

# North Yorkshire County Council

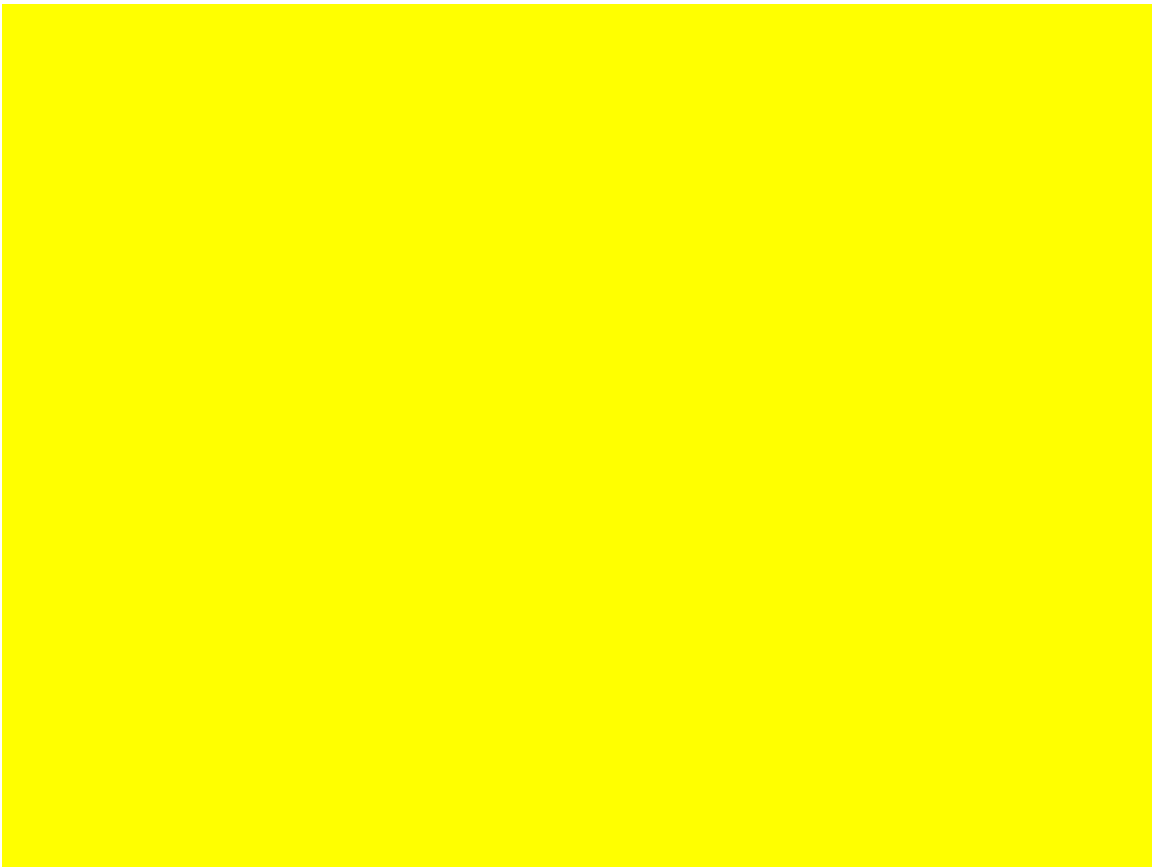
## Beck Hole Bridge Maintenance 2021

NYMNPA

07/04/2021

## Design and Access Statement

Structure Reference Number: 392



Rev A

April 2021

## Contents

Introduction .....	3
The Site .....	4
Existing Land Use .....	5
Justification for the works .....	5
Construction .....	6
New Materials .....	6
Layout .....	6
Appearance.....	6
Access .....	7

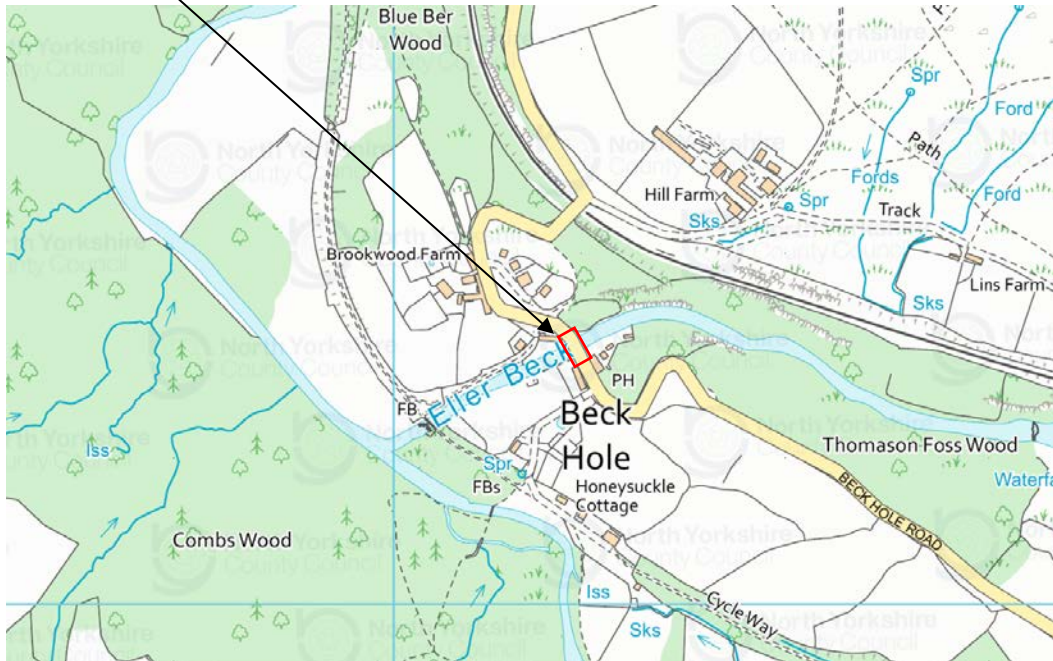
## **Introduction**

This report has been prepared by Ben Savage, Assistant Engineer North Yorkshire County Council in support of the application for Listed Building Consent to North Yorkshire County Council for the scheme to “Dismantle and rebuild south-east spandrel wall using existing stone”. This statement has been prepared in accordance with the current guidance regarding the conservation and enhancement of the historic environment. All drawings are to be read in conjunction with all relevant documents for the proposed works.

It is submitted as part of a package of information intended to outline and highlight the reasons why this bridge is in need of repair to protect and preserve the historical listed building. It will also show how the proposed repairs will not materialistically change any external appearance of the structure from its original intended appearance.

## The Site

The application site is across Eller Beck, as shown on the location plans below.



## Beck Hole Bridge



**OS GRID REF 394031, 450932**

© Crown copyright. All rights reserved.

Beck hole Bridge is a two span masonry arch structure which carries 'Beck Hole Road' over Eller Beck through the village of Beck Hole, North Yorkshire. Each arch spans approximately 6.3m with a rise of 3.5m.

### **Existing land use**

The bridge spans Eller Beck through the village of Beck Hole. It has surrounding dwellings and is used to connect both sides of the village. The bridge is located at the bottom of a valley, with routes to Goathland and the A169.

### **Proposed works**

The scheme is to dismantle the south-west spandrel wall, which has moved outwards by 30mm. It will then be rebuilt using the existing stone to its original condition. The works are required to prevent any collapse and potentially damaging the original stonework.

### **Justification for the works**

The structure has been inspected and identified as needing maintenance works to prevent the spandrel walls collapsing and causing damage to the original stonework. Due to its size and location there is a safety risk to the general public.

## **Construction**

The section of spandrel wall will be taken down to 150mm below ground level and rebuilt to original conditions using existing stone.

## **New Materials**

There will be little to no new masonry used to rebuild the structure. Any unknown damaged stones will be imported and shall be selected to blend into the structure with no discernible difference between the original stone and the new.

## **Layout**

The layout of the structure will not change as this is maintenance works to preserve the existing structures life therefore this will not affect the local surroundings or the structure itself.

## **Appearance**

The change in appearance of the bridge due to these works is minimal to nil, unless the works are not carried out further deterioration of the structure will occur which will result in losing its original character, appearance and historical history as new materials will need to be used to restore the structure. All mortar finishes will match the existing mortar finishes of the structure.

NYCC will inspect the works during and on completed to ensure the finishes meet our standards.

## **Access**

Access to and from the structure will be gained from the road. It is not proposed to change any access routes to and from the bridge. The works area will be closed to all public access whilst works are carried out. There will be a diversion in place around.

Any correspondence should be given in writing to:-

Mr Ben Savage

Bridges and Design Services,

Assistant Engineer

North Yorkshire County Council

County Hall

Northallerton

DL7 8AH





# North Yorkshire County Council

## Beck Hole Bridge Maintenance



## Heritage Statement

**Rev A**

**April 2021**

**NYMNPA**

**30/04/2021**



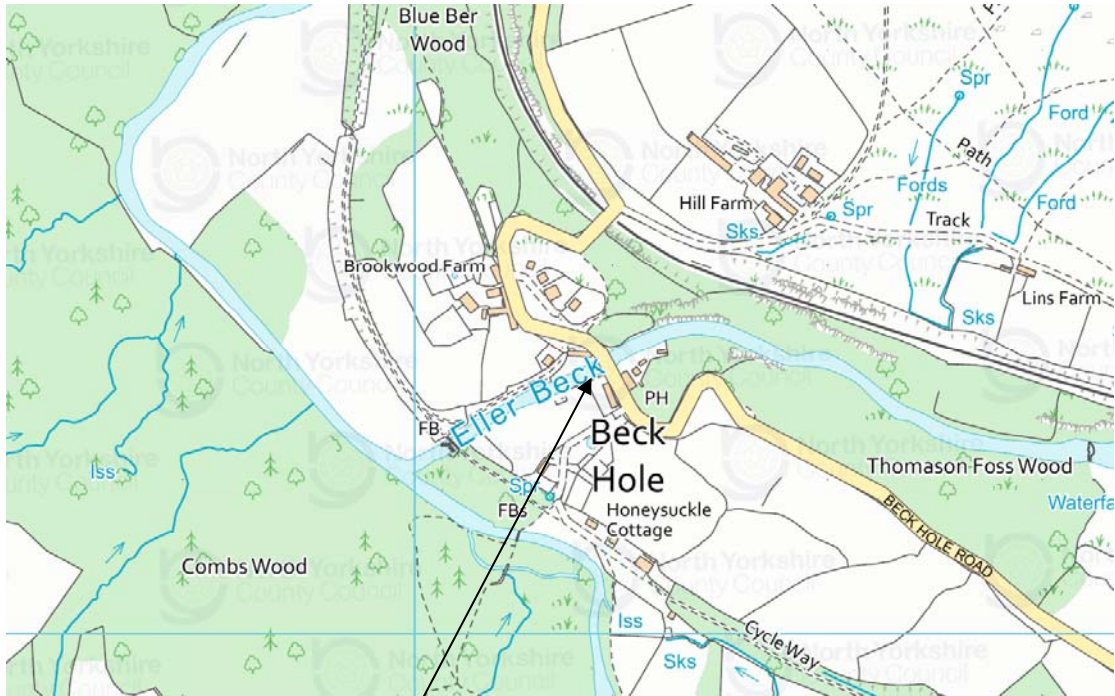
# **1 Introduction**

This design and access statement has been prepared to accompany the detailed planning application for the masonry repairs of Beck Hole Bridge, Beck Hole, North Yorkshire.

This statement has been prepared in accordance with the current guidance as part of North Yorkshire County Council's detailed application for the masonry repairs to Beck Hole Bridge. It is submitted as part of a package of information intended to show how repairs will not affect the Listed Status of the bridge.

## 2 The Site

The application site is in the centre of Beck Hole, as shown on the location plans below.



### Beck Hole Bridge



**OS GRID REF 482165, 502231**

© Crown copyright. All rights reserved.  
North Yorkshire County Council 100017946

Beck Hole Bridge is a two span Grade II listed Masonry arch structure carrying the Beck Hole loop Road to Goathland over Eller Beck in the centre of Beck Hole. The original construction date is believed to be the 19<sup>th</sup> century. The two arches have a spans of 6.3m each with a maximum rise of 3.5m and the arch barrels are 425mm thick at the crown.

The South of the bridge the approach is by a very steep hill which leads to a gentle humped profile over the bridge. The approach from the North is flat but curved. This results in traffic speeds over the bridge being quite low but the likelihood of conflict on the bridge is high. The bridge is only wide enough for single way traffic at 3.8m

The stone is Rusticated sandstone. The structure has two semi-circular arches of voussoirs with cutwaters on both sides of the centre pier. Pilaster piers at each end rising through plain parapet over moulded band. The parapet has slightly raked with cambered coping with flat caps to piers.



### 3 Consultation

The sections of parapet and spandrel wall for dismantle and rebuild (see attached drawings) will be carefully taken down and cleaned of all mortar before being used for the reconstruction, it is not thought any new stone will be needed however any stone badly damaged or weathered will be replaced with new, expected to be less than 5% of the total amount of stone taken down. Any stone work incorporated into the works shall match the colour, texture, surface finish, character, kind and size of existing stonework as closely as possible. Stone shall be good, hard, durable quality, uniform in texture and free from iron bands, spots, sand holes, flaws, shakes and other imperfections. Imported stone used as part of a structure with existing stone adjacent to it shall be of a similar compressive strength to that existing stone. The sizes of the stones shall be selected to blend into the structure with no discernible difference between the original, undamaged, structure and the new. Where possible existing masonry shall be reused in the repairs, existing masonry that is to be reused shall not be redressed before use and shall be incorporated back in their original positions. The type of sand and colour of mortar are to be blended to match the existing mortar. The rebuilding is on a like for like basis ensuring that only minimal changes in the appearance of the bridge are noticed.



It is requested that the Contractor provides samples of the selected replacement stone before an order is placed. A two week window will be made available for the inspection of the sample panels. The mortar samples will also be made available for approval as part of this process.

The nature of the works is due to the deterioration and movement of the South-West spandrel wall. The works are to ensure the structure is suitably safe for public use and that no loss of character is endured if the stonework falls down.

## **Physical Context**

Beck Hole Bridge is Grade II Listed.

The materials to be used in the repair of the bridge have been chosen to blend well with the surrounding environment and also replicate and compliment the existing bridge. It is proposed that the repairs use existing stone where possible. The repairs shall have minimum impact on the appearance of the bridge.

## **Social Context**

The bridge carries Beck Hole Road over Eller Beck. It is not such a vital link as the road loops round but carries ensures the village of Beck Hole is connected at both sides. It provides a picturesque location for tourism during the summer.

## **Amount**

The amount of masonry which is to be repaired has been limited to the South-West spandrel walls where bulging is occurring. The remaining stonework is to be left, as it is in a good condition. The areas, which include stonework in the spandrel and parapets are illustrated in the drawings. All stone removed shall be placed back in original locations.



## **Layout**

The layout of the structure will not change as part of the development and therefore this will not affect the local surroundings. The masonry repairs shall replicate the existing as far as possible within the specific guidelines required for a listed building application.

## **Landscaping**

There has been some vegetation growth around the rebuild section and will be removed during works. Ivy has started to grow within the stonework and is causing structural damage to the structure.

## **Appearance**

The change in appearance of the bridge due to these works is minimal. All stonework incorporated into the works shall match the colour, texture, surface finish, character, kind and size of existing stonework as closely as possible. Stone shall be good, hard, durable quality, uniform in texture and free from iron bands, spots, sand holes, flaws, shakes and other imperfections. Imported stone used as part of a structure with existing stone adjacent to it shall be of a similar compressive strength to that existing stone. The sizes of the stones shall be selected to blend into the structure with no discernible difference between the original, undamaged, structure and the new. Where possible existing masonry shall be reused in the repairs, existing masonry that is to be reused shall not be redressed before use. The type of sand and colour of mortar are to be blended to match the existing mortar.

## **Access**

Access to and from the bridge is gained from the road. Access to the upstream and downstream elevations is gained via land adjacent to the bridge. It is not proposed to change any access routes to and from the bridge.

A temporary scaffold will be erected on the elevations of the bridge to allow the works to be carried out, this shall be in no way attached to Beck Hole Bridge.

## **Heritage statement**

The reconstruction of the stonework on the Grade II listed bridge is now at essential stage. The reconstruction is needed for the safety of the travelling public due to the deteriorating strength of the parapets and spandrel walls and also the visual appearance of the listed structure.

The change in appearance of the bridge due to these works is minimal. All stonework taken down will be reused and incorporated back into the structure. It is not expected new stone will be needed however any new stone shall match the colour, texture, surface finish, character, kind and size of existing stonework as closely as possible. Stone shall be good, hard, durable quality, uniform in texture and free from iron bands, spots, sand holes, flaws, shakes and other imperfections. Imported stone used as part of a structure with existing stone adjacent to it shall be of a similar compressive strength to that existing stone. The sizes of the stones shall be selected to blend into the structure with no discernible difference between the original, undamaged, structure and the new. The existing structure uses a cement type mortar. The type of sand and colour of mortar will be blended to match the existing mortar.



Any correspondence should be given in writing to:-

Mr Ben Savage  
Bridges and Design Services,  
North Yorkshire County Council  
County Hall  
Northallerton  
DL7 8AH