

K454-OCSC-XX-XX-RP-C-0010

REMEDIATION METHODOLOGY

Moone Bridge Remediation

Project: K454

December 2021



OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers



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1 INTRODUCTION

Introduction

1.1 O'Connor Sutton Cronin (OCSC) were appointed by Kildare County Council to undertake a condition survey of Moone Bridge. Following the condition survey, OCSC undertook the design of the remediation works required for the structure. The survey identified that the proposed repair works consists of repointing of the parapets and spandrel, waterproofing the arch barrel to prevent water ingress, removing vegetation from embankments, arch barrel, parapet and spandrel wall and repointing of the underside of the arch barrel.

An AA screening was required to be undertaken for the proposed remedial works to confirm if likely significant effects on European sites will arise from the proposed repair works either alone or in combination with other plans or projects and as to whether the proposed development is likely to have significant effects on European sites, either individually or in combination with other plans or projects.

For the reasons set out in detail in the AA Screening Report undertaken by ecofact Environmental Consultant. (Reference date 26th April 2021), it was objectively concluded that an Appropriate Assessment of the proposed Project is required as there is potential for direct and indirect cumulative impact relating to the disturbance, water quality and invasive species to arise from the proposed bridge works at Moone Bridge. On the basis of objective information, mitigation measures will be required to prevent significant adverse impact on the following European site(s): River Barrow and River Nore SAC.

1.2 As part of the Appropriate Assessment process, OCSC engaged OCSC Environmental team to prepare a Natura Impact Statement (NIS). To assist OCSC Environmental team in completing the NIS, OCSC are required to prepare a construction methodology to be submitted to OCSC Environmental team for its inclusion in the Natura Impact Statement, which is the subject of this report.

Project Background

In February 2015, Malachy Walsh and Partners Consulting Engineers conducted a Principal Inspection survey for Moone Bridge (See Appendix A). The bridge was given an overall structural rating of "Category 4". The principal survey was conducted, and rating given in accordance with EIRSPAN Bridge Management System Principal Inspection manual (AM-STR-06054), published by TII. As can be seen from this report, an area of deterioration is the masonry arch barrel, receiving a "Category 4" rating.

Bridge Description

Moone Bridge carries the L8102 over the Timolin River, east of Athy Co. Kildare. The bridge is a single-span masonry arch structure spanning a total length of 2.5m. The bridge is skewed 0 degrees to road passing above it. Refer to Figure 1 below for an image of the bridge elevation.

1.3



Figure 1: Moone Bridge Upstream Elevation

2 SITE ACCESS

Access to the bridge will be from the L8102. Please see figure 2 below for site location map.

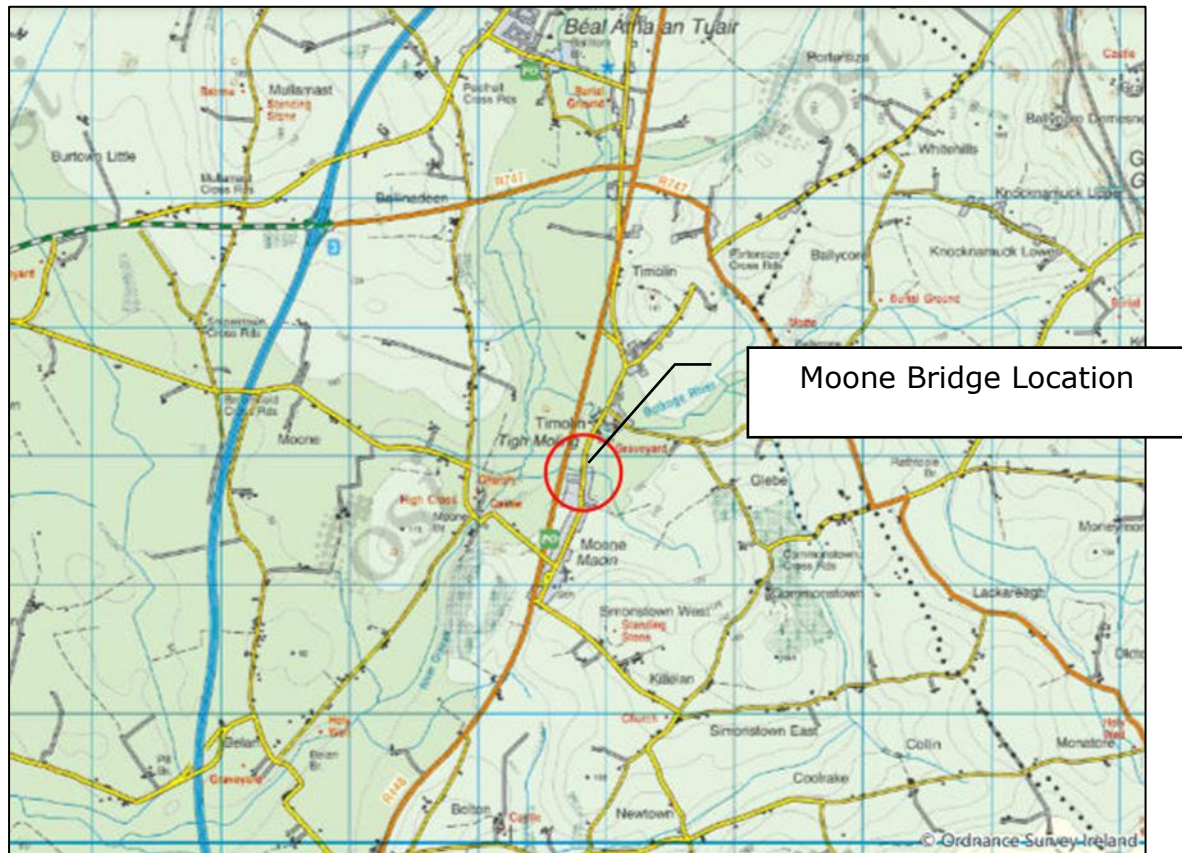


Figure 2: Site Location map

3 DESCRIPTION OF IN-STREAM WORKS

De-vegetation and Repointing of Masonry

3.1

It was noted during OCSC's survey of Moone Bridge that on several masonry units of the arch barrel, there was a loss of mortar in the joints and vegetation growing between the units. The extent of masonry repointing and vegetation removal is minor in nature with the specific repairs detailed in the notes for Details 1 and 3. See figure 3 below for image of masonry loss and vegetation growth and Detail 1 and 3 below for vegetation removal and masonry repointing, respectively. In order to further mitigate debris entering the watercourse, cleaning, and vegetation removal of bridge elements will be undertaken in such way as to prevent any debris falling into the watercourses. A sealed working platform – CRASH DECK - will be provided at the structure to contain the cleaning works. The crash deck will be fully boarded out and effectively screened and sealed on all edges to ensure that no products enter the watercourse. Debris will be removed from the crash deck at the end of each working day to avoid the build-up of material on the crash deck. During the cleaning works the Contractor must use a filtration membrane on the scaffold/ crash deck to capture particles and prevent them from entering the river/ watercourse.



Figure 3: Loss of mortar in joints and vegetation growth

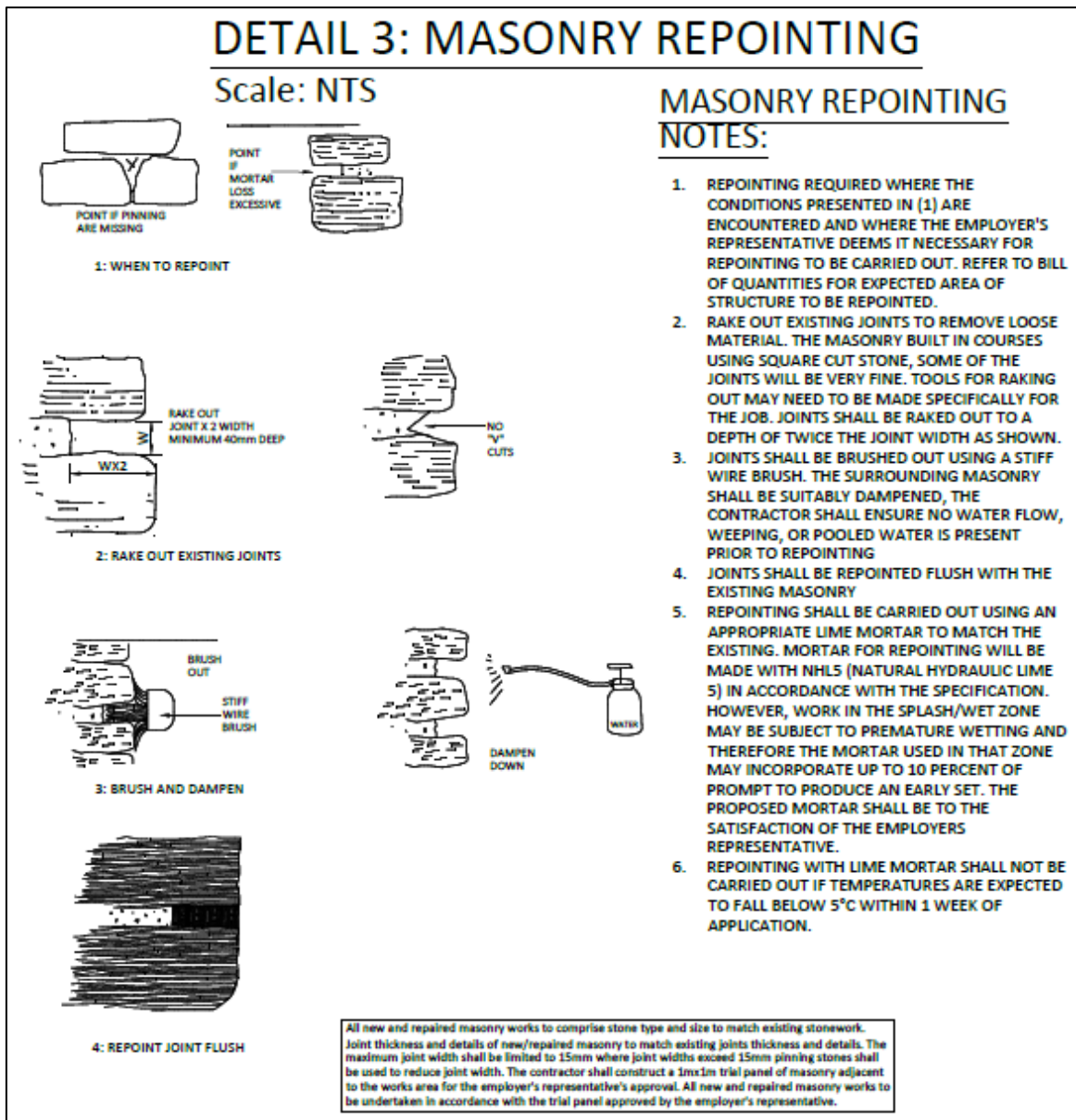
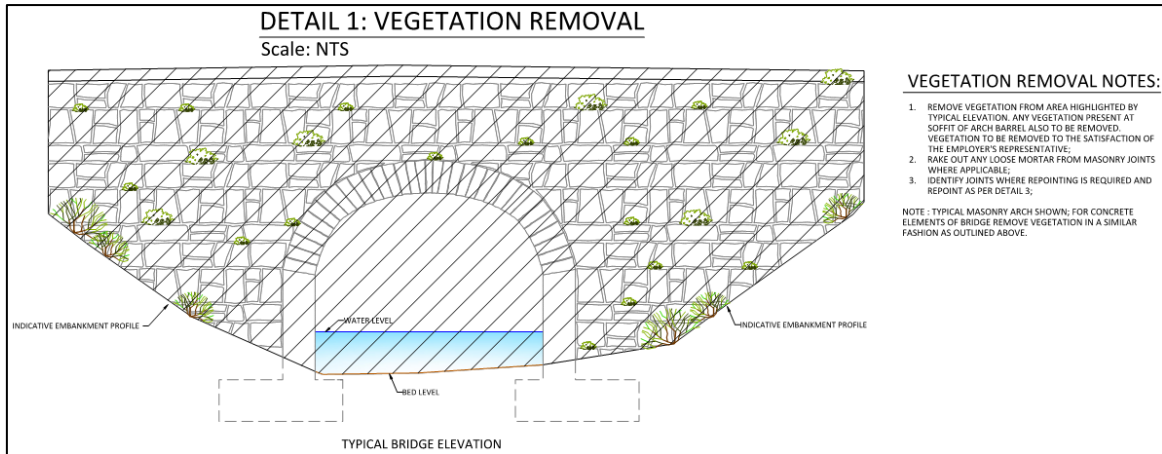


Figure 4: Typical Detail for Vegetation removal and Masonry Repointing.

4 SITE DURING CONSTRUCTION

In order to further mitigate debris entering the watercourse, the contractor will install a sealed working platform – CRASH DECK - fully boarded out and effectively screened and sealed on all edges to ensure that no products enter the watercourse. A filtration membrane will be installed on the scaffold/ crash deck to capture particles and prevent them from entering the river/ watercourse. This crash deck system will be installed around the areas to be repointed and masonry replacement. See figure 5 below for image of typical crash deck/ scaffolding setup.

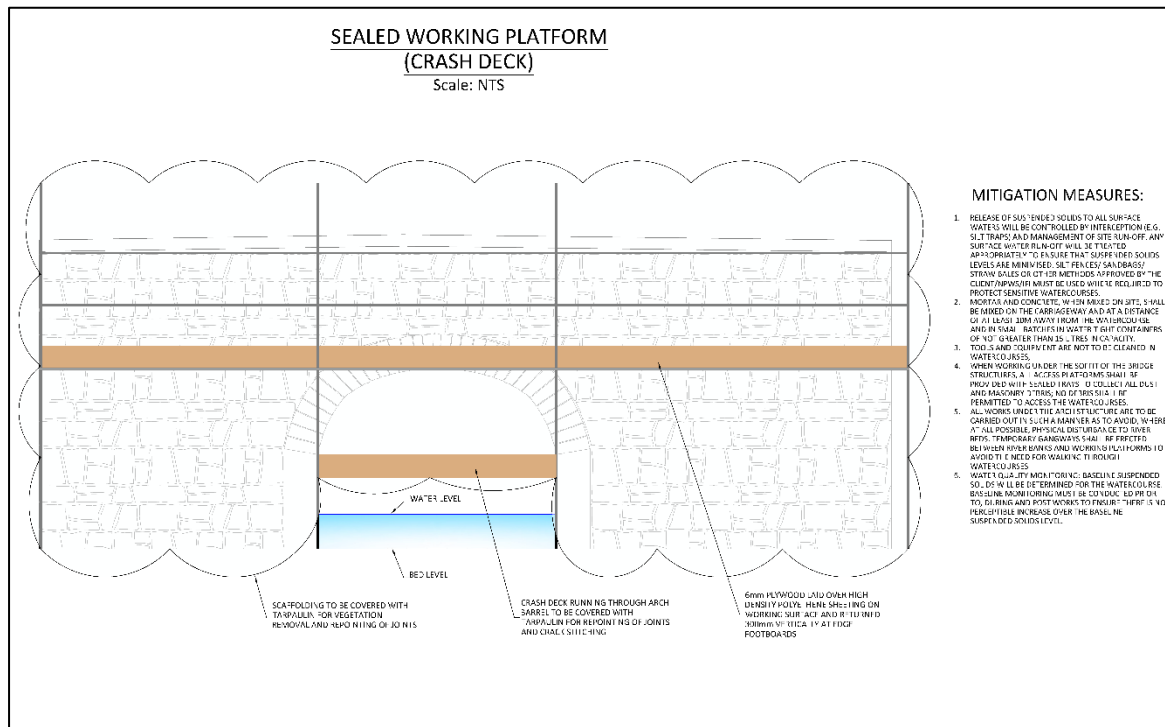


Figure 5: Typical tarpaulin and scaffolding setup

7 MATERIAL REQUIREMENTS

- i. Lime mortar for repointing of masonry joints.

8 REDUCTION OR ELIMINATION OF POLLUTION FROM SUBSTANCES

The following guidelines, based on the IFI guidelines (2016), Chilibeck et al (1992), and NRA (2005), will be followed by the contractor where required:

- i. Raw or uncured waste concrete will be removed from the construction site and disposed of in accordance with the relevant waste management legislation;
- ii. Wash down water from concrete trucks, cast in situ concrete etc. will be collected in a suitable containment structure and then taken off-site for appropriate disposal;
- iii. Fuels, lubricants and hydraulic fluids for equipment used on the construction site will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism and provided with spill containment according to current best practice;
- iv. Fuelling and lubrication of equipment will be carried out offsite or in bunded areas;
- v. Appropriate spill control equipment, including oil booms and oil soakage pads, will be kept within the construction site to deal with any accidental spillage;
- vi. Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and the contaminated soil removed from the construction site and disposed of in accordance with all relevant waste management legislation;
- vii. Prior to any work commencing, all construction equipment will be checked to ensure that it is mechanically sound, to avoid leaks of oil, fuel, hydraulic fluids and grease;
- viii. Measures will be implemented to minimise waste and ensure correct handling, storage and disposal of waste;
- ix. Emergency response procedures will be put in place.



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