



RIBBLE VALLEY  
BOROUGH COUNCIL

Council Offices, Church Walk, Clitheroe, Lancashire. BB7 2RA Tel: 01200 425111 www.ribblevalley.gov.uk

For office use only

Application No 320120524P

Date received

Fee paid £

Receipt No:

Application for Planning Permission.  
Town and Country Planning Act 1990

Publication of applications on planning authority websites.

Please note that the information provided on this application form and in supporting documents may be published on the Authority's website.  
If you require any further clarification, please contact the Authority's planning department.

8 JUN 2012

1. Applicant Name, Address and Contact Details

|                                                     |                                                                                                                              |             |  |                                                               |                 |                  |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------|--|---------------------------------------------------------------|-----------------|------------------|
| Title:                                              |                                                                                                                              | First name: |  | Surname:                                                      |                 |                  |
| Company name:                                       | United Utilities PLC                                                                                                         |             |  |                                                               |                 |                  |
| Street address:                                     | Engineering, Environment and Sustainability,<br>1st Floor Clearwater 4,<br>Lingley Mere Business Park, Lingley Green Avenue, |             |  | Country Code                                                  | National Number | Extension Number |
| Town/City:                                          | Great Sankey,                                                                                                                |             |  | Telephone number:                                             |                 |                  |
| County:                                             | Warrington,                                                                                                                  |             |  | Mobile number:                                                |                 |                  |
| Country:                                            |                                                                                                                              |             |  | Fax number:                                                   |                 |                  |
| Postcode:                                           | WA5 3UZ                                                                                                                      |             |  | Email address:                                                |                 |                  |
| Are you an agent acting on behalf of the applicant? |                                                                                                                              |             |  | <input checked="" type="radio"/> Yes <input type="radio"/> No |                 |                  |

2. Agent Name, Address and Contact Details

|                 |                                                                                                                              |             |         |                   |                             |                  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------|-------------|---------|-------------------|-----------------------------|------------------|
| Title:          | Mr                                                                                                                           | First Name: | Matthew | Surname:          | Buckley                     |                  |
| Company name:   | United Utilities PLC                                                                                                         |             |         |                   |                             |                  |
| Street address: | Engineering, Environment and Sustainability,<br>1st Floor Clearwater 4,<br>Lingley Mere Business Park, Lingley Green Avenue, |             |         | Country Code      | National Number             | Extension Number |
| Town/City:      | Great Sankey,                                                                                                                |             |         | Telephone number: | +44                         | 7909 627 477     |
| County:         | Warrington,                                                                                                                  |             |         | Mobile number:    |                             |                  |
| Country:        |                                                                                                                              |             |         | Fax number:       | +44                         | 1925 773 251     |
| Postcode:       | WA5 3UZ                                                                                                                      |             |         | Email address:    | matthew.buckley@uuplc.co.uk |                  |

3. Description of the Proposal

Please describe the proposed development including any change of use:

Bank Protection / Stabilisation Works consisting of Rock Armor Wall, Rip Rap and Regraded Bank and improved temporary construction access junction.

Has the building work or change of use already started?

☐ Yes ☒ No

#### 4. Site Address Details

Full postal address of the site (including full postcode where available)

|                 |                                   |         |                      |
|-----------------|-----------------------------------|---------|----------------------|
| House:          | <input type="text"/>              | Suffix: | <input type="text"/> |
| House name:     | Holden Wastewater Treatment Works |         |                      |
| Street address: | Bolton by Bowland Road            |         |                      |
|                 | North of Ouzel Hall Bridge        |         |                      |
| Town/City:      | Holden                            |         |                      |
| County:         | Lancashire                        |         |                      |
| Postcode:       | BB7 4NL                           |         |                      |

Description of location or a grid reference  
(must be completed if postcode is not known):

|           |        |
|-----------|--------|
| Easting:  | 377695 |
| Northing: | 449153 |

Description:

The site is located immediately north of Ouzel Hall Bridge which is at the crossing of Bolton By Bowland Road off Barrett Hill Brow and Holden Beck.

#### 5. Pre-application Advice

Has assistance or prior advice been sought from the local authority about this application?

☒ Yes ☐ No

If Yes, please complete the following information about the advice you were given (this will help the authority to deal with this application more efficiently):

Officer name:

|        |    |             |        |          |      |
|--------|----|-------------|--------|----------|------|
| Title: | Mr | First name: | Gareth | Surname: | Fort |
|--------|----|-------------|--------|----------|------|

|            |                   |
|------------|-------------------|
| Reference: | RV/2012/ENQ/00049 |
|------------|-------------------|

|                    |            |                                      |
|--------------------|------------|--------------------------------------|
| Date (DD/MM/YYYY): | 20/04/2012 | (Must be pre-application submission) |
|--------------------|------------|--------------------------------------|

Details of the pre-application advice received:

|                                                     |
|-----------------------------------------------------|
| Advice received on the suitability of the proposals |
|-----------------------------------------------------|

#### 6. Pedestrian and Vehicle Access, Roads and Rights of Way

Is a new or altered vehicle access proposed to or from the public highway?

☒ Yes ☐ No

Is a new or altered pedestrian access proposed to or from the public highway?

☐ Yes ☒ No

Are there any new public roads to be provided within the site?

☐ Yes ☒ No

Are there any new public rights of way to be provided within or adjacent to the site?

☐ Yes ☒ No

Do the proposals require any diversions/extinguishments and/or creation of rights of way?

☐ Yes ☒ No

If you answered Yes to any of the above questions, please show details on your plans/drawings and state the reference of the plan(s)/drawings(s)

|                                                                        |
|------------------------------------------------------------------------|
| The details of the temporary access are detailed on drawing TS928 03 D |
|------------------------------------------------------------------------|

#### 7. Waste Storage and Collection

Do the plans incorporate areas to store and aid the collection of waste?

☐ Yes ☒ No

Have arrangements been made for the separate storage and collection of recyclable waste?

☐ Yes ☒ No

#### 8. Authority Employee/Member

With respect to the Authority I am:

- (a) a member of staff
- (b) an elected member
- (c) related to a member of staff
- (d) related to an elected member

Do any of these statements apply to you?

☐ Yes ☒ No

#### 9. Materials

Please state what materials (including type, colour and name) are to be used externally (if applicable):

**Others - description:**

Type of other material:

Bank Protection

Description of *existing* materials and finishes:

Delapidated Stone Gabion Baskets

Description of *proposed* materials and finishes:

Rock Armour, Stone Rip Rap and Regraded Earth Embankment

Are you supplying additional information on submitted plan(s)/drawing(s)/design and access statement?

☒ Yes ☐ No

If Yes, please state references for the plan(s)/drawing(s)/design and access statement:

Details shown on the submitted plan (TS 928 03 D) and described within the submitted documentation.

**10. Vehicle Parking**

Please provide information on the existing and proposed number of on-site parking spaces:

| Type of vehicle                              | Existing number of spaces | Total proposed (including spaces retained) | Difference in spaces |
|----------------------------------------------|---------------------------|--------------------------------------------|----------------------|
| Cars                                         | 0                         | 0                                          | 0                    |
| Light goods vehicles/public carrier vehicles | 0                         | 0                                          | 0                    |
| Motorcycles                                  | 0                         | 0                                          | 0                    |
| Disability spaces                            | 0                         | 0                                          | 0                    |
| Cycle spaces                                 | 0                         | 0                                          | 0                    |
| Other (e.g. Bus)                             | 0                         | 0                                          | 0                    |
| Short description of Other                   |                           |                                            |                      |

**11. Foul Sewage**

Please state how foul sewage is to be disposed of:

Mains sewer

☐

Package treatment plant

☐

Unknown

☐

Septic tank

☐

Cess pit

☐

Other

No foul sewage generated

Are you proposing to connect to the existing drainage system?

☐ Yes ☒ No ☐ Unknown**12. Assessment of Flood Risk**

Is the site within an area at risk of flooding? (Refer to the Environment Agency's Flood Map showing flood zones 2 and 3 and consult Environment Agency standing advice and your local planning authority requirements for information as necessary.)

☒ Yes ☐ No

If Yes, you will need to submit an appropriate flood risk assessment to consider the risk to the proposed site.

Is your proposal within 20 metres of a watercourse (e.g. river stream or beck)?

☒ Yes ☐ No

Will the proposal increase the flood risk elsewhere?

☐ Yes ☒ No

How will surface water be disposed of?

☐ Sustainable drainage system☐ Main sewer☐ Pond/lake☒ Soakaway☐ Existing watercourse**13. Biodiversity and Geological Conservation**

To assist in answering the following questions refer to the guidance notes for further information on when there is a reasonable likelihood that any important biodiversity or geological conservation features may be present or nearby and whether they are likely to be affected by your proposals.

Having referred to the guidance notes, is there a reasonable likelihood of the following being affected adversely or conserved and enhanced within the application site, OR on land adjacent to or near the application site:

a) Protected and priority species

☐ Yes, on the development site☐ Yes, on land adjacent to or near the proposed development☒ No

b) Designated sites, important habitats or other biodiversity features

☒ Yes, on the development site☐ Yes, on land adjacent to or near the proposed development☐ No

c) Features of geological conservation importance

☐ Yes, on the development site☐ Yes, on land adjacent to or near the proposed development☒ No

#### 14. Existing Use

Please describe the current use of the site:

Agricultural Land

Is the site currently vacant? ☐ Yes ☒ No

Does the proposal involve any of the following?

If yes, you will need to submit an appropriate contamination assessment with your application.

Land which is known to be contaminated? ☐ Yes ☒ No

Land where contamination is suspected for all or part of the site? ☐ Yes ☒ No

A proposed use that would be particularly vulnerable to the presence of contamination? ☐ Yes ☒ No

#### 15. Trees and Hedges

Are there trees or hedges on the proposed development site? ☒ Yes ☐ No

And/or: Are there trees or hedges on land adjacent to the proposed development site that could influence the development or might be important as part of the local landscape character?

☐ Yes ☒ No

If Yes to either or both of the above, you may need to provide a full Tree Survey, at the discretion of your local planning authority. If a Tree Survey is required, this and the accompanying plan should be submitted alongside your application. Your local planning authority should make clear on its website what the survey should contain, in accordance with the current 'BS5837: Trees in relation to construction - Recommendations'.

#### 16. Trade Effluent

Does the proposal involve the need to dispose of trade effluents or waste? ☐ Yes ☒ No

#### 17. Residential Units

Does your proposal include the gain or loss of residential units? ☐ Yes ☒ No

#### 18. All Types of Development: Non-residential Floorspace

Does your proposal involve the loss, gain or change of use of non-residential floorspace? ☐ Yes ☒ No

#### 19. Employment

If known, please complete the following information regarding employees:

|                    | Full-time | Part-time | Equivalent number of full-time |
|--------------------|-----------|-----------|--------------------------------|
| Existing employees | 0         | 0         | 0                              |
| Proposed employees | 0         | 0         | 0                              |

#### 20. Hours of Opening

If known, please state the hours of opening for each non-residential use proposed:

| Use   | Monday to Friday |                | Saturday       |                | Sunday and Bank Holidays |                | Not Known                |
|-------|------------------|----------------|----------------|----------------|--------------------------|----------------|--------------------------|
|       | Start Time       | End Time       | Start Time     | End Time       | Start Time               | End Time       |                          |
| Other | Not Applicable   | Not Applicable | Not Applicable | Not Applicable | Not Applicable           | Not Applicable | <input type="checkbox"/> |

#### 21. Site Area

What is the site area?

150

sq.metres

#### 22. Industrial or Commercial Processes and Machinery

Please describe the activities and processes which would be carried out on the site and the end products including plant, ventilation or air conditioning. Please include the type of machinery which may be installed on site:

No additional industrial or commercial processes to be carried out

Is the proposal for a waste management development? ☐ Yes ☒ No

#### 23. Hazardous Substances

Is any hazardous waste involved in the proposal? ☐ Yes ☒ No

#### 24. Site Visit

Can the site be seen from a public road, public footpath, bridleway or other public land?

☒ Yes

☐ No

320120524P

If the planning authority needs to make an appointment to carry out a site visit, whom should they contact? (Please select only one)

☒ The agent

☐ The applicant

☐ Other person

#### 25. Certificates (Certificate B)

##### Certificate of Ownership - Certificate B

##### Town and Country Planning (Development Management Procedure) (England) Order 2010 Certificate under Article 12

I certify/The applicant certifies that I have/the applicant has given the requisite notice to everyone else (as listed below) who, on the day 21 days before the date of this application, was the owner (owner is a person with a freehold interest or leasehold interest with at least 7 years left to run) of any part of the land or building to which this application relates.

| Notice recipient |                                                        | Date notice served |
|------------------|--------------------------------------------------------|--------------------|
| Name:            | Bowland Estates, C/O Mike McEndry (Davis Bowring Ltd), | 08/06/2012         |
| Number:          |                                                        |                    |
| Suffix:          |                                                        |                    |
| Street:          | 6 & 8 Main Street,                                     |                    |
| Locality:        | Kirkby Lonsdale,                                       |                    |
| Town:            | Lancashire,                                            |                    |
| Postcode:        | LA6 2AE                                                |                    |

Title: Mr First name: Matthew Surname: Buckley

Person role: Agent Declaration date: 08/06/2012 ☒ Declaration made

#### 25. Certificates (Agricultural Land Declaration)

##### Agricultural Land Declaration

##### Town and Country Planning (Development Management Procedure) (England) Order 2010 Certificate under Article 12

Agricultural Land Declaration - You Must Complete Either A or B

(A) None of the land to which the application relates is, or is part of an agricultural holding

(B) I have/The applicant has given the requisite notice to every person other than myself/the applicant who, on the day 21 days before the date of this application, was a tenant of an agricultural holding on all or part of the land to which this application relates, as listed below:

If any part of the land is an agricultural holding, of which the applicant is the sole tenant, the applicant should complete part (B) of the form by writing 'sole tenant - not applicable' in the first column of the table below

Title: Mr First Name: Matthew Surname: Buckley

Person role: Agent Declaration date: 08/06/2012 ☒ Declaration Made

#### 26. Declaration

I/we hereby apply for planning permission/consent as described in this form and the accompanying plans/drawings and additional information



Date: 08/06/2012

## DESIGN & ACCESS STATEMENT

### Bank Protection / Stabilisation Works Holden Wastewater Treatment Works Bolton on Bowland

#### 1. Design

##### 1.1 Physical, Social, Economic and Policy context

The development provides environmental benefits in that it will ensure the continued operation of Holden WwTW and protect the bank of the Brook from future erosion.

##### 1.2 Amount of Development

The proposed bank protection works will be over a length of approximately 50m.

##### 1.3 Layout

The location of the WwTW and Holden Beck as well as the extent of the existing erosion has determined the proposed layout.

##### 1.4 Scale

The proposed protection measures are to be constructed over the minimum distance to keep the footprint as small as possible whilst at the same time ensuring that the proposed works do not lead to erosion of the bank elsewhere.

##### 1.5 Landscaping

The proposed development will be located along the existing corridor of the watercourse. The main visual impacts of the development will be during the construction phase with areas being stoned up and site cabins. Following completion of the development it is expected that there will not be any long term significant visual impact on views of the site from along the adjacent highway given that the embankment is being graded to tie in with both the existing ground levels and the Rock Armour. Also given the limited viewpoints of the site and small scope of works it is not expected to affect the setting or openness of Forest of Bowland Area of Outstanding Natural Beauty which the site is located in.

##### 1.6 Appearance

The erosion protection will be constructed using Rip Rap and Rock Armour and the bank will be re-profiled to tie back in with this. The erosion protection has been designed to look as natural as possible and given the limited viewpoints it is not expected to have a significant impact on the surrounding landscape.

## **2. Access**

It is proposed to widen the existing farm access to 5m and stone up for the duration of construction and reinstate to its existing condition following the completion of construction.

Access to public transport is not considered applicable to the proposed development.

# Flood Risk Assessment Pro-forma

## Flood risk assessment for new development

### 1 Development description and location

#### 1a. What type of development is proposed and where will it be located?

This flood risk assessment is to accompany the Planning Application for the proposed development to be located on Holden Brook adjacent to Holden Wastewater Treatment Works, Bolton on Bowland. The development consists of erosion protection (Rip Rap and Rock Armour together with a reprofiled bank) and temporary works including improved access, working area and compound.

The National Grid Reference of the application site is 377695,449153

#### 1b. What is its vulnerability classification?

The proposed development is classified as 'water compatible development' in accordance with Table D.2 Flood Vulnerability Classification as found in PPS25. This indicates that this type of development is appropriate within all zones of the floodplain.

#### 1c. Is the proposed development consistent with the Local Development Documents?

The proposed development is consistent with Local Development Documents.

#### 1d. Please provide evidence that the Sequential Test or Exception Test has been applied in the selection of this site for this development type?

The proposed development cannot pass the Sequential Test since it cannot be moved to a site with lower flood risk due to there being a need to connect to the existing sewerage infrastructure.

Therefore the Exception Test needs to be passed. The Exception test has 3 conditions, all of which must be passed. These are:

- 1) The development must provide wider sustainability benefits to the community that outweigh the flood risk.
- 2) The development must be carried out on developable or previously developed land.
- 3) A FRA must be carried out which demonstrates that the development is safe and does not increase the risk of flooding elsewhere.

These conditions are each examined in turn below

- 1) The existing Wastewater Treatment Works is at risk of failure due to erosion of the Brook if these works are not carried out. The proposed works will ensure the longterm operation of the site by constructing erosion protection measures and returning the brook to its original course.
- 2) The proposed development is to be located adjacent to the existing Wastewater Treatment Works.

The development cannot be located elsewhere as it needs to be along this section of Holden Brook to ensure that the site can be protected from future erosion.

3) This FRA demonstrates that the development is suitable to be located within the Flood Plain and that given the minor scale of development it will not increase the risk of flooding elsewhere.

## **2. Definition of the flood hazard**

2a. What sources of flooding could affect the site? (see Annex C PPS25).

The site is at risk of flooding from Holden Brook

2b. For each identified source, describe how flooding would occur, with reference to any historic records wherever these are available.

The site is within the floodplain of Holden Brook. Flooding at this site would occur when Holden Brook overtops its bank during flood events.

2c. What are the existing surface water drainage arrangements for the site?

Not Applicable.

## **3. Probability**

3a Which flood zone is the site within?

The Strategic Flood Risk Assessment (SFRA) shows that the site is within Flood Zone 3 (High Probability). PPS25 defines Flood Zone 3 as the flood zone with an annual probability of 1 in 100 (1% AEP) or greater risk of flooding.

3b If there is a Strategic Flood Risk Assessment covering this site, what does it show?

The Strategic Flood Risk Assessment (SFRA) makes no specific reference to this site or Holden Brook.

3c What is the probability of the site flooding taking account of the contents of the SFRA and of any further site-specific assessment?

The probability of the site flooding taking place is 1 in 100 (1% AEP) or greater.

3d What are the existing rates and volumes of run-off generated by the site?

It is expected that there will not be a significant increase in run-off rates resulting from the proposed development.

#### 4. Climate change

4a How is flood risk at the site likely to be affected by climate change?

Not applicable - the proposed development consists of bank protection / stabilisation measures and is not expected to be affected by increased flood levels.

#### 5. Detailed development proposals

5a Please provide details of the development layout, referring to the relevant drawings.

The scope of the proposed works is shown on drawing TS 928 03 D

5b Where appropriate, demonstrate how land-uses most sensitive to flood damage have been placed in areas within the site that are at least risk of flooding.  
The proposed development cannot be located elsewhere and due to the nature of the proposed works is not at risk of flooding

#### 6. Flood risk management measures

6a. How will the site be protected from flooding, including the potential impacts of climate change, over the development's lifetime?

Not Applicable see 5b

#### 7. Off site impacts

7a How will you ensure that your proposed development and the measures to protect your site from

flooding will not increase flood risk elsewhere?

The small footprint of the proposed development will not have any significant effect on the runoff from the development site or cause an increased risk of flooding elsewhere.

7b How will you prevent run-off from the completed development causing an impact elsewhere?

Not Applicable.

#### **8. Residual risks**

8a What flood-related risks will remain after you have implemented the measures to protect the site from flooding?

The flood risks will remain the same as existing following the completion of the development.

8b How, and by whom, will these risks be managed over the lifetime of the development?

The risks will be managed by United Utilities and the landowner over the lifetime of the development

## **SUPPORTING STATEMENT**

320120524P

**Bank Protection / Stabilisation Works**  
**Holden Wastewater Treatment Works**  
**Bolton on Bowland**

### **1. Site Setting and Description**

#### **1.1 General Location**

The proposed development site is located adjacent to an existing Wastewater Treatment Works (WWTW) to the west of Holden Beck and north of Ouze Hall Bridge.

The site is located approximately 0.3km to south of the village of Holden in Bolton By Bowland at National Grid Reference 377695,449153.

#### **1.2 Application Site**

The proposed site is located on agricultural land adjacent to the existing Holden WWTW. The site is bounded by Holden Beck to the west, Bolton by Bowland Road to the east and Ouze Hall Bridge to the south. The closest residential properties are located approximately 75m northeast of temporary working area in Lower Copy Nook Farm.

### **2. Proposed Development**

#### **2.1 Requirement for Development**

Recent monitoring has shown that the banks of Holden Beck are eroding at such a rate as to put Holden WWTW at risk of failure and being put out of service in the next few years if no protection works to stop the banks of the Beck eroding are completed. The proposed works are being implemented to ensure the continued operation of the WWTW.

#### **2.2 General Scheme Overview**

To provide the necessary improvements UU are proposing to construct to construct a Rock Armour Wall along the previous line of the beck with Rip Rap and re grade the bank with soil to tie back into the existing levels. Cross sections showing the existing and proposed profile of the bank and scope of the proposed works can be found on drawing TS 928 03 D.

### **3. Site Selection**

Due to the location of the existing WWTW and Beck no alternative locations for the proposed works were found. The length of protection required was looked at in detail and kept to a minimum distance. Although the severe erosion is only evident along a shorter distance (approximately 25m) it is proposed to construct this over a distance of 50m for a number of reasons as detailed below:

- The existing stone gabion baskets which are in a poor condition and don't follow the topography of the existing ground are to be removed and replaced with the lower rock armour embankment

## **SUPPORTING STATEMENT**

- The section close to the bridge abutment is showing signs of erosion such that the treated effluent from the WwTW is landing on shingle and not being diluted by the river as required under the consent from the EA
- The proposed scheme will protect the abutment of the bridge and protect it from scour which would occur should the erosion be left to continue

### **4. Option Selection**

During the design process a number of sustainability criteria were considered:

#### **4.1 Site Waste Management Plan**

The project does not fall under the Site Waste Management Plan Regulations as it is less than £300k in value.

#### **4.2 Flood Risk**

The development site is located within an area shown to be at risk of flooding on the Environment Agency Flood Maps. A Flood Risk Assessment has been completed and is enclosed. This assessment demonstrates that the development is suitable to be located within this area and will not increase the risk of flooding elsewhere.

#### **4.3 Ecology**

An extended phase 1 survey of the proposed development site has been completed which identified no significant issues or protected species.

Copies of the completed Ecological Assessment and Phase 1 Habitat Survey Map are enclosed.

#### **4.4 Landscape / Visual Impacts**

The proposed development will be located along the existing corridor of the watercourse. The main visual impacts of the development will be during the construction phase with areas being stoned up and site cabins. Following completion of the development it is expected that there will not be any long term significant visual impact on views of the site from along the adjacent highway given that the embankment is being graded to tie in with both the existing ground levels and the Rock Armour. Also given the limited viewpoints of the site and small scope of works it is not expected to affect the setting or openness of Forest of Bowland Area of Outstanding Natural Beauty which the site is located in.

#### **4.5 Trees**

A tree survey of the area affected by the development has been completed and is submitted as part of the Planning Application.

A number of trees are to be removed to facilitate the development as shown on the tree protection / removal plan within the tree survey. All

## **SUPPORTING STATEMENT**

remaining trees and hedgerow will be protected in line with BS5837. The existing gated access is to be widened to provide a 5m gap by removing a small section of hedgerow. This hedgerow will be replaced following completion with a species mix to match existing.

No further landscaping is proposed as part of the proposed development.

### **4.6 Land use**

The proposed development site is currently agricultural land and there will be no change in use following completion. A larger area of land will be available for use following completion of the protection and regarding works.

### **4.7 Rights of Way**

There are no public rights of way that will be affected during construction or operation of the proposed scheme.

### **4.8 Socio-Economic**

The proposed development is not expected to have a long term negative impact on the socio-economic viability of the area. It will provide benefits to the area as it will ensure the continued operation of Holden WwTW.

### **4.9 Archaeology**

There are no known archaeological features present within this area. Any artefact / anomaly uncovered during the contract shall be brought to the attention of the Council's Archaeologist.

## **5. Community Consultation / Involvement**

Consultation has been carried out with the landowner of the proposed working areas and development site. Letters will be sent to residential properties / businesses that are in close proximity to the works. This will inform them of the proposed development, what it entails, the expected duration and any temporary measures that may be in place.

## **6. Planning Context**

### **6.1 Planning Permission**

This document is in support of the proposed development requiring planning permission under the Town & Country Planning Act 1990. These elements comprise:-

#### **6.1.1 Rip Rap and Rock Armour**

Stone Rip Rap and Rock Armour will be constructed along the previous route of the watercourse. The area behind this will be filled in with excavated spoil to tie it into the existing ground levels. The protection will be along a distance of 50m as detailed and located as shown on drawing TS 928 03 D.

## **SUPPORTING STATEMENT**

### **6.1.2 Access Junction**

The existing farm access junction is to be stoned up and widened (including hedge trimming) so that a 5m wide access junction can be provided during construction. Following the completion of development the access will be returned to its existing condition and any hedgerow removed replaced with a native species in the first available planting season.

### **6.2 Permitted Development**

The temporary compound and working areas are permitted by virtue of the GPDO 1995 Part 4 Class (a). These elements are illustrated on the attached plans.

## **7. Construction Phase**

### **7.1 Environmental Impacts**

Environmental impacts from the construction work will be managed and controlled by the Contractor in accordance with the relevant Environmental and Health and Safety legislation and in accordance with United Utilities policies and procedures.

There will be increased noise levels during construction. Activities will be limited to normal working hours to minimise disturbance to most residents.

### **7.2 Construction Programme/Timing**

Construction is currently programmed to commence in late Summer 2012, subject to planning permission being granted, for a period of approximately 3 months with the in beck works being completed by the end of September.

It is anticipated that construction will be limited to 0800 – 1800 Monday to Friday and 0800 – 1200 Saturday mornings with no work to be carried out on Sundays or Bank Holidays. If any extension to these working hours is required then permission will be sought from the Local Planning authority.

### **7.3 Traffic Management & Access**

Site entrance/egress during construction will be taken from the improved access off the highway as shown on the submitted drawings. Following completion of the development the improved entrance will be removed and it will be reinstated to its existing condition. No permanent access to the WwTW is proposed.

### **7.4 Contractors Compound**

A compound area is to be provided within the working area as shown on the submitted plans. Access to the compound area will be taken from the improved access off the highway. The compound and working areas will be clearly fenced off throughout construction. The compound will consist of office and welfare cabins as well as parking and storage areas.

**SUPPORTING STATEMENT****8. Other Consents**

No other consents are required in connection with this scheme. Confirmation has been received from Graham Todd (Lancashire County Council Flood Risk) that consent under the Flood and Water Management Act 2010 (Land Drainage Act 1991 as amended) is not required for the proposed works.

**9. Plans**

Plans submitted in support of this application are:

- TS 928 03 D

| TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL |                                                                                                   |  |  |  |  |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|--|--|--|
| Site:                                                    | Holden Bank WwTW, Ouzel Hall Bridge, Bolton-by-Bowland Rd, Bolton-by-Bowland, Lancashire, BB7 4NL |  |  |  |  |
| Client:                                                  | United Utilities                                                                                  |  |  |  |  |

|                  |                                          |
|------------------|------------------------------------------|
| Surveyor:        | Phill Harris – Chartered Arboriculturist |
| Assessment Date: | 29 March 2012                            |
| Job Reference:   | BOW20/94                                 |

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| No. | Species  | Height | Stem Diam | Branch Spread                  | Height of C.C | Age | PC | Comments on Condition, etc                                                                                                                                                                 | Management Recommendations                                                                                                                                                                             | ERC                                                                                 | Cat. Grade | RPA (m²) | RPA Radius (m) |      |
|-----|----------|--------|-----------|--------------------------------|---------------|-----|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------|----------|----------------|------|
| T1  | Ash      | 18.5   | 1400 (ts) | N 10<br>E 9.5<br>S 7<br>W 9    | 1.5           | PM  | P  | ▪ Extensive basal decay<br>▪ Stem bifurcates into co-dominant sub-stems at a height of approximately 0.5m<br>▪ Crown showing signs of a substantial reduction in vitality                  | ▪ Protect Root Protection Area (RPA) throughout construction works with protective fencing to from Construction Exclusion Zone (CEZ) as per Tree Protection Plan<br>▪ Monitor physiological condition. | 10-20                                                                               | C1         | 615.83   | 14             |      |
| T2  | Ash      | 7      | 190       | N<br>E<br>S<br>W               | 0.5           | 3   | Y  | P                                                                                                                                                                                          | ▪ Growing in small earth mound<br>▪ Crown has evidently previously died back significantly<br>▪ Short projected remaining safe life expectancy                                                         | ▪ Remove due to short projected remaining safe life expectancy.<br>▪ Grub out stump | <10        | R        | 16.33          | 2.28 |
| T3  | Hawthorn | 5      | 350 (ms)  | N 2<br>E 1.5<br>S 1.5<br>W 2   | 1             | M   | P  | ▪ Multi-stemmed from ground level.<br>▪ Crown showing signs of a significant and evidently progressive reduction in vitality.<br>▪ Short projected remaining safe life expectancy.         | ▪ Remove due to short projected remaining safe life expectancy.<br>▪ Grub out stump.                                                                                                                   | <10                                                                                 | R          | 38.49    | 3.5            |      |
| T4  | Hawthorn | 7.5    | 230 (ts)  | N 3<br>E 2.5<br>S 1.5<br>W 2.5 | 0             | EM  | M  | ▪ Stem bifurcates into co-dominant sub-stems at a height of approximately 0.7m                                                                                                             | ▪ Remove in order to achieve re-modelling of existing stone area.<br>▪ Grub out stump.                                                                                                                 | 10-20                                                                               | C1/2       | 16.62    | 2.3            |      |
| T5  | Ash      | 10     | 270       | N 7<br>E 2.5<br>S 4<br>W 6     | 5             | SM  | G  | ▪ Located on river bank at base of steep slope.<br>▪ No visible structural defects.                                                                                                        | ▪ No work required.                                                                                                                                                                                    | >40                                                                                 | B1/2       | 32.98    | 3.24           |      |
| T6  | Alder    | 16     | 600       | N 6.5<br>E 2<br>S 6<br>W 6     | 2.5           | M   | M  | ▪ Located on river bank at base of steep slope.<br>▪ No visible structural defects<br>▪ Part of group with neighbouring tree<br>▪ Crown showing signs of a moderate reduction in vitality. | ▪ Prune to lift crown for machinery access over river if needed                                                                                                                                        | 20-40                                                                               | B1/2       | 162.88   | 7.2            |      |

#### HEADINGS & ABBREVIATIONS

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No.                         | Allocated Tree (T), Group (G), Woodland (W) or Hedge (H) reference number - refer to plan and to numbered tags where applicable                                                                                                                                                                                                                                                                                                                                                 |
| Species:                    | Common and botanical name in brackets where appropriate                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Height:                     | In metres - where possible approximately 80% are measured using an electronic clinometer and the remainder estimated against the measured trees. In the case of Groups and Woodlands the measurement listed is that of the highest tree                                                                                                                                                                                                                                         |
| Stem Diam.:                 | Stem diameter in millimetres - measured or estimated at a height of approximately 1.5 metres above ground level or just above the root flare for multi-stemmed trees. MS = multi-stemmed, TS = twin-stemmed                                                                                                                                                                                                                                                                     |
| Branch Spread:              | Crown radius measured (or estimated where considered appropriate) from the four cardinal points (north, east, south and west) to give an accurate visual representation of the crown                                                                                                                                                                                                                                                                                            |
| Height of CC:               | Height of crown clearance in metres - measured at lowest point above adjacent ground level - to inform on crown to height ratio, potential for shading, etc                                                                                                                                                                                                                                                                                                                     |
| Age:                        | Estimated age class - Y = young, SM = semi-mature, EM = early-mature, M = mature, PM = post-mature                                                                                                                                                                                                                                                                                                                                                                              |
| PC:                         | Physiological Condition - a measure of the tree(s) overall vitality i.e. D = Dead, MD = Moribund, P = Poor, M = Moderate, G = Good                                                                                                                                                                                                                                                                                                                                              |
| Comments on Condition, etc: | Comments relating to the tree(s) overall condition and any other pertinent factors including structural defects, current and potential direct structural damage, physiological decline, poor form, etc                                                                                                                                                                                                                                                                          |
| Management Recommendations: | Either Preliminary or In Consideration of the Proposal - In the case of Arboricultural Constraints Surveys the recommended management works only take existing site and tree circumstances and conditions into account and not proposed developments. Arboricultural Impact Assessment and Method Statement related Surveys take the proposed development into consideration with recommendations made accordingly. More than one option may be given if considered appropriate |
| ERC:                        | Estimated Remaining Contribution - in years as per BS5837:2005 (i.e. less than 10, 10-20, 20-40, more than 40)                                                                                                                                                                                                                                                                                                                                                                  |
| Cat. Grade:                 | Category Grading - tree retention value listed as R or A to C - broadly in line with BS5837:2005 table 1                                                                                                                                                                                                                                                                                                                                                                        |
| RPA m²:                     | Root Protection Area in m² - calculated area around the tree that must be appropriately protected throughout the development process in order avoid root damage                                                                                                                                                                                                                                                                                                                 |
| RPA Radius (m):             | Root Protection Area Radius - in metres measured from the centre of the stem to the line of tree protection                                                                                                                                                                                                                                                                                                                                                                     |

**TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL**
**Site:** Holden Bank WWTW, Ouzel Hall Bridge, Bolton-by-Bowland Rd, Bolton-by-Bowland, Lancashire, BB7 4NL

**Client:** United Utilities

**Surveyor:** Phill Harris – Chartered Arboriculturist

**Assessment Date:** 29 March 2012

**Job Reference:** BOW20/94

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| No. | Species               | Height | Stem Diam. | Branch Spread                    | Height of CC | Age  | PC  | Comments on Condition, etc.                                                                                                                                                                                                                               | Management Recommendations                                                                                                                                                                                                                                                                            | ERC   | Cal. Grade | RPA (m²) | RPA Radius (m) |
|-----|-----------------------|--------|------------|----------------------------------|--------------|------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------|----------|----------------|
| T7  | Sycamore              | 16     | 600        | N 4.5<br>E 6<br>S 6<br>W 2       | 6            | M    | M   | <ul style="list-style-type: none"> <li>Located on river bank at base of steep slope</li> <li>No visible structural defects</li> <li>Part of group with neighbouring tree</li> <li>Crown showing signs of a moderate reduction in vitality.</li> </ul>     | <ul style="list-style-type: none"> <li>No work required.</li> </ul>                                                                                                                                                                                                                                   | 20-40 | B1/2       | 162.88   | 7.2            |
| T8  | Elm                   | 4.5    | 130 (ts)   | N 2<br>E 2.5<br>S 2.5<br>W 2.5   | 1.5          | Y    | G   | <ul style="list-style-type: none"> <li>Stem bifurcates at a height of approximately 1m</li> </ul>                                                                                                                                                         | <ul style="list-style-type: none"> <li>Remove in order to construct new rock armour wall</li> <li>Grub out stump.</li> </ul>                                                                                                                                                                          | 10-20 | C1/2       | 5.31     | 1.3            |
| T9  | Hawthorn              | 4      | 250 (ts)   | N 2<br>E 2.5<br>S 2.5<br>W 2     | 0            | EM   | G   | <ul style="list-style-type: none"> <li>Stem bifurcates at a height of approximately 0.1m</li> </ul>                                                                                                                                                       | <ul style="list-style-type: none"> <li>Remove in order to construct new rock armour wall.</li> <li>Grub out stump.</li> </ul>                                                                                                                                                                         | >40   | C1/2       | 19.64    | 2.5            |
| G1  | approx. 4no. Hawthorn | ≤ 7    | ≤ 550 (ms) | N ≤ 3<br>E ≤ 4<br>S ≤ 4<br>W ≤ 5 | ≥ 0          | M-PM | MD  | <ul style="list-style-type: none"> <li>Linear group that evidently originally formed part of a hedge</li> <li>Most are multi-stemmed</li> <li>Crowns showing signs of a moderate to severe reduction in vitality.</li> <li>All are in decline.</li> </ul> | <ul style="list-style-type: none"> <li>Remove in order to construct new rock armour wall</li> <li>Grub out stumps.</li> </ul>                                                                                                                                                                         | <10   | R          | ≤ 95.05  | ≤ 5.5          |
| G2  | approx 4no. Hawthorn  | ≤ 5.5  | ≤ 300 (ms) | N ≤ 2<br>E ≤ 2<br>S ≤ 2<br>W ≤ 2 | ≥ 0.5        | EM-M | P-M | <ul style="list-style-type: none"> <li>Moderately closely spaced group on slope.</li> <li>Crowns showing signs of a moderate reduction in vitality</li> </ul>                                                                                             | <ul style="list-style-type: none"> <li>Protect throughout construction works with protective fencing to from CEZ as per Tree Protection Plan where considered necessary.</li> </ul>                                                                                                                   | 10-20 | C1/2       | ≤ 28.28  | ≤ 3            |
| G3  | approx. 5no Hawthorn  | ≤ 5.5  | ≤ 300 (ms) | N ≤ 2<br>E ≤ 2<br>S ≤ 2<br>W ≤ 2 | ≥ 0.5        | EM-M | P-M | <ul style="list-style-type: none"> <li>Moderately closely spaced group on slope</li> <li>Crowns showing signs of a moderate reduction in vitality</li> </ul>                                                                                              | <ul style="list-style-type: none"> <li>Protect throughout construction works with protective fencing to from CEZ as per Tree Protection Plan where considered necessary</li> </ul>                                                                                                                    | 10-20 | C1/2       | ≤ 28.28  | ≤ 3            |
| H1  | Hawthorn              | ≤ 1.5  | ≤ 150 (ms) | ≤ 1.5 wide                       | ≥ 0.5        | SM   | G   | <ul style="list-style-type: none"> <li>Maintained hedgerow along boundary to road</li> </ul>                                                                                                                                                              | <ul style="list-style-type: none"> <li>Remove 5m long section in order to form access point, as per Tree Protection Plan</li> <li>Protect remainder throughout construction works with protective fencing to from CEZ as per Tree Protection Plan.</li> <li>Replant space following works.</li> </ul> | >40   | C2         | ≤ 7.07   | ≤ 1.5          |

BS5837:2005 Table 1 – Cascade Chart for Tree Quality Assessment

| Trees for removal                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                            |                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Category and definition                                                                                                                                                                                                              | Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                            | Identification on plan |
| <b>Category R</b><br>Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management                             | <ul style="list-style-type: none"><li>• Trees that have serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees such as where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning</li><li>• Trees that are dead or are showing signs of significant, immediate and irreversible overall decline</li><li>• Trees infected with pathogens of significance to the health and/or safety of other trees nearby, for example Dutch Elm Disease, or very low quality trees suppressing adjacent trees of better quality</li></ul> <p>Note – Habitat reinstatement may be appropriate For example R category tree used as a bat roost: installation of bat box in nearby tree.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                            | Dark Red               |
| Trees to be considered for retention                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                            |                        |
| Category and definition                                                                                                                                                                                                              | Category – Subcategories                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                            | Identification on plan |
|                                                                                                                                                                                                                                      | 1. Mainly arboricultural values                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2. Mainly landscape values                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3. Mainly cultural values, including conservation                                                                                          |                        |
| <b>Category A</b><br>Those of high quality and value: in such a condition as to be able to make a substantial contribution A minimum of 40 years is suggested                                                                        | Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal Arboricultural features for example the dominant and/or principal trees within an avenue                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance for example avenues or other arboricultural features assessed as groups                                                                                                                                                                                                                                       | Trees, groups or woodlands or significant conservation, historical, commemorative or other value for example veteran trees or wood-pasture | Light Green            |
| <b>Category B</b><br>Those of moderate quality and value: those in such a condition as to make a significant contribution A minimum of 20 years is suggested.                                                                        | Trees that might be included in the high category, but are downgraded because of impaired condition Examples include the presence of remediable defects including unsympathetic past management and minor storm damage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Trees present in numbers, usually as groups or woodlands, so they form distinct landscape features which attract a higher collective rating than they might as individuals But which are not, individually, essential components of formal or semi-formal arboricultural features For example, trees of moderate quality within an avenue that includes better, A category specimens Or trees which are internal to the site, therefore individually having little visual impact on the wider locality | Trees with clearly identifiable conservation or other cultural benefits                                                                    | Mid Blue               |
| <b>Category C</b><br>Those trees of low quality and value: currently in adequate condition to remain until new planting could be established - a minimum of 10 years is suggested - or young trees with a stem diameter below 150 mm | Trees not qualifying in higher categories                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit                                                                                                                                                                                                                                                                                                                         | Trees with very limited conservation or other cultural benefits                                                                            | Grey                   |
|                                                                                                                                                                                                                                      | Note – Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                            |                        |

320120524P

## **DISCLAIMER**

**Survey Limitations:** Unless otherwise stated all trees are surveyed from ground level using non-invasive techniques. The disclosure of hidden crown and stem defects, in particular where they may be above a reachable height or where trees are ivy clad or in areas of ground vegetation, cannot therefore be expected. All obvious defects, however, are reported. Detailed tree safety appraisals are only carried out under specific written instructions. Comments upon evident tree safety relate to the condition of said tree at the time of the survey only

Unless otherwise stated all trees should be re-inspected annually in order to appraise their on-going mechanical integrity and physiological condition. It should, however, be recognised that tree condition is subject to change, for example due to the effects of disease, decay, high winds, development works, etc. Changes in land use or site conditions (e.g. development that increases access frequency) and the occurrence of severe weather incidents are also significant considerations with regards tree structural integrity and trees should therefore be re-assessed in the context of such changes and/or incidents and inspected at intervals relative to identified and varying site conditions and associated risks.

Where trees are located wholly or partially on neighbouring private third-party land then said land is not accessed and our inspection is therefore restricted to what can reasonably be seen from within the site. Stem diameters of trees located on such land are estimated. Any subsequent comments and judgments made in respect of such trees are based on these restrictions and are our preliminary opinion only. Recommendations for works to neighbouring third-party trees are only made where a potentially unacceptable risk to persons and/or property has been identified during our survey. Where significant structural defects of third-party trees are identified and associated management works are considered essential to negate any risk of harm and/or damage then we will first attempt to inform the site occupier of the issues and, if not possible, then inform the relevant Council. Where a more detailed assessment is considered necessary then appropriate recommendations are set out in the Tree Survey Schedule.

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820120524P

T = Surveyed Individual Tree  
G = Surveyed Group of Trees  
H = Surveyed Hedge

Please refer to associated Tree Survey Schedule and BS5837:  
2005 Table 1 for specific details in respect items detailed below:

**Tree Categorisations:**

Those of a High and Moderate Quality &/or Value:

Category 'A' Tree/Group/Hedge  
High Quality/Value with Estimated Remaining  
Lifespan of Over 40 Years

Category B Tree/Group/Hedge  
Moderate Quality/Value with Estimated Remaining  
Lifespan of Between 20 & 40 Years

Those of a Low Quality &/or Value:

 **Category 'C' Tree/Group/Hedge**  
Low Quality/Value with Estimated Remaining  
Lifespan of Between 10 & 20 Years

Category 'R' Tree/Group/Hedge  
 <10 Years Remaining Lifespan - Should Therefore  
 be Considered for Removal in Accordance with  
 Prudent Arboricultural Management

**RPA's & CEZs:**

 Radial Root Protection Area (RPA)  
Area that Should be Protected Throughout  
Development Works with Protective Fencing to  
form a Construction Exclusion Zone - see below



**Construction Exclusion Zone (CEZ)**  
Ground Area to be Enclosed with Temporary  
Protective Fencing Throughout the Development  
Process

**Important:** The original version of this plan was produced in colour, which is essential to the plan's interpretation and usability. As such, a monochrome copy should not be relied upon.

Note: Survey carried during March 2012 under BS5837:2005 guidance

Project:  
HOLDEN BANK WWTW  
OUZEL HALL BRIDGE  
BOLTON BY BOWLAND ROAD  
BOLTON BY BOWLAND  
LANCASHIRE  
BB7 4NL

**Client:**  
**UNITED UTILITIES**

Title:  
**TREE PROTECTION PLAN**

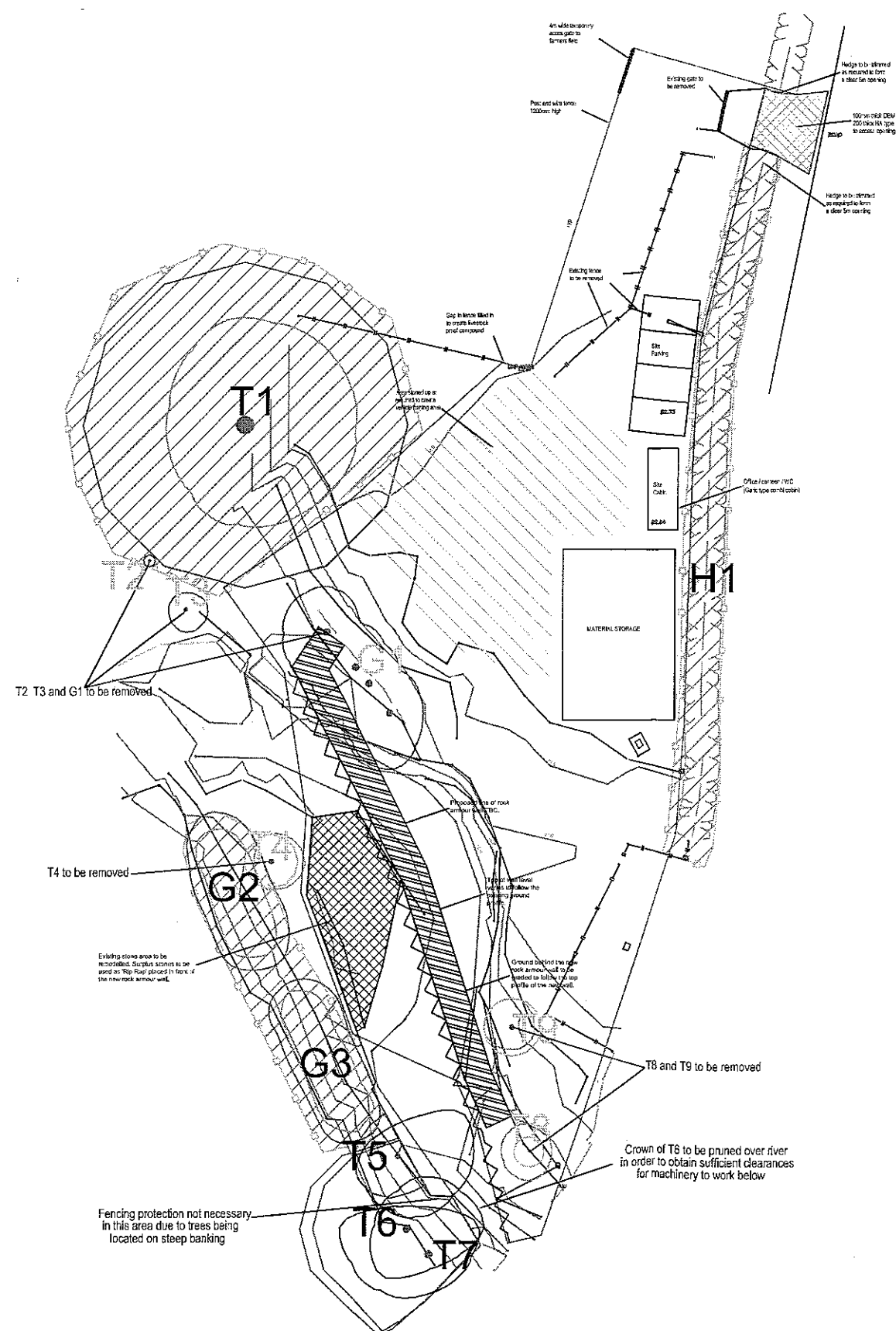
in Relation to Proposed Shoring Works to  
River Bank

|             |           |
|-------------|-----------|
| Scale:      | 1:500@A3  |
| Date:       | March 201 |
| Drawn by:   | PH        |
| Checked by: | EK        |



Refs: BOW20/105 - TCP

Rev:





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## Holden WWTW - Bank Slippage

*Extended Phase 1 Habitat Survey*

March 2012

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|                         |  |
|-------------------------|--|
|                         |  |
| 14 JUN 2012             |  |
| FOR THE<br>ATTENTION OF |  |

## **Control sheet**

**Project No & Title:** BOW0020/094 – Holden WWTW - Bank Slippage Extended Phase 1 Habitat Survey

**Client:** United Utilities Plc

**Prepared by:** Emma Kilduff, Ecologist

**Checked by:** Jeremy James, Principal Ecologist

**Date of Issue:** March 2012                      **Status:** Final

**Version No:** 1

**Revisions:** 0

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## **1. Introduction**

- 1.1 Bowland Ecology Ltd was commissioned to undertake an Extended Phase 1 Habitat survey of a site at Holden WWTW (NGR: SD 876150) where extensive erosion of a section of the eastern bank of Holden Beck has occurred, comprising the adjacent underground treatment works. The site comprises species poor semi-improved pasture, scattered trees and scrub along with Ouzel Hall Bridge to the west of the proposed works location.
- 1.2 The ecological survey methodology followed that of an extended Phase 1 habitat survey. It also included a brief desk study of online resources to search for wildlife sites and protected species records. The aim of the survey and desk study was to make an assessment of wildlife interests at the site with particular reference to legal requirements and potential development constraints.
- 1.3 This report includes a description of survey methods; a summary description of habitats and fauna; and outlines recommendations to provide protection and enhancements for biodiversity and protected species.
- 1.4 The locations of target notes (1-8) as listed in Appendix A are shown on the Extended Phase 1 Habitat Plan (Appendix B). This report should be read in conjunction with the Phase 1 plan.

## 2. Methodology

### *Desk Study*

- 2.1 A targeted desk study was undertaken of the site and a 1.5km buffer zone involving an online search of the Multi Agency Geographical Information Centre ([www.magic.gov.uk](http://www.magic.gov.uk)), Natural England's Nature on the Map ([www.natureonthemap.org.uk](http://www.natureonthemap.org.uk)). The UK and Local (Lancashire) Biodiversity Action Plans were also consulted.
- 2.2 The aim of the desk study was to identify the presence of statutory wildlife sites and any legally protected and notable species records for the area.

### *Extended Phase 1 Survey*

- 2.3 The survey followed the Phase 1 habitat survey methodology (JNCC, 1993) and assesses all features of ecological significance within the survey area; these were target noted.
- 2.4 The survey was extended such that evidence of fauna and faunal habitat is also recorded. The Extended Phase 1 survey is a modified version of the Phase 1 survey and follows the approach recommended by the Guidelines for Baseline Ecological Assessment (IEA, 1995). This involves walking the whole site, mapping and describing the habitats present (e.g. woodland, grassland, scrub) and recording evidence of fauna and faunal habitat (e.g. droppings, tracks or specialist habitat such as trees for bats or ponds for breeding amphibians). A colour coded map of the habitats on site is produced, with corresponding target notes of ecologically interesting features.
- 2.5 The ecological survey was carried out on the 1<sup>st</sup> March 2012 by Emma Kilduff BSc (Hons), AIEEM and James Segar MSc, BSc (Hons), AIEEM. The weather was cool and clear with no appreciable wind or rain. The timing of the survey was within the optimum period for completing such a survey allowing for a full assessment of the habitats present and their potential to support legally protected species.

### *Water Vole and Otter Survey*

- 2.6 The water vole and otter survey was undertaken along Holden Beck on the 1<sup>st</sup> March 2012 following the methodology outlined below. The survey was undertaken by Emma Kilduff BSc (Hons), AIEEM and James Segar BSc (Hons), MSc, AIEEM.
- 2.7 The method for the water vole survey followed Strachan & Moorhouse (2006) Water Vole Conservation Handbook 2nd Edition. During the survey the following evidence of water voles was searched for: sounds of water voles entering the water (a distinctive 'plopping' noise), burrow entrances, feeding stations, latrines or droppings, waterside paths, runs in vegetation and footprints. Signs of brown rat (*Rattus norvegicus*), bank vole (*Clethrionomys glareolus*) and field vole (*Microtus agrestis*) were also searched for, as these can easily be confused with those of water vole.
- 2.8 During the survey the following evidence of otter (*Lutra lutra*) was searched for: spraints or droppings on exposed rocks in the watercourse and on the

banks, footprints, runs or trails within the surrounding bank side vegetation, feeding remains and overhanging banks and cavities which could be utilised by otters as suitable holts or resting points.

### 3. Results

#### *Statutory Wildlife Sites*

- 3.1 There is one statutory wildlife site within 1.5km of the proposed development, New Ing Meadow SSSI, located approximately 1.2km to the north-west of the site. The site is designated for its herb-rich meadow, which has become increasingly scarce in Lancashire. The SSSI is not connected to the development site via the watercourse and is sufficiently far from the proposed works location that any potential impacts resulting from the works can be considered negligible. It will not therefore be considered further within the scope of this report.

#### *Non-statutory Wildlife Sites*

- 3.2 Two Biological Heritage Sites are situated within 1.5km of the proposed works location;
- Spring Wood (Ref; 74NE02) is situated approximately 480m to the south-west of the proposed works location and is designated for its woodland and scrub habitats.
  - Clough Wood (Ref; 75SE04) is situated approximately 400m to the north-west of the proposed works location and is designated for its woodland and scrub habitats along with its assemblage of flowering plants and ferns, which includes the occurrence of wood fescue (Lancashire Red Data List of Vascular Plants). It is also listed in the Lancashire Inventory of Ancient Woodland.

#### *Protected Species and Habitats Records*

- 3.3 Records for the following BAP species exist for the Grid Square SD74;

##### *Birds*

- Common cuckoo
- Common grasshopper warbler
- Corncrake
- Curlew
- Tree sparrow
- Nightjar
- Grey partridge
- House sparrow
- Lesser redpoll
- Lapwing
- Reed bunting
- Ring ouzel
- Spotted flycatcher
- Tree pipit
- Wood warbler
- Yellowhammer

##### *Fish*

- Atlantic Salmon have been recorded in Holden Beck most recently in 1998.
- Brown Trout have been recorded in Holden Beck most recently in 1998.

- European Eel have been recorded in Holden Beck most recently in 1998.

*Plants*

- Darnel
- Field gentian
- Thorow-wax

*Butterflies and Moths*

- Duke of Burgundy
- Small heath
- Wall
- White-letter hairstreak
- An assemblage of moth species

*Mammals*

- One record of brown long eared bat in 1992 (site name protected)
- Soprano pipistrelle recorded at SD7549 in 2005 and 2006
- Dated water vole records
- Otter records for the River Ribble and Ings Beck in 1993

3.4 Natural England's 'Nature on the Map' reveals that there are areas of Ancient Woodland and Deciduous Woodland within 1.5km of the site, listed as a UK BAP Priority Habitat.

3.5 Consultation with 'Lancashire Environment Record Network' highlighted the following notable records for the site and the 1.5km buffer zone;

- Fish; bullhead have been recorded in Holden Beck
- Birds; grey Heron, redshank, lapwing and sand martin
- Mammals; water vole have been recorded along Biers Beck approximately 300m to the east of the proposed works location. Otter and water vole have been recorded adjacent to the River Ribble approximately 1.2km to the south-east of the works location. Red squirrel have been recorded approximately 1km to the west of the works location
- Flowering plants; lily of the valley and Solomon's seal have been recorded in Clough Wood approximately 850m to the north-west of the works location.

***Extended Phase 1 Survey***

3.6 Target notes summarising key interest features for wildlife recorded during the Extended Phase 1 survey are included as Appendix A. The Phase 1 habitat plan for the study site is presented as Appendix B, which includes dominant species codes for the habitats present and the locations of the target notes.

3.7 The site at Holden WWTW lies within the small village of Holden within the Ribble Valley, Lancashire. The site is situated within an area of species-poor semi-improved pasture. Holden Beck flows from north to south through the survey area and has been subject to extensive bank slippage/erosion, compromising the adjacent underground treatment works. The boundary features consists of predominately hawthorn dominated hedgerows which is representative of the wider landscape. Areas of scattered trees/scrub exist to the north of the working area which manifests itself as broadleaf woodland further to the north. Ouzel Hall Bridge is located adjacent to the works, to the

south. The wider landscape consists of agricultural land with associated farm buildings, hedgerow boundaries, blocks of woodland and several watercourses.

#### ***Habitat descriptions from field survey***

##### Holden Beck

- 3.8 Holden Beck flows from north to south through the proposed works location at Target note 3. The watercourse was observed to be fast flowing at the time of survey with a shingle substrate with occasional boulders. The banks of the watercourse have been heavily eroded over time leaving areas of exposed shingle bed with the existing embankments set back from the edge of the watercourse. Areas of marsh vegetation have colonised damp depressions within these shingle beds where the water level appears to fluctuate at times. The section of bank subject to the proposed works has been subject to significant erosion/bank slippage in recent years. The approximate depth of the beck is variable in nature, but was noted to be approximately 3-4m in width and 1m depth adjacent to the proposed works location.

##### Species poor semi-improved grassland

- 3.9 The site comprises of mainly intensively grazed species poor semi-improved pasture described in Target note 2. The species composition includes varying amounts of the following species; creeping buttercup, abundant perennial rye grass, cock's foot, dandelion and the moss *Brachythecium rutabulum*. Localised areas of vegetation with acidic tendencies were noted to be present upon the sloping embankments of the watercourse at Target notes 5 and 7. The dominant species present at these locations include; foxglove, mouse-ear hawkweed, lesser celandine, willow herb species, Yorkshire fog, marsh thistle, fescue species, hairy sedge and the bryophytes *Brachythecium rutabulum*, *Rhytidiadelphus squarrosus* and *Rhytidiadelphus loreus*.

##### Hedgerows

- 3.10 A managed hawthorn dominated hedgerow borders the road Barret Hill Brow to the north at Target note 3. Other species present include patches of ash and elder. The ground flora was observed to be sparse in places with the following species recorded within the groundlayer; abundant lords and ladies, cleavers, creeping buttercup and ivy.

##### Scattered Trees and Scrub

- 3.11 Areas of scattered trees and scrub are situated upon the embankments of the watercourse at Target notes 5 and 7. The trees species vary in age from immature to mature trees. The tree species include; ash, alder and oak with the scrub species including; hawthorn, elder and holly.

##### Other Habitats

- 3.12 Holden WWTW is situated at Target note 1 within the species poor semi-improved field described in Target note 2. The treatment works is underground and covered within a fenced off compound approximately 5m to the east of Holden Beck.

- 3.13 Ouzel Hall Bridge is situated over Holden Beck approximately 30m to the south of the proposed works location at Target note 8. The bridge was observed to be in good condition and well pointed.

***Faunal description from field survey***

- 3.14 The range of habitats including species poor semi-improved pasture, scattered trees and scrub, hedgerows, the watercourse Holden Beck and Ouzel Hall Bridge present on site provide a number of opportunities for fauna inhabiting the site.

Riverine species

- 3.15 Holden Beck was subject to a targeted water vole and otter survey on the 1<sup>st</sup> March 2012. No evidence of either species was identified along the banks/margins of the watercourse. A possible lay-up area for otters was located on the western banks of the watercourse directly opposite the working area in a cavity beneath some exposed tree roots. No evidence was found to suggest its current usage. The watercourse also provides suitable habitat for other small mammals such as bank voles.
- 3.16 The watercourse Holden Beck is situated within the scope of the bank re-profiling works to be undertaken. Records for Atlantic salmon, Brown Trout and European Eel all exist for this particular watercourse. Records for Bullhead were also highlighted in the data search undertaken with the 'Lancashire Environment Records Network' (LERN).

Small mammals

- 3.17 The scattered trees, scrub and hedgerows within the survey area provide important habitats for small mammals on site such as hedgehogs, mice, voles and shrews.

Bats

- 3.18 Two mature ash trees upon the eastern embankment of the watercourse within close proximity of the proposed works location at Target note 5. The individual trees were observed to have features such as cavities and splits in branches providing suitable roosting habitat for bats. The watercourse and hedgerow habitats are considered to provide suitable foraging habitat for a range of bat species.
- 3.19 Ouzel Hall Bridge situated approximately 30m to the south of the proposed works location was inspected for its potential to provide suitable habitat for roosting bats. The underneath and sides of the bridge were observed thoroughly and were noted to be in good condition and well pointed with few opportunities for roosting bats. A single, shallow crevice on the north side of the bridge was observed to be present. No evidence of bats was found at the time of survey.

Birds

- 3.20 The hedgerows, scattered trees and scrub present provide potential habitat for nesting birds. Shrub and tree nesting birds blackbird (*Turdus merula*), and wood pigeon (*Columba palumbus*) were observed during the ecological survey.

#### **4. Conclusions and Recommendations**

- 4.1 This section is a summary of ecological interest within the survey area and the recommendations and mitigation measures that should be considered, should the development affect them.
- 4.2 The proposed works involves reinforcement works to a section of the eastern bank of Holden Beck which has experienced significant bank slippage/erosion in recent years. These works are required in order to prevent impacts to the adjacent underground Holden WWTW, which is currently at a distance of 5m to the east of the watercourse. The proposed development has the potential to impact upon a number of ecological features including; species poor semi-improved grassland, hedgerows, scattered scrub and trees, Ouzel Hall Bridge and the eastern bank of Holden Beck. The species poor semi-improved grassland is considered to be of low ecological value. No hedgerows, trees or scrub are considered to be impacted as a result of the proposed works. Ouzel Hall Bridge will not be directly impacted by the proposed works.

##### ***Protected Sites***

- 4.3 The Clough Wood Biological Heritage Site (BHS) is situated approximately 400m to the north of the proposed works location and is connected by the watercourse Holden Beck. The site is designated for its woodland and scrub habitats along with its assemblage of flowering plants and ferns. It is also listed as Ancient Woodland. No direct impacts to the woodland are envisaged due to the implementation of appropriate contingency measures described in paragraph 4.4. The Spring Wood BHS is situated approximately 480m to the south-west of the works location. No impacts to the BHS are envisaged due to the distance and there being no direct link from the works location to the site.

##### ***Holden Beck***

- 4.4 The survey of Holden Beck found no evidence of otter or water vole. However it is recommended that Pollution prevention measures following PPG5 Pollution Prevention Guidelines (Environment Agency, 2007) should be implemented to ensure that there is no run off or pollution into the watercourse as a result of construction activities.
- 4.5 Records for the fish species; Atlantic salmon, brown trout and European eel exist for Holden Beck. It is recommended that consultation with the Environment Agency (EA) is undertaken in order to agree the timing of the works to avoid the spawning season of these species which occurs between the months of October to February. Particular vigilance will be required in respect of these species and sediment control/ pollution prevention especially in periods of heavy rainfall.

##### ***Birds***

- 4.6 Although no tree/scrub clearance is considered necessary if the scope of the works changes any vegetation clearance work should occur outside the bird breeding season, which runs from late February to September. If vegetation is cleared during the nesting season it should be preceded by a pre-clearance nesting bird survey by an experienced ecologist. If nesting birds are found an exclusion zone should be maintained around any occupied nest and these areas should not be cleared until declared free of nesting birds by the ecologist.

**Bats**

- 4.7 Two mature ash trees adjacent to the proposed works location were observed to have cavities and splits in branches providing suitable roosting opportunities for bats. No tree pruning/removal is considered necessary in order to facilitate the works. However, if this is not the case a bat tree inspection of the aforementioned trees will be required by a suitably experienced ecologist prior to any works commencing on site. If evidence of bats is identified; dusk emergence or dawn re-entry surveys or a climb and inspect survey may be required. If bats are found to be roosting within any of the trees a licence from Natural England may be required in order to proceed with the required works.
- 4.8 Ouzel Hall Bridge situated within close proximity of the works was considered to provide low risk potential habitat for bats. The inspection of the bridge revealed only a single, small, shallow crevice on the north facing side of the bridge. The remainder of the bridge was observed to be in good condition, well pointed with no obvious gaps/crevices where bats could roost. No evidence of bats was found at the time of survey. The bridge will not be directly impacted as a result of the proposed works.

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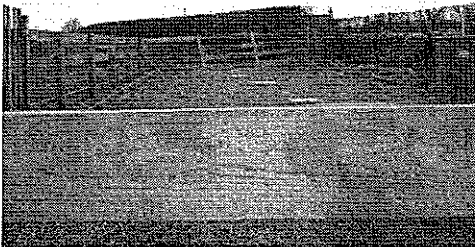
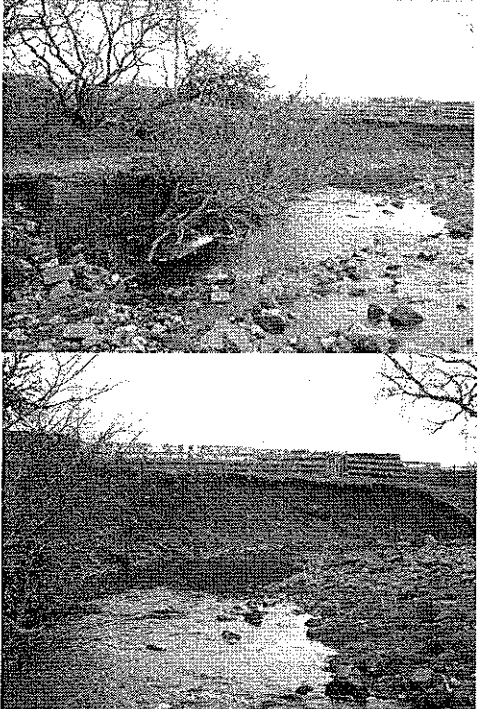
## 5. Legal Status

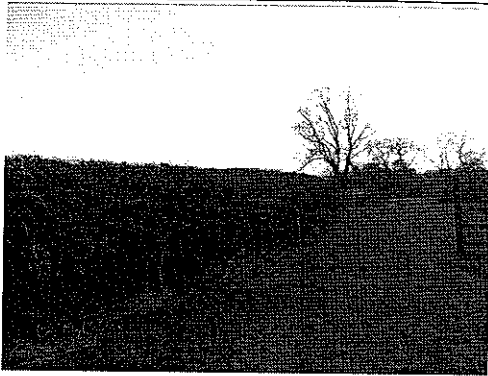
| Species      | Key Legal Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Bats</b>  | <p>All bats in the UK are listed on Schedule 5 of the Wildlife and Countryside Act (WCA) (1981, as amended), updated by the Countryside and Rights of Way Act (2000). It is therefore subject to provision 9 of the WCA which makes it an offence to;</p> <ul style="list-style-type: none"> <li>• Intentionally kill, injure or take any wild bat,</li> <li>• Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by any wild bat</li> <li>• Intentionally or recklessly disturb any wild bat while it is occupying a structure or place which it uses for that purpose.</li> </ul> <p>The Conservation of Habitats and Species Regulations 2010 make provision implementing Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna (the Habitats Directive). These give additional protection to bats. Under Regulation 39 a person commits an offence if he;</p> <ul style="list-style-type: none"> <li>• Deliberately captures, injures or kills any wild animal of a European protected species.</li> <li>• Deliberately disturbs wild animals of any such species in such a way as to be likely to significantly affect;</li> <li>• the ability of any significant group of animals of that species to survive, breed or rear or nurture their young;</li> <li>• Or in the case of a hibernating or migratory species; to hibernate or migrate.</li> <li>• Deliberately takes or destroys the eggs of such an animal or;</li> <li>• Damages or destroys a breeding site or resting place of such an animal</li> </ul> <p>A bat roost has been interpreted to mean any structure or place which is used for shelter or protection whether or not bats are present at the time.</p> |
| <b>Birds</b> | <p>All wild birds, their nests and eggs are, with a few exceptions, fully protected under Section 1 of the WCA, 1981 (as amended) and it is thus an offence to:</p> <ul style="list-style-type: none"> <li>• Intentionally kill, injure or take any wild bird</li> <li>• Intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built</li> <li>• Intentionally take or destroy the egg of any wild bird</li> <li>• Use traps or similar items to kill, injure or take wild birds</li> <li>• Intentionally or recklessly disturb and wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb dependent young of such a bird.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

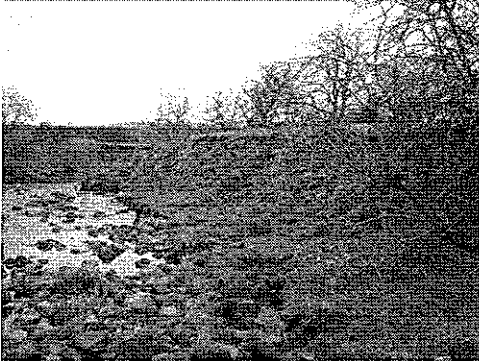
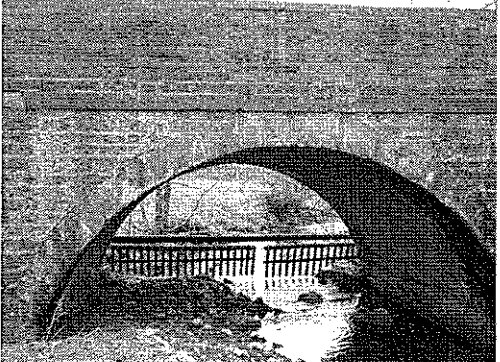
## References

- Environment Agency, 2007. PPG5 Pollution Prevention Guidelines.
- IEA. 1995. *Guidelines for Baseline Ecological Assessment*. Chapman and Hall.
- Joint Nature Conservation Committee (1993). *Handbook for Phase 1 Habitat Survey: A technique for environmental audit*. JNCC

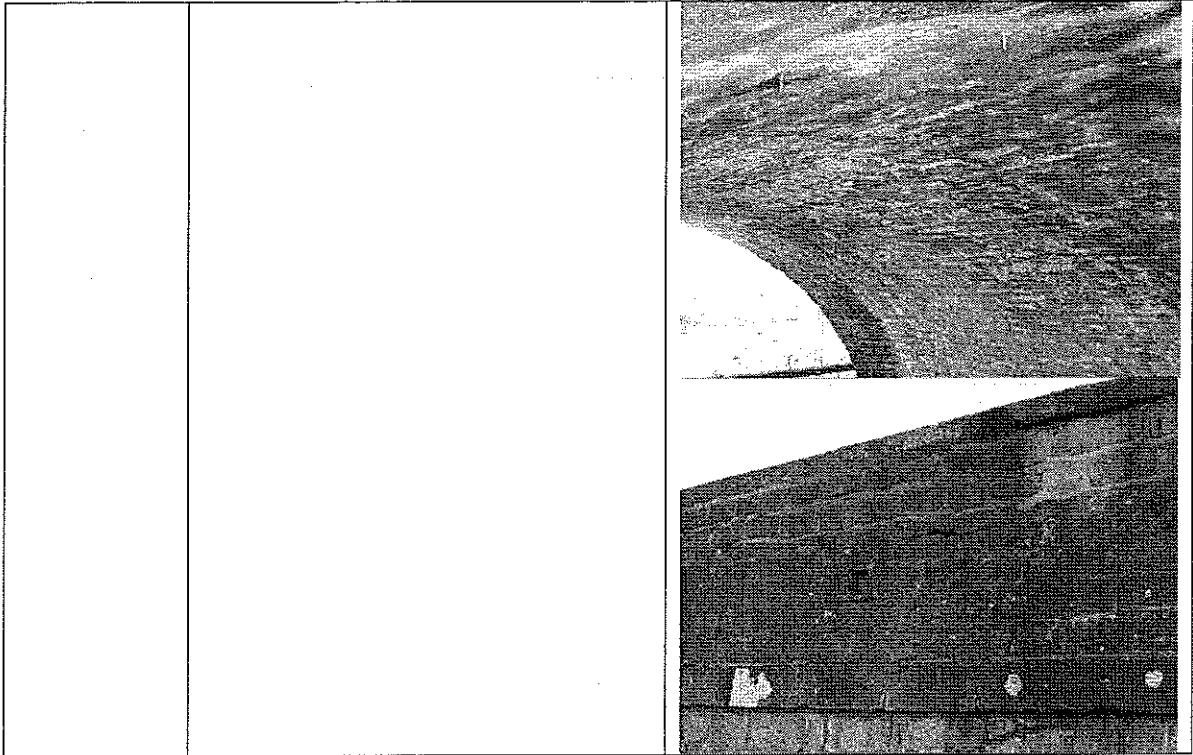
## Appendix A - Extended Phase 1 Target Notes

| Target Note | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Photograph                                                                           |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 1           | The existing underground treatment works is situated within a section of intensively grazed pasture approximately 5m from the top of the east bank of Holden Beck. The treatment works is fenced with timber rail and post fencing with a gravel compound and two metal kiosks.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |
| 2           | The proposed works location and the surrounding land consists of intensively grazed generally species poor pasture. The dominant species present include; creeping buttercup ( <i>Ranunculus repens</i> ), abundant perennial rye grass ( <i>Lolium perenne</i> ), cock's foot ( <i>Dactylis glomerata</i> ), dandelion ( <i>Taraxacum officinale</i> agg) and the moss <i>Brachythecium rutabulum</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |   |
| 3           | Holden Beck flows from north to south through the proposed working area. Significant slippage/erosion of a section of the eastern bank of the watercourse has occurred in recent years, comprising the adjacent WWTW building. This section of the bank will be subject to proposed bank reinforcement. The section of the watercourse within the proposed working area consists of heavily eroded banks with exposed shingle berms, with embankments set back from the watercourse itself. The watercourse was observed to be fast flowing at the time of survey with a substrate consisting of shingle with occasional boulders. The depth/width of the beck is variable in nature, although was noted to be approximately 3-4m width and 1m depth in the proposed working area.<br><br>A water vole and otter survey was undertaken of the watercourse approximately 50m either side of the |  |

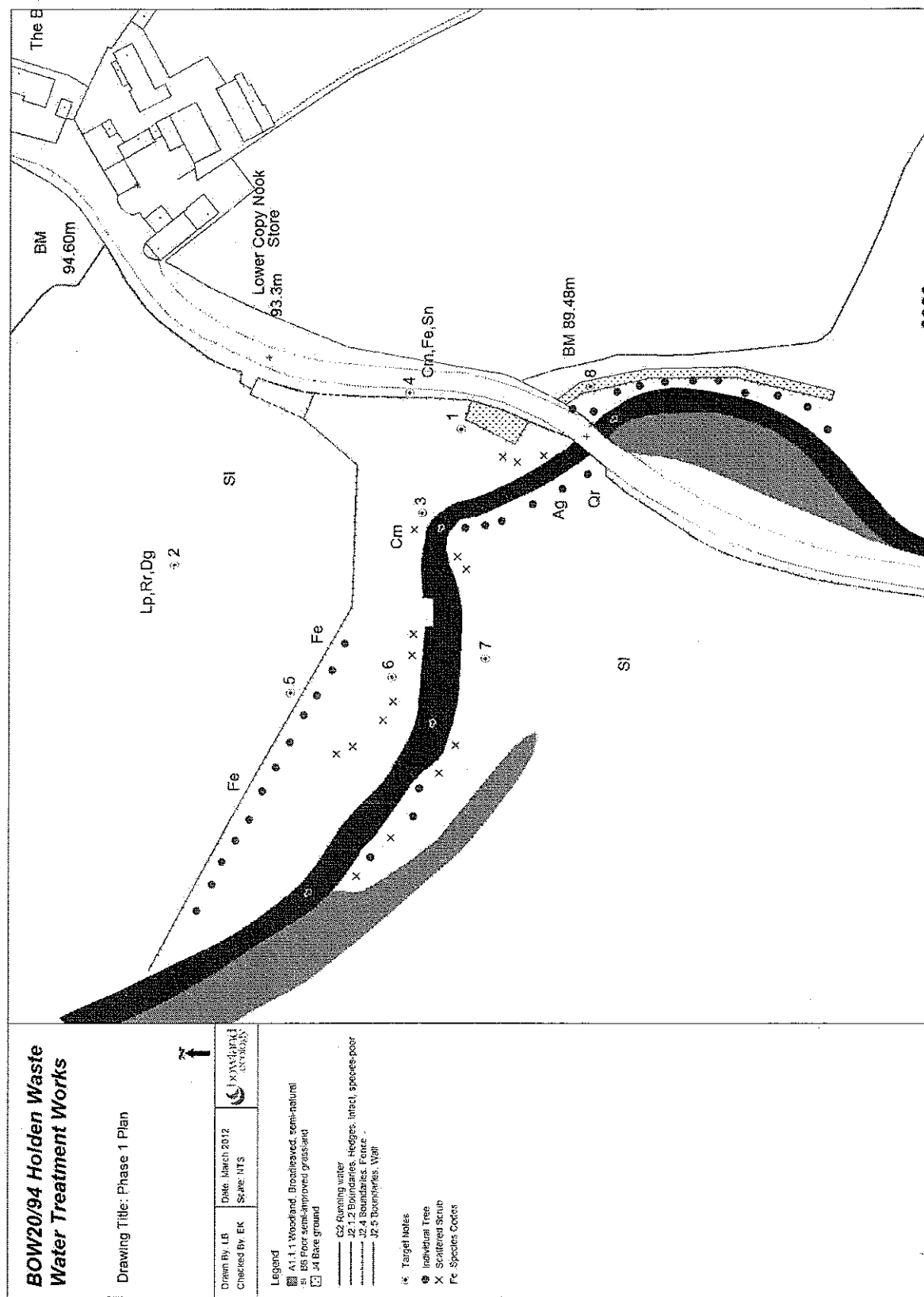
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                          |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | proposed works location by Bowland Ecology at the time of the Phase 1 Survey. No evidence of water vole or otter was found at the time of survey.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 320120524P                                                                                                                                                               |
| 4 | <p>A section of managed hedgerow situated along the roadside boundary and a section of the eastern boundary of the treatment works. Species noted include; abundant hawthorn (<i>Crataegus monogyna</i>), patches of ash (<i>Fraxinus excelsior</i>) and elder (<i>Sambucus nigra</i>). The groundflora species include; lords and ladies (<i>Arum maculatum</i>), cleavers (<i>Galium aparine</i>), creeping buttercup and ivy (<i>Hedera helix</i>).</p> <p>Provides suitable habitat for a range of tree/shrub nesting birds.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                        |
| 5 | <p>A row of mature trees and scattered scrub along the top of a raised embankment with areas of exposed rock, adjacent to the eastern margin of Holden Beck. The embankment itself was noted to have acidic tendencies represented by the floristic composition, which included; foxglove (<i>Digitalis purpurea</i>), mouse-ear hawkweed (<i>Hieracium pilosella</i>), lesser celandine (<i>Ranunculus ficaria</i>), brooklime (<i>Veronica beccabunga</i>), willowherb species (<i>Epilobium</i> species), <i>Geranium</i> species, perennial rye grass, Yorkshire fog (<i>Holcus lanatus</i>) and the moss <i>Brachythecium rutabulum</i>. The tree/scrub species include; ash, hawthorn, elder and holly (<i>Ilex aquifolium</i>). Two mature ash trees are present within close proximity of the proposed working area and were observed to have features such as cavities and splits in branches which could potentially be used by roosting bats. The trees/scrub also provide suitable habitat for a range of tree/shrub nesting birds.</p> |   |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                      |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 6 | <p>A marshy area adjacent to the eastern bank of Holden Beck, which may have been subject to flooding at some point in the past. This damp depression is vegetated with an abundance of floating sweet grass (<i>Glyceria fluitans</i>), brooklime and soft rush (<i>Juncus effuses</i>).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>No photograph available</p>                                                       |
| 7 | <p>An embankment with acidic tendencies with scattered trees and scrub upon the western embankment of Holden Beck. The species present in carrying amounts include; lesser celandine buttercup, marsh thistle (<i>Cirsium palustre</i>), common sorrel (<i>Rumex acetosa</i>), fescue species (<i>Festuca</i> species), umbelifer species, ribwort plantain (<i>Plantago lanceolata</i>), creeping buttercup, hairy sedge (<i>Carex hirta</i>), cock's foot and a range of bryophytes including; <i>Rhytidiadelphus squarrosus</i> and <i>Rhytidiadelphus loreus</i>. Areas of erosion and exposed rocks are present with well worn paths down to the margins of the watercourse where cattle have been accessing the water. The scattered scrub and tree species include; hawthorn, elder, holly, alder (<i>Alnus glutinosa</i>) and oak (<i>Quercus robur</i>), providing suitable habitat for a range of tree/shrub nesting birds.</p> |    |
| 8 | <p>Ouzel Hall Bridge is located to the south of the proposed works location. The bridge was considered to be well pointed with a single crevice identified on the north side of the bridge. No evidence of bats was identified at the time of survey. The bridge will not be directly impacted by the proposed works.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |

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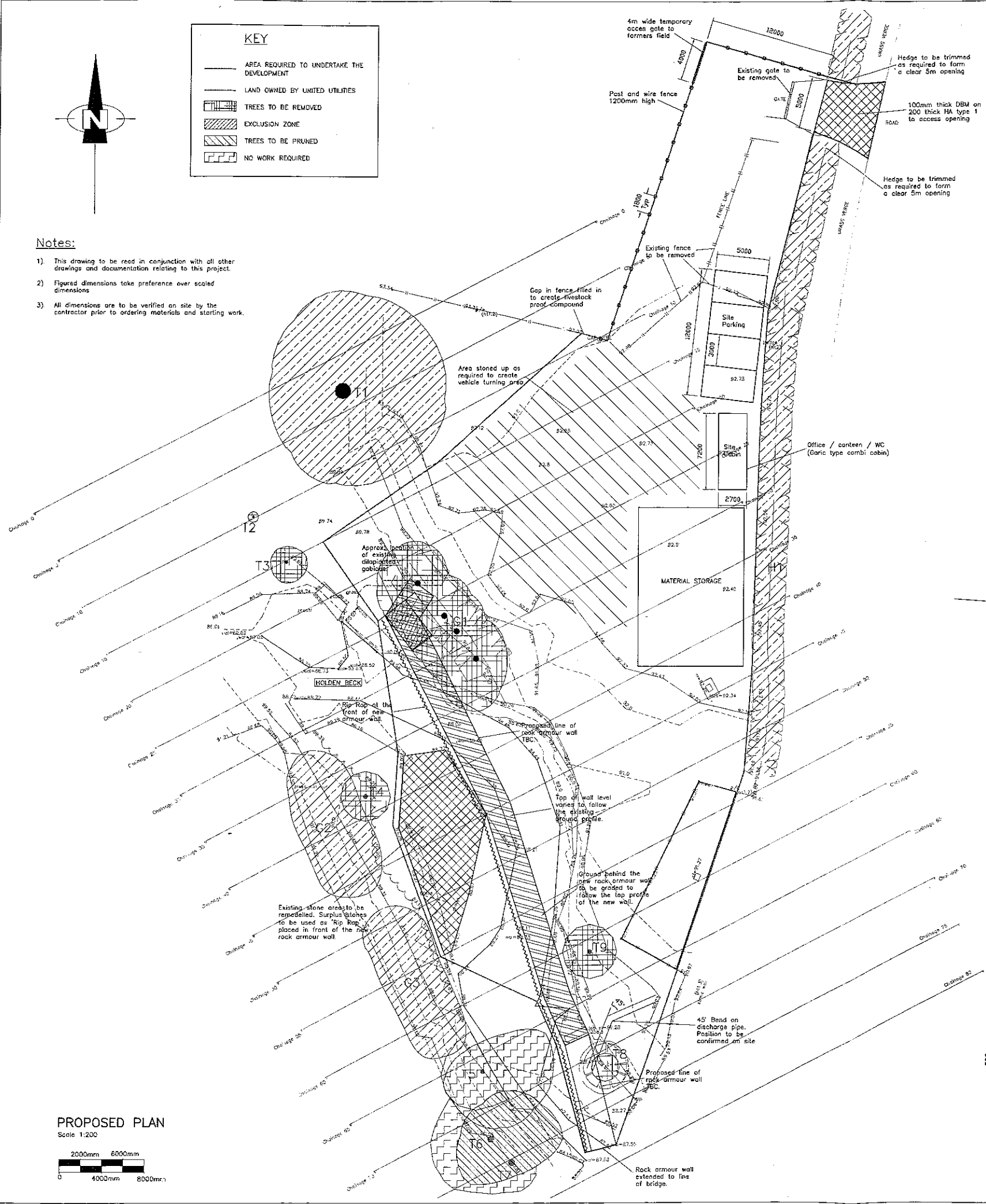
## Appendix B - Extended Phase 1 Habitat Plan



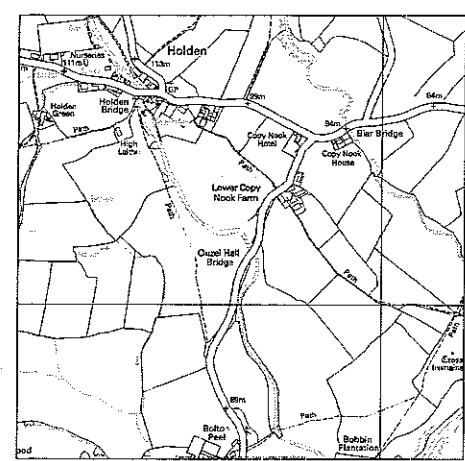
**KEY**

- AREA REQUIRED TO UNDERTAKE THE DEVELOPMENT
- LAND OWNED BY UNITED UTILITIES
- TREES TO BE REMOVED
- EXCLUSION ZONE
- TREES TO BE PRUNED
- NO WORK REQUIRED

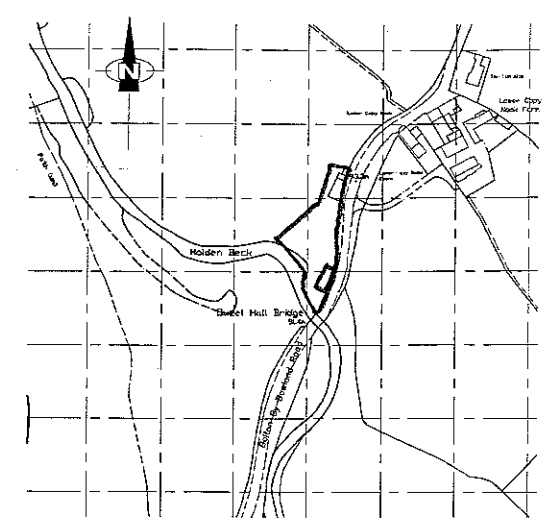
- Notes:**
- 1) This drawing to be read in conjunction with all other drawings and documentation relating to this project.
  - 2) Figured dimensions take preference over scaled dimensions.
  - 3) All dimensions are to be verified on site by the contractor prior to ordering materials and starting work.



**PROPOSED PLAN**  
Scale 1:200

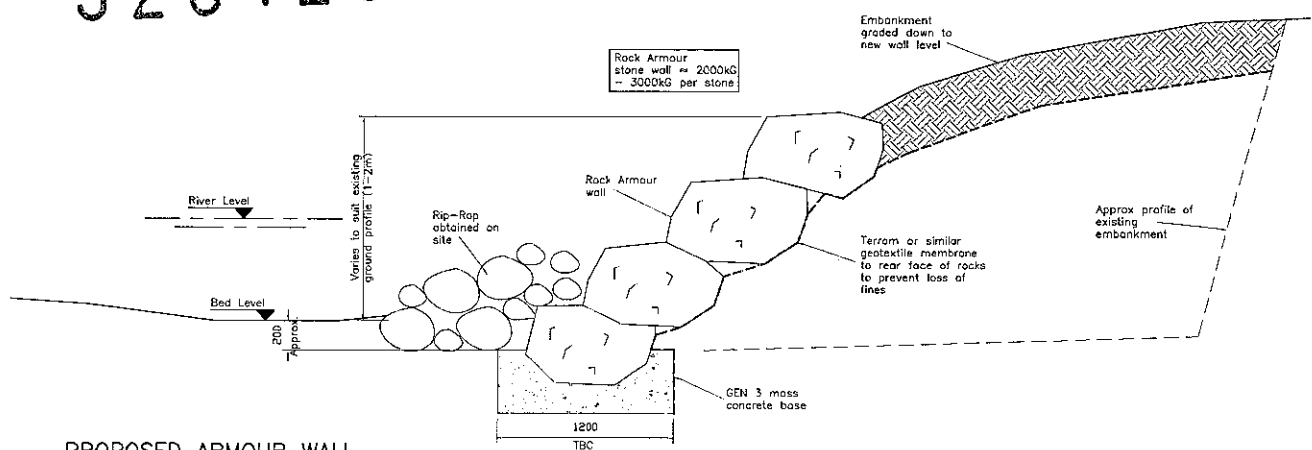


**MAP**  
Scale: NTS

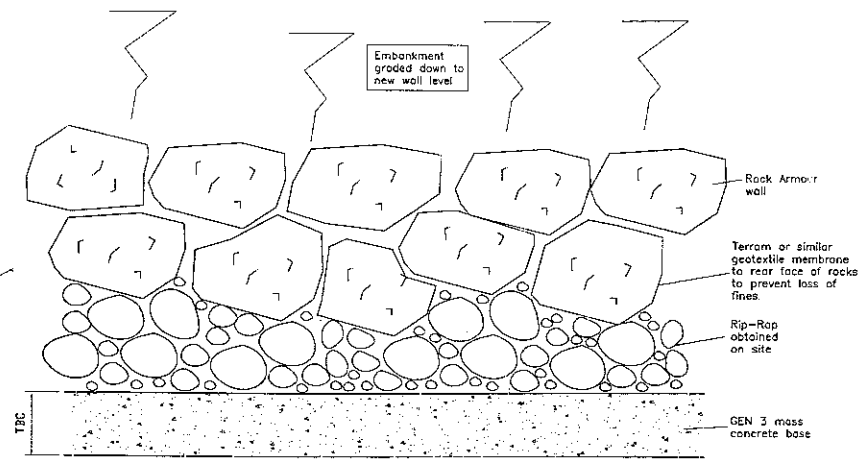


**LOCATION PLAN**  
Scale 1:2500

320120524P



**PROPOSED ARMOUR WALL TYP. SECTION**  
Scale 1:25



**PROPOSED ARMOUR WALL TYP. ELEVATION**  
Scale 1:25

| REV | DESCRIPTION        | DATE       | BY |
|-----|--------------------|------------|----|
| D   | GENERAL AMENDMENTS | 16.05.2012 | RS |
| C   | GENERAL AMENDMENTS | 02.05.2012 | RS |
| B   | GENERAL AMENDMENTS | 27.04.2012 | RS |
| A   | FIRST ISSUE        | 13.04.2011 | RS |

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**CLIENT**

**United Utilities**

**ERIC WRIGHT CIVIL ENGINEERING**

**PROJECT**

**HOLDEN BANK WTW RIVER BANK REPAIRS**

**TITLE**

**PROPOSED REPAIRS SITE PLAN & DETAILS**

**T&S Design Services**

24 POPPYFIELD, COTTAM PRESTON, PR4 0RF  
Tel: 07974 732456  
Email: sales@glebalnet.co.uk

| CHECKED     | DATE        | DRAWN | SCALE    | AT |
|-------------|-------------|-------|----------|----|
| J.Mck       | April 11    | RS    | As shown |    |
| PROJECT No. | DRAWING No. |       | REV      |    |
| TS 928      | 03          |       | D        |    |