



**Photographic building recording survey
of the overbridges at M1 Junction 11a
A5-M1 Link Road
January 2016**

Report No. 16/32

Authors: Yvonne Wolfram-Murray

Illustrators: Olly Dindol
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Project Manager: Jim Brown
NGR: TL03722610 and TL0382588
Event Number: LTNMG 1093

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OASIS REPORT FORM

PROJECT DETAILS		OASIS molanort1-243389
Project title	Photographic building recording survey of the overbridges at M1 Junction 11a A5-M1 Link Road	
Short description	MOLA Northampton carried out building recording of the Chalton and Houghton Regis Overbridges, prior to their demolition. The bridges are original unchanged structures surviving from the 1958-9 construction of the M1 motorway. They have undergone a few changes that include the addition of metal grills and crash barriers and pavement, and some maintenance that are apparent in patches.	
Project type	Building Recording	
Site status		
Previous work	None	
Future work	Unknown	
Monument type and period	1958-9 concrete overbridges	
PROJECT LOCATION		
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Site address	Chalton Cross	
NGR	TL 03722610 and TL03822588	
Area	C 200sqm	
PROJECT CREATORS		
Organisation	MOLA Northampton	
Project brief originator	Highways England	
Project Design originator	Andrew Copp, AECOM	
Director/Supervisor	Yvonne Wolframmm-Murray	
Project Manager	Jim Brown, MOLA	
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Photographic Building Recording Survey of the overbridges at M1 Junction 11a A5-M1 Link Road

January 2016

Abstract

MOLA Northampton carried out building recording of the Chalton and Houghton Regis Overbridges, prior to their demolition. The bridges are original unchanged structures surviving from the 1958-9 construction of the M1 motorway. They have undergone a few changes that include the addition of metal grills and crash barriers and pavement, and some maintenance that are apparent in patches.

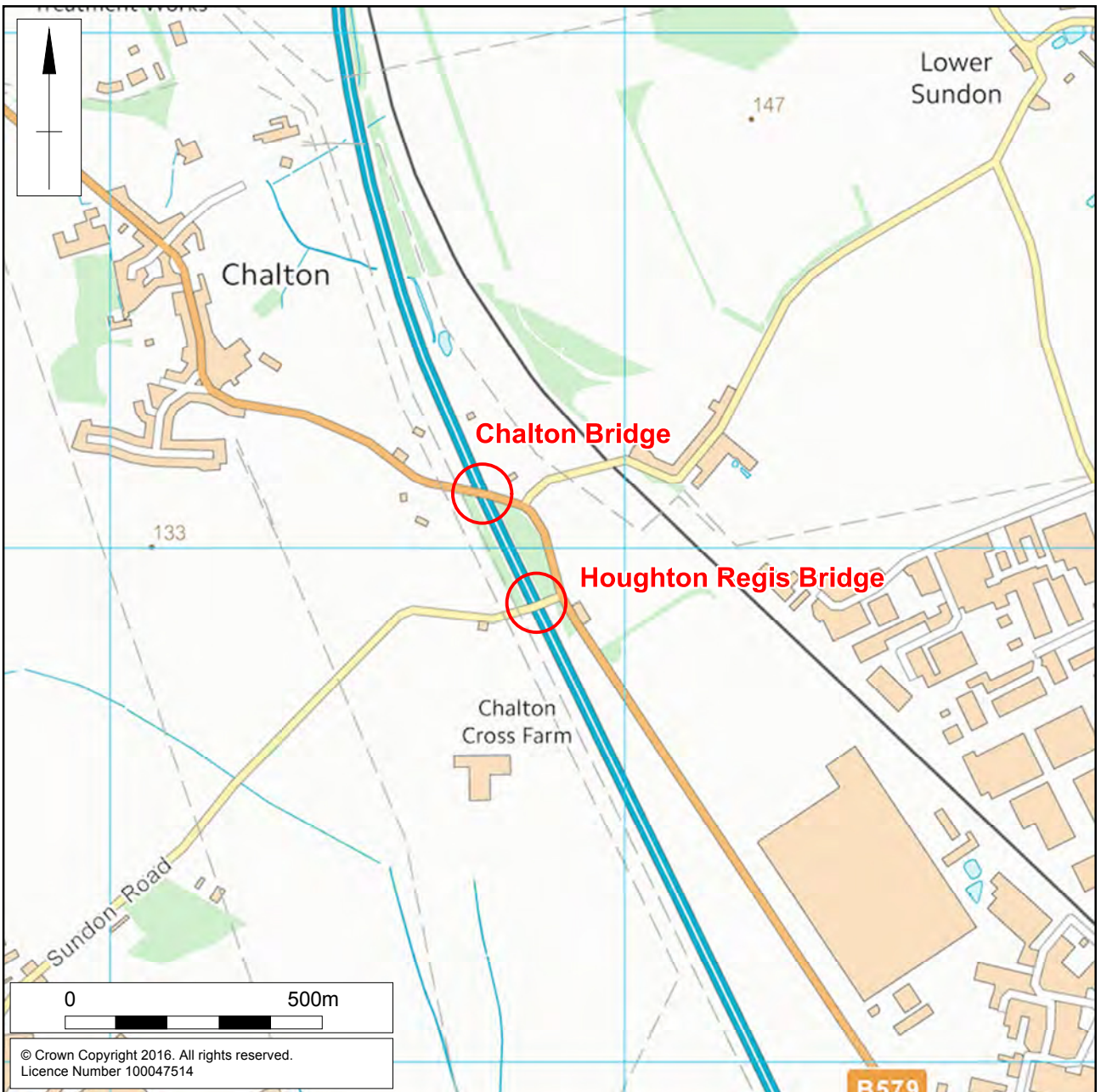
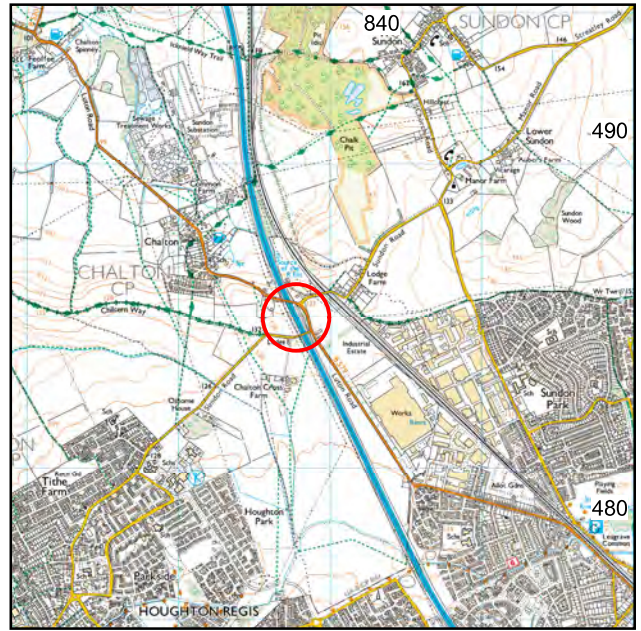
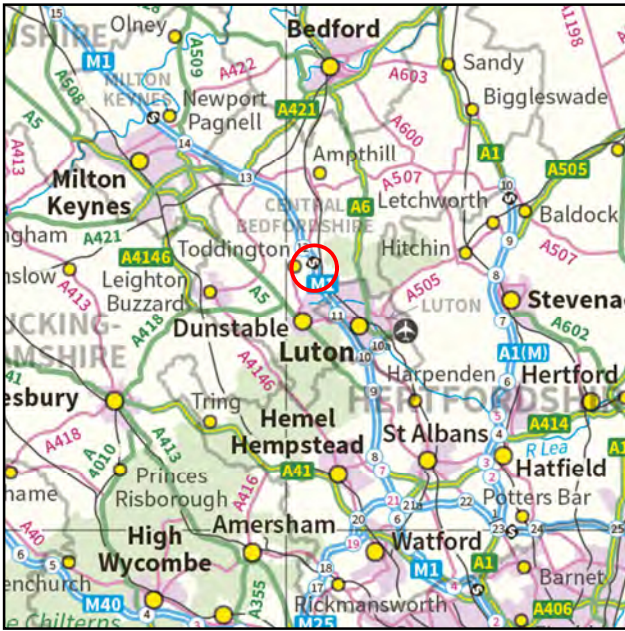
1 INTRODUCTION

MOLA Northampton has been commissioned by Costain-Carillion Joint Venture (CCJV) for the Highways England to carry out a Level 2 Photographic Building Recording Survey of two M1 motorway overbridges at Chalton, Central Bedfordshire, prior to demolition (TL 03725 26102 and TL 03829 25888; Fig 1).

The investigations are being carried out as part of a programme of historical building recording as detailed by AECOM (formerly URS) in a design document issued by Highways England (HA 2014). All work conducted by MOLA is being monitored by AECOM in consultation with the Planning Archaeologists for Central Bedfordshire Council (CBC) and is managed by CCJV. A method statement (MOLA 2015) confirms that the work will be undertaken as specified by the Detailed Design documentation.

MOLA is a Chartered Institute for Archaeologists' (CIfA) registered organisation. All works will be conducted in accordance with the procedural documents of English Heritage (EH 1991; 1997; 2006; 2008; 2009) and the appropriate standards and guidance of the Chartered Institute for Archaeologists (CIfA 2014a-b).

The Accession number is: LTNMG 1093



Scale 1:12,500

Site location Fig 1

2 BACKGROUND

2.1 Location and topography

The site of Junction 11a lies upon a low natural plateau between the valley of the River Flit to the north, and the headwaters for the River Lee to the south-east and the River Ouzel to the south-west. These fields are fairly level and slope very gradually towards the south from c 130m above Ordnance Datum. The original road layout did not incorporate any bridges (Fig 2).



1940s aerial photograph, Chalton (Central Bedfordshire Record Office) Fig 2

At Chalton Cross the London-Yorkshire motorway lies in a deep cutting with the two overbridges, the Chalton and Houghton Regis Overbridges, overhead.

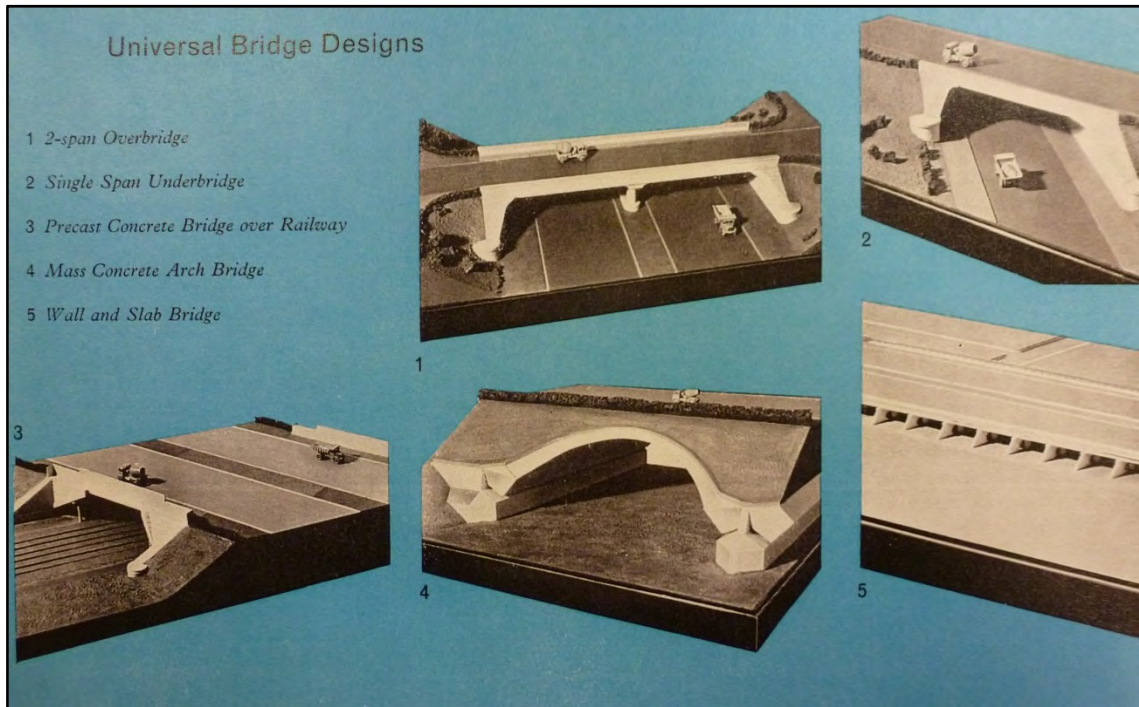
2.2 Historical background

The structures, constructed in 1958-9, form part of the first long distance inter-urban motorway in Britain designed by the Consultant Engineers Sir Owen Williams and Partners. The motorway was constructed by John Laing & Son Ltd, the contract was awarded in 1958 with work to start soon after. Completion was to be in 1959 (Williams and Partners 1958). The bridges are first shown on the Ordnance Survey 1:10,560 series 1964, and upon subsequent mapping.

Over 130 bridges were constructed as part of the motorway, those included were as diverse as a farmer's cattle creep to viaducts over the Rivers Lovat, Nene and Ouse. The bridges had to carry roads and railways over or under the motorway and over canals (Rolt 1959).

A construction method of *in situ* reinforced or mass concrete was chosen for practical reasons of availability, cost, permanence, strength and ease of construction. At the time steel was still in short supply and concrete was cheaper. Pre-stressed concrete was relatively new and untested, and the transportation of parts would have also caused issues (Rolt 1959).

To simplify and make the construction efficient six universal types were designed and specified by Sir Owen Williams and Partners (Fig 3).



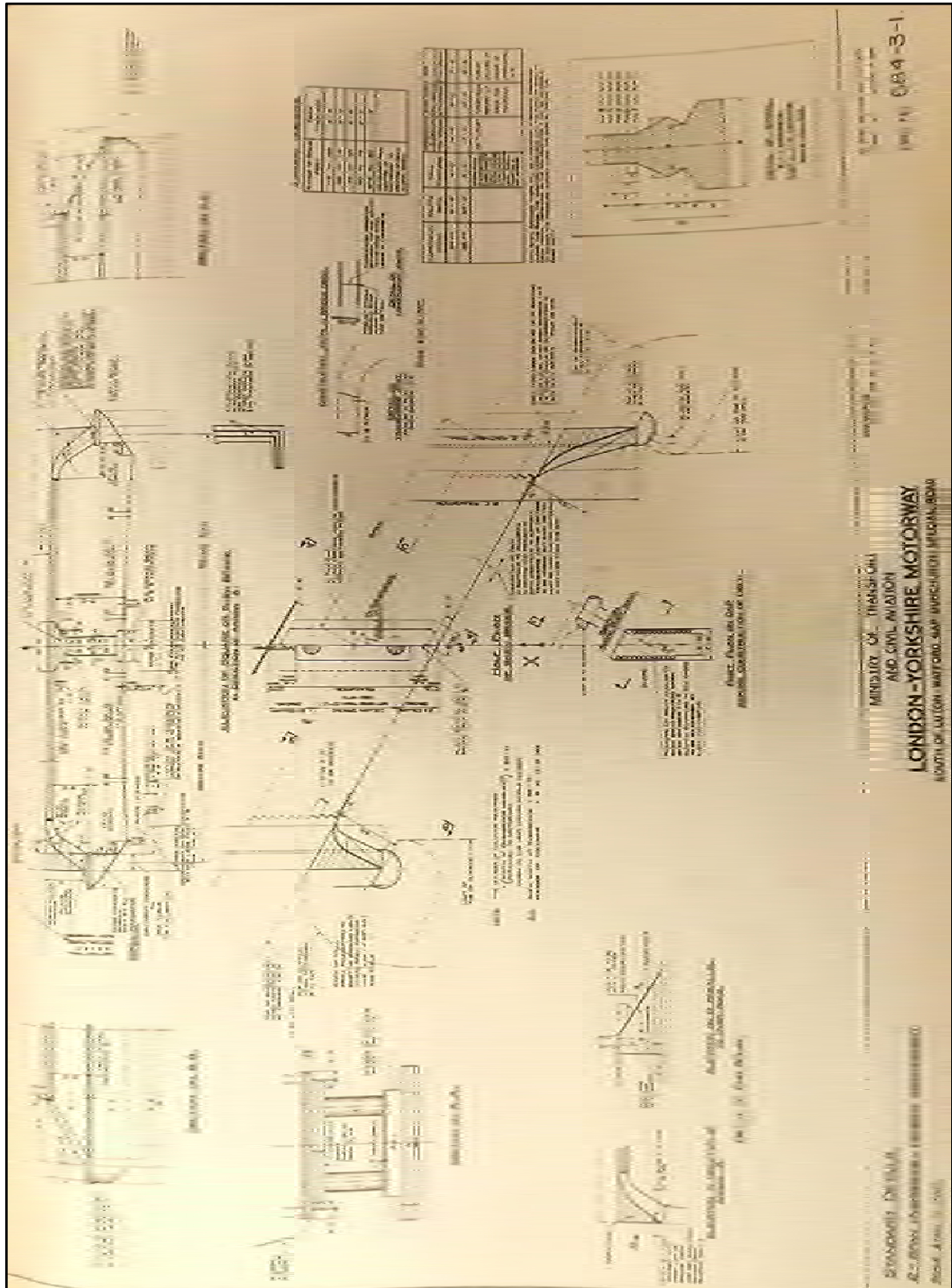
Models of the Universal Bridge Designs (Rolt 1959) Fig 3

The bridge designs were approved by the Royal Fine Art Commissions (Owens and Partners 1958).

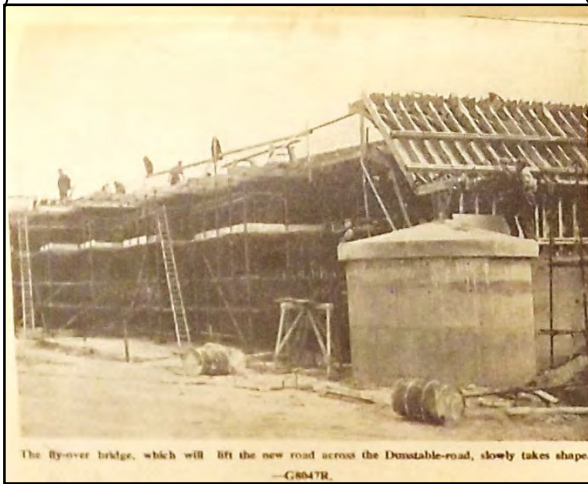
The aim behind the universal design was that it could be modified to account for height, width, span and be skew or square in plan. It would also allow the construction company to calculate the materials needed (Owen and Partners 1958).

The recorded bridges are two of the 59 planned overbridges, they are of the 2-span universal design and are of skew and square plan (Fig 4).

During the construction of the motorway the intent was to re-use the concrete formwork or shuttering to keep the cost and time down during the construction of the bridges. Figures 5 to 9 show the construction of bridges, including one of the bridges at Chalton Cross and aerial photographs of the area under construction. However, due to the number of bridges and speed of progress it was often the case that new shuttering had to be made to keep up with the rapid progress of the road construction (Rolt 1959).

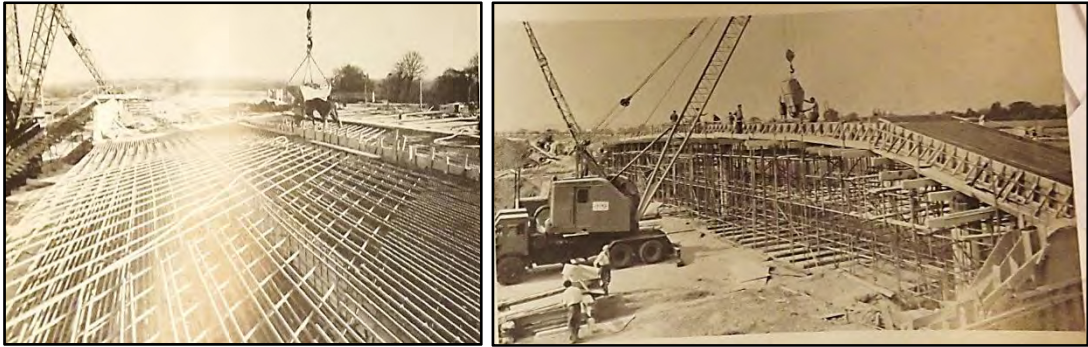


Standard details, 2-span Overbridge, general arrangement
(Owen and Partners 1958) Fig 4



The by-over bridge, which will lift the new road across the Dunstable – road, slowly takes shape.

The Luton News Thursday, August 14, 1958 Fig 5



Tons of reinforcement and miles of steel scaffolding were needed for the 134 structures (Rolt 1959) Fig 6

Over Choice Of **MOTORWAY PROGRESS**

Wearing gumboots, with hands in pockets and an intent look on his face, Mr. Harold Watkinson, Minister of Transport, inspects part of the new London-to-Birmingham super-highway which he visited on Monday. He toured the road from Chalton Cross to Runley Wood. With him are Sir Owen Williams, Consulting Engineer, and Mr. J. C. Cryer, Project Manager of the section of road Mr. Watkinson inspected.— B6971R Right: Mr. Watkinson stops near the fly-over bridge, which will lift the Motorway across the Dunstable-road near the Hospital.— B6973R (See Page 3.)

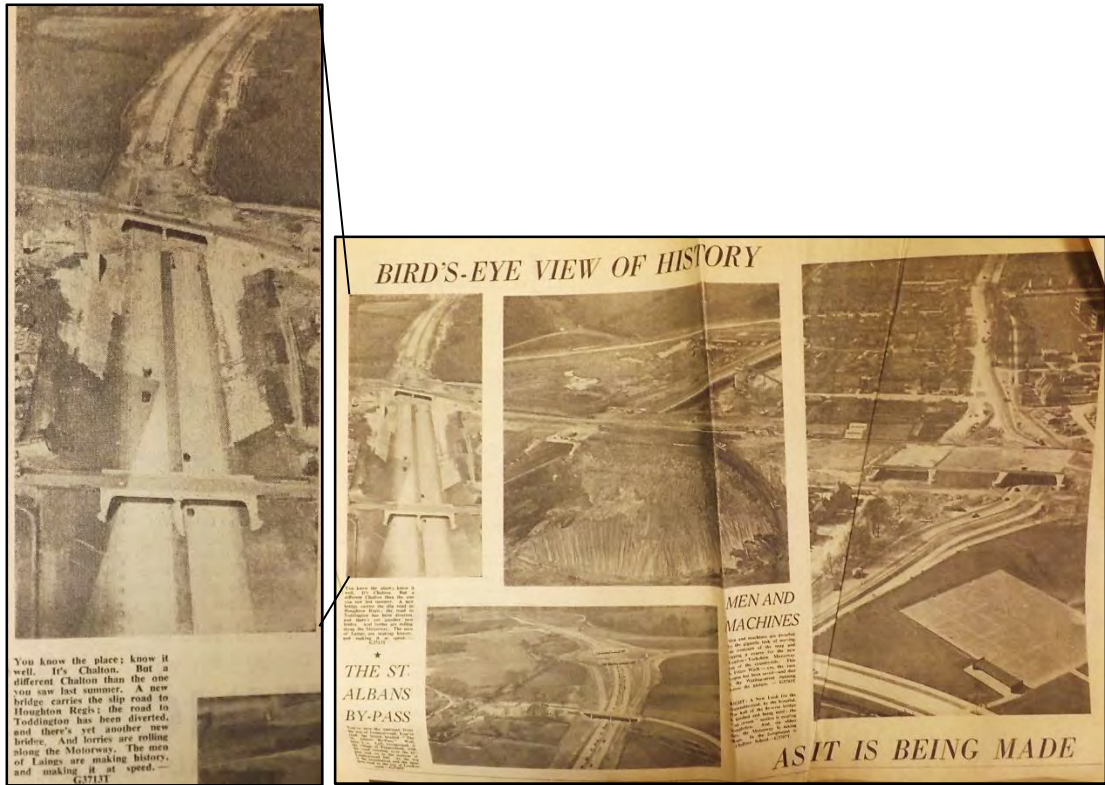
CARAVAN QUESTION

Council Seek A New Policy

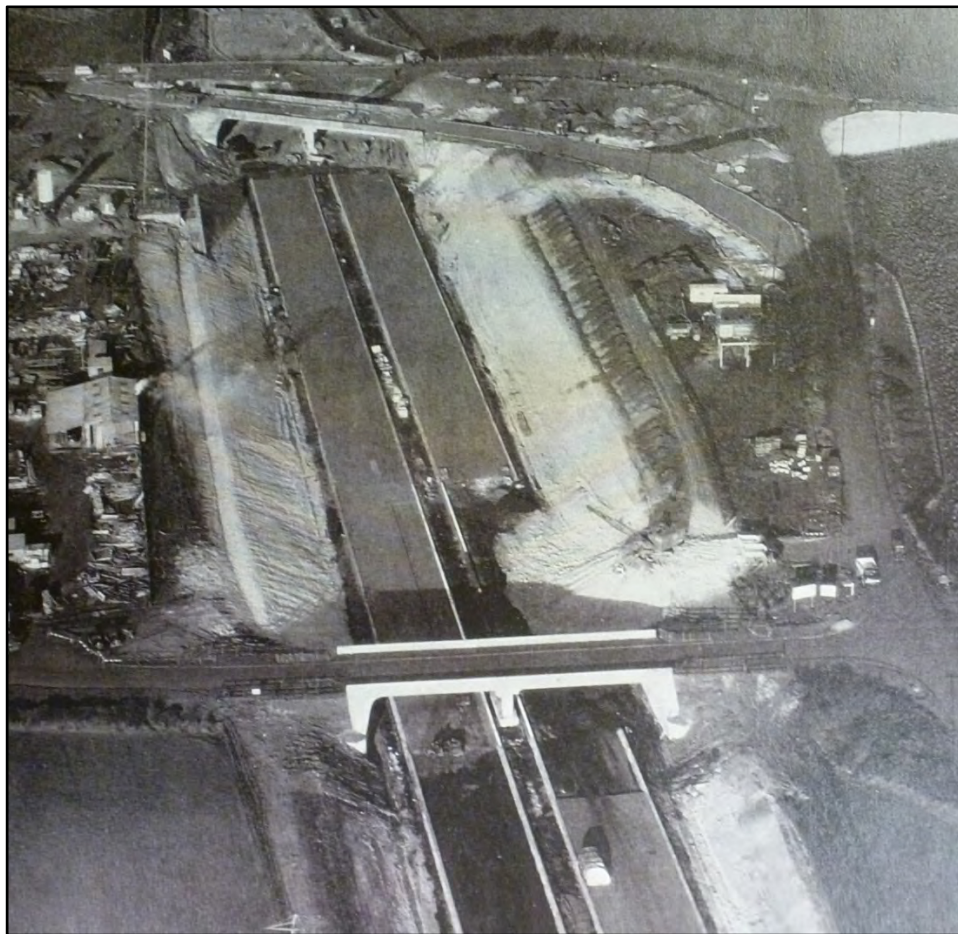
Luton Town Council decided on Tuesday to set up a special committee to investigate the whole matter of caravans and caravan sites in the town. This recommendation, made by the General Purposes Committee, and approved, said the special committee should submit

B^e tion sou able not the T pres cil Purp asked inter Th a let sions that

The Luton News, Thursday, June 26, 1958 Fig 7



The Luton News, Thursday, April 16, 1959 Fig 8

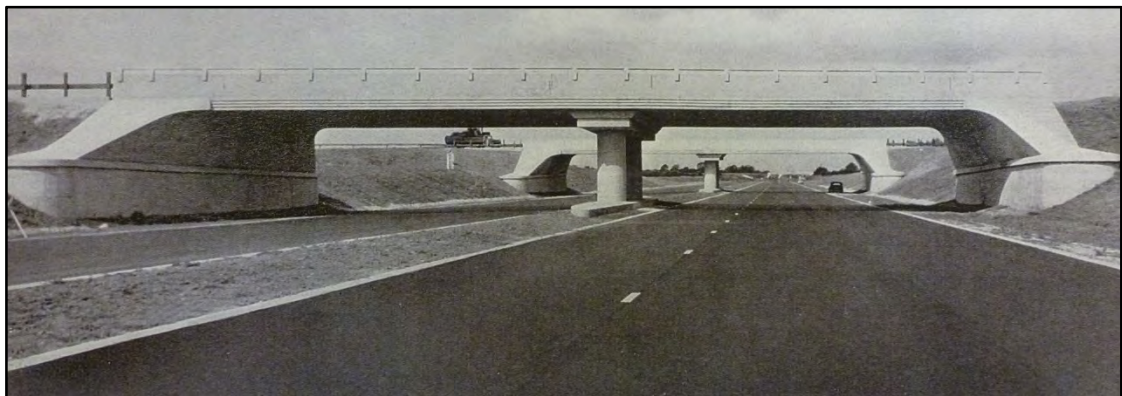


The bridges at Chalton Cross under construction (Rolt 1959) Fig 9

The design is described to include mass concrete scrolls which comprise strong, low, vertical walls surmounted by inclined tapering haunches curving over into the reinforced deck slabs. The middle of the span of the overbridges was supported on large circular columns, the number of which varied depending on the width of the bridge, which had rectangular bases and shared a flared rectangular head. The design also included solid reinforced concrete parapets. A design detail is the banding along the deck, which tapers in varying numbers of steps according to bridge type (The Motorway Archive). Figures 10 to 12 show newly finished bridges, the metal rail on top of the parapet is present on some bridges (Fig 11), but not others (Fig 12).



2-span bridge (The Motorway Archive) Fig 10



Universal bridge design, overbridge at Collingtree (Rolt 1959) Fig 11



London – Yorkshire Motorway, Junction at Upper Heyford, Photograph No. 4
Fig 12

Recent work consists of *The Cultural Heritage report for the M1 Widening, Junctions 10 to 13*, which included a review of the historical background to the M1 motorway, and the design and construction of the motorway (HA 2006). A detailed photographic appraisal of the motorway structures was also undertaken and the results included in that report.

The M1 motorway forms one of the Historic Landscape Character types that was identified in the Cultural Heritage baseline for the Scheme (HA 2007). The route is a 20th-century major transportation highway. During the preparation of the Stage 3 assessment for the M1 improvements, English Heritage was consulted regarding the status of the original M1 motorway structures and their significance. The decision was taken not to designate the M1 structures; however, the historic importance of the individual elements was acknowledged (HA 2011, 2.13-2.14).

A similar original overbridge at Junction 12 of the M1 motorway was recorded before its demolition (Upson-Smith 2011).

Visits to the Northamptonshire Record Office (NRO) were made and documents relating to the motorway consulted (see Appendix 1 for accessed documents). The NRO holds an un-catalogued collection, which include plans of a standard bridge design, route plans and landownership details. This also includes published books about Britain's motorways by Drake *et al* (1969), Charlesworth (1984), and Baldwin *et al* (2007).

A full list of documents catalogued under the MA/ER/M1/* prefix can be found at: <http://motorwayarchive.ihtservices.co.uk> .

The Central Bedfordshire Record Office at Chicksands holds aerial photographs of the two bridges before and after construction dating to the early 1940s, 1976 and 1996.

In preparation of their demolition two new bridges are being constructed which will form part of Junction 11a (Figs 13 and 14).



Construction of the new bridge by the Chalton Bridge, looking north-west Fig 13



Construction of the new bridge by the Houghton Regis Bridge, looking north-west Fig 14

3 AIMS AND OBJECTIVES

The general aim of the survey was to record the form and appearance of the existing bridges as determined by the Written Scheme of Investigation (HA 2014), equivalent to an English Heritage Level 2 Photographic Building Recording Survey as defined by their standards and guidance documents (EH 2006). The record was primarily by photography, complemented with a written description and analysis of phasing. The specific objectives of the work were to:

- assess the significance and character of the bridge structures in relation to the historic M1 motorway;
- record the typology of the bridge structures, their shape, form and character;
- preserve the archaeological, architectural and historic interest of the structures through a permanent record;
- make a written and photographic record of the bridges as motorway structures;
- mitigate the impact of the removal of the bridges by the new Junction 11a build;
- disseminate the findings in the form of a report and ordered archive.

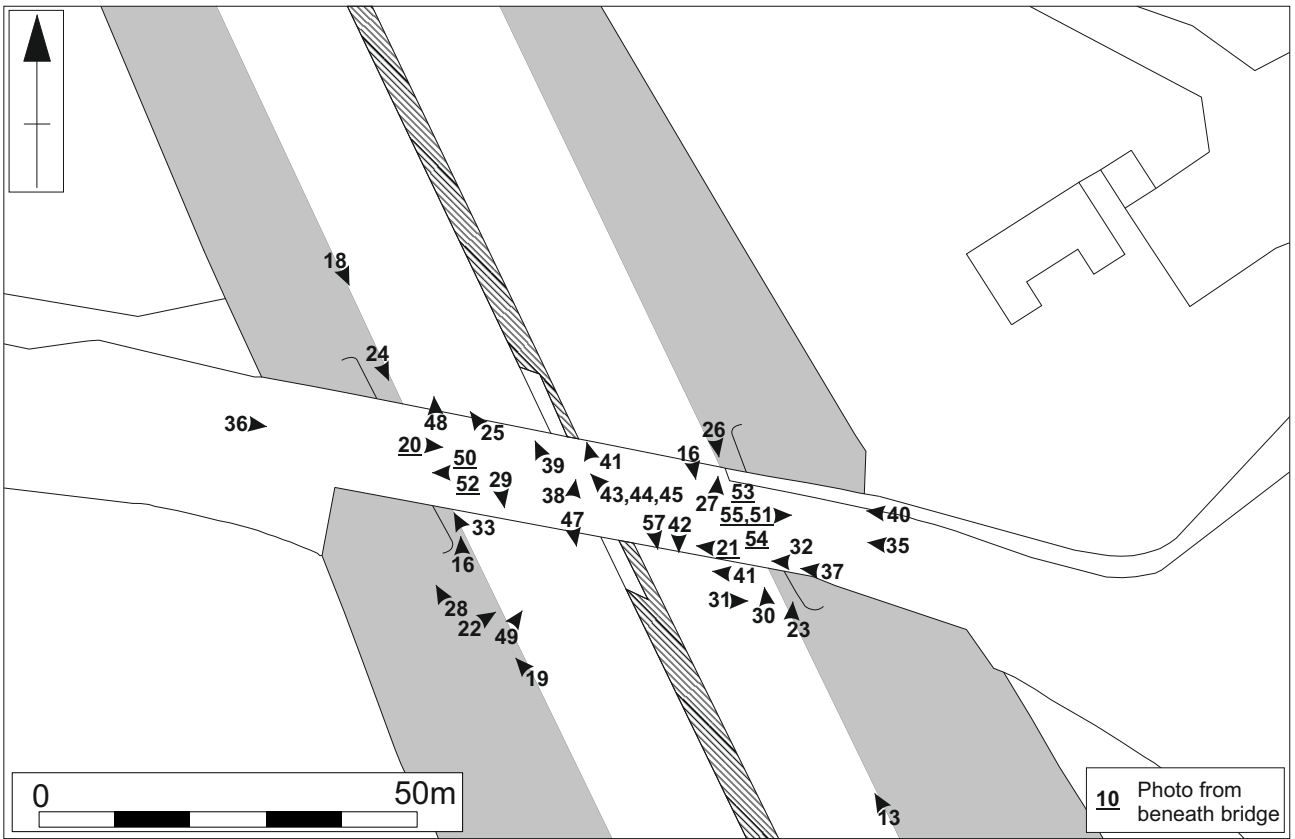
4 METHODOLOGY

The bridges were assessed, photographed and approximate position of cracks and patches on the elevations illustrated. The initial walkover was used to assess site and weather conditions pertinent to taking photographs. Access was only to the hard shoulders after an appropriate Health and Safety induction. As the motorway was open during the survey no access to the central reservation could be gained. There was no access to the deck of the southern bridge due to safety regulations as it was still in use.

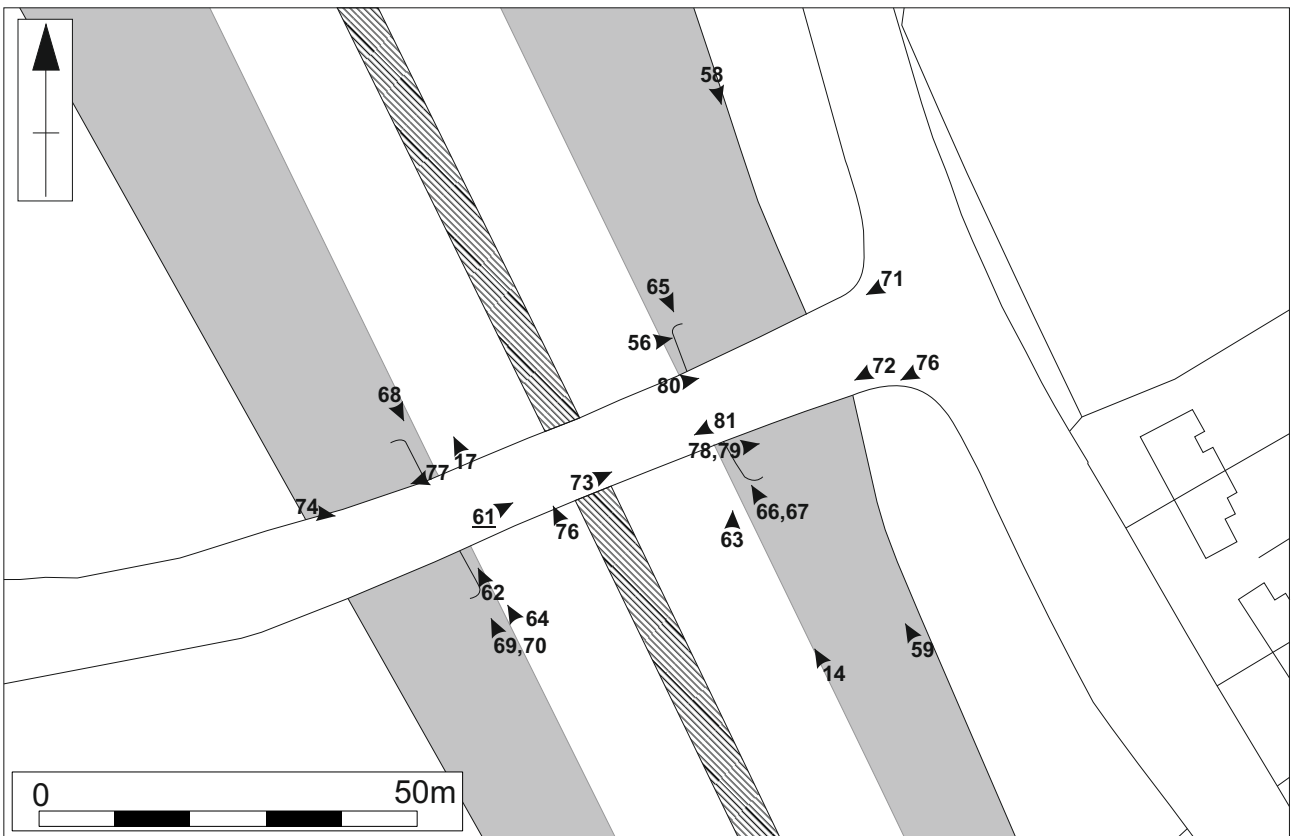
Photographs were taken of the structures' external appearance in order to give an overall impression of their size and shape, by a series of oblique views and elevations. General photographs were also taken showing the wider context of the structures. All photographs included an appropriate scale where feasible. A scale was not always possible due to the location of object of interest or due to safety concerns in high winds in the close proximity of the carriageway. Photographs also included structural details relevant to the bridges' design and development, which did not show adequately on the general photographs.

Photographs were taken by 35mm black and white film negative and digital SLR camera with a resolution of at least 10 megapixels. The positions and angles of view of each frame were tabulated and recorded upon a pre-printed base plan derived from the Ordnance Survey (Fig 15). This was compiled for the archive (Appendix 2 and 3). Due to the strong winds the use of tripods became unsafe in the proximity of the carriageway.

The entire archive, made up of the project and field records, general background information, plans, field record sheets, photographs, drawings and building recording report will be included within a single archive for the archaeological evaluation and mitigation of the scheme; to be submitted to Luton Culture under Accession number **LTNMG 1093**. For the purposes of managing the archaeological works, MOLA have attached a single letter suffix to the end of the accession



Chalton Bridge



Houghton Regis Bridge

number, which acts as a site code for different areas or schemes of work. The letter “R” was used as the suffix for the Bridge Recording.

5 THE PHOTOGRAPHIC SURVEY

The survey at Chalton Cross, carried out on overcast days with strong winds, comprises two 2-span overbridges. The Chalton Bridge, to the north, links the Luton Road from Chalton to Sundon and Luton over the M1. The Houghton Regis Bridge, to the south, carries the Sundon Road over the motorway (Fig 1).

Both bridges correspond to the 2-span Universal Bridge Design (Figs 3 and 4). The bridge designs were designed to be adapted to the place they were needed. The northern bridge was of skew plan and the southern bridge was of square plan. Both bridges have their original components present, albeit repaired and added to.

5.1 The Chalton Bridge

The northern bridge was of the 2-span universal design with a skew plan (Fig 3). On the south-west scroll and the north-east scroll black, repainted numbers on what would have been a white rectangle records the bridge as 58 2 (Fig 16).



Bridge markings northbound and southbound Fig 16

The survey (Figs 17 to 33) of the structure suggests the bridge to have had its original features as laid out in the original plans and descriptions, see above in historical background and Figure 4.

The bridge had three circular columns with a square cap and a flared head spanning the width of the bridge (Figs 20 and 21). This supported the deck, the banding detail tapered in five steps (Figs 22, 23 and 33). Support at each end was provided by the two scrolls on either side of the abutment walls (Figs 22 to 32). A sloping toe wall, which was to be added when necessary, was attached to the south-eastern scroll (Fig 31).



The Chalton Bridge from under the Houghton Regis Bridge, looking north-west
Fig 17



The north elevation of Chalton Bridge, looking south-east Fig 18



South elevation of Chalton Bridge, looking north Fig 19



Central reservation and columns, looking south-east Fig 20



Underside of bridge with patching and columns, looking west Fig 21



The scrolls and eastern abutment wall, looking east Fig 22



Scrolls and abutment wall with central columns, looking north-west Fig 23



North-western scroll of northern bridge, looking south Fig 24



North-western scroll, looking north-west Fig 25



North-eastern scroll of northern bridge, looking south Fig 26



North-eastern scroll, looking down from the deck Fig 27



South-western scroll of northern bridge, looking north-west Fig 28



View of south-western scroll from the deck Fig 29



South-eastern scroll of northern bridge, looking north Fig 30



South-eastern scroll with sloping toe wall, looking east Fig 31



South-eastern scroll, looking down from the deck Fig 32



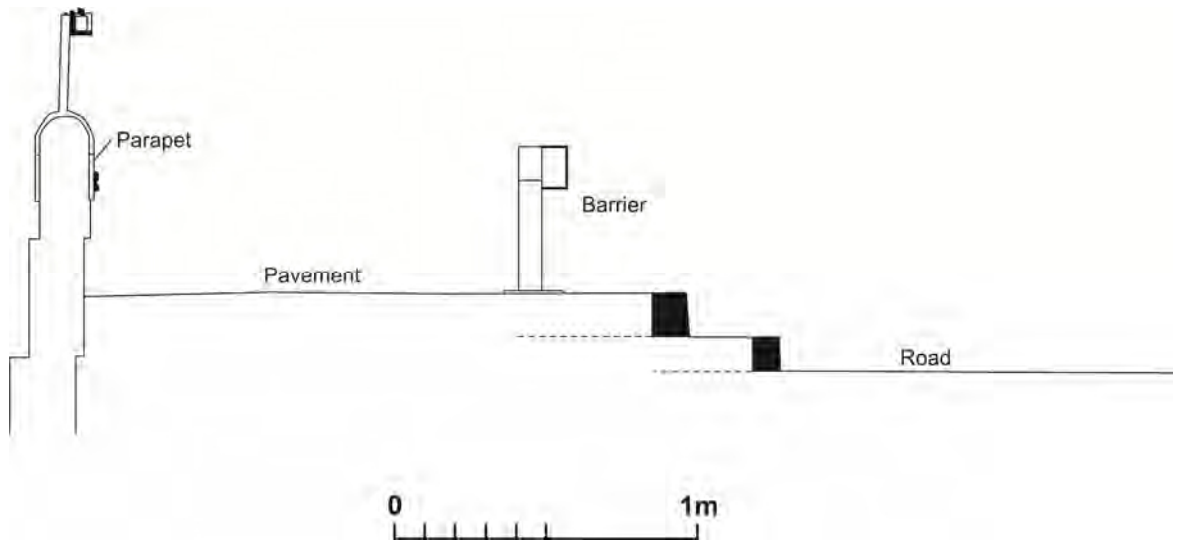
Detail of deck and curving mould surface with parapet Fig 33

The deck and parapet (Fig 34) were constructed of reinforced concrete with the road, 7.33m wide, laid in tarmac (Figs 35 and 36). The pavement on both sides had been raised (Fig 34). The original pavement on both sides was concrete overlain with a later tarmac pavement on the north side and concrete on the south side (Figs 37 to 39). A galvanised steel crash barrier was later added to both sides, probably for safety reasons (Figs 37 and 38).

The parapet comprised three inwards stepping sections that became progressively thinner and with a saddle coping top (Figs 34 and 40). Both parapets were topped with galvanised handrails, which were added shortly after completion of the bridge (Figs 34 and 40 to 42). These were fixed to the concrete through U-shaped fixtures with two bolts, raising the structure by c300mm. The fixtures were fixed at c280mm intervals. Some fixtures were raised and some were set into the concrete, presumably to level the rail. The rail measured 60mm by 35mm and was screwed to the fixture through an L-shaped plate, occasionally two screw holes were present (Fig 41).

A recent addition to the handrails was metal grills on both sides of the bridge (Figs 37 and 38). The grills measured 1360mm by 480mm and were fastened by square bolts at their bases and metal bands towards the top to the rail (Fig 42).

On the north side, northbound, were three sets of four bolt holes (Figs 43 to 45). Also below the first step-in are screw holes and small rectangular brackets. Google view of the Chalton Bridge, dating from May 2012, depicts an electrical cable leading to a pole supported by a rectangular bracket fixed to the parapet by four bolts (Fig 44).



The parapet and pavement set-up Fig 34



The deck of the Chalton Bridge, looking north-west Fig 35



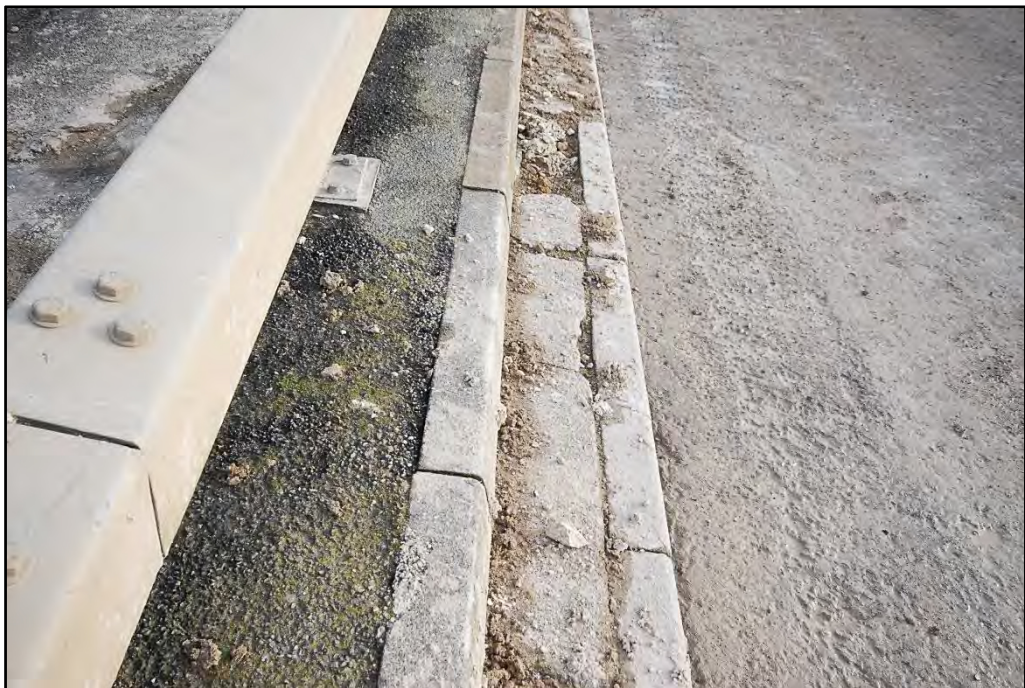
The deck of the Chalton Bridge, looking south-east Fig 36



South side parapet guards, path and barrier, looking north-west Fig 37



The road, pavements with barrier and north parapet, looking north-east Fig 38



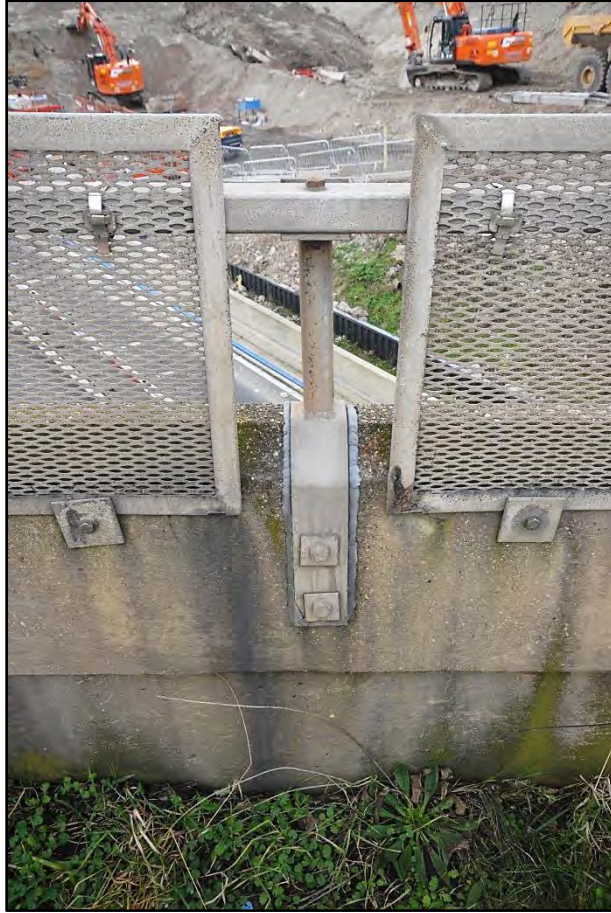
The raised pavement on the north side of the bridge Fig 39



Cross section of parapet with metal barrier, north elevation Fig 40



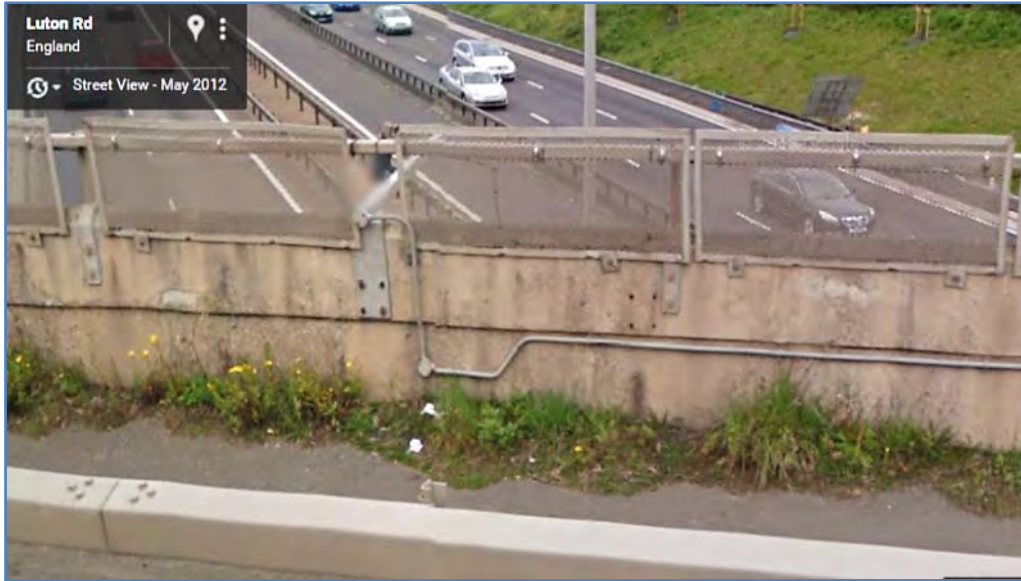
Bolt holes for the railing Fig 41



The metal railing with mesh, north elevation Fig 42



Bolt holes on north parapet, looking north-west Fig 43



2012 Google map image, showing bolt use Fig 44

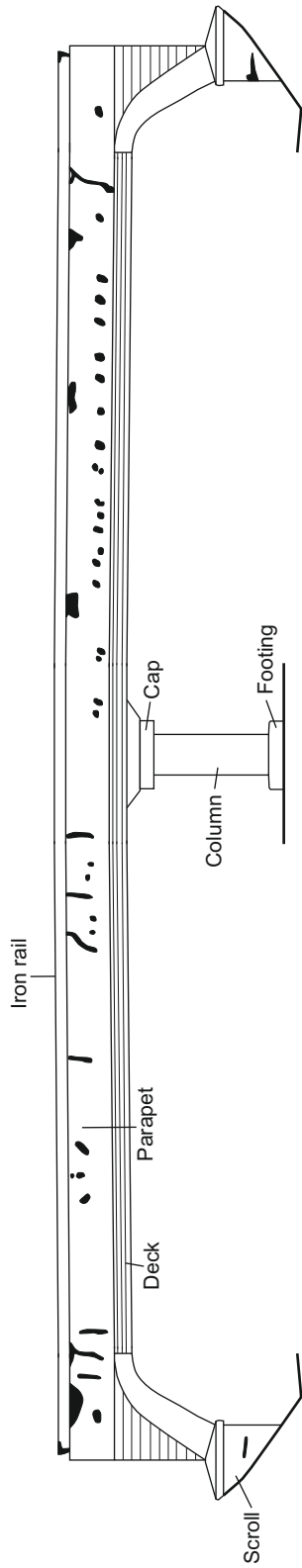


Close-up of bolt holes and cable fixings on north parapet Fig 45

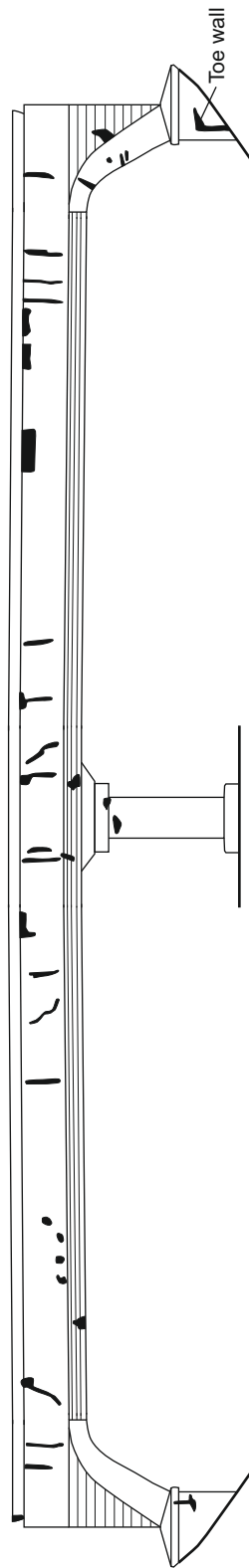
In respect to the age of the bridge there was some damage and repairs. Their approximate locations were noted only on the elevations (Figs 18, 19 and 46). The condition of the bridge was such that concrete was flaking off the parapet and exposing some of the steel rebar, some of which have been patched (Figs 27, 33, 47 and 48). Concrete section joints were in-filled with a grey rubber compound, over time cracks were treated the same (Figs 48 and 49).

Under the deck on the northbound side frequent parallel scratches could be seen, possibly due to strikes from high-sided vehicles. The underside of the deck has been also patched in the past (Figs 50 and 51). The abutment walls and scrolls all show cracks, areas of blown concrete exposing rebar poles, and water marks from water seepage (Figs 52 to 54). Only one written marking beside the bridge number was noted on the south bound side stating the location of communications cable (Fig 55).

North elevation



South elevation



- Holes
- Rubber infilled cracks
- Patched areas



Damage on south parapet Fig 47



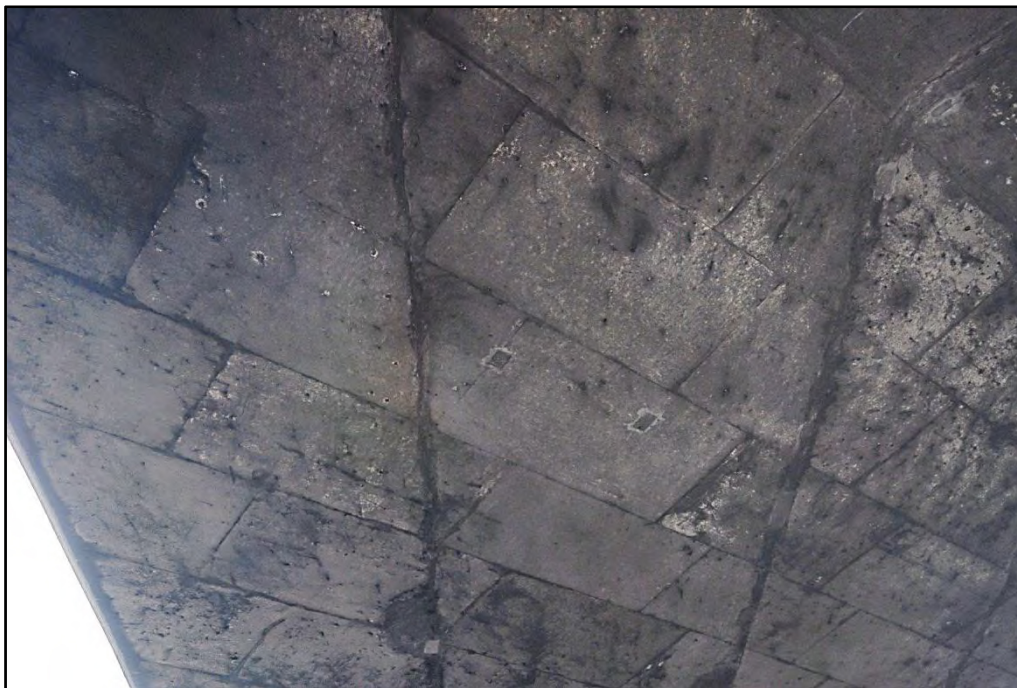
Damage and repair on north parapet Fig 48



In-filled cracks/joints on the external south elevation of the parapet Fig 49



Scratches and damage on the underside of deck, northbound Fig 50



Repairs on the underside of deck, southbound Fig 51



Blown concrete showing the steel reinforcement and scratches on west abutment wall Fig 52



Scratches, cracks and water seepage on east abutment wall Fig 53



Crack with water deposit Fig 54



Comms cable 93 marking on southbound side Fig 55

5.2 The Houghton Regis Bridge

The southern bridge was of the 2-span universal design of a square plan (Fig 3). On the north-east scroll, repainted numbers on what would have been a white rectangle records the bridge as 57 9 (Fig 56). South bound there are only numbers. A black and white checked square was also attached to the wall.



Bridge number and square southbound and number northbound Fig 56

The survey (Figs 57 to 70) of the structure suggests the bridge to have had its original features as laid out in the original plans and descriptions, see above in historical background and Figure 4.

The bridge had two circular columns with a square cap and a flared head spanning the width of the bridge (Figs 60 and 61). This supported the deck in the centre, the banding detail along it tapered in four steps (Fig 62). Support at each end was provided by the two scrolls on either side of the abutment walls (Figs 63 to 70).

Due to health and safety restrictions the top of the deck and the parapets could not be closely assessed. A brief superficial appraisal indicates a similar set up as the Chalton Bridge, no comparative measurements could be taken. The main differences appear to be only one level of pavement that visually appears to be narrower than

the pavement at Chalton Bridge. The crash barriers had been installed closer to the parapets than the other bridge, leaving little space for pedestrians. At the time of the survey not much used by pedestrians. This was narrow, especially due to the presence of crash barriers, and at the time was not much used by pedestrians. The metal hand rails were present but no metal grills were attached to them (Figs 71 to 74).



View of southern bridge from northern bridge, looking south Fig 57



The north elevation, looking south-west Fig 58



The south elevation, looking north-west Fig 59



Central columns, looking south-west Fig 60



The central columns, looking north-east Fig 61



Parapet and deck with scroll, looking north-east Fig 62



The west abutment wall with scrolls, looking west Fig 63



The east abutment wall with scrolls, looking north-east Fig 64



North-east scroll, looking south-east Fig 65



South-east scroll, looking north-east Fig 66



Top of south-east scroll Fig 67



North-west scroll, looking south-east Fig 68



South-west scroll, looking north Fig 69



Top of south-west scroll Fig 70



The deck of the Houghton Regis Bridge, looking west Fig 71



The deck of the Houghton Regis Bridge, looking west Fig 72



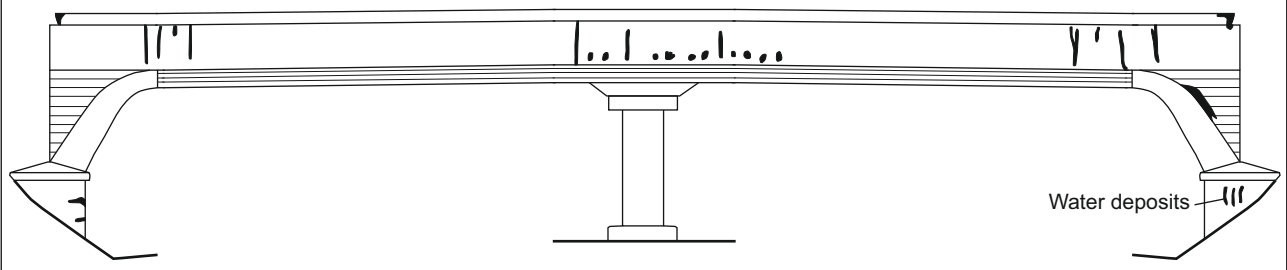
The parapet on the south side Fig 73



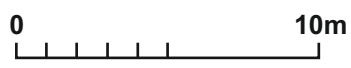
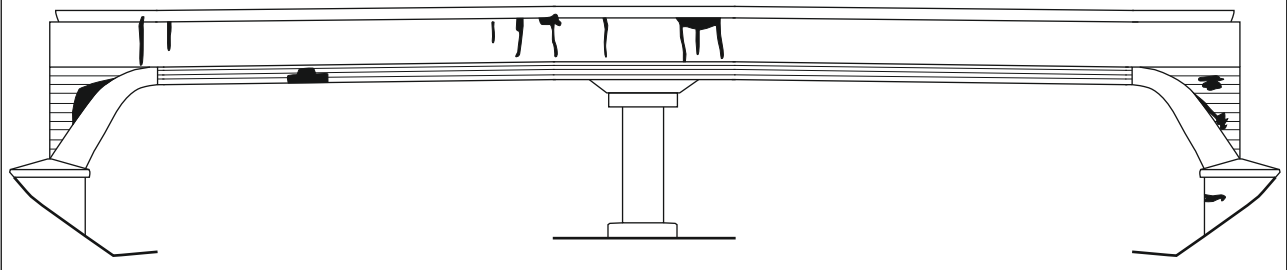
The parapet on the north side (beyond the fence in foreground) Fig 74

In regards to the age of the bridge there was some damage and repairs, only the elevations were noted with approximate locations (Fig 75). The condition is similar to the Chalton Bridge with similar problems.

North elevation



South elevation



- Holes
- | Rubber infilled cracks
- Patched areas

Concrete was flaking off the parapet and exposing some of the steel rebar, some of which have been patched. Concrete section joints were in-filled with a grey rubber compound, over time cracks were treated the same (Figs 66, 69 and 75).

A repair was undertaken of the deck on the northbound side where a vehicle possibly clipped the bridge (Fig 76). The underside of the deck has been patched in the past. The abutment walls and scrolls all show cracks, areas of pitting, and water marks from water seepage (Figs 77 to 88).



Repair on underside of deck on south elevation Fig 76



Water issues on north-west scroll Fig 77



Pitting on the structure Fig 78



Decay of the concrete Fig 79



Wear and markings on the east abutment wall Fig 80

6 DISCUSSION

The survey, undertaken in January 2016, showed the bridges in their present state before demolition and replacement by two new bridges that will form Junction 11a. Both bridges were in their original condition as described in historical notes and depicted in Figure 4. Only minor additions and maintenance work has been carried out in the past 57 years.

The bridges were designed to the 2-span overbridge universal design, which could be varied according to the needs of its location. This can be noted at Chalton Cross where one of each of the basic variation can be seen. The Chalton Bridge was of the skew plan with three central columns and the Houghton Regis Bridge was of the square plan with two central columns. As described by Wilson and Partners (1958) the detail banding present on the outside of the deck varies, the skew bridge has five bands whereas the square one has four bands.

The Chalton Bridge had footpaths on either side, which had been raised once. The parapets had handrails with metal grill additions, possibly to minimise objects entering the carriage way. Crash barriers had been later installed on both sides.

The Houghton Regis Bridge had raised sections next to the parapet with the later addition of the crash barriers on both sides. If these had been intended as footpaths, they were not easily used as such. A muddy track on the road side of the crash barriers denoted the current use by pedestrians. The handrail was present but not the grills.

It is difficult to assess whether the galvanised handrails were later additions as photographs of recently finished bridges have them, but others do not. No specific mention of them could be found in the historical records. They are not shown on the architects drawing, but were definitely an addition shortly after the completion of the bridge. The remaining few original bridges with concrete parapets tend to have no handrails, but higher parapets, if they are single column footbridges or farm roads (Fig 10). The handrails appear to be present on bridges with lower parapets that are intended as two to three column overbridges for normal road traffic. The concrete parapet and handrail are possibly a direct reflection on type of traffic expected to cross the bridge.

Both bridges showed their ages in the number of cracks, areas of pitting, water staining and repair patches. On at least one occasion a tall load hit the Houghton Regis Bridge.

The recorded bridges represent two of a diminishing number of original bridges in original condition along the first M1 section running from St Albans to Crick. Many have been demolished (Junction 12; Upson Smith 2011) or altered. Many have had their concrete parapets replaced by iron railings.

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MOLA
29 February 2016

07 March revised

APPENDIX 1 Northamptonshire Records Office - Consulted documents

Reference Number	Document	Comments
MA/M/M1/1 or MA/ER/M1/2	The London-Birmingham Motorway, LTC Rolt, south of Luton-Dunchurch-Crick Section, 1959	Relevant information (Figs 3, 9 and 11)
MA/ER/M1/3	London-Yorkshire Motorway, South of Luton-Watford Gap-Dunchurch-Crick, Special Road, Brief Description of History Design and construction, sir Owen Williams & Partners, September 1958	Bridge information
MA/ER/M1/5	M1 Luton-Crick (Northants). Formal Startin and Early works, 5 photos	Not right area
MA/ER/M1/17	Article, setting out large-scale road works, Peter Toole, The Surveyor, 20 July 1957	Not relevant
MA/ER/M1/21	Folio, M1-M45 Historical information, Mini-archive, SBiszysko M1 Drawings List	Not relevant
MA/ER/M1/25	Newspapers, Articles about M1, The Luton News, June and August 1958 and April 1959, Chronicle and Echo, April and November 1959	Good photographs (Figs 7 and 8)
MA/ER/M1/1	M1 opening Bochure, London-Yorkshire Motorway, First Section, London-Birmingham, Ministry of Transport & Civil Aviation, 1959	No longer in collection
Motorway Plans 684-3-1	2-span overbridge – general arrangement 1/8inch to 1foot, Ministry of Transport and Civil Aviation	Reproduced in report (Fig 10)
M1 Q8 691-79-1	Structure no 79 outline of details of bridge	Rothersthorpe bridge
The Motorway Archive Eastern Region; D. Evans 2003	Lists of information held at the Northamptonshire Record Office – largely undocumented	Executive Summary Background information
2B544-5	Proposed route of M1 in Bedfordshire – Chalton, Chalton Cross farm 1955	Looked at
MA/M/M1/3	Construction Photos by J Laing Construction 1958-60	None relevant
MA/M/M1/7	Crick –Doncaster Bridge Designs	Not the correct bridge design
2B544/1-27	Motorway – 1953-60 Strip plans, improvement plans, diversion plans for M1	Not relevant to report
MA/ER/G/9	A history of British motorway, George Charlesworth, Thames Telford Limited, London 1984	Looked at
-	Motorway, James Drake, HL Yedon & DI Evans, Faber and Faber, London 1969	Looked at

MA/ER/M1/* - A full list of documents can be found at:

<http://motorwayarchive.ihtservices.co.uk>

APPENDIX 2 Photographic Index for Chalton Bridge

Fig	Description	Direction of view	Location (fig)	Digital ref no.	Black & white ref no.	Date
-	Carriageway over bridge	SE	-	948	F1/2	25/01/16
-	Carriageway and paths over bridge	SE	-	949	F1/3	25/01/16
36	North side footpath	SE	15	950		25/01/16
35	Carriageway and north parapet	NW	15	951-52	F1/4	25/01/16
-	South side path, east end, partially demolished	SW	-	953-54	-	25/01/16
37	South side parapet guards, path and barrier	NW	15	955-57	F1/5	25/01/16
-	South side barrier	NW	-	958	F1/6	25/01/16
-	South parapet guard bracket	SW	-	959-60	F1/7	25/01/16
-	South parapet guard bracket and details	SW	-	961-66	-	25/01/16
32	SE scroll, from above	SE	15	967	F1/8	25/01/16
48	North parapet repair	N	15	968	F1/9	25/01/16
-	Expansion joint to east of above repair	N	-	969-70		25/01/16
-	North parapet, bolts, small bracket, repairs	NW	-	971-72	F1/10	25/01/16
-	North parapet, bolts, small bracket, repairs	N	-	973	F1/11	25/01/16
-	North parapet, damage to concrete	N	-	974	-	25/01/16
-	North parapet, 4 bolts, panels, clips, small lower brackets	N	-	975-76	-	25/01/16
27	NE scroll, from above	NE	-	977-78	-	25/01/16
47	South parapet, damage to top of concrete	SE	-	979	-	25/01/16
-	South parapet damage to concrete showing exposed rebar	SE	-	980-81	-	25/01/16
-	South parapet, expansion joint, missing panel, damage and repair to concrete	SW	-	982-83	-	25/01/16
-	South parapet, 8th bracket from east end	SE	-	984-85	-	25/01/16
-	South parapet, repair of concrete by 8th bracket from west end. Note, no bolts	SW	-	986-87, 90	-	25/01/16

A5-M1 LINK ROAD JUNCTION 11A OVERBRIDGES

Fig	Description	Direction of view	Location (fig)	Digital ref no.	Black & white ref no.	Date
-	West side footings for new north bridge	SW	-	988-89	-	25/01/16
-	South parapet, 6th bracket from west end set in concrete	SW	-	991	-	25/01/16
42	South parapet, 5th bracket from west end fixed on top of concrete	SW	15	992	-	25/01/16
-	East side construction of new north bridge	SE	-	993	-	25/01/16
-	West side construction of new north bridge	SW	-	994	-	25/01/16
57	View of south bridge and gantry from north bridge	S	15	995	-	25/01/16
38	North parapet, path, barrier and carriageway	NE	15	996-97	F1/12	25/01/16
29	SW scroll from above, concrete repairs	SW	15	998-99	F1/13	25/01/16
25	NW scroll from above, concrete repairs	NW	15	0001-02	F1/14	25/01/16
39	General view of path and step down to carriageway	NW	15	0003	-	25/01/16
-	North side bridge from M1, general views	S	-	0004-07	F1/15	25/01/16
18	North side bridge from M1, close up	S	15	0008-15	-	25/01/16
24	NW scroll from M1, including close ups	SW	15	0016-19,	F1/16	25/01/16
-	West end under bridge views, damage from flying debris etc.	W	-	0020-33	-	25/01/16
50 20	Central pillars from west end	SE	15	0029, 0034-37	F1/17	25/01/16
16	Bridge number 58 2, near SW scroll	W	15	0027, 0038	-	25/01/16
52	West side underbridge, rebar showing through damaged concrete	W	15	0039	-	25/01/16
-	Working shots during bridge recording	N	-	0040-41	-	25/01/16
28	SW scroll from M1	NW	-	0042	F1/18	25/01/16
-	South side of bridge, repairs to lower deck edge and holes in parapet	NE	-	0043	-	25/01/16
49	South side of bridge, expansion cracks in centre of bridge	NE	-	0044-45	-	25/01/16

A5-M1 LINK ROAD JUNCTION 11A OVERBRIDGES

Fig	Description	Direction of view	Location (fig)	Digital ref no.	Black & white ref no.	Date
-	West side lower deck and underbridge damage from vehicles	NE	-	0046-47	-	25/01/16
22	East side lower deck and underbridge damage	E	15	0048-49	F1/19	25/01/16
19	South side general bridge views	NE	15	0050-54	F1/20	25/01/16
-	M1 modern post marker 58 2	NW	-	0055	-	25/01/16
-	North side west end parapet repairs, exposed rebar and central repairs	S and SE	-	0056-59	-	25/01/16
26	North side east end parapet and NE scroll, damage and repairs	S	15	0060-61	F1/21	25/01/16
-	North parapet, central bridge damage and repairs	S	-	0062-64	-	25/01/16
16	NE underbridge stencilled number 58 2	E	15	0065	-	25/01/16
-	NE underbridge drains at base of bridge	SE	-	0066	-	25/01/16
55	NE underbridge cracks, scuffs and scrapes, also cable run marked in spray paint	E	15	0067	F1/22	25/01/16
21 51 53 54	NE underbridge ceiling and wall damage	W	15	0068-82		25/01/16
31	SE scroll and sloping toe wall, cracks and damage	E	15	0083		25/01/16
30	SE scroll, sloping toe wall, damage	N	15	0084	F1/23	25/01/16
23	South side general views	NW	15	0085-92	-	25/01/16
13	New bridge built	NW	15	0090-92	-	25/01/16
17	The Chalton Bridge from under the Houghton Regis Bridge	NW	15	4303-05	-	26/01/16
33	NW scroll	S	15	4287	-	26/01/16
40	Cross section of parapet	W	15	4329	-	26/01/16
41	Bolt holes	-	15	4329	-	26/01/16
43	Bolts	NW	15	4345	-	26/01/16

APPENDIX 3 Photographic Index for Houghton Regis Bridge

Fig	Description	Direction of view	Location (fig)	Digital ref no.	Black & white ref no.	Date
58	North side of bridge general	SW	15	0093-97	F1/24	25/01/16
59	South side of bridge general	NW	15	0098-100	F1/25	25/01/16
14	Replacement south bridge under construction, with original south bridge in distance	N	15	0101-108	F1/26	25/01/16
-	SE scroll, water ingress and damage	N	-	0109-110	-	25/01/16
63	E scroll and columns	W	15	0111+01 15-17	-	25/01/16
-	Bridge centre	W	-	0112-13	-	25/01/16
-	SE scroll	N	-	0114	-	25/01/16
56	Number 57 9	E	15	0118	-	25/01/16
65	NE scroll	SE	15	0119-20	-	25/01/16
-	E scroll and columns	SW	-	0121-22	-	25/01/16
-	North side of bridge, general	S	-	0126-127	-	26/01/16
-	NE scroll with damage	SE	-	0128-130	-	26/01/16
-	Bridge number 57 9 on east inside wall	E	-	0131, 4249	-	26/01/16
-	Water damage to NE scroll	E	-	0132, 4247-48	-	26/01/16
80	East wall inside damage and drainage holes	E	15	0133-137	-	26/01/16
60	Damage to bridge roof		15	0138-143	-	26/01/16
66	SE scroll damage	N and NE	15	0144-147	-	26/01/16
-	Damage to bridge roof	W	-	0148-151	-	26/01/16
-	North side of bridge, west end	SW	-	0152-154	F1/28	26/01/16
-	North side of bridge, general	S	-	0155-156		26/01/16
68	NW scroll	SE	15	0157-160	F1/29	26/01/16
-	North side of bridge, east end	SE	-	0161	-	26/01/16
77	NW scroll and water damage	S and W	15	0162-65, 4289	-	26/01/16
-	West side under bridge, drainage holes and damage	W	-	0166	-	26/01/16
-	Damage to bridge roof and deck	SW	-	0167	-	26/01/16

A5-M1 LINK ROAD JUNCTION 11A OVERBRIDGES

Fig	Description	Direction of view	Location (fig)	Digital ref no.	Black & white ref no.	Date
69	SW scroll with damage	N	15	0168-171, 0173	F1/30	26/01/16
-	Patching of concrete on south elevation	NE	-	0172, 0174	-	26/01/16
-	Bridge number 57 9, on west side wall	W	-	0175	-	26/01/16
64	South elevation, west side	NE	15	0176-178	F1/31	26/01/16
-	New south bridge, centre pillars	E	-	0179	-	26/01/16
-	South elevation, east side	NE	-	0180	-	26/01/16
-	West under bridge, drainage holes	NW	-	0181	-	26/01/16
61	Under bridge and east end	NE	15	0182-187	-	26/01/16
-	West wall under bridge, drainage holes	W	-	0188-190	-	26/01/16
71	Carriageway, note no footpath	W	15	0191-194	-	26/01/16
-	North elevation	SW	-	0195-196	-	26/01/16
-	South elevation	NW	-	0197-200	-	26/01/16
-	South elevation	NE	-	0201-202	-	26/01/16
-	North elevation	E	-	0203-210	-	26/01/16
62	Parapet and deck with scroll	NE	15	4295	-	26/01/16
67	SE scroll close-up	-	15	4257	-	26/01/16
70	SW scroll close-up	-	15	4293	-	26/01/16
72	Bridge top	W	15	4314	-	26/01/16
73	The parapet on the south side	-	15	4316	-	26/01/16
74	The parapet on the north side	-	15	4320	-	26/01/16
76	Repair on underside of deck on south elevation	-	15	4301	-	26/01/16
78	Abutment wall	SW	15	4252	-	26/01/16
79	E abutment wall damage	SW	15	4255	-	26/01/16

from the Chronicle on
17th November 1958.

The London Birmingham Motor Road.

It was agreed one February day,
to inform the people by order and say,
that such was the line of a new highway.
We therefore in Division 4,
with posts and timber obtained from stores,
busied ourselves, and produced no more
than exactly a dozen of posters for sale.
The Order came giving the information,
and defined quite surely the exact location
of each and every demarcation.
Henslope, Hartwell and Collingtree,
Courteenhall East Lodge, all did see,
a small grey van lettered M.C.C.
and was engaged quite busily
erecting the posts so carefully.
But it is so difficult to appreciate,
with such locations as by a gate,
south of a building where we create,
in the middle of a forest, by a tow path straight,
who passes by to read and state
by such a time on such a date,
any objections they have to make.



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