and shrubs being selected for their resistance to wind and salt.

The carriageways throughout are of conventional flexible construction comprising 1¼ inches hot rolled asphalt wearing course, 2¾ inches hot rolled asphalt basecourse, 8 inches dense bituminous macadam base and 8 inches crusher run limestone sub-base.

A new traffic signal control system is provided where the approach to Greyhound Bridge leaves Parliament Street and the signals at the Morecambe Road - Owen Road junction are removed.

The length of the works from Parliament Street to Morecambe Road at Carlisle Bridge is approximately two-thirds of a mile.

The roadworks were designed and supervised by the City Engineer of Lancaster in close collaboration with the County Surveyor and constructed by contract, the Contractor being G. W. Farrer Ltd. of Morecambe at a tender figure of approximately £164,000. The road contract commenced on the 1st October 1971. The scheme was designed with a view to easy connection to the Lancaster Eastern Relief Road, which is at present in the Principal Road Preparation List, and for which application for firm programming has been made to the Department of the Environment

The Bridgeworks

The first bridge carrying the Green Ayre - Morecambe railway over the Lune was a timber structure built in 1848. The line was subsequently electrified in 1908.

The present bridge, which has now been converted, was erected near to the original site in 1911 and before deciding upon its use for road purposes the County Surveyor carried out detailed investigations (later confirmed by the consultants) to ensure that the condition of the structure justified conversion. These investigations proved that the bridge was in sound basic condition and capable of conversion. The Greyhound Bridge scheme, therefore, became a practicable proposition. It is of particular interest as it is believed to be the first occasion in this country where a conversion of this nature has taken place.

Greyhound Bridge is a 9 span viaduct of about 640 feet total length. The piers consist of pairs of circular steel plate caissons 6 feet in diameter, the pairs of caissons being braced together. The piers are founded on hard sandstone and filled with concrete and brickwork.

The deck which carried the railway was supported on riveted cross girders carried on the bottom flanges of longitudinal mild steel riveted plate girders.

Because the width between the plate girders was insufficient for highway purposes it was necessary to construct a reinforced concrete deck providing adequate superelevation and resting on and cantilevered beyond the upper flanges of the plate girders with new steel supports and bracings supporting the centre of the carriageway from the original cross girders. (See Fig. 2).

This superimposed deck has an overall width of 41 feet 6 inches providing a carriageway 30 feet wide (divided into three lanes), a 6 feet wide footway and a verge 2 feet wide. The remaining 3 feet 6 inches is occupied by concrete string courses surmounted by steel vehicle/pedestrian parapets.

The result of the re-positioning of the bridge deck is that the road level is roughly 4 feet 6 inches above that of the former railway. The approach from Parliament Street to the bridge has, therefore, been graded accordingly with the result that the branch line to Lancaster Power Station has had to be raised for a considerable distance and forms a level crossing. Although this level crossing is necessary to permit coal supplies to reach Lancaster Power Station its use is very infrequent. It is controlled by automatic gates designed and constructed by British Rail.

The conversion of Greyhound Bridge was designed in detail by C. S. Allott & Son, Consulting Engineers (now Allott and Lomax), to basic designs specified by the County Surveyor and Bridgemaster. The construction was carried out by Leonard Fairclough Limited of Adlington and supervised by the County Surveyor. The tender figure was approximately £268,000. The Bridge Contract commenced in June 1971, i.e. in advance of the roadworks and was completed in June 1972.

Additional Structures

In addition to Greyhound Bridge the scheme involved the construction of a reinforced concrete box pedestrian underpass on the south bank. This subway can be used by pedestrians in Parliament Street so as to avoid crossing the new approach road to Greyhound Bridge; it will also provide access to a future riverside park. The existing Lune Street Railway Bridge on the north bank was redecked so as to carry road traffic over an access to the foreshore.

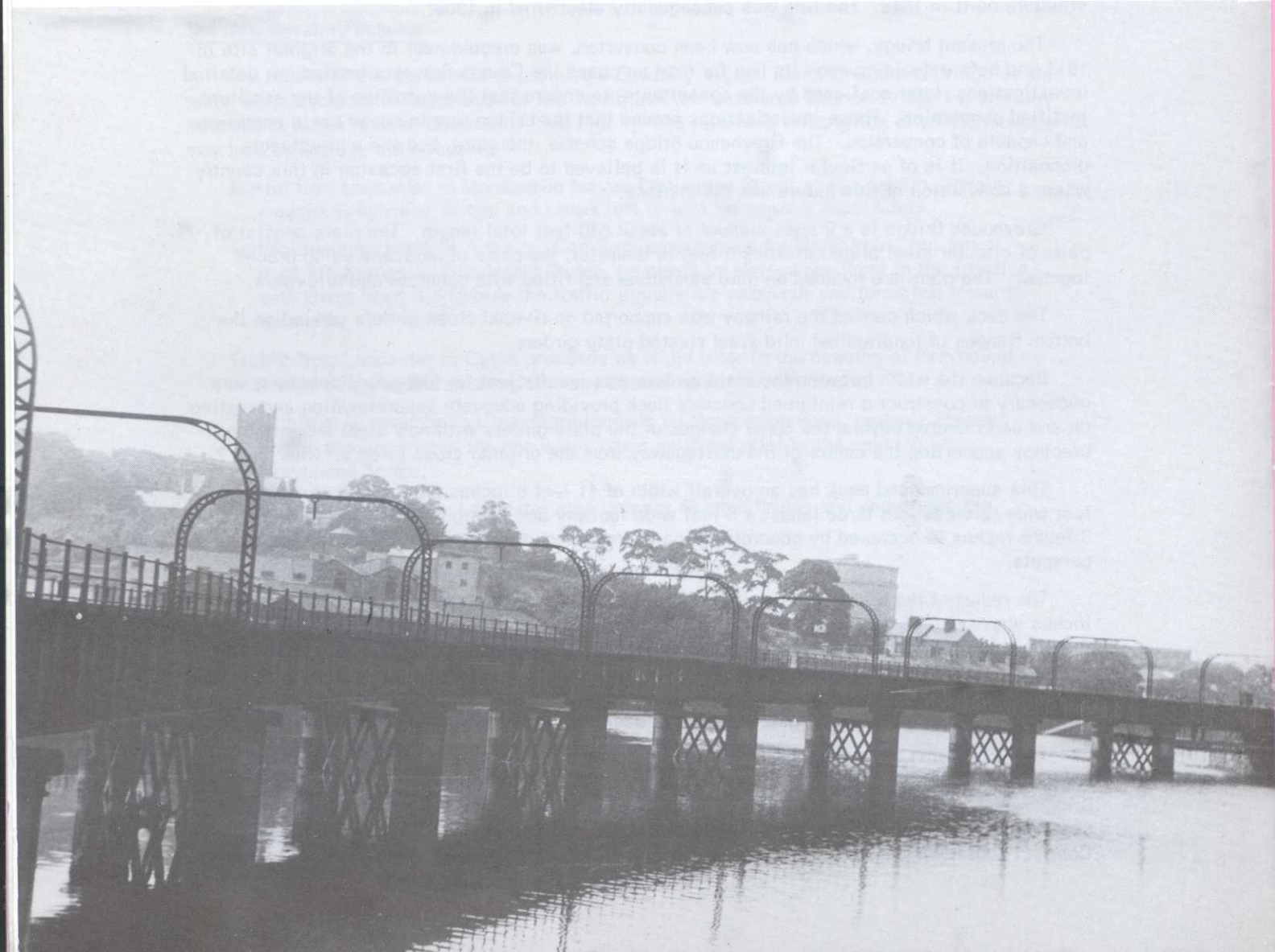
Retaining walls and a pedestrian ramp near Lune Street approach were also constructed as part of this scheme.

Cost

The total estimated cost of the scheme including the road and bridge contracts, accommodation works, property, etc. is £549,529 including a contribution towards the cost of the pedestrian subway by the City Council.

Acknowledgments

Owing to the nature of the Greyhound Bridge Scheme its complexities have been out of proportion to the total cost of the scheme. The co-operation of an unusually large number of Authorities and individuals has been necessary to bring the scheme to a successful conclusion. The grateful thanks of the County and City Councils are extended to all those concerned, amongst whom are the Lancashire Constabulary, the District Valuer, Lancaster, various officers of British Rail, the River and other Authorities having responsibilities in connection with the Lune which is a tidal river and the Statutory Undertakers involved.



GREYHOUND BRIDGE SCHEME

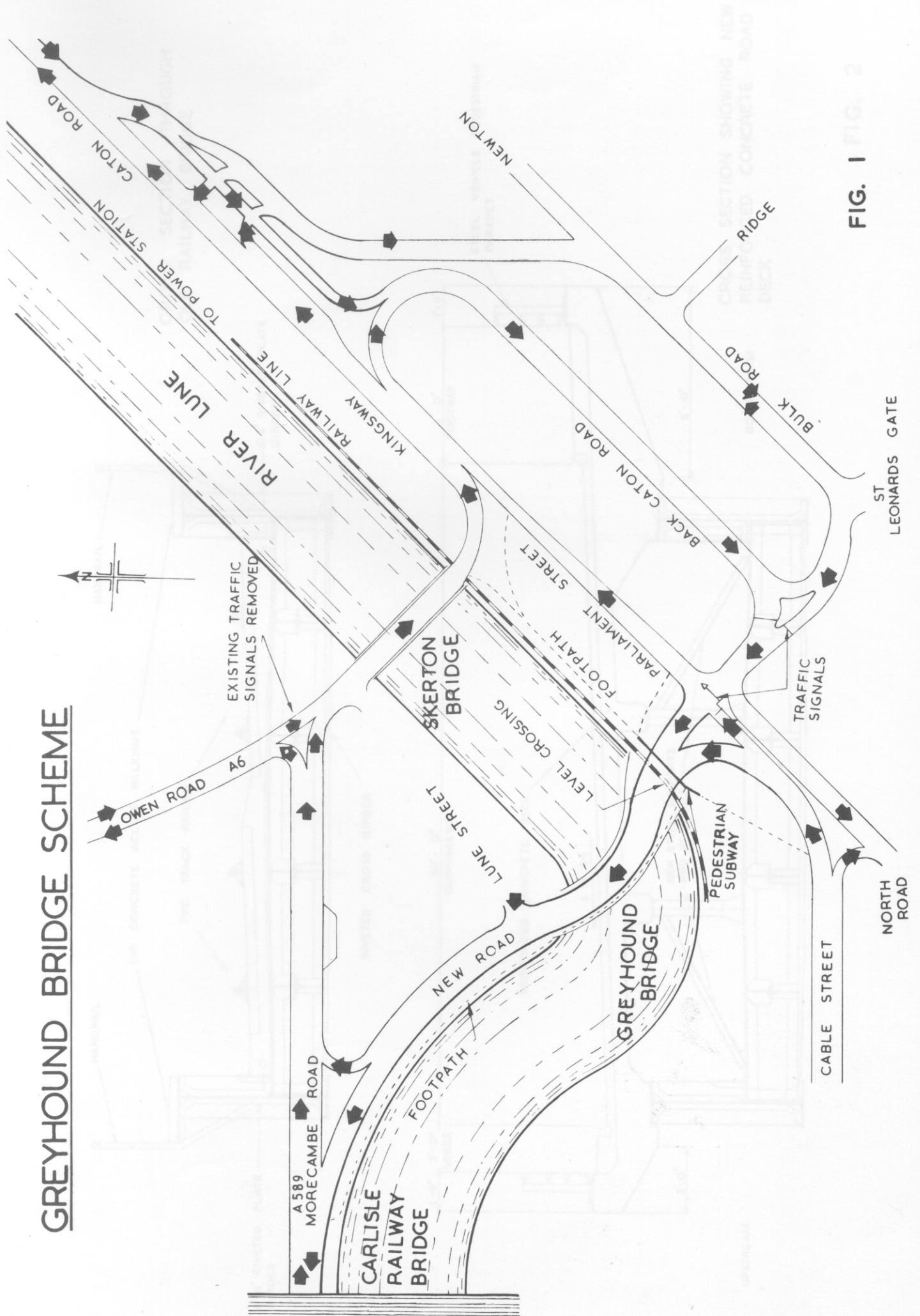


FIG. 1 FIG. 2

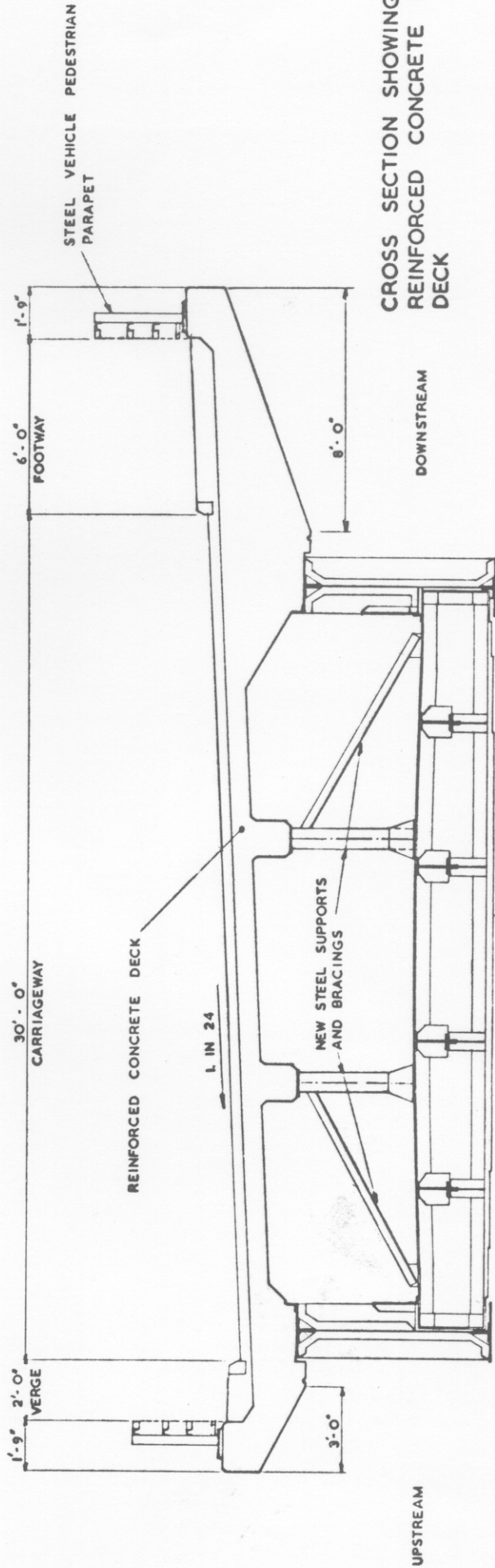
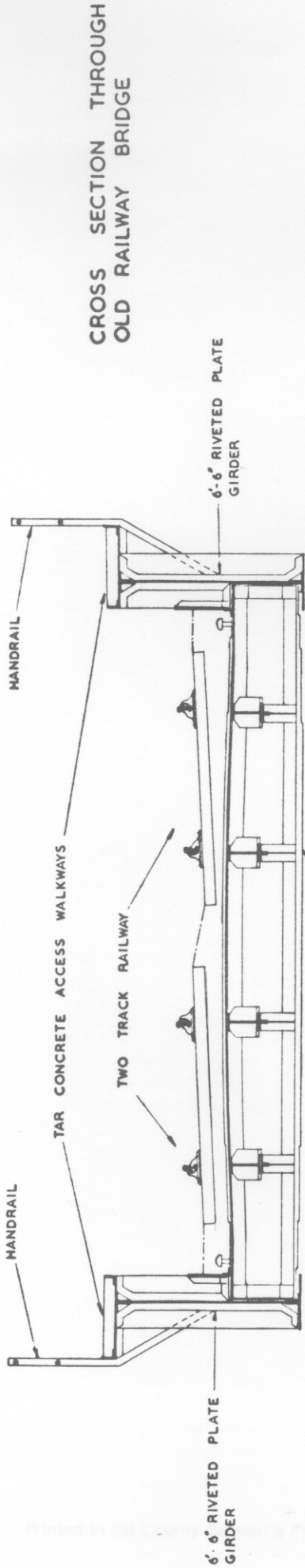


FIG. 2