

LCCC 2026 Non-National Road Bridge  
Refurbishment Contract

Garrouse – Works Requirements Report  
251250-PUNCH-26-01-RP-CS-0012

## Document Control

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## 1 Introduction

Limerick City & County Council (LCCC) proposes to carry out repair works to a number of bridges in County Limerick as part of their 2026 Non-National Road Bridge Refurbishment Contract. PUNCH Consulting Engineers (PUNCH) have been engaged by LCCC to assess and design as appropriate a structural repair scheme for the nominated bridge structures.

The bridge at Garrouse has been identified by LCCC following condition surveys carried out by LCCC Engineers. This report details works requirements for Garrouse Bridge, referred to in this report as Structure 12.

Stage 1 AA screening has been completed, and stage 2 assessment is not required for the bridge. The bridge has been identified as having potential for bats and a separate bat survey and possible derogation survey is required in advance of the works. The ecological screening report by

## 2 Bridge Location & Description

The structure carries the local secondary road L1545 in Garrouse. GPS Coordinates 52.397250, -8.661553.

The bridge comprises a triple arch masonry structure which crosses the River Loobagh. This bridge is a protected structure with National Service registration number 21904703.

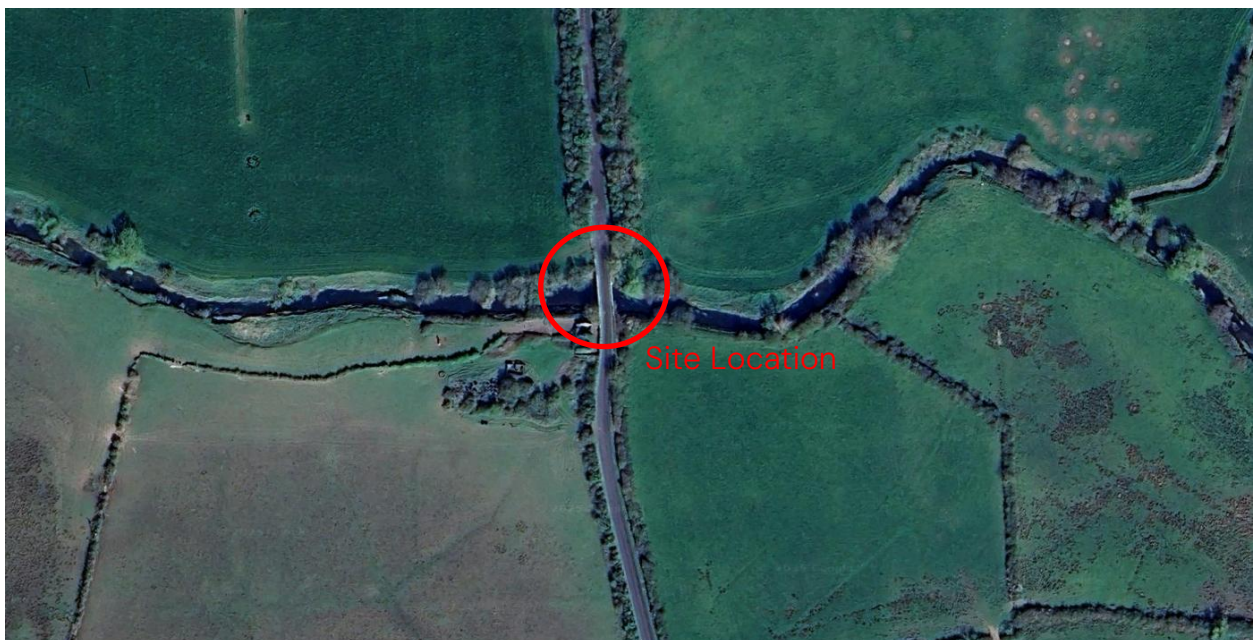


Figure 1: Site Location

### **3 Inspection**

A detailed inspection was carried out by PUNCH Engineers on the 02<sup>nd</sup> of December 2025.

The inspection involved a detailed review of the triple arch masonry bridge. The structural condition of each element was assessed individually. Structural defects/collapses were reviewed in the context of their implications on the overall stability of the bridge and the safety of road users. All defects were measured and recorded during this inspection.

Digital images were recorded as part of the inspection and are included in Appendix A.

The inspection was visual in nature and did not involve any opening up of the structure.

### **4 Summary of Findings**

A summary of the findings is included below:

- There is heavy vegetation growth on the upstream side of the bridge around arch 1 and 3 and on the spandrel walls.
- A new concrete apron has been added to all of the arches.
- There is mortar loss from the third arch of the bridge that requires repointing.
- The spandrel walls have large amounts of mortar loss and require repointing.
- The upstream parapet wall is 800mm in height x 450mm in width.
- The downstream parapet wall is 850mm in height x 450mm in width.
- The first arch was unable to be inspected due to being inaccessible.
- Both upstream and downstream parapet wall has mortar loss and is cracked in a number of locations and will require repointing.
- There is heavy moss growth on both parapet walls which will need to be removed to allow inspection.
- The central arch appears to be in good condition above the springing point.
- Both parapet walls have rounded concrete capping.

## **5 Works Requirements**

The works requirements for Structure 12, Garrouse Bridge, are:

### **5.1 Access and Site Set Up**

Site compound and access to riverbed to be planned, agreed and established by the appointed Contractor with permission from the relevant statutory bodies and landowners.

### **5.2 Traffic Management**

It is the Contractor's responsibility to design all traffic management required for the completion of the works and to obtain all necessary permissions for the implementation of a traffic management plan prior to the works commencing. The traffic management shall comply with the Department of Transport, Traffic Signs Manual, Chapter 8 "Temporary Traffic Measures and Signs for Roadworks".

Single lane traffic controlled by timed traffic lights may be permitted during the construction. Separate permission must be obtained from LCCC for any full road closures. The full width of the road shall be available during school drop-off and pick-up times.

The Contractor will be responsible for implementing and managing all temporary traffic measures for the duration of the work.

The road shall be kept clear of debris, dust, and contractors' materials by regular road sweeping and cleaning.

### **5.3 Progress Photographs**

The Contractor shall take a weekly set of photographs to document the general site progress and also critical elements of the rehabilitation works. Contractor's photographs shall be made available to the Employer and Engineer by a project specific digital shared file which will be managed by the Contractor for the duration of the project and form part of the handover file on completion of the works.

### **5.4 Existing Services**

The Contractor is solely responsible for identifying and protecting all existing services at the site. The Engineer must immediately be notified of any damage to existing services. The Contractor is responsible for making good any services which are damaged or displaced during the work.

### **5.5 Water Management for Construction in the Dry**

It is the Contractor's responsibility to design all necessary temporary works, including damming and the over-pumping and the like to ensure a dry and safe area to construct the repairs. It is also the Contractor's responsibility to obtain all necessary works approvals related to water management systems. All works proposals must be reviewed by PUNCH.

### **5.6 Temporary Accommodation**

Erect offices and messes, stores and workshops for the Contractor.

Service offices and messes, stores and workshops until practical completion.

Dismantle offices and messes, stores and workshops for the Contractor.

The Contractor is to provide temporary self-contained toilet facilities.

## **5.7 Temporary Works**

It is the Contractor's responsibility to design and construct all necessary temporary works and temporary supports and obtain all necessary works approvals. All temporary works proposals must be reviewed by PUNCH, as PSDP & Permanent Works Designers.

## **5.8 Site Clearance**

### **5.8.1 Vegetation Removal**

#### Vegetation Removal

The canopy of vegetation growth on masonry elements should be trimmed back to allow inspection of the stem and root system. Non-significant stems should be cut through above root level by hand saw and the associated ivy or other canopy should then be carefully removed by hand. Where it is found that deeply embedded roots or stems have caused an element to become unstable then it will be necessary to dismantle and reconstruct the affected element. The use of power tools is to be avoided where there is a risk of damage to the surface of stonework.

Remove light vegetation from the bridge downstream elevation and dispose of offsite, 15 sq. m.

Remove heavy vegetation from the bridge upstream elevation and dispose of offsite, 15 sq. m.

Remove medium – dense vegetation from embankments for 5 m upstream and downstream by 5 m wide and dispose of offsite, 100 sq. m, total.

#### Noxious Weeds and Invasive Plants

Identify noxious weeds and non-native invasive plant species as listed and illustrated in the NRA publication "Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads". Pay attention to Giant Hogweed, Himalayan Balsam and Japanese Knotweed. Fence them off to prevent accidental cutting or removal. Contact the LCCC Parks Department who will advise and if possible, remove the plants.

### **5.8.2 Take Up or Down Existing Items**

Take up and set aside for re-use masonry stone lying in the riverbed and on embankment.

Bridge parapet walls to be taken down where concrete has been introduced and rebuilt to a has been introduced. It is estimated that 50% of each parapet walls will have to be taken down and rebuilt.

Upstream parapet wall total length 18.9m length to be rebuilt 9.45m.

Downstream parapet wall total length 26.1m length to be rebuilt 13.1m.

Concrete facing which has previously been applied to bridge 2No. cut waters is to be removed and cutwaters to be repointed.

Remove all mortar from the stone masonry units to be reinstated as part of the works.

## **5.9 Fencing Including Boundary Walls**

Not applicable to this Bridge.

## **5.10 Drainage**

Provide 4No. DN225 Drainage Outlets as indicated on drawing O866.

## **5.11 Pavements**

No applicable to this Bridge.

**Note:** Surface dressing will be carried out separately by LCCC.

## **5.12 Traffic Signs and Road Markings**

Not applicable to this Bridge.

## **5.13 Concrete Work**

Concrete works are to include for propping, formwork, reinforcement, finishing and the use concrete grade C32/40, 350 kg/cu m cement content and minimum 50 mm cover to reinforcement.

A proposed concrete saddle is to be installed for the extents of the bridge. A minimum of 125mm at the centre of arches. See engineers' drawings for further detail regarding profile and location. Stainless steel dowel bars shall be provided at 450mm c/c in a staggered arrangement with 900mm spacing.

2No. Dywidag Stainless Steel tie bars with pattress plates are to be installed at the  $\frac{1}{4}$  points of each arch. Pattress plates to be installed with tiebar system. See engineers' drawing DR-CS-0551 for further detail.

## **5.14 Sealing of Gaps**

Not applicable to this Bridge.

## **5.15 Stonework to Bridge**

All masonry repair work is to be carried out in accordance with the PUNCH specification provided in Volume A of the Tender Documents. Original masonry is to be used in the repair works wherever possible. The appointed Contractor must make every effort to retrieve dislodged masonry from where it may have fallen on to embankments or the riverbed. A sample of any proposed imported masonry must be presented to the Employer's Representative for approval.

The height of parapet above the road surface to be set as 1150 mm, unless otherwise directed by the Employers Representation.

The existing upstream approach wall is set at 800 mm high above the road surface.

The downstream parapet wall is set at a height of 850mm high above the road surface.

The top of both of these parapet walls have been previously recapped using a rounded concrete capping. This concrete is to be removed, and new capping stones are to be installed on top of parapets.

### Masonry Repointing

Repointing of the spandrels, abutments, barrel and parapet walls are required. Refer to drawings for details of repointing work. The repointing works shall be undertaken using 3.5 natural hydraulic lime (NHL) mortars with the use of Vicat Natural Cement or Prompt where required (below high-level water line & splash zones) as directed by the Engineer. Existing mortar joints shall be raked out square to a

uniform minimum depth of 15mm using hand tools before repointing. Once raked out, the joints shall be brushed and flushed out with air to remove dust and loose material. Any joints which have dried out since cleaning shall be rewetted for repointing. The NHL mortar shall be installed using caulking method and the joints shall be finished flush with surrounding masonry and be given a struck and weathered finish.

Parapet Walls 40%

Spandrel Walls 40%

Abutments 50%

Arch Barrel 20%

Cut waters 20%

#### Masonry Reconstruction

Existing salvaged stone shall be used to the maximum extent.

The quality, shape, colour and nature of imported stone shall be agreed with the Employers Representative before being incorporated in the works.

Where a combination of existing stone and imported stone are used, the relative locations shall be agreed with the Employer's Representative

In general, existing stone will be used below the base of the parapet wall, or on field side faces of the parapets.

The new parapet walls shall be repaired with the use of solid stone masonry with stone, coursing, bond and coping to the Engineers detail. The pointing works shall be undertaken using 3.5 natural hydraulic lime (NHL) mortars.

Where necessary the upstream wall shall be reconstructed with 450mm wide stone masonry to a height of 1150mm above the road surface approximately 18.9m long to match existing wall dimensions.

Where necessary the downstream wall shall be reconstructed with 450mm wide stone masonry to a height of 1150mm above the road surface approximately 26.1m long to match existing wall dimensions.

## Appendix A Images



Photo 1 – General Upstream Elevation of third arch.



Photo 2 – General Upstream elevation of central arch.



Photo 3 – General downstream elevation of third arch



Photo 4 – General downstream elevation of central arch.



Photo 5 – General downstream elevation of central arch.



Photo 6 – Mortar loss from right-hand bank side of third arch.



Photo 7 – Mortar loss from upstream right-hand bank spandrel wall.



Photo 8 – Cracks and mortar loss from upstream parapet wall.



Photo 9 – Mortar loss from downstream spandrel wall.



Photo 10 – Mortar loss from upstream pier