Heritage Impact Assessment Report

Proposed Maintenance Works to Paul's Arm Bridge
Shipley Park, Heanor, Derbyshire, Nr. DE75 7JL
DCC Structure Number: E44015



Structures Design Section
Highways, Place
Derbyshire County Council
Station Road
Darley Dale
Matlock
DE4 2EQ

January 2026

CONTROLLED

1 Introduction

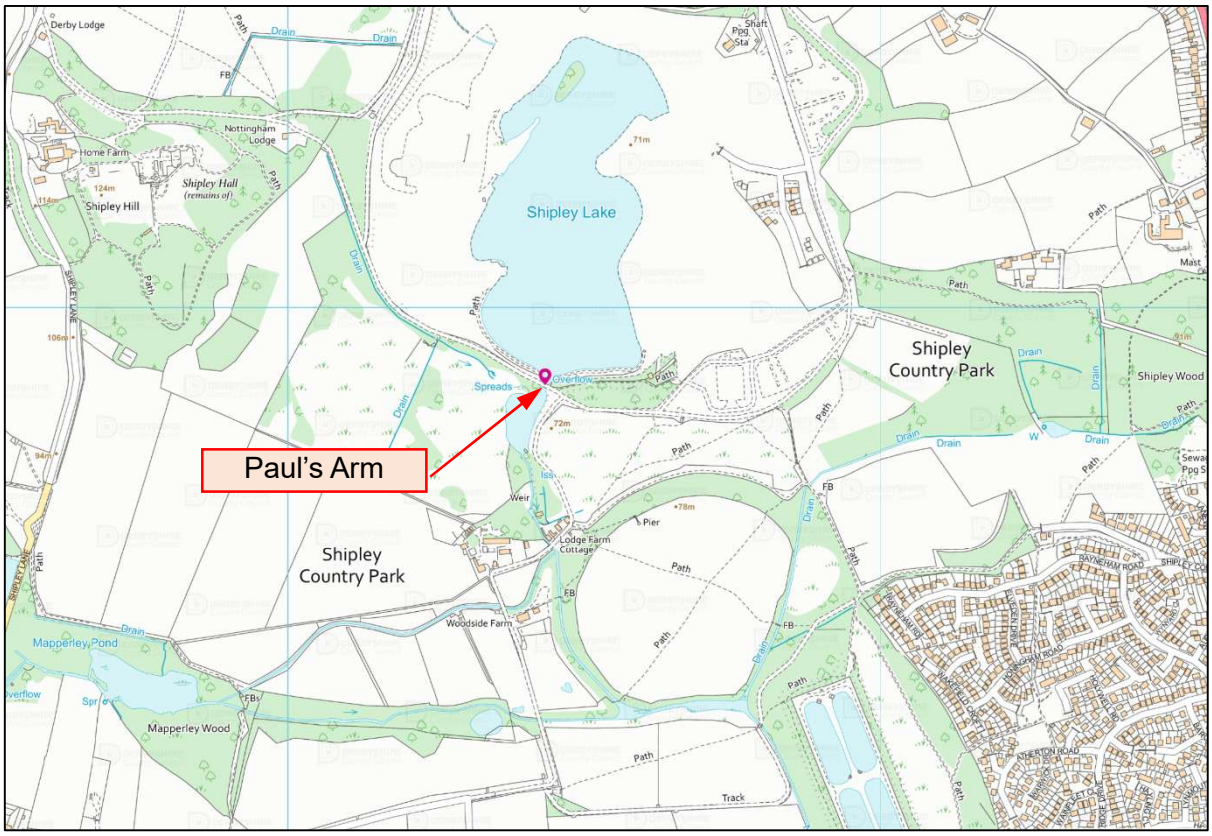
This Heritage Impact Assessment has been prepared by Derbyshire County Council's (DCC) Structures Design Section on behalf of the DCC Countryside Services. It forms part of a listed building and planning application which seeks permission to carry out proposed maintenance works to Paul's Arm bridge.

The aim of this assessment is to appraise any potential impact that the proposals may have on the designated heritage asset in order to ensure that its significance remains intact.

2. Site Location

Paul's Arm Bridge carries an unclassified track, locally referred as FP9, Shipley over Shipley Lake outlet in Heanor, Derbyshire. The lake outlet flows from north to south at this location. There is a 3-tonne weight restriction over the structure. The approximate grid reference of this structure is SK444438. The nearest post code is DE75 7JL. Figure 1 represents the location plan of this structure.

Figure 1.



The structure is designated Grade II listed in Historic England's records and the date first listed records 20/01/1986.There are no archive or as-built information available for this structure. According to Historic England's records, it is believed to have been constructed in circa 1790 as part of the reservoir to feed the Nutbrook canal located south of the lake.

3. Structure Description

The structure is a two-span brick masonry arch overbridge approximately 4.66 meters wide. Each arch is semi-circular shape and spans approximately 2.80 meters to the central pier. Both arches have a rise of approximately 1.53 meters.

The foundations to east and west abutment walls and central pier are not visible. The abutments and central pier are constructed of red common brickwork with a sandstone stringcourse at the springing level. The outer edges of arch barrels are faced with sandstone ashlar voussoirs. Stone masonry spandrel walls are present at each elevation.

The track over the bridge runs west to east and comprises north verge, asphalt carriageway and a south verge. The north parapet comprises of sandstone wall with concrete coping, curving outwards at approach and departure ends and end in square finials. The metal south parapet comprises of vertical rectangular hollow metal sections (RHS) filled with fine concrete welded to horizontal square hollow sections (SHS) with infill metal bars.

For general views refer to photographs in Appendix A.

3. Historic Background

The earliest available record of the reservoir is from an 1837 map reproduced in Figure 2 below:

A reservoir shown on the 1837 OS map as “Fish Pond” encompasses the historic footprint of Shipley Lake Reservoir. The Shipley Estate was owned by the Miller-Mundy family and became a colliery site in the 16th Century, extracting 100,000 tonnes of coal a year by the early 1900's from four mines.

The original alignment is overlain against the current footprint in Figure 2 below. Note the colliery site and the old coal shaft to the north of the reservoir with the service railway running along the eastern side of the reservoir.

The original purpose of the reservoir is unconfirmed but the recorded name of “Fish Pond”, the presence of the boat house and arched bridges indicate it was for amenity and recreational use.

The Derbyshire Record Office has been contacted regarding a potential record search in connection with Paul’s Arm bridge, but no information directly related to the bridge was available.

Figure 2

Source: DCC DMaps – OS 1837

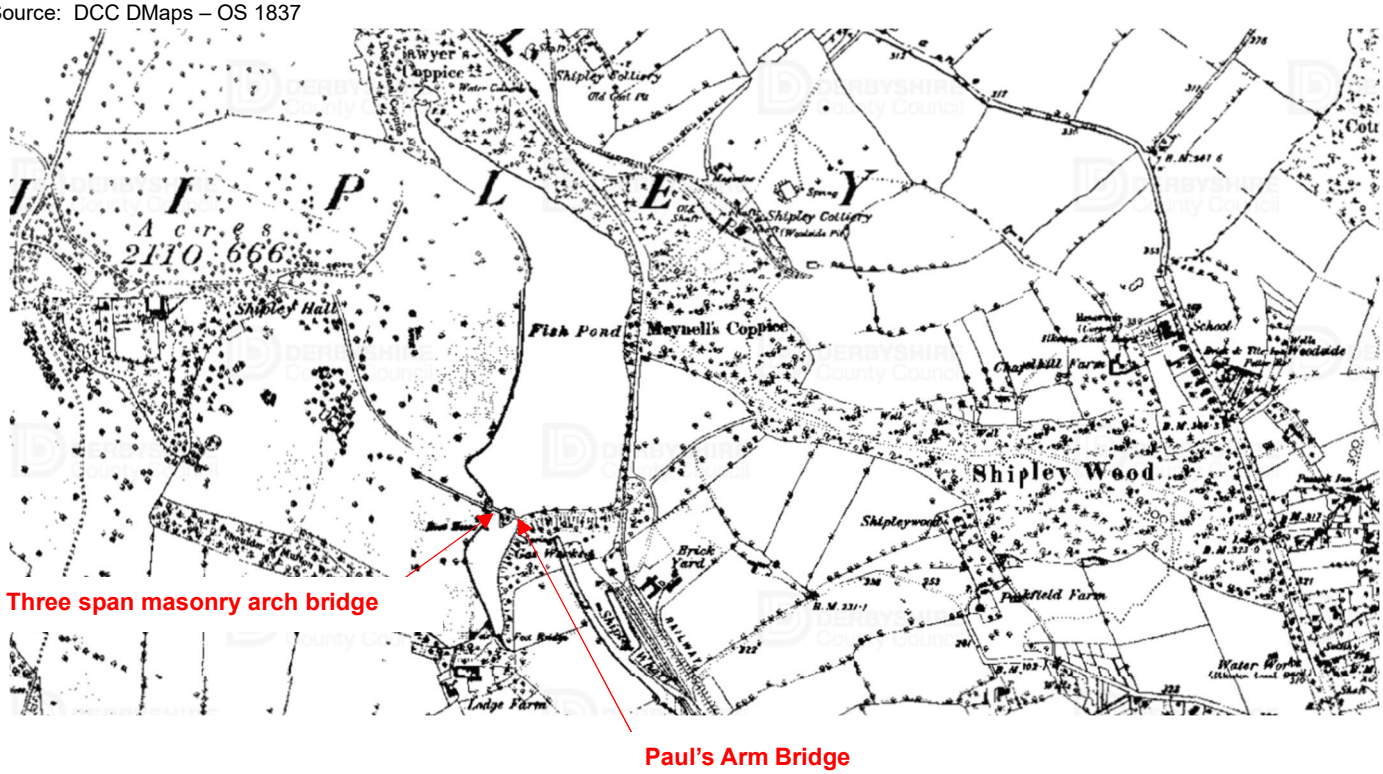
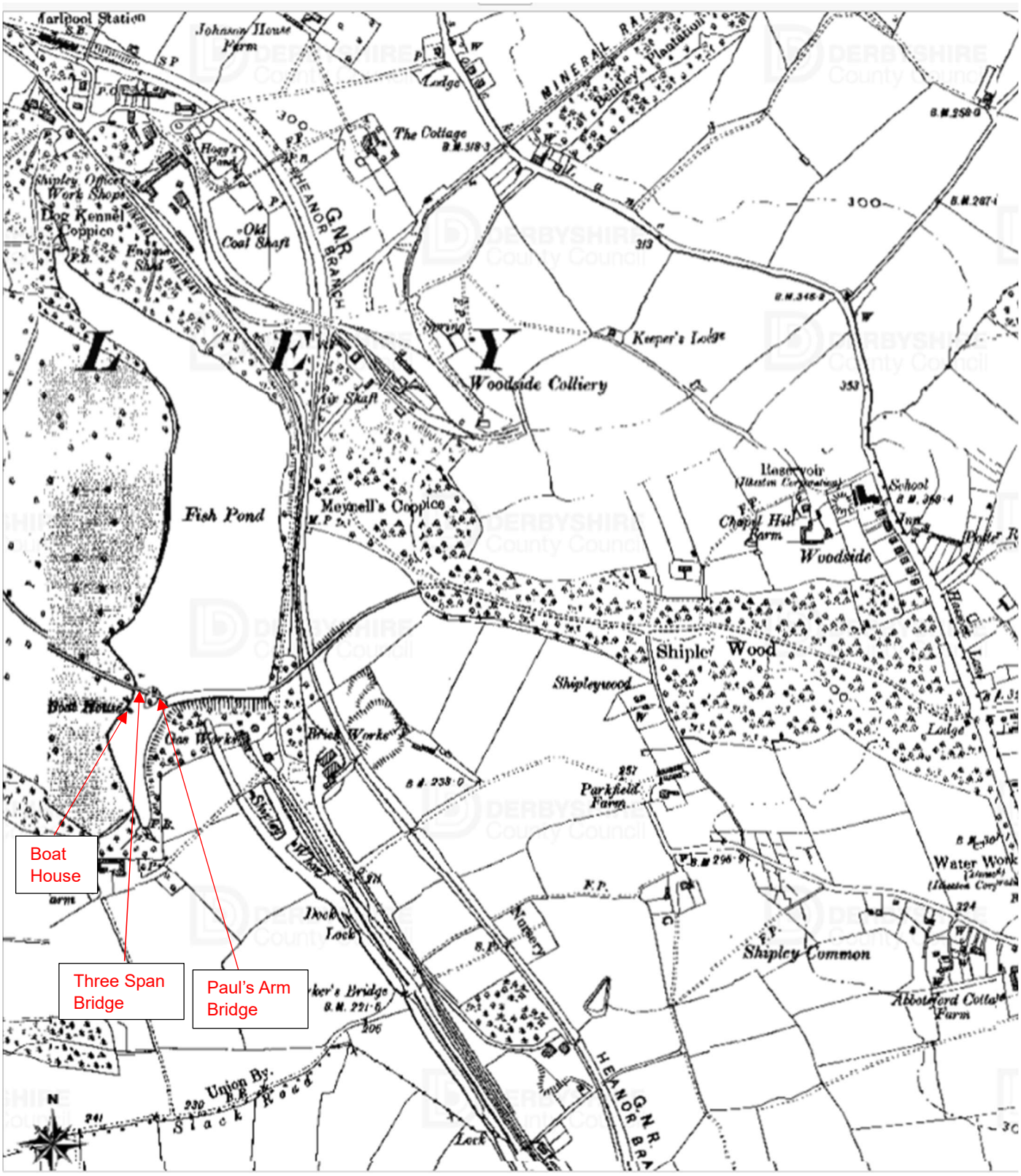


Figure 3.

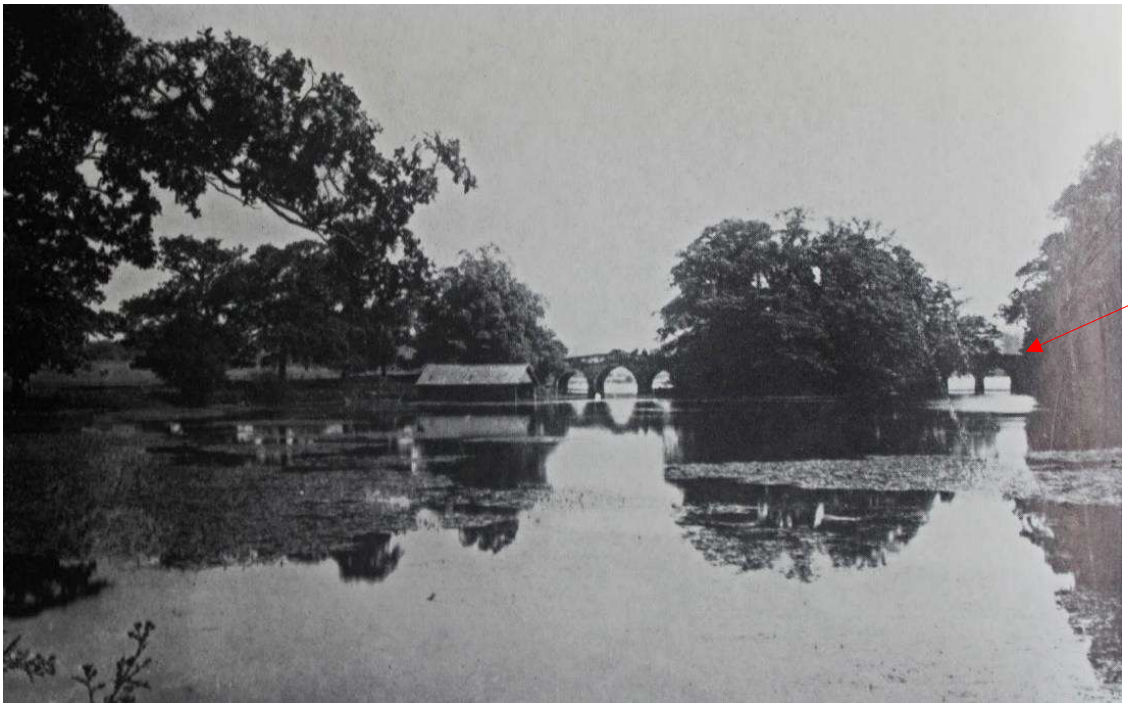


An access way is shown running reservoir embankment crest. At the change in embankment direction the track splits with leg extending from the eastern spur of the embankment westwards over the reservoir via two arched bridges positioned either side of a small island

Figure 4.

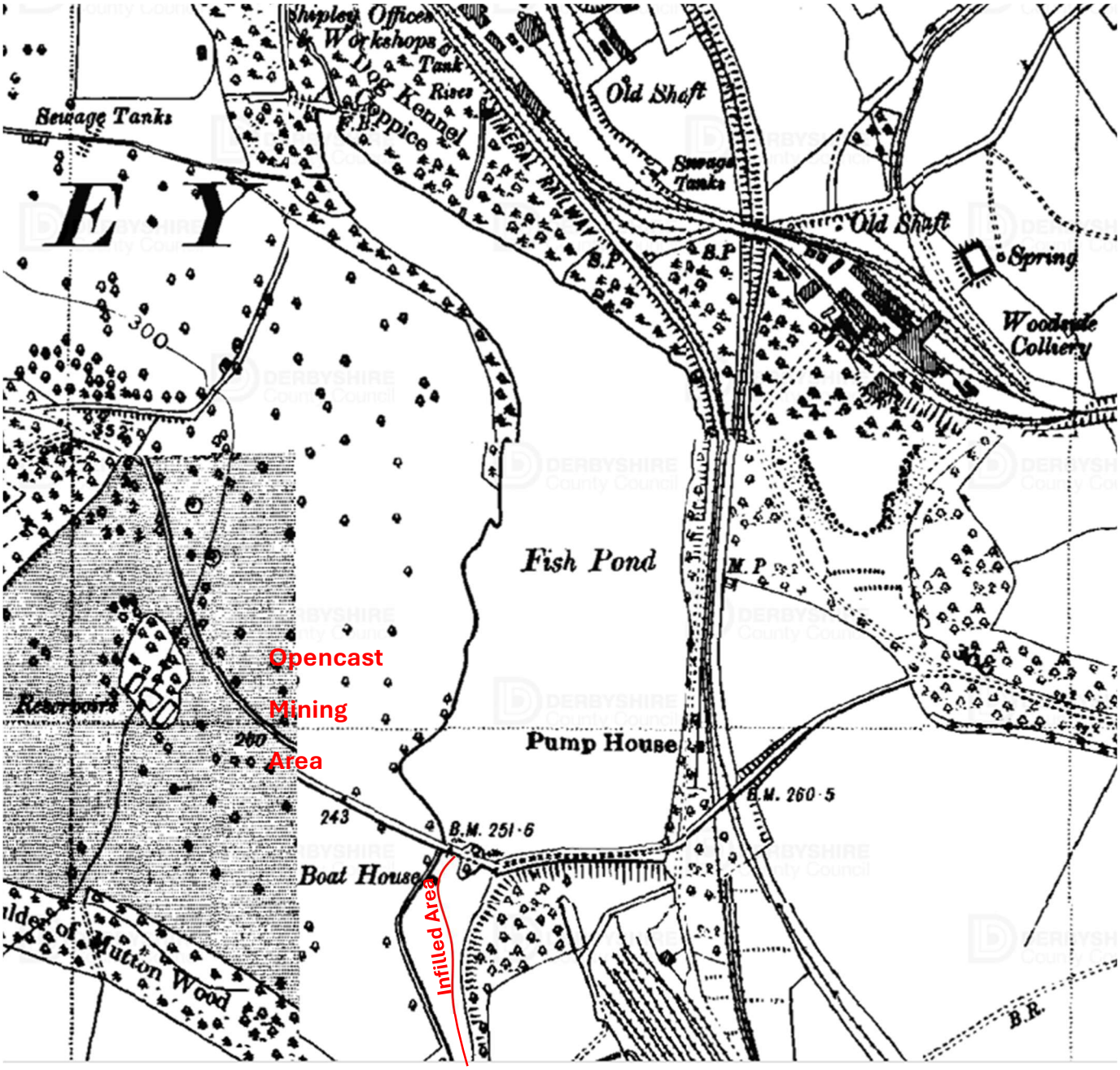
Historic Photograph of Original Arched Bridges and Boat House

Source: Derbyshire County Council Archives – undated photograph



The image above, Figure 4, is looking from the footbridge at the southernmost tip of the reservoir towards upstream (north). A boat house is shown downstream of the western three span arch bridge.

Figure 5.



Latest Historic DMap Available 1919-1939

The deep mining ceased in circa 1966. The ponded area downstream of the arch bridges became more isolated and western three span arch bridge was infilled including where boat house was located

The area was subject to extensive open cast mining the period from 1970 to 1974 during which time the reservoir was drained. However, the boundary of open cast mine workings was further away from west of arched bridges.

It is reasonable to assume that concrete repairs/Strengthening works to the Paul's Arm bridge may have carried out between 1970 to 1974 by the National Coal Board when track over the structure was used as access to Opencast Mining. However, there were no records found in the Derbyshire Record Office related to Paul's Arm bridge to verify any further details.

In 1976, the National Coal Board worked in conjunction with Derbyshire County Council to landscape the area and Shipley Country Park was opened in 1976.

The reservoir including the Paul's Arm Bridge is presently owned and maintained by Derbyshire County Council and sole purpose is amenity.

4. Maintenance Work Proposed to Paul's Arm Bridge

Following the inspection report produced by Mott Macdonald consultants (commissioned by the DCC), under the Section 10 of the Reservoirs Act 1975, recommendations were made to assess the extent of any repair/strengthening work to the structure and develop a maintenance plan.

Following Principal Bridge Inspection carried out by Structures Design Section of DCC in February 2023, several defects were identified. To maintain the structural integrity of the bridge proposed maintenance works are listed below:

- Site Clearance,
- Reconstruction of missing parts of downstream (southeast & southwest) wingwalls and pilasters with matching ashlar stone masonry,
- Repointing of masonry arch barrel, arch face and wing walls,
- Cleaning of brickwork and stone masonry,
- Removal of graffiti on masonry work,
- Removal of existing downstream (south) parapet,
- Installation of new upstream (north) and downstream (south) parapets,
- De-vegetation of masonry and around wingwalls,
- Resurfacing over the existing tarmac track.

5. Heritage Impact Assessment for Paul's Arm Bridge

Heritage impact assessment is aimed to assess the capacity for change and weigh up the balance between the long-term public benefit any perceived harm to the structure.

Following table provides maintenance options chosen and reasons for preferred approach and mitigation measures.

6. Justification for not to replace existing concrete repairs

At the site meeting with Heritage Consultant of Amber Valley District Council on 09/05/2024 DCC agreed to restore the missing stones and improve aesthetics of downstream elevation in a practicable way. Prior to listing this structure as Grade ll in 1986 we believe the structure had been repaired and strengthened with concrete in many places in an unsympathetic manner when it was believed to be under the ownership of the Coal Authority.

It is not intended to remove any old concrete repairs including the concrete beam at downstream elevation for the following reasons:

- Loss of structural integrity of the bridge as now the in-situ concrete beam has become part of the arch barrel, being monolithically bonded to stone masonry. It would require extensive temporary propping of the arch barrel in advance of removing the concrete beam.

- It would require extensive repair work to the barrel and voussoir after having removed the beam, and it would be beyond DCC's scope of proposed maintenance work.

- As heritage assets are irreplaceable any significant repair works which may pose risk should require clear and convincing justification.

Heritage Impact Assessment Table – Maintenance Works to Paul's Arm Bridge, Shipley Park, Heanor

DCC Proposal	Significance Level: High/Medium/Low	Beneficial Impact	Harmful Impact	Comments/Mitigation Measures
Site Clearance	Low	Facilitate maintenance work	None	Ecological survey already underway prior to works.
Reconstruction of missing parts of downstream (southeast & southwest) wingwalls and pilasters with matching ashlar stone masonry.	Low	Bringing back to its original condition/appearance, replacing missing stone masonry, and preserving historical features.	None	Use of matching ashlar stone masonry. To be sourced from quarries specified in SCOPE document. **See Appendix C** It may be possible to source ashlar stone masonry from the buried three span arch structure in the proximity of the bridge.
Repointing of masonry arch barrel, arch face and wing walls.	Medium	Ensure the structure is in sustained use and maintained.	Possible	Ensure repointing with correct mortar and finish specified in Appendix 24/1 in SCOPE
Cleaning of brickwork and stone masonry.	Medium	A key part of appearance and character of masonry.	Possible	It is important to find out Contractor's experience and competency. Trial area to be done under the supervision of DCC's Conservation Officer.
Removal of graffiti on masonry work	High	A key part of appearance and character of masonry and whole structure	Possible	To be carried out by a specialist contractor with necessary skills and experience with historic buildings.
Removal of existing downstream (south) parapet,	Low	Downstream parapet to be taken down to install new parapets	None	Make sure parapet to be taken down without damaging the existing stringcourse
Installation of new upstream (north) and downstream (south) parapets,	Medium	Restrain pedestrians and equestrians from falling into water.	Possible	Mesh infill panels are to be used recommended by the AVBC's heritage consultant as compared to solid panels. Parapets are to be painted with colour Derbyshire Green (RAL6006). **See Appendix B** for infill panel details.
De-vegetation in stone masonry and around wingwalls	Low	Ensure the structure is in sustained use and maintained.	Possible	Ensure no damage to existing brick and stone masonry during works and repointing of de-vegetated locations. Removal of tree roots and saplings without damaging foundations of structure.
Resurfacing over the existing tarmac track	Low	Improve surface water management over the structure, hence prevent damage due to leakage, and ensure sustainability.	Possible	Ensure no damage to stringcourse and handheld machines with no vibratory action to be used over the structure.
Maintain 3 Tonne weight restriction over the structure	Low	Restricted to light weight maintenance vehicles to prevent arch barrels getting overstressed by heavy axle loads.	None	Erect 3 Tonne weight restriction signs approach to the bridge.



Downstream Elevation

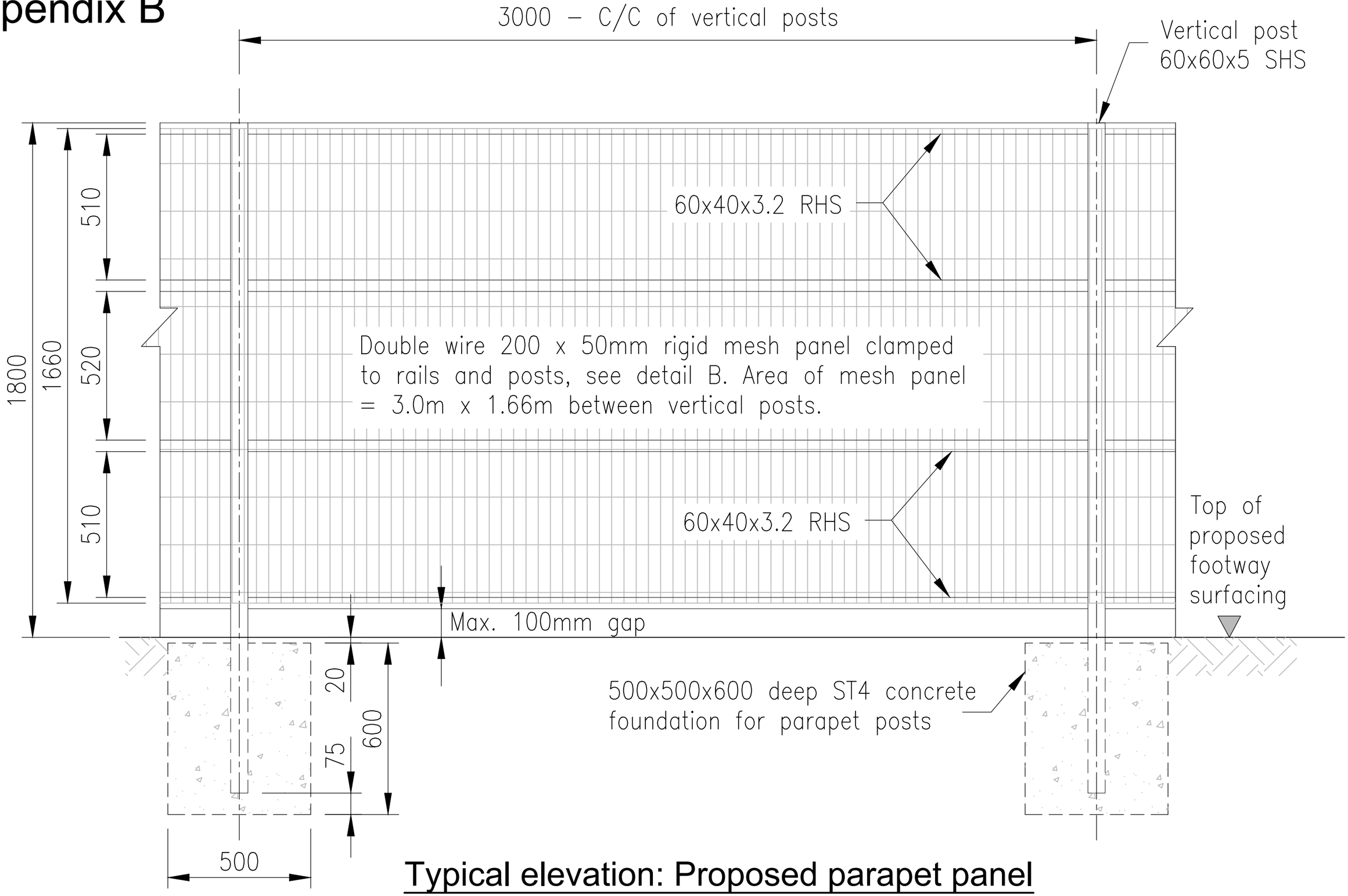


Upstream Elevation



Looking East Over Structure

Appendix B



Typical elevation: Proposed parapet panel

Not To Scale

Maintenance Works to Paul's Arm Bridge Shipley Lake Reservoir, Heanor

(January 2026)

Tender No. xxxx

Appendix C

NEC4 Engineering & Construction Short Contract

Scope
(Works Information)

Company/Organisation: Enter Tenderer's Name

FOR PLANNING

TABLE OF CONTENTS

SCOPE 3

1. Description of the Works 3
2. List of Drawings..... 4
3. Specifications with Additional Clauses and Appendices 5

Appendix Number	Appendix Title	Page No.
Appendix 0/1	Contract-Specific Additional, Substitute and Cancelled Clauses, Tables and Figures Included in the Contract	5
Appendix 1/1	Temporary Accommodation and Equipment for the Overseeing Organisation	15
Appendix 1/4	Working and Fabrication Drawings	16
Appendix 1/7	Site Extent and Limitations on Use	17
Appendix 1/9	Control of Noise and Vibration	18
Appendix 1/11	Temporary Works Design	19
Appendix 1/12	Setting Out and Existing Ground Levels	20
Appendix 1/14	Payment Applications	21
Appendix 1/16	Privately and Publicly Owned Services and Supplies	22
Appendix 1/23	Risks to Health and Safety	23
Appendix 2/1	List of Buildings, etc. to be Demolished or Partially Demolished	25
Appendix 4/1	Road Restraint System (Vehicle and Pedestrian)	26
Appendix 7/2	Excavation, Trimming and Reinstatement of Existing Surfaces	28
Appendix 7/4	Bond Coats, Tack Coats and Other Bituminous Sprays (Sheets 1, 2 and Binder Data Sheet)	29
Appendix 11/1	Footways and Paved Areas	30
Appendix 19/1	(Specification for Highway Works) Form HA/P1 (New Works) Paint System Sheet	31
Appendix 19/3	(Specification for Highway Works) Form HA/P2 Paint System Sheet	32
Appendix 19/5	General Requirements	33
Appendix 24/1	Brickwork, Blockwork and Stonework	34
Appendix 24/70	Treatment of Anti-Graffiti	36

4. Constraints on how the Contractor Provide the Works 37
5. Requirements for the Programme..... 38
6. Services and other things provided by the Client..... 39

SCOPE

1. Description of the works

Provide, construct, and maintain until the defects date all necessary work, including temporary works, in connection with:

Tender No. xxxx – Maintenance Works to Paul's Arm Bridge,
Shipley Lake Reservoir, Heanor

Works are to be carried out as detailed on the drawings listed in Section 2 and in accordance with the following Specifications, Clauses, and Requirements. Where there are no relevant specification or standard details mentioned in this document, Manual of Contract Documents for Highway Works Specification (updated MCHW Volume 1) & Highway Construction Details (updated MCHW Volume 3) will apply.

The Paul's Arm Bridge is designated as Grade II listed by Historic England

Main works required are:

- Site Clearance,
- Reconstruct missing parts of downstream (southeast & southwest) wingwalls and end finials stone masonry with matching ashlar stone masonry.
- Repointing of masonry arch barrel, arch face and wingwalls,
- Cleaning of brick and stone masonry,
- Removal of graffiti on masonry work,
- Removal of existing downstream (south) parapet,
- Installation of new upstream (north) and downstream (south) parapet,
- De-vegetation of masonry
- Resurfacing over the existing tarmac track
- Construction of new footpath at the existing north and south verges,
- Vegetation clearance adjacent to wingwalls.

Note:

In addition to the above list of works, the Contractor is advised to include any other construction activities deemed necessary to provide whole of works and priced in the Activity Schedule provided.

2. List of Drawings

Drawing Number	Drawing Title
E44015/4646.04/SK01	Location Plan
E44015/4646.04/01A	Existing Details
E44015/4646.04/02/Rev C	Proposed Works

List of scheme drawings are attached in Appendix A.

3. Specifications with Additional Clauses and Appendices

Appendix 0/1: Contract-Specific Additional, Substitute, and Cancelled Clauses, Tables and Figures Included in the Contract

Contract-Specific Additional Clauses Included in the Contract

Clause No (etc.)	Title	Written on Page No.
170 AR	Site Safety, Health and Welfare	6
171 AR	Advertisements and Name boards	6
172 AR	Protection from Nuisance due to the Works	7
173 AR	Environmental Protection Act 1990	7
174 AR	Accidents	7
175 AR	Damage to Property and the Highway	8
176 AR	Bank Holiday Working	8
177 AR	Sanitary Arrangements	8
178 AR	Contractor's Compounds and Temporary Accommodation	8
179 AR	Parking of the Contractor's Vehicle	9
180 AR	Public Relations	9
183 AR	Storage of Plant and Materials	9
187 AR	Temporary Access Scaffolding	10
670 AR	Disposal of Material	11
770 AR	Scarifying, Planing or Burning off Flexible Pavements	11
971 AR	Gas Detection	12
2470 AR	Health and Safety File	13

Clause No. (etc.)	Title and written text
170 AR	**Site Safety, Health, and Welfare** 1. The Contractor shall throughout the duration of the Works have full regard for the safety, health and welfare of all persons entitled to be on Site and shall provide for the appropriate measures to ensure safety of all concerned. 2. The Contractor and all Sub-Contractors employed by him shall comply fully with the "Health and Safety at Work Act 1974", the "Control of Pollution Act 1974", the "Control of Substances Hazardous to Health Regulations 2002", the "Environmental Protection Act 1990", the "Water Resources Act 1991", the "Construction (Design and Management) Regulations 2015" and all other relevant statutory requirements. 3. The Contractor shall provide a copy of his Statement of Health and Safety Policy, before the Commencement of the Works. 4. When appointed, the Contractor shall prepare a Site Safety procedure applicable to the Site and the nature of the Works, together with a plan showing the location of the facilities which he proposes to provide on Site. This shall be submitted to the Supervisor for approval within two weeks of the Contract award. 5. The Contractor shall appoint a supervisor(s) with appropriate qualifications and experience who will be familiar with all relevant health and safety legislation and who has the necessary experience and knowledge to carry out the Works in a safe manner. The particulars of the supervisor(s) shall be submitted to the Supervisor for approval with two weeks of the Contract award. 6. The Contractor shall arrange for regular periodic inspections to be carried out by his company Safety Officer/Advisor and that a written report of each inspection is copied to the Supervisor. 7. Regular Health and Safety meetings shall be held on Site, the prime function of these will be to keep under review the measures taken to ensure the health and safety at work for all site personnel.
171 AR	**Advertisements and Name Boards** All advertisements, Contractor's, and Sub Contractor's nameboards to be erected within the Site shall be submitted for acceptance by the Derbyshire County Council. Advertisements and nameboards will not be allowed in the vicinity of traffic lanes where these would distract drivers or conflict with statutory traffic signs. All advertisements and nameboards within the Site shall be removed within 2 weeks of the Completion Date. Nameboards providing directional information erected beyond the Site and within the highway shall only be erected with the consent of the Highway Authority.

Clause No. (etc.)	Title and written text
172 AR	**Protection from Nuisance Due to the Works** 1. Roads to be kept clean Existing roads and any new roads which are being used by traffic shall be kept clean of all dirt, mud or any other materials dropped from plant vehicles' tyres or tracks which are being used in connection with the Works. The Contractor shall procure as and when required equipment incorporating a brush suction device and collection compartment and such other plant, labour and equipment necessary to keep the roads clean. 2. Nuisance from dust The Contractor shall take all necessary measures to prevent dust arising from the Works causing nuisance to traffic and property, and keep available at all times plants, labour and equipment necessary to keep the roads clean.
173 AR	**Environmental Protection Act 1990** It is a requirement of the Act that all tips, whether permanent or temporary outside the limits of the site, should have a valid Waste Management Licence or an exemption and all transporters of waste should have a valid Waste Carriers Licence. A register of licensed tips may be consulted at the Environment Agency – Customer Services Manager, Trentside Offices, Scarrington Road, West Bridgeford, Nottingham NG2 5FA (Fax: 0115 981 7743). The Contractor shall provide to the Project Manager evidence of valid licences for all waste carriers and tips proposed to be used in this contract including those proposed to be used by any sub-contractors. For tipping other than at an already licensed tip, the Contractor shall arrange for his own Waste Management Licence. Consignment notes shall be fully completed in accordance with the Waste Management Regulations 1994 and the Hazardous Waste Regulations 2005.
174 AR	**Accidents** 1. In the event of any casualty or accident or damage to property on the Site, the Contractor shall comply with any Statutory requirements giving notice of such event. 2. The Contractor shall immediately report in writing to the Supervisor and in all cases not more than 24 hours after the event, any accidents arising out of, or in connection with the Works which cause death or personal injury to any person, whether connected with the Works or not, or any damage to property, giving full details and statements of witnesses. In the event of a claim being made against the Contractor, the Contractor shall promptly report the facts in writing to the Supervisor, together with full details of the claim.

Clause No. (etc.)	Title and written text
175 AR	**Damage to Property and the Highway** 1. Before the commencement of any part of the Works the Contractor shall inspect the condition of existing buildings, road and footway surfaces and installations, kerbs, verges, fences, walls and street furniture etc. He shall prepare a schedule noting all existing defects, together with sketches or photographs where necessary. The schedule shall be agreed with the Supervisor. The Contractor on completion of the Works or at such earlier time as may be required shall make good to the satisfaction of the Supervisor and any owners or public authorities concerned all damage additional to that agreed in the schedule. 2. In the event of the Contractor failing to prepare and agree a schedule of condition, the property in question shall be deemed to have been undamaged prior to the execution of the Works. 3. If, in the opinion of the Supervisor, the Contractor has failed to repair and make good within a reasonable time, any damage attributed to his actions, or has likewise failed to arrange for the repairs to be carried out, the Employer may himself arrange for the repairs to be carried out and deduct the expenses incurred from money due to the Contractor under the Contract.
176 AR	**Bank Holiday Working** The Contractor shall programme the Works such that no work is to be carried out on Bank Holidays.
177 AR	**Sanitary Arrangements** 1. Sufficient sanitary conveniences for all operatives and site staff engaged on the Works shall be provided and maintained by the Contractor in accordance with the "Code of Welfare Conditions for the Building Industry" and the "Construction (Health, Safety and Welfare) Regulations 1996" and to the satisfaction of the Sanitary Authority and the ground shall be deodorised at completion of the Works. The Contractor shall provide all other amenities in accordance with the above-mentioned Code of Welfare and Working Rule Agreement, including adequate heating, lighting, attendance etc. 2. The Contractor shall ensure that all operatives and site staff are aware that the sanitary conveniences provided must be used by all personnel and any person committing a nuisance on or about the Site by failing to use the conveniences provided will be dismissed from the Site. 3. The Contractor shall arrange for the disposal of sewage effluent arising from site toilets and the Contractor's and Engineer's offices.
178 AR	**Contractor's Compounds and Temporary Accommodation** The Contractor shall take all necessary measures to provide a site for his temporary accommodation which shall be close to the works to the satisfaction of Derbyshire County Council. The Contractor's compound shall provide adequate and sufficient parking space to enable compliance with Clause 179AR.

Clause No. (etc.)	Title and written text
179 AR	**Parking of the Contractor's Vehicles** Parking of all Contractor's and Sub-Contractor's vehicles shall be restricted to the site compound areas. Parking on any length of the public highway (including hard shoulders), in public car parks and in lay-bys shall not be permitted unless agreed otherwise with Derbyshire County Council.
180 AR	**Public Relations** The Contractor shall give a minimum of two weeks' notice to the relevant Local Authorities, Police Authorities, member of the public, and other affected parties so they are warned of any prolonged working at nights or a weekend, movements of heavy loads liable to cause traffic congestion and any other planned abnormal occurrence likely to cause disturbance to persons in the vicinity of the Works.
183 AR	**Storage of Plant and Materials** 1. The site for storage of plant and materials shall be approved by the Supervisor. 2. There shall be no storage of any materials, including soil, within river floodplains during the construction of the works unless agreed with the Supervisor. The extent of any floodplains will be shown on contract drawings. 3. All electrical plant and materials to be incorporated in permanent works shall be stored in weatherproof accommodation. 4. The Contractor shall, to the satisfaction of the Supervisor, minimise the use of the highway for storing or mixing materials. 5. Any obstruction to traffic or pedestrians shall be properly signed and protected. Footways shall be kept clear unless the Supervisor agrees otherwise. 6. Where there is no reasonable alternative to the use of the highway, boarding and/or heavy gauge plastic sheeting shall be used when mixing or depositing any material which is likely to stain or damage the highway. Similarly, the contractor shall take measures to ensure that no such material is allowed to enter any drain or sewer connected to the highway.

Clause No. (etc.)	Title and written text
187 AR	**Temporary Access Scaffolding** 1. All scaffolding provided shall comply with the requirements of the appropriate one(s) of the following codes: (i) Common Scaffold – BS12811 – 1: 2003; (ii) Suspended Scaffold – BS 5974: 2017; (iii) Special Scaffold Structures – BS 12811 – 1: 2003 (iv) TG20:13 Good Practice Guidance for Tube and Fitting Scaffolding. 2. Each scaffold should be either TG20 compliant and/or covered by manufacturer's instructions or, for a bespoke scaffold, subject to design and calculation by a Competent Engineer. 3. The Contractor shall be responsible for securing the Environment Agency's approval / consent (likely to be a bespoke environmental permit) as necessary. The Contractor shall allow sufficient time in his/her programme for submission and assessment / approval of the application and will be responsible for paying any relevant fees and associated costs. 4. A method statement including a statement defining the basis of the scaffold design (as per Items 1 & 2 above) and describing the proposed methods of access and sheeting shall be submitted by the Contractor, in writing, at least 7 days before it is programmed to be used. Any comments made by the Supervisor shall be fully acted upon and incorporated and/or discussed with the Supervisor to their satisfaction. When the scaffold is complete, certification stating the time and date the scaffold is ready for use shall be maintained. 5. Scaffolding work shall be undertaken under the immediate supervision of a competent person with adequate experience of this type of work. 6. Appropriate imposed and wind loads should be considered in the calculation. 7. Full details of the safe working load shall be attached to the scaffolding giving details of the correct distribution of personnel, plant and materials and the allowable depth of debris. 8. The elevation area to be used in calculating the horizontal transverse wind force on the scaffold shall be the total length of the access scaffold multiplied by its overall height.

Clause No. (etc.)	Title and written text
670 AR	**Disposal of Material** 1. All waste material shall be disposed of in accordance with the requirements of "The Control of Pollution Act 1974", "The Environmental Protection Act 1990" and any subsequent Regulations, Code of Practice etc, relevant to the above enacted by the Secretary of State for the Environment. 2. The Contractor shall ensure that all waste material is: - a. Deposited, treated or stored at a place which is exempt from the requirement to have a waste disposal licence or has a waste disposal licence relevant to the type of waste, is managed in accordance with the conditions of the waste disposal licence and will not cause pollution or harm to health; b. Prevented from escaping; c. Transferred to an "authorised person" for "authorised transport purposes". (An "authorised person" is a waste collection authority, a person who holds a waste disposal licence, a person exempt from licensing, a registered carrier, an exempt carrier etc); d. Transferred to an “authorised person” with a written description of the waste. A controlled waste transfer note must be completed and signed by the appropriate persons when the waste changes hands. Copies of the transfer note must be retained for a period of two years. 3. The Contractor shall provide the Supervisor with:- a. Written details of the place of disposal, treatment, or storage (and subsequent use), together with the waste disposal licence number (if appropriate), the name of the licensing authority and the name and registration number (if appropriate) of the registered carrier. b. A copy, as requested, of any controlled waste transfer notes, including individual load records against a single waste transfer note, relevant to the works. 4. The Contractor shall ensure that all sub-contractors employed on the works comply with the requirements of sub-clause 1 and 2 of this clause. The Contractor (where works have been sub-contracted) will be personally responsible for complying with the requirements of sub-clause 3(a) and 3(b) of this clause.
770 AR	**Scarifying, Planing or Burning off Flexible Pavements** 1. When scarifying, planing or burning-off existing roads, no vertical step greater than 0mm shall be formed in the existing carriageway left open to traffic. A temporary ramp of material complying with Clause 910 shall be laid across the step until the discontinuity is made up with resurfacing or regulating material as described in the Contract, at which time the temporary ramps shall be taken out. 2. Scarifying, planing or burning-off shall not begin if the surface to be treated is to be left more than 14 days before the application of an overlying course of material.

Clause No. (etc.)	Title and written text
971 AR	**Gas Detection** 1. The Contractor shall, 24 hours in advance of any mechanical planing and/or surfacing works, carry out a series of tests for the detection of combustible gases. 2. The combustible gas detection equipment shall comply with the requirements of BS 6020 Parts 1 and 5. The portable equipment shall be capable of sensing the presence of combustible gases or vapour concentrations within the air, and shall emit a visual or audible signal at the concentration stipulated in BS 6020 (viz:- 60% of the Lower Explosive Limit). 3. The equipment shall be used in accordance with the British Standard Code of Practice, BS 6959 and the manufacturer's instructions. The portable equipment shall be used to detect the presence of combustible gases WITH and ADJACENT to each individual chamber (i.e. manhole, gully, gas valve etc) situated on the section of carriageway and/or footway to be mechanically planed and/or surfaced. When sampling vapour or gas above a liquid, care should be taken to avoid the sample line or sensor from coming into contact with the liquid, since this may block the entry of vapour or gas into the equipment. 4. The Contractor shall ensure that the person(s) undertaking the tests for combustible gases are fully conversant with the use of the portable gas detection equipment, have been fully trained in the use of the equipment and have ready access to the operating instructions. 5. The Contractor shall provide, erect and maintain such traffic signs, lamps, barriers and traffic control signals and such other measures as may be necessitated by the tests for combustible gases in accordance with the recommendations contained in Chapter 8 of the Traffic Signs Manual. 6. The Contractor shall certify to the Engineer, in writing, the results of the tests for combustible gases. a. Should the tests detect the presence of combustible gases the Contractor shall immediately notify the relevant Authority or Statutory Undertaker of the location and presence of combustible gas within their apparatus. All mechanical planing and/or surfacing works shall be postponed and will not commence until the build-up of combustible gas has been dissipated from detected area. b. A series of further tests shall be undertaken by the Contractor, if the preceding series of tests detected the presence of combustible gases. c. Should the tests fail to detect the presence of combustible gases the Contractor shall issue the Engineer a certificate stating: - • Testing for combustible gases has been undertaken, by a fully qualified person, in accordance with sub-clause 1 to 6 of this specification. • The date and time of commencement and completion of the testing. • The site location. • Confirm that the site is free from combustible gases. Following the issue of the certificate, to the Engineer, the Contractor may proceed with mechanical planing and/or surfacing works.

Clause No. (etc.)	Title and written text
2470 AR	**Health and Safety File** **1. General** 1.1 The contractor in his role as Principal Contractor shall provide particular information in the specified format(s) and at the timings indicated within this clause to the Principal Designer or Supervisor as appropriate to facilitate the production of the Health and Safety File as required by the CDM Regulations (2015). The Contractor should follow Interim Advice Note 105/08 (for the supply of any information required for the Health and Safety File relating to those elements of the design which the Contractor is responsible for. **2. Information Required** 2.1 The Principal Contractor shall provide original copies of all drawings that relate to those aspects of the design for which he, or his sub-contractors and suppliers, have a direct responsibility. Such drawings shall be inclusive of all construction stage amendments introduced via approved changes and may include drawings initially produced by the Principal Contractor's sub-contractors and suppliers. Responsibility for the as-built version of all such drawings lies with the Principal Contractor. 2.2 The Principal Contractor shall provide copies of product data sheets and other technical literature relating to all materials that are approved for incorporation into the Works that have health and safety implications, including maintenance facilities. All such information shall bear the name, address and contact numbers of the manufacturer / supplier of these materials. 2.3 The Principal Contractor shall provide as-built information relating to all Statutory Undertaker's equipment that is exposed during, or affected by, the Works. This will exclude such work carried out in advance of the works contract by others (unless subsequently exposed during the works) but will include all existing supplies and services exposed during the works and all main service diversions required by these works whether carried out by others, the Principal Contractor or his sub-contractors. 2.4 The Principal Contractor shall provide copies of all Method Statements originated by the Principal Contractor or his sub-contractors that relate to the Works. 2.5 Not used – refers to Signals & Lighting – Specification Clause 1402. 2.6 The Principal Contractor shall provide the following information in relation to each individual structure in accordance with CG 302: i) As built drawings, including updated details of Statutory Undertakers' equipment; ii) Contractors' as-built construction programme iii) List of sub-contractors iv) Details of suppliers and materials v) Precast Concrete unit test certificates/results vi) Other material test results vii) Any other relevant Test Certificates viii) Environmental measures carried out during construction

Clause No. (etc.)	Title and written text
2470 AR (contd.)	**3. Formats Required** 3.1 All drawings submitted by the Principal Contractor in accordance with paragraphs 2.1 and 2.6 above shall be paper originals, in colour if necessary, and on the appropriate standard sized sheets (A1, A3 and A4). Drawings submitted by the Principal Contractor in accordance with paragraph 2.5 shall be in the format(s) described in Specification Clause 1402. All drawings shall clearly indicate the Project Title, Drawing Title, Drawing Number, date of production, scale and initials of those persons responsible for production and checking the drawing. Each drawing shall be clearly marked as-built and identify the company responsible for the producing this drawing. 3.2 The as-built information required by paragraph 2.3 above will be in the form of electronic survey data compatible with Mx Professional for Windows and shall be submitted to the Supervisor who shall arrange for the information so provided to be incorporated into the as-built service drawings. Equipment belonging to each Statutory Undertaker shall be clearly distinguishable from each other by colour, line style and by use of specific string labels. Precise formatting for each service type shall be agreed between the Principal Contractor and the Supervisor. **4. Timing of Submission** 4.1 All information as defined by paragraphs 2.1, 2.2 and 3.1 shall be submitted to the Principal Designer or Supervisor within six months after Completion. 4.2 All information as defined by paragraphs 2.3 and 3.2 shall be submitted to the Supervisor at monthly intervals as the works progress. The survey information will be cumulative in content. **5. Contract Health and Safety File** 5.1 The Principal Contractor shall be responsible for the production and compilation of the works Health and Safety File to those standards listed above.

Contract-Specific Substitute, and Cancelled Clauses, Tables and Figures Included in the Contract

None included.

Appendix 1/1: Temporary Accommodation and Equipment for the Overseeing Organisation

Accommodation Required

Overseeing Organisation's Supervisor or his representative will visit site on a daily basis – the Contractor is to provide shared accommodation within the Contractor's accommodation when required.

The Contractor is to supply all the necessary equipment for the control and supervision of the works – Example: Weather and Humidity Measuring and paint Thickness" Measurement tools etc. for onsite paintwork.

The Contractor shall supply minimum, but adequate to meet health and safety requirements, site accommodation and facilities for his work force based on the types of work and duration required.

Appendix 1/4: Working and Fabrication Drawings

Series	Description of Work	Minimum period for submission of drawings
400	Fabrication Drawings	2 weeks prior to commencement of fabrication of parapets
	Steel supplier's product identification certificate	Prior to steel fabrication work

Appendix 1/7: Site Extent and Limitations on use

Extent of Site

The extent of the site is indicated on the drawing No. E44015 / 4646.04 / 01 - Existing Details.

Limitations on the Use of Site

Damages to any land or road adjacent to site shall be kept to a minimum and these shall be reinstated upon completion of the works to the satisfaction of the Overseeing Organisation. The Contractor shall maintain site and keep it in a clean and tidy condition.

The site extents indicated are deemed to be for the purposes of this contract only and are to enable all the works operations required under this contract to be carried out.

The site extents indicated are not meant to imply that access onto adjacent land has been agreed. Separate consultations with adjacent landowners may be required.

The Contractor shall be aware that some work operations within the public footpath may require safe areas by the works for pedestrians and hence may require the introduction of temporary pedestrian traffic control and signage at such areas of the site.

No equipment, plant, materials, or other items will be permitted to remain or to be placed on areas which are not part of the Site with the exception of items needed to control pedestrian traffic which have been placed in positions agreed by the Supervisor.

The Contractor shall take all due care to avoid damage to the grass verges, carriageway, footways and the drainage system, providing sleeper or other protection whenever he requires plant or vehicles to cross these features. Any damaged areas of verge shall be reinstated with topsoil and seeded in accordance with the specification. Any damaged or disturbance to drains shall be reinstated by the Contractor within 24 hours or such other time as the Supervisor may agree in writing and works to check adjacent lengths of drains possibly damaged by Contractor's plant shall be carried out concurrently if the Supervisor so directs. Other areas of the Site, including the Contractor's accesses shall be reinstated to the original condition on completion of the Works.

No materials will be allowed to be stored on areas designated as public highway without the prior consent of the Supervisor.

All advertisements, contractors, and sub-contractors name-boards to be erected within the Site shall be approved by the Supervisor. All advertisements and nameboards within the site shall be removed within two weeks of the date of the Certificate of Completion of the Works.

The Contractor shall take all necessary precautions within the Site, and land temporarily occupied for purposes of the Contract, against the growth of weed injurious to agriculture until the defects date.

Appendix 1/9: Control of Noise and Vibration

1. The measures detailed in this Appendix are given as a guide; however, it is for the Contractor to decide whether to seek the Local Authority's formal consent to his proposed methods of work and to the steps he proposes in order to minimise the noise.

   The local authority is: **Amber Valley Borough Council**
   Town Hall
   Market Place
   Ripley
   Derbyshire
   DE5 3BT

   Tel: 01773 570222

2. Local Authorities generally agree that the following measures can be acceptable to them, and these are given here as a guide.

Restrictions on Working Hours:

1. The normal working hours within the Site shall be Monday to Friday between 07:30 and 17:00 hours. Consent for work outside these hours may be given after any necessary consultation. Notice of at least 7 days is required from the Contractor when seeking such consent.

2. All vehicles and mechanical plant used on the Works shall be fitted with effective silencers and shall be maintained in good and efficient working order. Machines in intermittent use shall be shut down in the periods between work or throttled down to a minimum. The Contractor shall remove from the site any item of plant which in the opinion of the Supervisor is not effectively silenced.

3. All compressors shall be 'sound reduced' models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers. Pumps and mechanical static plant shall be enclosed by acoustic sheds or screens where necessary.

4. Any plant such as generators and pumps which is required to work outside the hours 0700 -1800 shall be surrounded by an acoustic enclosure which shall restrict the noise levels to not less than 5 dB(A) below levels quoted in the schedule for normal night-time working.

5. The Contractor shall undertake letter-drops to all properties within 250m of the site prior to commencement of the works (or phase of works) in order to inform residents of the nature of the operations, the duration and the proposed working hours. The letter should also provide a contact telephone number for use in the event of a query or complaint.

6. The Contractor shall also inform affected properties of the date/time and details of any specific operations that cause specific disruption (e.g., limited access to/from properties). The contact number given in any letter-drops shall be manned during all working hours. Copies of any letters issued by letter-drop shall be given to the Local Authority contacts detailed above.

Appendix 1/11: Temporary Works Design

The Contractor is responsible for all temporary works and its design and shall be included in his rates. It is anticipated that the following areas of temporary works would require design:

Temporary access scaffolding

Fluming water using a temporary barrier / sandbags.

This list is **not** exhaustive, and the Contractor should account for all temporary works they deem necessary to safely construct the project.

Appendix 1/12: Setting Out and Existing Ground Levels

The Contractor shall carry out a survey of the existing profile of the track and north & south verges in order to produce fabrication drawings of the proposed upstream and downstream parapets.

Appendix 1/14: Payment Applications

The Contractor is paid for each activity at the assessment date following its completion.

Appendix 1/16: Privately and Publicly Owned Services and Supplies

At present, there are no known services and supplies exists within the vicinity of the works.

Before commencing excavations, the Contractor shall carry out trial holes at the location of proposed parapet post locations to identify any potential underground services and to determine the depth of cover (fill). The number and locations of trial holes shall be agreed with the Supervisor. See Appendix 4/1 for details.

Statutory Undertaker/ DCC Contact	Apparatus	Contact Details	Work Required on Site	Action to be taken
Derbyshire County Council - Countryside	N/A	John.thompson@derbyshire.gov.uk	Any queries relating to Shipley Park and access to non-permitted areas if needed	If and when required
Conservation officer historic buildings Derbyshire County Council	Grade II listed building	Alex Gilbert 01629 539795 alex.gilbert@derbyshire.gov.uk	Repointing of masonry	If and when required

Appendix 1/23: Risks to Health and Safety from Materials or Substances

Restrictions in relation to traffic/pedestrian management measures: -

The proposed traffic/pedestrian safety management measures outlined elsewhere in this document should provide adequate safety zones to protect against materials and substances generated by or used in the works. Localised additional fencing off and screening may need to be utilised adjacent to unprotected operational areas of work.

Restrictions in relation to working practices: -

Where substances hazardous to health (as indicated in (e) below) are generated by or used in the Works, then restrictions/precautions in relation to working practices shall be submitted by the Contractor to the Supervisor in the form of a risk assessment. This shall give details of the measures to be taken to prevent or control the exposure of those working with the substances to acceptable levels.

Measures to be taken to protect members of the public: -

Where substances hazardous to health (as indicated in (e) below) are generated by or used in the Works, then the Contractor shall submit details to the Supervisor of his requirements to prevent or control exposure of members of the public.

Monitoring to be undertaken by Contractor: -

Where substances hazardous to health (as indicated below) are generated by or used in the Works, then the Contractor shall submit details to the Supervisor of his proposals to monitor exposure of the workforce and public to such substances.

The Contractor shall provide all site operatives with personal protective equipment commensurate with the operations being carried out and shall ensure it is utilised correctly throughout the workforce.

Substances Hazardous to Health: -

<u>Low Risk Substances</u>

1. Bituminous Tapes
2. Sand
3. Natural Aggregates
4. Pulverised Fuel Ash
5. Blast Furnace Slag
6. Dust from cutting of Macadams/Asphalts
7. Water Based Admixtures

Moderate Risk Substances

1. Coated Roadstone (Macadams/HRA)
2. Line Marking Paints
3. Phenolic Undercoats/Finishes
4. Alkyd Undercoats/Finishes
5. Acrylated Rubber Primers/Undercoats/Finishes
6. Chlorinated Rubber Primers/Undercoats/Finishes
7. Vinyl Primers/Undercoats/Finishes
8. Timber Primers/Finishes
9. Varnishes for Wood
10. Thermoplastic
11. Bitumen Joint Sealing Compounds, etc
12. Cement
13. Cementitious Mortars and Grouts
14. Concrete
15. Bituminous Waterproof Adhesive Membrane
16. Bitumen Cutback
17. Coal Tar Creosote
18. Dust from Cutting of Cement, Concrete etc
19. Metallic Abrasive for Blasting
20. Solvent Based Concrete Curing Agents
21. Existing carriageway materials containing Tar

High Risk Substances

1. Polyurethane Bridge Deck Waterproofing System
2. Polyurethane Primers/Undercoats/Finishes
3. Polyurethane Sealants
4. Epoxy Adhesives with Flammable Solvents
5. Epoxy Adhesives with Non-Flammable Solvents
6. Epoxy Adhesives in Water Base
7. Epoxy Mortars
8. Epoxy Based Primers/Undercoats/Finishes
9. Polyureide Bridge Deck Waterproofing Membranes
10. Bituminous Primers and Coatings
11. Dust from Cutting of Hard Woods
12 Dust and debris from Preparation of Previously Painted Surfaces
13. Silicone Waterproofing Agent
14. U2 Hazardous Materials
15. Lead Paint
16. Zinc Paint
17. Aluminium Paint

The above lists are not exhaustive and not all of the above substances are expected to be encountered during the Works.

Appendix 2/1: List of Buildings, etc. to be Demolished or Partially Demolished

Following items require removing and disposal off site.

- Existing downstream (south) parapet;
- Heras fencing in front of existing upstream parapet (trackside face);
- Metal angles, barbed wire fence and other fixtures attached to existing upstream parapet (trackside face);
- Metal wire fence at the departure and approach ends of existing upstream parapet for the installation of proposed equestrian parapet. Length of metal wire fence requires removing shall be agreed with the Supervisor.
- Items arising from vegetation and saplings clearance.

Appendix 4/1: Road Restraint Systems (Vehicle and Pedestrian)

Temporary Edge Protection Barriers

No work to the parapet systems should be carried out until the temporary edge protection system in place to protect the pedestrians, cyclists and equestrians during parapet installation.

The location and type of barrier to be used is to be submitted to the Overseeing Organisation for approval prior to use on site.

Edge protection system should be a minimum of 1.8m high and have solid / mesh infill and suitable sheeting to prevent any dust or arisings from the works. All gaps between panels should be filled to ensure no objects may fall onto the watercourse below.

Trial Holes

Prior to fabrication of proposed parapets, trial holes 300mm x 300mm to be excavated over the structure to a depth of 600 mm to ensure adequate depth to the parapet post foundations.

- Three trial holes within the north verge (1 located at centre of pier, 2 located at either side of the bridge measuring 3m from centre of pier)
- Three trial holes within the south verge (1 located at centre of pier, 2 located at either side of the bridge measuring 3m from centre of pier)

Pedestrian Restraint Systems

1. Requirements for pedestrian parapet:

   Proposed upstream and downstream equestrian parapet of Paul's Arm Bridge to meet the specification below (derived in accordance with BS: 7818:1995). Details of the proposed system including the section details and items noted below should be agreed with the overseeing organisation prior to commencing fabrication of any parts.

Item	Detail
Material	Steel
Surface Protection	All welds to be smooth with platter removed prior to surface preparation. After completion of fabrication, parapet shall be hot dip galvanized in accordance with BS EN ISO 1461 (thickness to be set to meet durability requirement in Appendix 19/1). Further requirements for protection and painting are given in Appendix 19/1.
Guard Rails	Steel, Cl. 1.5.2a Class 3 loading (minimum); Minimum height - 1.8m above surfacing.
Infill and Protection	Steel, Cl. 1.5.2b Class C (minimum). Refer to Drawing No. E44015/4646.04/02/Rev C – Proposed Works for details regarding infill and protection.
Detailed Layout	Required layouts and section size as shown on drawing no. E44015/4646.04/02/Rev C.

Details of attachment to any safety fence	N./A.
Availability of Storage at site	To be completed by Contractor
Erection requirements	To be completed by Contractor
Method of securing attachments against vandalism	N/A
Weld defect levels for acceptance	Change in cross-section and porosity of weld not permitted

2. Requirements for material and section sizes:

- Required layouts and section sizes as shown on drawing no. E44015/4646.04/02/Rev C.
- All structural hollow section – Hot finished structural hollow sections to EN 10210: S355J0

3. Weld Requirements

- All welds to be 4 fillet weld unless noted otherwise.

4. Connections

Spigot welded centrally to the post (end chamfered prior to) to take incoming rectangular hollow sections for top and bottom rails.

5. Galvanise and Air Vents

- Air vent holes at upstream end of top and bottom rails at lower face.
- 12mm dia. galvanise vent holes at top and bottom of each infill.
- 35mm dia. galvanise vent in the centre of base plate.
- Post to have minimum 10 mm drain holes central with the rail section and at bottom where necessary.

6. Weld Testing

As per the table below.

Clause	Work, Goods or Material	Test	Frequency of Testing	Test Certificate	Comments
Series 400					
402	Welding	Welding procedures (manufacturer's test)	As required in sub-Clause 402.7 i & ii	Test certificates to be submitted to the Overseeing Organisation	Quality management scheme applies
		Welder qualification (manufacturer's test)	As required in sub-Clause 402.7 iii		
		Production testing (manufacturer's test)	As required in sub-Clause 402.7 iv		
		Fillet Welds Non destructive test MPI test.	Min 25% of length of welds		

Appendix 7/2: Excavation, Trimming and reinstatement of existing surfaces.

1. Excavation of Existing Surfaces

1.1. The boundaries of existing track shown on the drawing to be saw cut to 100 mm. depth. Longitudinal joints at tie-ins shall be made good over the whole length prior to construction of new footway area.

2. Junctions between New and Existing Pavements / Paved Areas

2.1. Joints between new and existing pavements/paved areas shall be sealed with hot bituminous binder prior to the laying of bituminous materials.

2.2. All transverse joints shall be saw cut vertical. Vertical faces shall be painted with hot bituminous binder, prior to the laying of surfacing course.

Appendix 7/4: Bond Coats, Tack Coats and Other Bituminous Sprays (Sheets 1, 2 and Binder Data Sheet)

Bond Coat

1. A bond coat shall be applied prior to laying of the surfacing course on to the existing bituminous material.

Appendix 11/1: Footways and Paved Areas

Footway Surfacing:

The footway and paved area layouts, showing the types are shown on the contract drawings.

The formation shall be sprayed with a total weed killer in accordance with the manufacturer's instructions prior to laying the sub-base layer.

Footway Surfacing					
Material Course	**Clause**	**Material**	**Grade of Binder**	**Thickness (mm)**	**Special Requirements**
Surface Course	909	AC 6 dense surf (PD 6691 reference)	100/150	20	PSV coarse aggregate 45 min.
Binder Course	906	AC 20 dense bin (PD 6691 reference)	100/150	50	Regulating Course 50-70 mm over the new footway area
Sub-base	803	Type 1 Unbound Mixture	N/A	100	

Footway Edging:

The edging of the footway shall be secured as detailed on drawing no. E44015 / 4646.04 / 02 / Rev C.

APPENDIX 19/1: (Specification for Highway Works) Form HA/P1 (New Works) Paint System Sheet

Sheet for Proposed Upstream (North) and Downstream (South) Parapets

1. CONTRACT TITLE: **Maintenance Works to Paul's Arm Bridge, Shipley Lake Reservoir, Heanor** STRUCTURE No**: E44015** **TENDER NO.: xxxx** GRID REF: **SK444438**.				
2. DATE OF ISSUE OF DOCUMENTS TO TENDERERS: **May 2024**				
3. ENVIRONMENT AND ACCESSIBILITY: **Inland, Difficult Areas, Watercourse below.**				
4. REQUIRED DURABILITY OF SYSTEM: NO MAINTENANCE: 12 YEARS MINOR MAINTENANCE: 12 YEARS MAJOR MAINTENANCE: 20 YEARS				5. COLOUR OF FINISH **Green** **RAL 6006**
6. PAINT SYSTEM TO BE APPLIED OVER: AREA REF: **ALL** AREA DESCRIPTION: **The whole upstream and downstream parapet steelworks including mesh panels.** PROTECTIVE SYSTEM TYPE: **IV (Hot Dip Galvanized)**				
7. DETAILS	1st Coat	2nd Coat	3rd Coat	4th Coat
Registered Description Item No. and Colour Date Registered Brand Name & Manufacturer's Ref No. Manufacturer's Data Sheet No. Where applied How applied Min. dry film thickness (mdft) Max. local dft (see Cl. 1914.7) Estimated total volume of paint likely to be used (litres) 'A' type testing required? (YES) (See Cl 1912.3) 'B' type testing required? (NO) (See Cl 1912.9)				
8. STRIPE COAT DESCRIPTION (Including Item No. and colour) Workshop: Site:			9. PAINT MANUFACTURER'S OFFICIAL STAMP:	
10. Mdft (µm) **NOTE:** The minimum total dry film thickness of the paint system, neglecting primers and sealers under 30 microns, shall not be less than the minimum value given for the paint system in Tables 19/2B, 19/3B or 19/4C as appropriate.			11. APPROVED BY: DATE:	

[Note to compiler:

(i) The above is Appendix 19/1 Form HA/P1 (New Works) Paint System Sheet; a separate form should be provided for each structure, including CCTV masts, cantilever masts, steel lighting columns and bracket arms if appropriate, with items 1 to 5 completed. Sheets should be numbered for easy identification.]

APPENDIX 19/3:

(SPECIFICATION FOR HIGHWAY WORKS)
FORM HA/P2 PAINT DATA SHEET

BBA HAPAS Road and Bridge Certificate Reference and Date:

Manufacturer :

Item No. :

Registered Description :

Brand Name and Reference No. :

Consistency and Method of Application :

Weight per 5 Litres (kg) :

Specific Gravity : Colour:

For two pack paints

Base: Activator : Mixed components:

Volume Solids% :

For two pack paints volume solids % for mixed paint:

VOC content g/l (mixed) :

Manufacturer's Minimum Dry Film

Thickness Range
Recommended lower mdft :
Recommended upper mdft :

Full Application Instructions: :

Mix Ratio :

Flash Point :

		5°C	10°C	20°C	30°C
Drying Times (hours)	Surface Dry				
	Hard Dry				
Overcoating Times (hours)	Minimum				
	Maximum				
Pot Life (hours)					

Cleaning Solvent :

State effects on Drying Times of Temperatures below 20°C :

Manufacturer's Application Restrictions, e.g. for Temperatures or Humidity :

Manufacturer's General Recommendations :

APPENDIX 19/5: General Requirements

1. The completion of painting for the new parapet steelwork in an offsite workshop is envisaged. For any painting or touching up completed on site, the Contractor shall be approved by the NHSS 19A and 19B and provide any necessary screening etc. to enable the work to be carried out without risk to his staff or to the public. The provision of heated shelters is likely to be required to comply with Cl. 1914.4.

2. “B sample” shall be provided as required by Cl.1912 for testing.

3. Paints for any one system shall be obtained from the same manufacturer.

APPENDIX 24/1: Brickwork, Blockwork AND Stonework

Preparation

- Existing mortar joints to be raked out using a suitable hand tool to remove all loose, friable and deleterious material. No power tools should be used for raking out the joints.
- Care shall be taken to avoid damage to existing brickwork and stonework.
- Areas of sound existing mortar shall be left in place.

Cleaning Brick/Stonework

- Steam cleaning and power wash to remove leachate staining and algae.

Repointing

- Mortar shall be non-hydrated hydraulic lime mortar mixed with well washed yellow sharp sand with a good range of particle sizes. No cement additives should be used.
- Example - Proportions to be 1:3, NHL 3.5 to Sand and well mixed; some suppliers of hydraulic lime suggest that it is put in a mixer with the sand for at least half an hour.

  NHL3.5

  Areas to be repointed – Stone arch faces and Wingwalls

  NHL5

  Areas to be repointed – Arch barrel and abutment faces (Locations where mortar is more susceptible to freeze/thaw)

- The finish of the pointing should be bag rubbed or stippled with a brush.
- Any mortar splashes over adjacent stonework shall be removed before set.

The Contractor shall obtain approval from the Council's Planning and Conservation Officer for a sample panel of masonry re-pointing prior to commencement of re-pointing work.

Cracked Joint Repairs

Repairs to treat joints shall be raking out the cracked joint, insert 6mm Helibar and repointed over with lime mortar. Specific areas affected are not shown on the drawing or not quantified at this stage. Areas to be confirmed at construction stage in consultation with DCC's Council's Planning and Conservation Officer and work will be issued as a compensation event.

Cracked or Missing Stonework/Brickwork

Contractor shall take exact measurement for the missing stones and cracked bricks. Colour and quality of masonry shall be a good match with existing masonry stones or brickwork. Reclaimed bricks may be available from existing buried three span brick arch structure, believed to have been constructed in similar years as Paul's Arm bridge. Specific areas affected are not shown on the drawing or not quantified at this stage. Areas to be confirmed at construction stage in consultation with DCC's Council's Planning and Conservation Officer and work will be issued as a compensation event.

Reconstruction of missing parts of downstream wingwalls and end finials

The Contractor to construct missing parts of downstream wingwalls and end finials stone masonry with matching ashlar stone masonry.

The locations of such areas and measurements are as shown on contract drawing E44015 / 4646.04 / 05.

The Contractor to provide a sample from the quarries so that DCC heritage personnel can compare with the existing stone prior to reconstruction work proceeds.

Possible source of procuring quarry stones for sampling are as below:

1. Stanton Moor – Dale View Quarry (Marshalls) – buff/ yellow sandstone gritstone

2. Blaxter Stone – Dunhouse Quarry (Northumberland) – yellow coal measures sandstone Blaxter - Dunhouse Natural Stone

APPENDIX 24/70: Removal of Graffiti

- Graffiti removal shall be carried out by a specialist contractor with the necessary skill and experience with historic buildings.

- Initial recommended method on the trial area would be use of AG4 graffiti remover with hot water and steam power wash. Following removal of graffiti, stonework/brickwork would require cleaning with water and steam power wash to eliminate darker and uncleaned areas.

- Run-off shall need to be contained to prevent it entering into the watercourse.

The Contractor shall obtain approval from the Council's Planning and Conservation Officer for a trial area to ensure graffiti residues do not remain on the substrate in faded or outline form.

4.0 Constraints on how the *Contractor* Provide the Works

Following tender award, a period of four weeks will be allowed before the starting date on site, so that the successful tenderer is able to organise their sub-contractors and to submit method of working and risk assessments to Derbyshire County Council.

Temporary works to facilitate maintenance works shall be erected around or under the arches allowing unobstructed flow under both arches. All temporary works and obstructions should be removed in case of a severe weather warning.

The track over the structure to be opened for pedestrians throughout the contract period.

A 3 Tonne structural weight restriction is imposed over the Paul's Arm Bridge. The Contractors attention is drawn to the limitation of the plant that can be used within the footway over.

Prior to any work operations being commenced, method statements shall be submitted to the Supervisor before those operations will be allowed to proceed.

The Contractor shall obtain approval from the Council's Planning and Conservation Division for a sample panel of masonry re-pointing on the arch barrel prior to commencement of re-pointing work. Contractor shall provide safe access to the Council's conservation officer for inspection of the sample panel.

5.0 Requirements for the programme

The Contractor shall provide an outline programme for the works in the form of a bar chart produced as a result of a critical path analysis; this shall be returned as part of the tender return documents. Contractor shall refer to all “Constraints” and “Special Requirements” given in previous sections and allocated time and resources accordingly in his programme where necessary. It shall show the level of detail appropriate to each stage of the works and all main activities and restraints, each of which shall be given a short title. All events shall be numbered and annotated with earliest and latest event dates. A detailed works programme should be presented at the Pre-Contract Meeting.

At the time of presentation of the programme, the Contractor shall also provide locations and capacities of anticipated plant and other resource input.

6.0 Services and other things provided by the *Client*

None