



Radcliffe and Redvales FRMS Hardy's Gate Bridge

Level 2 Historic Building Recording Report

April 2023

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Environment Agency

Radcliffe and Redvales FRMS Hardy's Gate Bridge

Level 2 Historic Building Recording Report

April 2023

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	14/04/2023	R. Attwood/I. Lyons	J. Critchley	Z. Burn	First draft for EA comments

Document reference: ENV0000389C-BMM-DZ-4ZZ-RP-EN-0301085

Information class: Standard

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Executive summary

This Level 2 Historic Building Recording Report has been prepared by BAM Nuttall Mott MacDonald Joint Venture (BMMJV), on behalf of the Environment Agency in relation to proposed works at Hardy's Gate Bridge (hereafter referred to as 'the Bridge') in Radcliffe, Greater Manchester (centred on Nation Grid Reference SD 80152 08451). The works form part of the Radcliffe and Redvales Flood Risk Management Scheme (FRMS). This report has been produced to preserve by record, the non-designated Hardy's Gate Bridge, prior to any alteration work.

In its current form, the Bridge is particularly susceptible to blockage, due to its location and geometry, which creates a restricted flow and limits water volume which can pass downstream. The proposed works include raising the pedestrian footpath on the Bridge and installing a Trief Kerb with handrail.

The Bridge is a double span, sandstone structure thought to date to the late 19th century. The Bridge was widened and refaced in ashlar in 1911. However, a crossing point is depicted on the 1848 first edition Ordnance Survey Map and so the Bridge is likely to have been constructed prior to this. It is referred locally as New Bridge and carries the A6053 Dumers Lane over the River Irwell.

The Bridge has architectural interest as a local landmark and historic interest as a surviving example of a structure built to act as a crossing point over the River Irwell. Hardy's Gate Bridge is therefore considered a non-designated heritage asset. Following consultation with the Greater Manchester Archaeological Advisory Service (GMAAS), it was agreed a Level 1 historic building recording prior to, and after completion of, the bridge works be undertaken. However, while a Level 1 was agreed, given the availability of existing information during previous heritage assessments a Level 2 historic building recording was undertaken to allow this information to be included in the record.

The initial survey was completed on 24th April 2021 prior to works commencing and a second survey was completed on 30th March 2023, after the works had been completed. The work was carried out by a suitably qualified archaeologist at BMMJV, in accordance with the agreed methodology in the Heritage Project Design and according to the relevant Historic England and the Chartered Institute for Archaeologists guidance documents.

The survey revealed evidence of widening, visible only within the arch soffit of the Bridge. The Bridge appears to have originally been single carriageway and constructed sometime after 1836 and before 1848. The Bridge was widened on both upstream and downstream sides in 1911. There is no above ground evidence to suggest that there was a bridge here prior to the one present today although it was a fording point, as shown in late 18th century mapping. The present survey has not revealed any further evidence for earlier crossing points at this location; indicating the earlier structure would have likely been removed by the construction of the current Bridge.

Following acceptance of the report by GMAAS, the survey will be deposited with the Online Access to the Index of Archaeological Investigations (OASIS) website hosted by the Archaeological Data Service.

1 Introduction

1.1 Project Background

This document provides a record of Hardy's Gate Bridge (hereafter referred to as 'the Bridge'), which was subject to alterations as part of the Radcliffe and Redvales Flood Risk Management Scheme (FRMS). The main objective of the FRMS is to reduce the risk of flooding to people, their property and the critical infrastructure serving the communities in Radcliffe and Redvales.

BAM Nuttall Mott MacDonald Joint Venture (BMMJV) have been appointed by the Environment Agency (EA) to design infrastructure to reduce the risk of flooding from the River Irwell, River Roch, various ordinary watercourses, and former goits (man-made water channels designed to feed water-driven textile mills) in the Radcliffe and Redvales area.

A bridge has been recorded at Hardy's Gate since at least the mid-19th century, however the current structure appears to mostly date from 1911. It is not designated, nor recognised on the Greater Manchester Historic Environment Record, however a Statement of Significance¹ identified that it had a degree of heritage and architectural interest and therefore should be recognised as a non-designated heritage asset.

1.2 The Scheme

The FRMS stretches along 6km of the River Irwell through Radcliffe from National Grid Reference (NGR) SD 790 072 to Redvales at NGR SD 794 100 within Bury in Greater Manchester. The works at the Bridge forms part of Phase 2 of the FRMS and was subject to a separate planning application (Bury Council planning references: 65746; 66762). The proposed development consisted of raising the upstream parapet level along the full extent of Hardy's Gate Bridge by approximately 250mm to provide additional flood protection, as well as strengthening the parapet by reinforcing dowel bars. The proposal also included the installation of approximately 30m length of twin stainless steel debris cables spanning the river immediately upstream of the Bridge.

Due to the works required and following consultation with the archaeological advisor at the Greater Manchester Archaeological Advisory Service (GMAAS), it was agreed that a photographic and written record would be undertaken in advance of, and after the works. This would be in the form of a Level 1 Photographic Survey. However, while a Level 1 was agreed, given the availability of existing information during previous heritage assessments a Level 2 historic building recording was undertaken to allow this information to be included in the record.

A Heritage Project Design for the building recording was produced by Mott MacDonald (MM) (document ENV0000389C-MMD-DZ-ZZ-RP-HE-0302008-S2-P01). Following the approval of the methodology set out in the Project Design, a historic building recording was undertaken at the Bridge in order to satisfy GMAAS requirements.

1.3 Site Description and Location

The Bridge presently carries the A6053 Dumers Lane over the River Irwell positioned at NGR SD 80152 08451 in Bury, Greater Manchester. The banks of the Irwell are heavily developed with industrial premises and a modern housing development to the east. On the southern side of the Bridge, modern development encroaches onto and forms the banks of the Irwell, while the

¹ Mott MacDonald (2018) Radcliffe and Redvales FRMS: Cultural Heritage Desk Based Assessment, ENV0000389C-MMD-DZ-00-RP-EN-0302002-S2-PO3_compiled

industrial units on the northern side of the river are set a little further back, allowing a fringe of trees and vegetation to grow along the northern bank (see Photo 1.1 below).

Photo 1.1: View of the Bridge, facing north-east.



Source: BMMJV, 2021.

1.4 Fieldwork Dates and Circumstances

Survey data were collected during fieldwork to provide this Level 2 Historic Building Recording. Survey data of the Bridge was collected on two occasions:

- 23rd April 2021, by the BMMJV Archaeologist, during which the weather conditions were sunny; and,
- 30th March 2023, by the BMMJV Archaeologist, during which the weather conditions were overcast.

A comprehensive photographic record was collected during these surveys, including photographs, notes and annotated drawings.

1.5 Aims and objectives

1.5.1 Level 2 Historic Building Recording

The Standards and guidance for the archaeological investigation and recording of standing buildings or structures², defines a standing building recording as “a *programme of work intended*

² ClfA (2019)

Figure 1.1: <Insert Figure Caption>

<Click here and insert picture with the tools on the 'Picture' button>

Source: <Insert Notes or Source>

to establish the character, history, dating, form and archaeological development of a specified building, structure, or complex and its setting, including buried components”.

The overall aim of the programme of building survey work, was to create a record of the Bridge. This allows for a lasting record of the Bridge after it is modified by the Scheme. The Bridge was recorded in accordance with the Chartered Institute for Archaeologists standards and guidance, and the Historic England guidance document Understanding Historic Buildings: A guide to good recording practice³. The historic building survey aimed to achieve the following:

- To document the building in order to provide a lasting record of the structure;
- Further our understanding of its fabric and development; and
- Identify historic alterations and the fabric associated with these and determine to what extent the historic fabric of the Bridge survives.

³ Historic England (2016)

2 Methodology

2.1 General

This historic building recording has been undertaken in accordance with a Heritage Project Design prepared by MM in January 2020.

The building recording comprised a Level 2 survey, as defined in Understanding Historic Buildings: A guide to good recording practice⁴. This provides a sufficient level of recording to both assess the character and use, and any changes thereof, of the structure over its lifetime, including a photographic record of the structure and its immediate setting.

A Level 2 recording and its specification, as set out in Section 5 of the Historic England guidance, is summarised here: "This is a descriptive record, made in similar circumstances to Level 1 but when more information is needed...Both the exterior and interior of the building will be seen, described and photographed. The examination of the building will produce an analysis of its development and use and the record will include the conclusions reached, but it will not discuss in detail the evidence on which this analysis is based".

2.2 On site investigation

The recording was undertaken by an appropriately qualified archaeologist from BMMJV. Investigation of the Bridge was undertaken over two visits. The survey investigated all safe areas of the Bridge, including the exterior and the setting of the asset. This was aimed at elucidating significant details regarding fabric, function, the methods and order of construction and development of the Bridge.

2.3 Drawn record

A drawn record has not been produced for the Bridge. This is partly due to the inability to safely undertake a measured survey as the Bridge spans the River Irwell and partly due to the inability to safely survey below the waterline. Level 2 is defined as a "descriptive record" in the Historic England Understanding Historic Buildings Guidance, and therefore a drawn record is optional. In place of a drawn record, a plan showing the design has been included in Appendix B.

2.4 Photographic record

The record includes photographs of each Bridge face as required. The photographic record has captured as much detail as possible following limitations with access, including all significant phases, structures, important structural relationships, and individual items of interest of the Bridge. Photographs were taken with a high-resolution camera with a minimum 10 Mega Pixels as per the Historic England Guidance.

A photographic register has been compiled, relating image number, site photograph number, direction of view, and other relevant information (Appendix C & D).

2.5 Written record

BMMJV is responsible for ensuring that the written record to be submitted to the archive corresponds to a Level 2 in the Historic England specifications⁵.

⁴ Historic England (2016)

⁵ Historic England (2016)

In addition, the written records comply with the standards and guidance for archaeological investigation of standing buildings or structures as stated by ClfA.

The written account includes the following main components:

- The precise location of all buildings recorded using a National Grid reference;
- A note on any statutory or non-statutory designations of the structure;
- The date when the record was made, the name(s) of the recorder(s) and the location of any archive material; and
- A longer summary statement. This account should summarise the building's form, function, date and sequence of development. The names of architects, builders, patrons and owners should be given if known. Its purpose is to describe the building when no fuller record is necessary. Alternatively it may serve as an introduction to the more detailed body of a record that may follow, for users who may need a summary of the report's findings.

2.6 Assumptions and limitations

The Bridge spans the River Irwell, therefore a photographic survey of historic fabric below the waterline was not possible.

Working adjacent to water is inherently dangerous. As such the survey was undertaken from safe areas which has resulted in photographs of some historic fabric from a distance, and not close up. The photographic survey is as comprehensive as possible given these safety requirements.

3 Planning, policy and guidance

3.1 National planning context

3.1.1 NPPF (2021)

Chapter 16 of The National Planning Policy Framework (2021; NPPF) addresses the conservation and enhancement of the historic environment. In accordance with NPPF paragraph 205, it is a requirement that heritage assets should be recorded in a manner appropriate to their importance and impact in circumstances where an asset will be lost (wholly or in part).

3.2 Local planning context

3.2.1 Bury UDP

The site sits within the authority of Bury Council. The current local planning policy is set out within the Adopted Bury Unitary Development Plan (UDP), adopted 29 August 1997. Although the Council is preparing to replace the UDP with the Bury Local Plan, whilst in preparation the UDP continues to be used in making planning decisions. Regarding the historic environment associated with the proposed scheme policy EN3/2 is relevant here, as works to the Bridge have received planning permission and the Bridge is not designated as an ancient monument (Policy EN3/3).

3.3 Guidance

MM are a ClfA Registered Organisation (RO) and have adhered to the ClfA Code of Conduct: professional ethics in archaeology (2014, updated 2022).

This historic building report has also been prepared in accordance with the following guidance:

- Understanding Buildings: A guide to good recording practice (Historic England, 2016); and
- Standard and guidance for the archaeological investigation and recording of standing buildings or structures (ClfA, updated 2020).

4 Historic Context

4.1 The Bridge

It is unclear exactly when the Bridge was built but its current form is likely to have replaced an earlier structure. A crossing point is shown in this location on the Earl of Derby's Estate Plan from the 1780s but there does not appear to have been a bridge at this point. Therefore, this crossing likely consisted of a ford across the river.

In 1836, the Radcliffe, Bolton and Bury Turnpike Road Act was passed (6&7 Will. 4 c. x) which included improvements to the road leading to "the Prestwich and Bury Turnpike Road at or near to Hardy's Gate in the Township of Bury...". The Bridge is depicted on the 1848 first edition Ordnance Survey Map and so the Bridge may have then been constructed as part of general improvements to what is now Dumers Lane sometime between 1836 and 1848. The construction of the Bridge may also have helped with the collection of toll payments along the turnpike road. There is limited documentary information about the Bridge, other than it was subject to further works in 1911.

5 Description

The Bridge comprises a 19th century bridge. It forms a crossing point over the River Irwell from the core of Radcliffe to the where Bealey's bleach works were located near Close Park. It is referred locally as New Bridge. It currently carries the A6053 Dumers Lane over the River Irwell.

The Bridge comprises a triple span, triple arched, road bridge, constructed of rusticated red sandstone with ashlar yellow sandstone dressings and rusticated yellow sandstone base. There are three segmental arches, with ashlar voussoirs and keystones, and an ashlar band at the top of the base (Photo 5.2). There are ashlar cutwaters on the western (upstream) side of the Bridge (Photo 5.1). A string course of ashlar blocks separates the lower part from the upper part. Spandrels are of regular, narrow coursed red sandstone, with larger square blocks interspersed throughout, which rise to a projecting string course at deck level. Above the string course, the parapet consists of a two-course high ashlar wall, with a rounded top and no coping stones. Carved into the central part of the upstream parapet (Photo 5.3) facing the deck is:

HARDY'S GATE BRIDGE

WIDENED 1911

RADCLIFFE BURY

The evidence for widening is limited to the arch soffits, where joints in the stonework are visible upstream and downstream (Photos 5.1 & 5.2). This suggests that the Bridge was widened on both sides, with the earlier bridge fabric surviving between the later material.

Source

Source

Source

Photo 5.1: North-west, upstream elevation of Harvey's Gate Bridge looking north east. Arrow shows the joint between the original fabric and the widened structure of 1911.



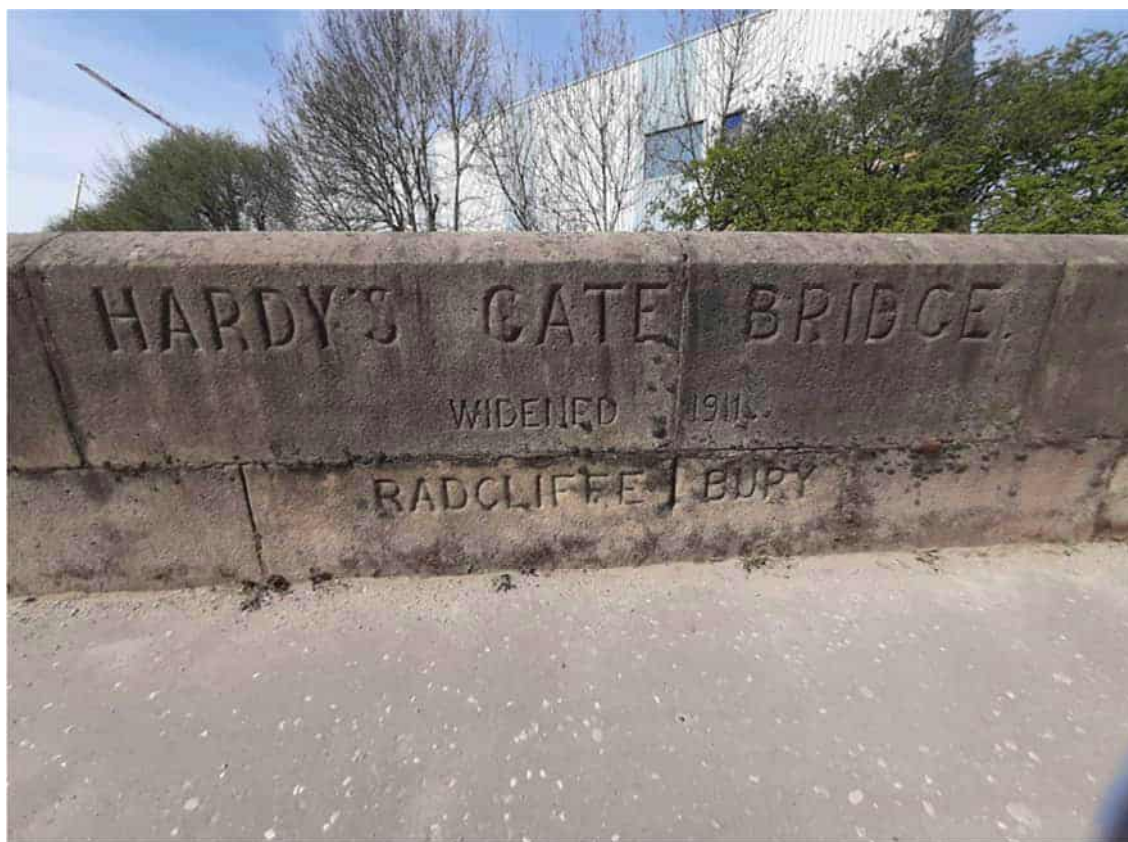
Source: BMMJV, 2021

Photo 5.2: South-east, downstream face of Harvey's Gate Bridge looking north-west. Arrow shows joint between the original fabric and the widened structure of 1911.



Source: BMMJV, 2021

Photo 5.3: Carving commemorating widening of the Bridge in 1911, on upstream side of the Bridge looking north-west.



Source: BMMJV, 2021

6 Significance

6.1 Significance of the Bridge

The Bridge is a low value non-designated heritage asset and is neither locally listed nor recorded on the Greater Manchester HER.

The significance of the Bridge is derived from its historic interest as a surviving crossing point used from at least the 18th century (possibly earlier). The fording point was depicted on late 18th century mapping and later replaced by a bridge constructed between the 1830s and 1840s during road developments in the area. This allowed the River to be crossed for access between the industrial works and the outer edge of the town. The Bridge also has some archaeological interest as it remains largely intact and functional, still serving as a road bridge carrying Dumers Lane over the River Irwell. It also contains evidence of the original bridge structure and its subsequent widening, providing evidence for road developments in the area in the early 20th century. The sandstone construction possesses some architectural interest, derived from an appreciation of its modest classical design, and as a landmark in the local area.

7 Conclusion

This document sets out the results of a historic building recording, undertaken by BMMJV on behalf of EA (the client), in advance of and after alterations to the Bridge in Radcliffe.

This level 2 historic building recording was undertaken in accordance with Historic England (2016) and ClfA guidance (2019). The record comprises a visual record based primarily upon photographs and notes undertaken by BMMJV on two occasions: 24th April 2021 and 30th March 2023. Measurements are based on existing drawings undertaken as part of the project. However no further measured survey was undertaken. This report is accompanied by a photographic archive of the Bridge and a photographic register can be found in Appendices C-F.

The survey revealed evidence of widening, visible only within the arch soffit of the Bridge. The Bridge appears to have originally been single carriageway and constructed sometime after 1836 and before 1848. The Bridge was widened on both upstream and downstream sides in 1911. There is no above ground evidence to suggest that there was a bridge here prior to the one present today although it was a fording point, as shown in late 18th century mapping. The present survey has not revealed any further evidence for earlier crossing points at this location; indicating the earlier structure would have likely been removed by the construction of the current Bridge.

Following acceptance of the report by GMAAS, the survey will be deposited with the Online Access to the Index of Archaeological Investigations (OASIS) website hosted by the Archaeological Data Service.

8 References

Brown, D H (2011) Archaeological Archives: A Guide to best practice in creation, compilation, transfer and curation, Archaeological Archives Forum

Bury Council (1997) Bury Unitary Development Plan, [Adopted Bury Unitary Development Plan - Bury Council](#) [Accessed March 2023].

CIfA (2014, updated 2022) Code of Conduct: professional ethics in archaeology. Available at [Microsoft Word - Code of conduct revOct2022 \(archaeologists.net\)](#) [Accessed: April 2023]

CIfA (2014, updated 2019) Standard and Guidance for archaeological investigation and recording of standing buildings or structures. Available at https://www.archaeologists.net/sites/default/files/CIfAS&GBuildings_1.pdf [Accessed: March 2023]

Historic England (2016) Understanding Historic Buildings: A Guide to Good Recording Practice (Guidance Note)

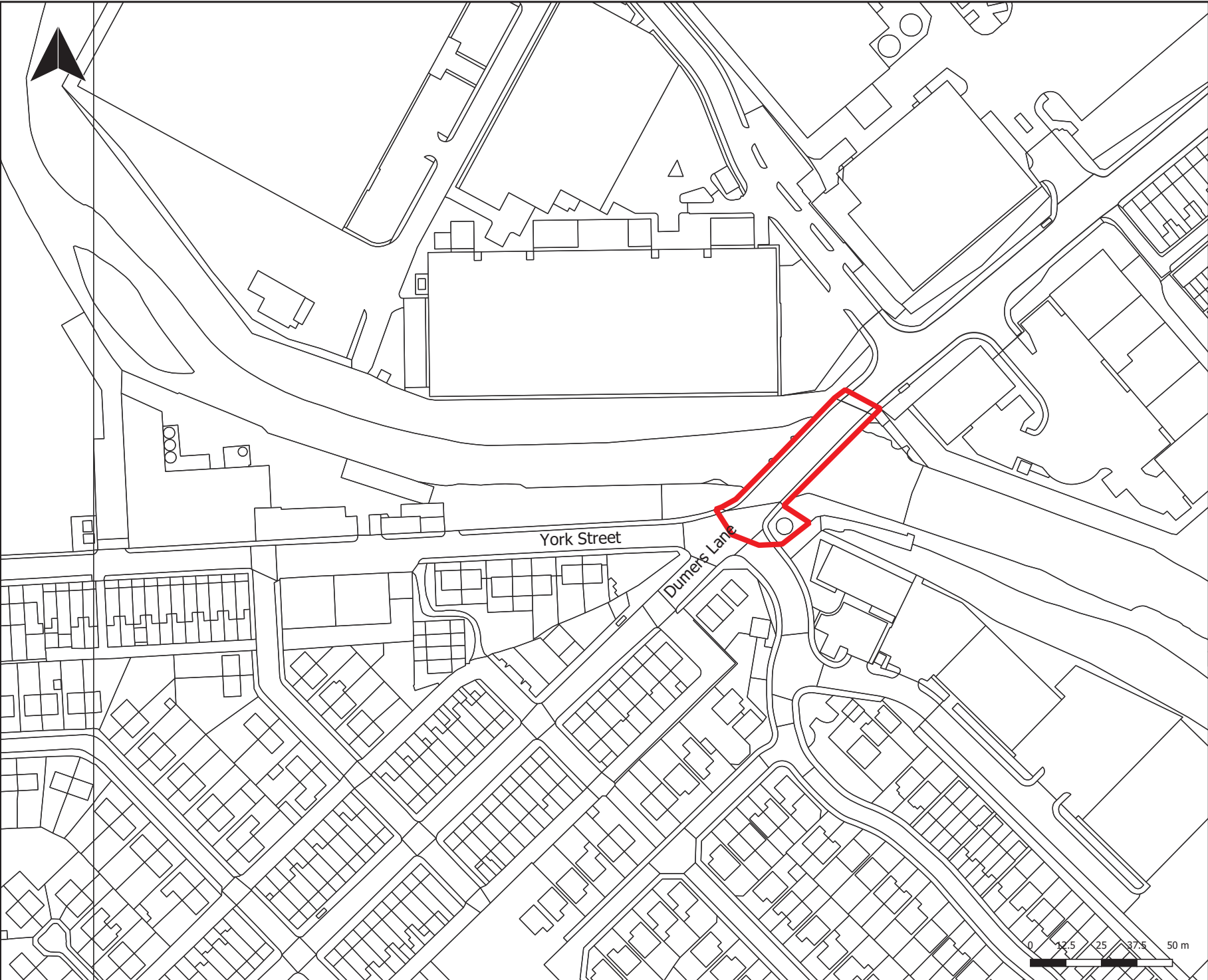
Mott MacDonald (2017) Radcliffe and Redvales FAS: Cultural Heritage Desk Based Assessment. ENV0000389C-MMD-XX-00-MP-EN-03010020

Mott MacDonald (2018) Radcliffe and Redvales FRMS: Cultural Heritage Desk Based Assessment.

Mott MacDonald (2019) Radcliffe and Redvales FRMS, Hardy's Gate Bridge, Bury: Heritage Project Design. ENV0000389C-MMD-DZ-00-RP-HE-0302008

National Planning Policy Framework (NPPF), published 2012, updated July 2021, [National Planning Policy Framework - 16. Conserving and enhancing the historic environment - Guidance - GOV.UK \(www.gov.uk\)](#) [Accessed March 2023].

A. Location Plan



Key to Symbols

 Permitted Development Boundary

Notes

1. Contains OS data © Crown copyright and database right (2021). Contains Environment Agency information © Environment Agency and/or database right.
2. The area of the planning boundary (red line) shown is 1,110sqm.

P03	15/10/21	SP	Update to Permitted Development	JH	JS
P02	10/07/20	SP	For planning submission	AB	JS
P01	12/03/20	SP	First issue	AB	JS
Rev	Date	Drawn	Description	Ch'k'd	App'd

P03	15/10/21	SP	Update to Permitted Development	JH	JS
P02	10/07/20	SP	For planning submission	AB	JS
P01	12/03/20	SP	First issue	AB	JS
Rev	Date	Drawn	Description	Ch'k'd	App'd



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Client



Title

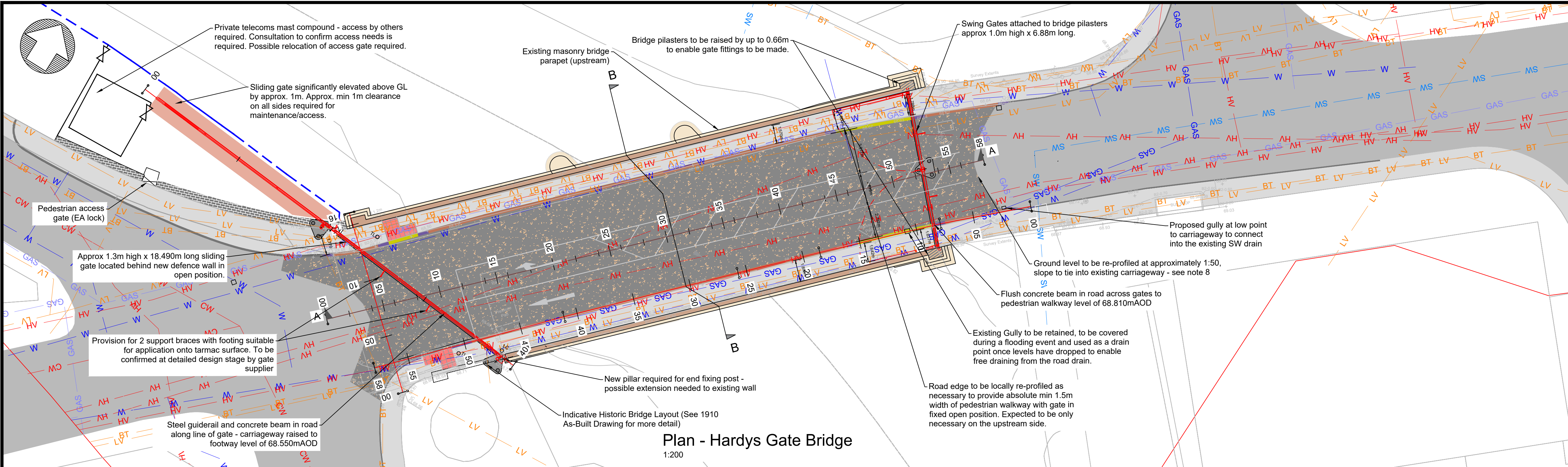
ENV000389C Radcliffe & Redvales FRMS
Detailed design Phase 2
Planning Application Boundary
Radcliffe Areas - Hardys Gate Bridge
Area for Permitted Development

Drawn	S Parkinson	SP	Eng check	J Holden	JH
Designed	S Parkinson	SP	Coordination	J Starling	JS
GIS check	J Holden	JH	Approved	J Starling	JS
Scale at A3	Status	Rev	Security		
1:1,250	PRE	P03	STD		

Drawing number

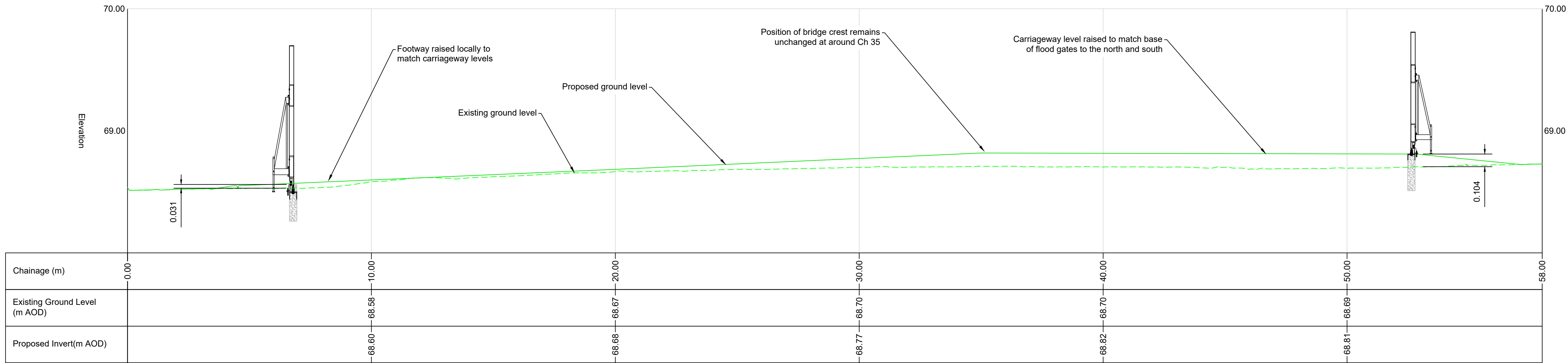
ENV0000389C-BMM-DZ-4ZZ-DR-T-0213472

B. Design Plan



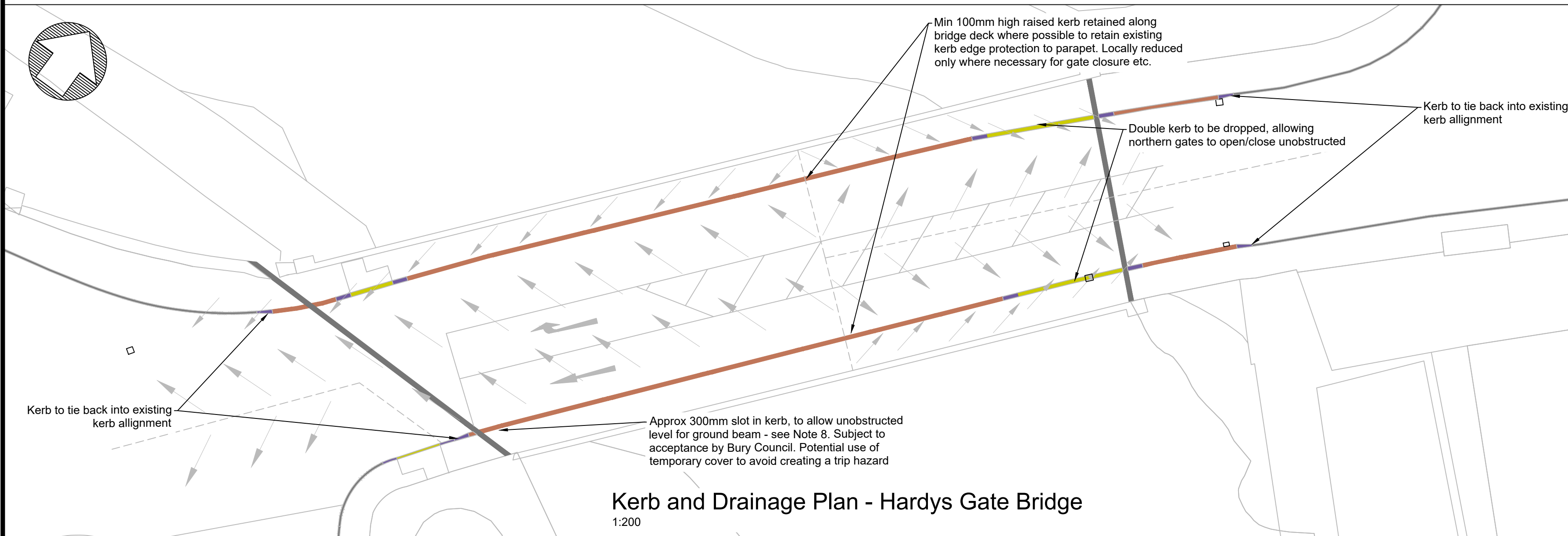
Plan - Hardys Gate Bridge

1:200



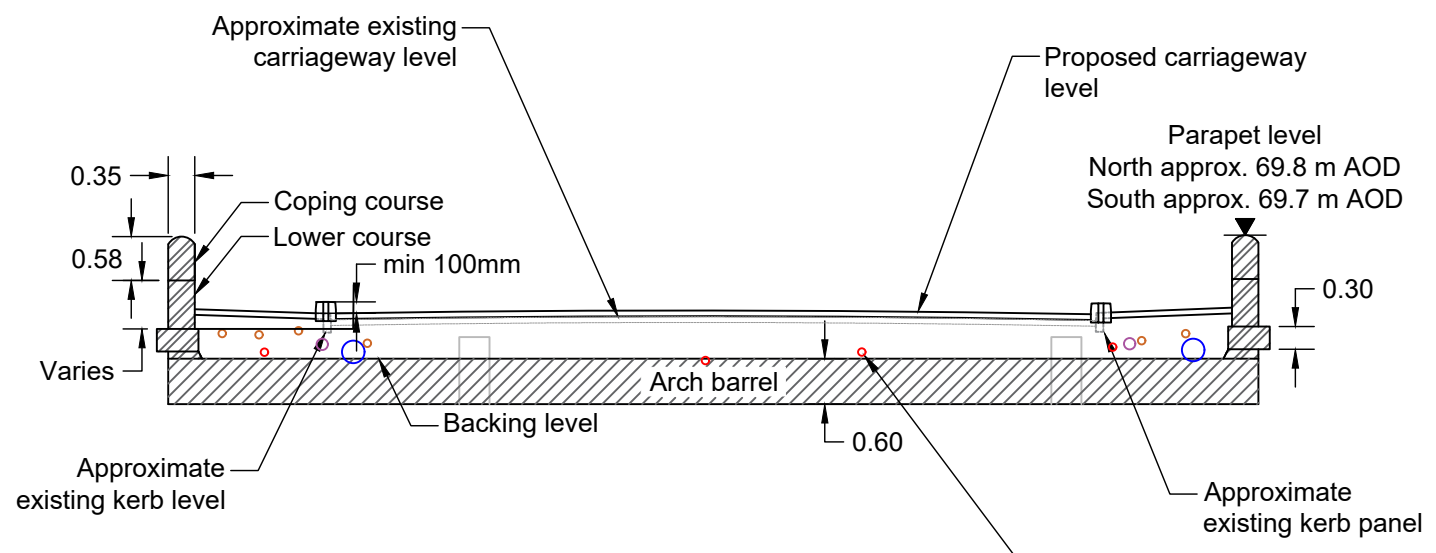
Section A-A

H: 1:100 V: 1:20



Kerb and Drainage Plan - Hardys Gate Bridge

1:200



Section B-B

1:100

- Notes
- Do not scale from this drawing.
 - This drawing is to be read in conjunction with ENV0000389C-BMM-DZ-DL-RP-C-0213661 Hardy's Gate Bridge Flood Gates, Basis of Outline Design Report.
 - All dimensions are in millimeters unless stated otherwise noted.
 - All levels are given in metres Above Ordnance Datum (AOD).
 - The service location, depths and size shown on these drawings are indicative only, based on best estimates from utility information. Depths and alignment of services have been confirmed through trench surveys along the line of each gate, undertaken Feb 2023.
 - Topographical survey information shown based on survey conducted by BAM, October 2022.
 - Gate layout is indicative only based on previous similar designs, gate design to be produced by gate supplier at detailed design stage.
 - All changes to road layout and surface profiles, including re-profiling slopes and kerb alignments, remain subject to acceptance by Bury Council Highways Authority.
 - Gates designed to achieve a minimum level of 69.85mAOD, based on the 100yr event with a 50% allowance for climate change.

Key to symbols

- Centreline of New Flood Defence Wall
- Approximate Extents of Ground Re-profiling
- Approximate Extent of Working Area Required for O&M
- LV Low Voltage Electricity Cable (< 1kV)
- HV High Voltage Electricity Cable (6kV-6.6kV)
- HV High Voltage Electricity Cable (11kV)
- HV High Voltage Electricity Cable (33kV)
- BT Cable
- COMMS Misc Communication Cable
- GAS Medium Pressure Gas Main
- GAS Low Pressure Gas Main
- U Unidentified
- CW Combined Sewer
- FW Foul Water Sewer
- W Water Main
- SW Surface Water Sewer
- Existing Kerbline (Single)
- Proposed Dropped Kerb
- Kerb Transition Unit
- Raised Double Kerb

Reference Drawings

ENV0000389C-BMM-DZ-DL-DR-C-0213663 - HGB Flood Gate Outlet Design
Northern Flood Gate General Arrangement
ENV0000389C-BMM-DZ-DL-DR-C-0213664 - HGB Flood Gate Outline Design
Southern Flood Gate General Arrangement

P02	23/03/23	BB	Updated with EA Comments	TA	TA
P01	14/12/22	BB	First issue for comment	JS	JS
Rev	Date	Drawn	Description	Ch'k'd	App'd

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Title
**Radcliffe & Redvales FRMS
Phase 2 Detailed Design
HGB Flood Gate Outline Design
General Arrangement**

Designed	B Brown	BB	Eng. check	A Griffiths	AG
Drawn	B Brown	BB	Coordination	J Starling	JS
Dwg. check	J Starling	JS	Approved	J Starling	JS

MMD Project Number	408463	Scale at A1	As Shown	Security	STD
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Suitability Description	For Information	Suit. Code	S2
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Project Code	Originator Volume	Location	Type	Disc	Serial Number	Revision	P02
ENV0000389C-BMM-DZ-	DL	DR-	C	-	0213662		

C. Pre-Works Survey: Photo Location Plan and Photographic Register



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M M MOTT MACDONALD Mott MacDonald House 8-10 Sydenham Road Croydon, CR0 2EE United Kingdom T +44 (0)20 8774 2000 F +44 (0)20 8681 5706 W mottmac.com	Client Environment Agency	Rev	Date	Drawn	Description	Ch'k'd	App'd	Title Radcliffe & Redvales Hardy's Gate Bridge Pre-Works Survey Photo Location Plan	Drawn	I Lyons	
		01	12/04/2023	IL	PHOTO LOCATION PLAN	JC	ZB		Checked	J Critchley	
									Approved	Z Burn	
		Scale at A3 1:500									
								Drawing Number	Security	Status	Rev
								ENV0000389C-BMM-DZ-4ZZ-DR-EN-0302047	STD	PRE	P1

Table 1: Photos from the Phase 1: Level Survey, Pre-works (April 2021)

Photo Number	Image Reference Number	Description	Direction Looking	Phase
N/A	PLN001	Photo location plan	N/A	Phase 1: Level 1 Survey, Pre-Works
1	HGB001	HGB, NW upstream face	NE	Phase 1: Level 1 Survey, Pre-Works
2	HGB002	HGB, NW upstream face, close up of bridge piers	NE	Phase 1: Level 1 Survey, Pre-Works
3	HGB003	HGB, NW upstream face, close up of bridge piers	NE	Phase 1: Level 1 Survey, Pre-Works
4	HGB004	HGB, NW upstream face, close up of bridge piers	NE	Phase 1: Level 1 Survey, Pre-Works
5	HGB005	HGB, NW upstream face, close up of bridge piers.	NE	Phase 1: Level 1 Survey, Pre-Works
6	HGB006	HGB, NW upstream face (blurry)	NE	Phase 1: Level 1 Survey, Pre-Works
7	HGB007	HGB, NW upstream face	NE	Phase 1: Level 1 Survey, Pre-Works
8	HGB008	HGB, NW upstream face	NE	Phase 1: Level 1 Survey, Pre-Works
9	HGB009	HGB, SE downstream face. No bridge piers this side	NW	Phase 1: Level 1 Survey, Pre-Works
10	HGB010	HGB, SE downstream face	NW	Phase 1: Level 1 Survey, Pre-Works
11	HGB011	HGB, SE downstream face.	NW	Phase 1: Level 1 Survey, Pre-Works
12	HGB012	HGB, SE downstream face. Close up, showing zig-zag nature of the bridge structure. Note the 'joists' sticking out as well	NW	Phase 1: Level 1 Survey, Pre-Works
13	HGB013	HGB, SE downstream face. Close up	NW	Phase 1: Level 1 Survey, Pre-Works
14	HGB014	River Irwell, downstream (east) of HGB. Shows retaining walls with possible watercourse outlets	N	Phase 1: Level 1 Survey, Pre-Works
15	HGB015	HGB, SE downstream face	NW	Phase 1: Level 1 Survey, Pre-Works
16	HGB016	Road level of HGB	N	Phase 1: Level 1 Survey, Pre-Works
17	HGB017	Carving commemorating widening of bridge in 1911, on upstream side of bridge	NW	Phase 1: Level 1 Survey, Pre-Works
18	HGB018	Looking upstream along the River Irwell from HGB	W	Phase 1: Level 1 Survey, Pre-Works
19	HGB019	Plan view of bridge pier of upstream side of HGB	-	Phase 1: Level 1 Survey, Pre-Works
20	HGB020	Detailing of parapet at northern, upstream end of HGB	W	Phase 1: Level 1 Survey, Pre-Works

Photo Number	Image Reference Number	Description	Direction Looking	Phase
21	HGB021	Detail of brickwork abutting northern, downstream side of HGB	NE	Phase 1: Level 1 Survey, Pre-Works
22	HGB022	Upstream side of HGB, from road level	SW	Phase 1: Level 1 Survey, Pre-Works
23	HGB023	Detail of parapet at downstream side of HGB	S	Phase 1: Level 1 Survey, Pre-Works
24	HGB024	Looking across towards the carving on the western side of HGB	W	Phase 1: Level 1 Survey, Pre-Works

Source: BMMJV , 2021

D. Post-Works Survey: Photo Location Plan and Photographic Register



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Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS

0 25 50 75 100 Metres

M M MOTT MACDONALD Mott MacDonald House 8-10 Sydenham Road Croydon, CR0 2EE United Kingdom T +44 (0)20 8774 2000 F +44 (0)20 8681 5706 W mottmac.com	Client Environment Agency	Rev	Date	Drawn	Description	Ch'k'd	App'd	Title Radcliffe & Redvales Hardy's Gate Bridge Post-Works Survey Photo Location Plan	Drawn	I Lyons		
		01	12/04/2023	IL	PHOTO LOCATION PLAN	JC	ZB		Checked	J Critchley		
									Approved	Z Burn		
									Scale at A3 1:600			
								Drawing Number ENV0000389C-BMM-DZ-4ZZ-DR-EN-0302048		Security STD	Status PRE	Rev P1

Table 2: Phase 2: Level 1 Survey, Post-works (March 2023)

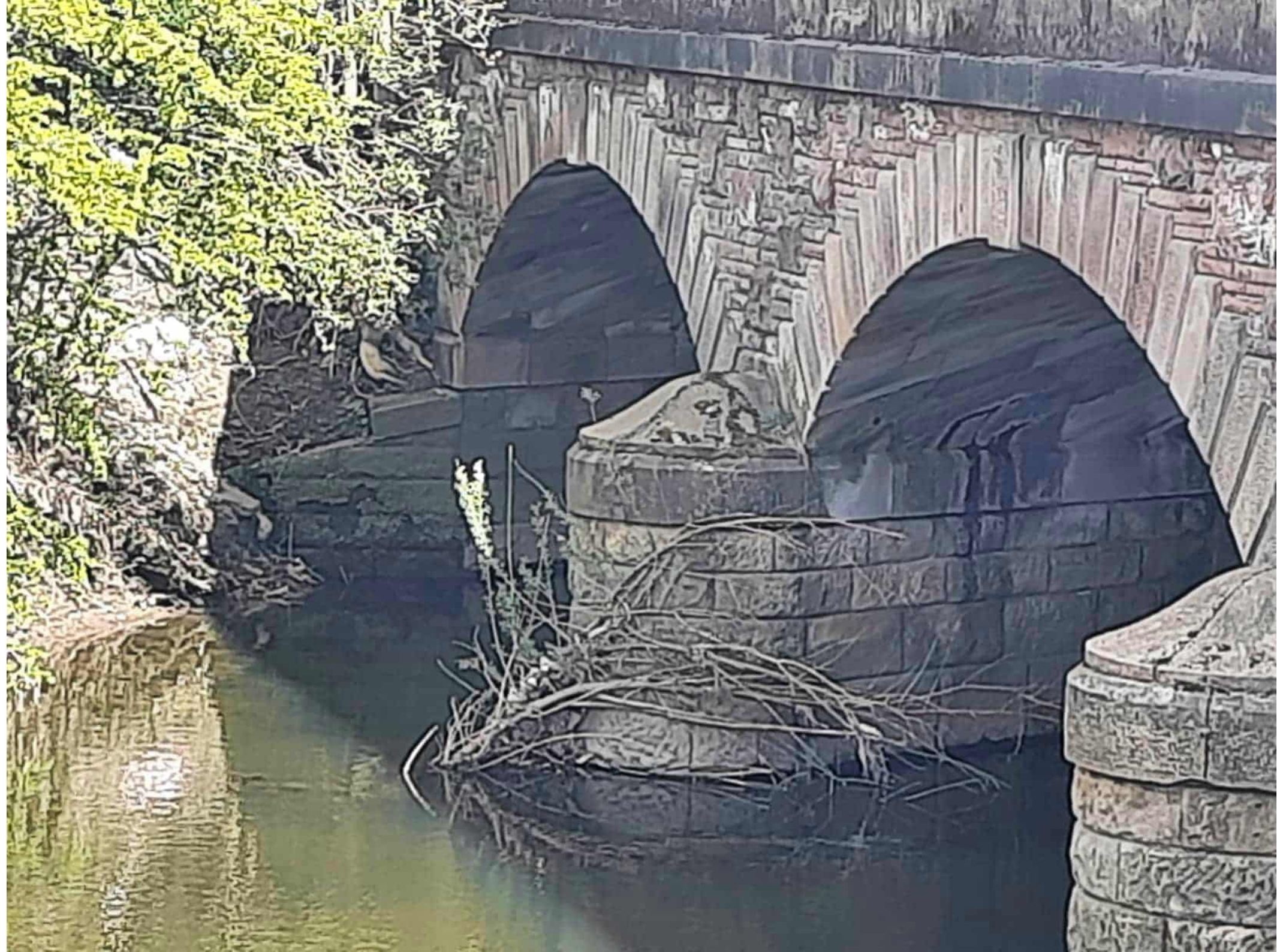
Photo Number	Image Reference Number	Description	Direction Looking	Phase
PLN002	N/A	Photo location plan	N/A	Phase 2: Level 1 Survey, Post-Works
HGB025	HGB025	Taken from the south-west of HGB along Dumers Lane, looking towards the bridge.	NE	Phase 2: Level 1 Survey, Post-Works
HGB026	HGB026	Retaining wall along the south-west side of HGB.	N	Phase 2: Level 1 Survey, Post-Works
HGB027	HGB027	Dowelling works on the upstream parapet of HGB.	N	Phase 2: Level 1 Survey, Post-Works
HGB028	HGB028	Cutwaters along the upstream, west facing side of HGB.	NE	Phase 2: Level 1 Survey, Post-Works
HGB029	HGB029	Carving commemorating widening of bridge in 1911, on upstream side of bridge	W	Phase 2: Level 1 Survey, Post-Works
HGB030	HGB030	Detailing of parapet at northern, upstream end of HGB	W	Phase 2: Level 1 Survey, Post-Works
HGB031	HGB031	Detailing of parapet at northern, downstream end of HGB	SE	Phase 2: Level 1 Survey, Post-Works
HGB032	HGB032	View of river from northern, downstream end of HGB (blurry)	SE	Phase 2: Level 1 Survey, Post-Works
HGB033	HGB033	Parapet at northern, downstream end of HGB	S	Phase 2: Level 1 Survey, Post-Works
HGB034	HGB034	Parapet at northern, upstream end of HGB from the downstream end of the bridge	W	Phase 2: Level 1 Survey, Post-Works
HGB035	HGB035	Dowelling works on the downstream parapet of HGB.	SW	Phase 2: Level 1 Survey, Post-Works
HGB036	HGB036	Dowelling works on the downstream parapet of HGB.	SW	Phase 2: Level 1 Survey, Post-Works
HGB037	HGB037	HGB, SE downstream face.	N	Phase 2: Level 1 Survey, Post-Works
HGB038	HGB038	HGB, SE downstream face. Zoomed in to show joint in the bridge arch.	N	Phase 2: Level 1 Survey, Post-Works
HGB039	HGB039	View towards HGB from the junction of Dumers and Gate Lane.	N	Phase 2: Level 1 Survey, Post-Works
HGB040	HGB040	View towards HGB from the junction of Dumers and Gate Lane. Zoomed in to show additional infrastructure.	N	Phase 2: Level 1 Survey, Post-Works

Source: BMMJV, 2023

E. The Bridge: Pre-Alteration

































HARDY'S GATE BRIDGE.

WIDENED 1911.

RADCLIFFE BURY

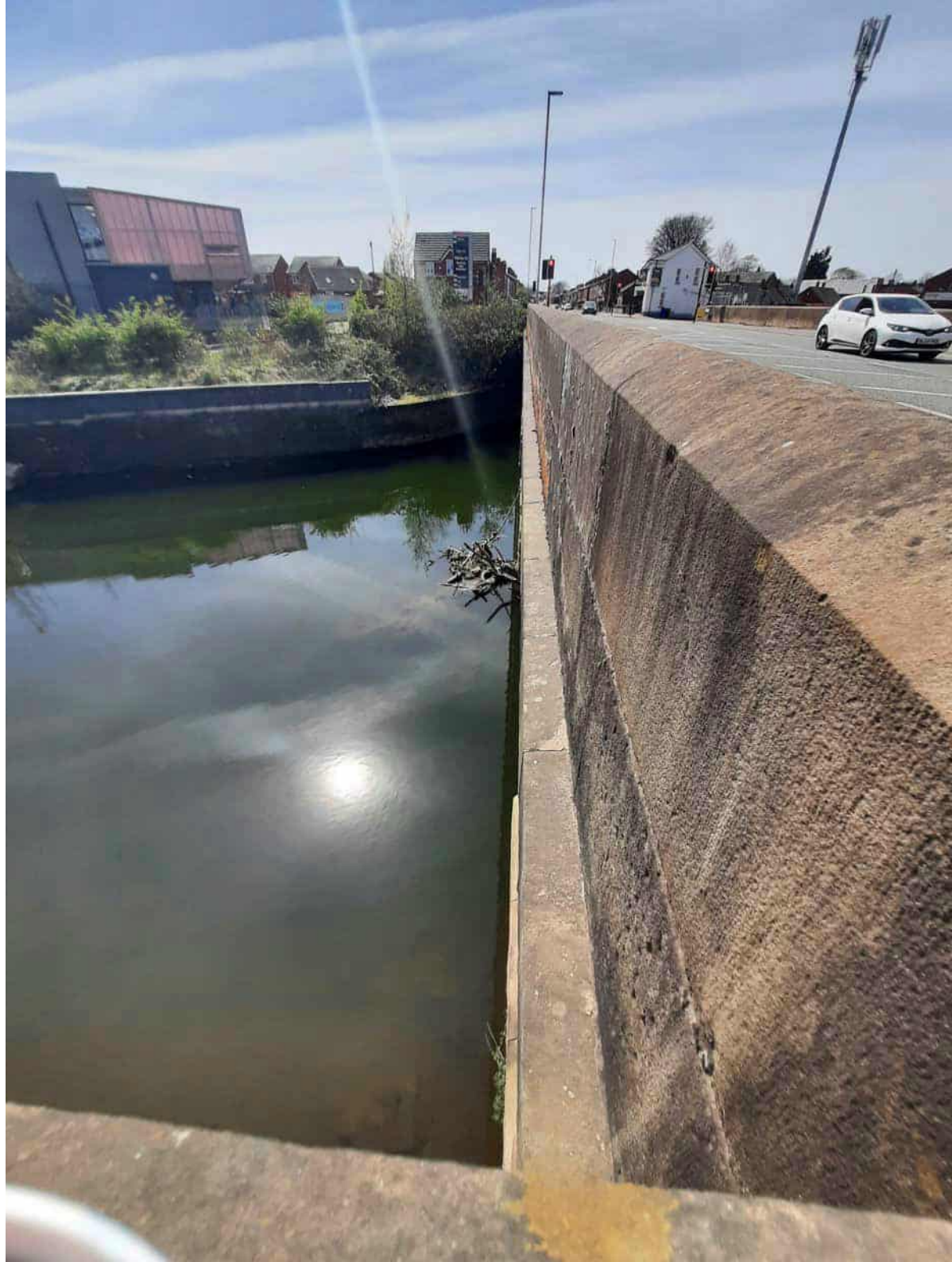




LOWERS LANE
BURY

Construction
operations
KEEP OUT









F. The Gate Bridge: Post-Alterations











HARDY'S GATE BRIDGE
WIDENED 1911

RADCLIFFE
EUBEN























