Black Pool Mill Wall Repair- Flood Consequences Assessment

P01

November 2024

Prepared for:

Bluestone Resorts Ltd

Canaston Wood

Narberth

Pembrokeshire

SA67 8DE

www.jbaconsulting.com

bluestone

NATIONAL PARK RESORT

Document Status

Issue date	November 2024
Issued to	Liz Weedon of Bluestone Resorts Ltd
BIM reference	LTU-JBA-XX-XX-RP-Z-0001-S3-P01-Blackpool_Mill_FCA
Revision	P01
Prepared by	George Williams BSc (Hons) MSc First Analyst
Reviewed by	Faye Tomalin BSc (Hons) MSc MCIWEM C.WEM Principal Analyst
Authorised by	Jonathan King MEng PhD CEng MICE Project Manager

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Contract

JBA Project Manager	Jonathan King MEng PhD CEng MICE
Address	Kings Chambers, 8 High St, Newport NP20 1FQ
JBA Project Code	2023s1481

This report describes work commissioned by Bluestone Resorts Ltd, by an instruction dated November 2023. The Client's representative for the contract was Liz Weedon of Bluestone Resorts Ltd, George Williams of JBA Consulting carried out this work.

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Unless otherwise stated in this Report, the assessments made assume that the sites and facilities will continue to be used for their current purpose without significant changes.

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Abbreviations

AEP	Annual Exceedance Probability
FCA	Flood Consequence Assessment
FMfP	Flood Map For Planning
LiDAR	Light Detection And Ranging
NGR	National Grid Reference
NRW	Natural Resources for Wales
OS	Ordnance Survey
PPW	Planning Policy Wales
TAN-15	Technical Advice Note 15: Development and Flood Risk

1 Introduction

1.1 Terms of Reference

JBA Consulting (JBA) was commissioned by Bluestone Resorts Ltd in November 2023 to undertake the permanent design of a proposed retaining wall at Black Pool Mill, Pembrokeshire. This FCA supports the planning submission associated with the proposed works and demonstrates the suitability of the proposed development within its location.

1.2 FCA Requirements

This FCA follows Welsh Government guidance on development and flood risk set out in Technical Advice Note 15: Development and Flood Risk (TAN-15). Where appropriate, the following aspects of flood risk should be addressed in all planning applications over their expected lifetime:

- The likely mechanisms of flooding
- The likely source of flooding
- The depths of flooding through the site
- The speed of inundation of the site
- The rate of rise of flood water through the site
- Velocities of flood water across the site
- Overland flow routes
- The effect of access and egress and infrastructure, for example, public sewer outfalls, combined sewer outflows, surface water sewers and effluent discharge pipes from wastewater treatment works
- The impacts of the development in terms of flood risk on neighbouring properties and elsewhere on the floodplain.

2 Site Description

2.1 Site Summary

The site is located at Black Pool Mill, Narbeth, Pembrokeshire. Black Pool Mill is a heritage restaurant within Minwear Woods. The development site is a small 0.009Ha area located to the immediate west of the restaurant building, on the southern bank of the Cleddau Ddu, as shown in Figure 2-1.

The proposed development site comprises the southern bank of the Cleddau Ddu, with the site currently comprising a temporary rock bag wall following emergency works undertaken in November 2023 The temporary rock bag wall is providing stabilisation to the riverbank following the collapse of the original masonry wall following flooding of the Cleddau Ddu in Autumn 2023.

A summary of the site can be seen in Table 2-1 below.

Figure 2-1 Site Overview

Table 2-1 Site Summary

Site Summary	Description
Site name	Black Pool Mill
Site area	0.009ha

Site Summary	Description
Existing land use	A riverbank comprising a temporary rock bag wall
Purpose of development	Replace the temporary rock bag wall with a permanent Redi-Rock gravity retaining wall
OS NGR	SN 05976 14487
Local Planning Authorities	Pembrokeshire County Council
Lead Local Flood Authority	Pembrokeshire County Council

2.2 Watercourses and Flood Defences

The proposed development is on the banks of the Cleddau Ddu, an NRW Main River, as shown in Figure 2-2. The Cleddau Ddu flows in an east to west direction through the site, with the river being tidally influenced up to and beyond the site. Three smaller tributaries to the Cleddau Ddu join the watercourse downstream of the development site.

There are no formal NRW flood defences located on the banks of the river.

Figure 2-2 Watercourses and Flood Defences

2.3 Proposed Development

Following flooding of the Cleddau Ddu on the 25th of October 2023 an existing masonry wall located on the bank of the Cleddau Ddu collapsed. Following the collapse, JBA designed the emergency works that have stabilised the riverbank since construction in November 2023. Emergency works consisted of a Temporary Rock Bag Wall.

The proposed development is for the replacement of the Temporary Rock Bag Wall and replacement with a permanent Redi-Rock gravity retaining wall. The proposed retaining wall will be a replacement for the original masonry wall that was in place prior to the collapse.

Crest levels of the wall will tie in with the remaining bank and replicate the original wall. The new proposed retaining wall will offer long-term protection and stability to the riverbank.

The proposed permanent Redi-Rock gravity retaining wall will form a similar replacement to the previous masonry wall at this location. There will be no change in wall crest level, channel geometry or impact on watercourse conveyance as a result of the proposals.

Details of the proposed wall are included in Appendix A.

2.4 Site Topography

A topographic survey undertaken by M.W.Surveys in August 2016 showed the sites topography before the collapse with crest levels of the original masonry wall shown to be between 4.37mAOD and 4.39mAOD.

A topographic survey was undertaken by Infomapsurveys Ltd in November 2023 following the collapse of the original masonry wall. The survey includes the area of the collapsed bank and the wider area. A copy of the survey is included in Appendix B. The survey shows that the crest levels of the Temporary Rock Bag Wall are just below the crest levels of the original masonry wall at around 4.30mAOD.

3 Planning Policy and Flood Risk

3.1 Planning Context

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy and improve the social, economic, environmental and cultural well-being of Wales as set out in the Wellbeing of Future Generations Act 2015.

Technical Advice Note (TAN-15) introduced by the Welsh Government in 2004, provides technical guidance relating to development planning and flood risk in Wales. The initial requirements of TAN-15 are to identify the vulnerability classification(s) and flood zones relevant to the proposed development and to apply this information to the application of the Justification Test.

An update for TAN-15 was released in October 2021. However, the Welsh Government subsequently suspended this, and it is not currently known when the new TAN-15 will be published and implemented in its final form.

Although the new TAN-15 is not a material consideration, the Welsh Government and NRW advise that some consideration is given to the Flood Map for Planning (FMfP) as the best information available. Therefore, where a site is located in an FMfP flood risk zone it is recommended that an FCA is undertaken.

As a result of the above, both the Development Advice Map (DAM) and the FMfP are considered as part of the FCA.

3.2 Development Advice Map (DAM)

DAM Zone classification is used to trigger different planning actions based on a precautionary assessment of flood risk. As can be seen in Figure 3-1 below, the site is located within DAM Zone C2. Zone C2 is described as "areas of the floodplain without significant flood defence infrastructure". As the site is located within Zone C2 of the DAM Map it triggers the requirement for an FCA to be undertaken.

Figure 3-1 DAM Classification

3.3 Flood Map for Planning Classification

Although the forthcoming updated TAN-15 is not yet enacted, the Flood Map for Planning (FMfP) is considered the best available information and is given material consideration.

3.3.1 Flood Map for Planning - Flood Risk from Rivers

The site is shown to be located within Flood Zone 3 of the FMfP-Flood Risk from Rivers, as seen in Figure 3-2. Flood Zone 3 represents areas that have a greater than 1.% AEP (1 in 100 year) chance of flooding in any given year, including the effects of climate change.

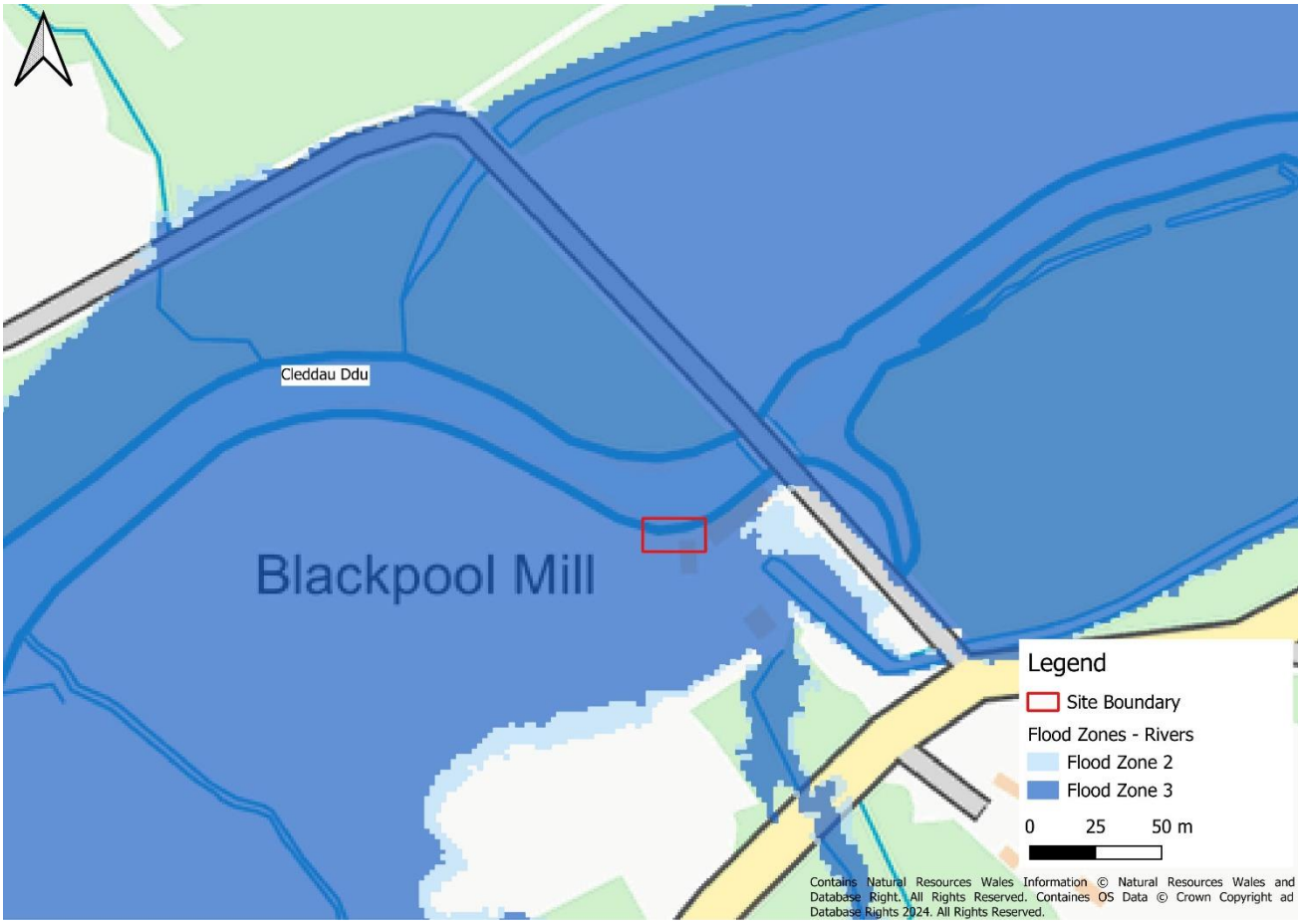


Figure 3-2 FMfP- Flood Risk from Rivers

3.3.2 Flood Map for Planning - Flood Risk from the Sea

The site is shown to be located within Flood Zone 3 of the FMfP-Flood Risk from the Sea, as seen in Figure 3-3. Flood Zone 3 represents areas that have a greater than 0.5% AEP (1 in 200-year) chance of flooding in any given year, including the effects of climate change.

Figure 3-3 FMfP- Flood Risk from the Sea

3.4 Vulnerability Classification and Application of the Justification Test

TAN-15 identifies the vulnerability of different land uses to flooding in its precautionary assessment of flood risk. These are: emergency services, highly vulnerable development and less vulnerable development, as set out in Table 3-1 below.

The proposal comprises the construction of a permanent Redi-Rock gravity retaining wall to provide bank stabilisation. TAN-15 advises that there are uses considered to be exceptions to the general classifications because they are required in fluvial, tidal or coastal locations by virtue of their nature. These proposals shall not be subject to the first part of the Justification Test but will be subject to the acceptability of the consequences.

The proposals are therefore considered as water-compatible development due to their function as bank stabilisation within the Cleddau Ddu. Consequently, the Justification Test has not been applied within this FCA, but the proposals have been considered against the Acceptability Criteria, contained within Section 5 of this report.

Table 3-1 Development Categories Defined by TAN-15

Development Category	Type
Emergency Services	Hospitals, ambulance stations, fire stations, police stations, coastguard stations command centres, emergency depots and buildings are used to provide emergency shelter in times of flood.
Highly Vulnerable Development	All residential premises (including hotels and caravan parks), public buildings (e.g. schools, libraries, leisure centres), especially vulnerable industrial (e.g. power stations, chemical plants, incinerators) and waste disposal sites.
Less Vulnerable Development	General industrial, employment, commercial and retail development, transport and utilities infrastructure, car parks, mineral extraction sites and associated processing facilities, excluding waste disposal sites.

4 Flood Risk Assessment

4.1 Review of Existing Flood Risk Data

In order to inform this FCA, a review of publicly available flood risk data has been undertaken. A summary is contained in Table 4-1 and detailed further below.

Table 4-1 Summary of Flood Risk Data

Source of flooding	Onsite Presence	Description
Flood Risk from Rivers	✓	The site is in an area at **high risk** of fluvial flooding
Flood Risk from the Sea	✓	The site is in an area at **high risk** of tidal flooding
Flood Risk from Surface Water and Small Watercourses	×	The site is at **very low** risk of surface water flooding.
Flood Risk from Groundwater	×	The site is at a **low risk** of flooding from groundwater.
Flood Risk from Reservoirs	×	The site is at **very low risk** of flooding from reservoirs.
Flood Risk from Sewers	×	The site is at **very low risk** of flooding from sewers.

4.2 Historical Flood Risk

NRW's map of recorded flood extents does not provide a history of flooding at the proposed development site.

However, there is a known flood history at the site, including the October 2023 event which resulted in the masonry wall failure and subsequent requirement for temporary and permanent works.

No further detail on-site flood history has been provided in order to inform this report. However further information on the sites flood risk is detailed below.

4.3 Flood Risk from Rivers

The site is located in an area of High Risk from fluvial flooding as shown in Figure 4-1. High Risk means that each year, this area has a greater than 3.3% (1 in 30 years) of flooding from fluvial mechanisms each year.

A review of the 2020 Black Pool Mill FCA produced by WSP in support of a previous planning application at the site provides information of fluvial flood risk to the wider Black Pool Mill site. This report states that the 50% AEP (1 in 2 year) event flood level for the

Cleddau Ddu is 4.6mAODm. This is greater than the 4.3mAOD crest level of the original masonry wall .

This suggests that the southern bank of the Cleddau Ddu is likely to be breached on a regular basis, resulting in flooding across both the development site and the wider Black Pool Mill site.

Furthermore, flood levels for the site during the 1% AEP (1 in 100 year event) and the 0.1% AEP (1 in 1000 year event) are 4.8mAOD and 5.0mAOD respectively. During both of the 1% AEP and the 0.1% AEP events flooding at the site is anticipated.

As the proposed permanent Redi-Rock gravity retaining wall is to be constructed to the same crest level as the historic masonry wall, it is envisaged that there shall be no change in flood frequency as a result of the proposals. The proposed development is water-compatible by virtue of nature and is therefore resilient to this flood risk.

Any development susceptible to flooding could have a negative impact on flood risk elsewhere. However, as the proposals have been designed to tie in with the existing bank-level and be a like-for-like replacement of the historic masonry wall, it is concluded that the development will have no impact on the flood risk to third parties.

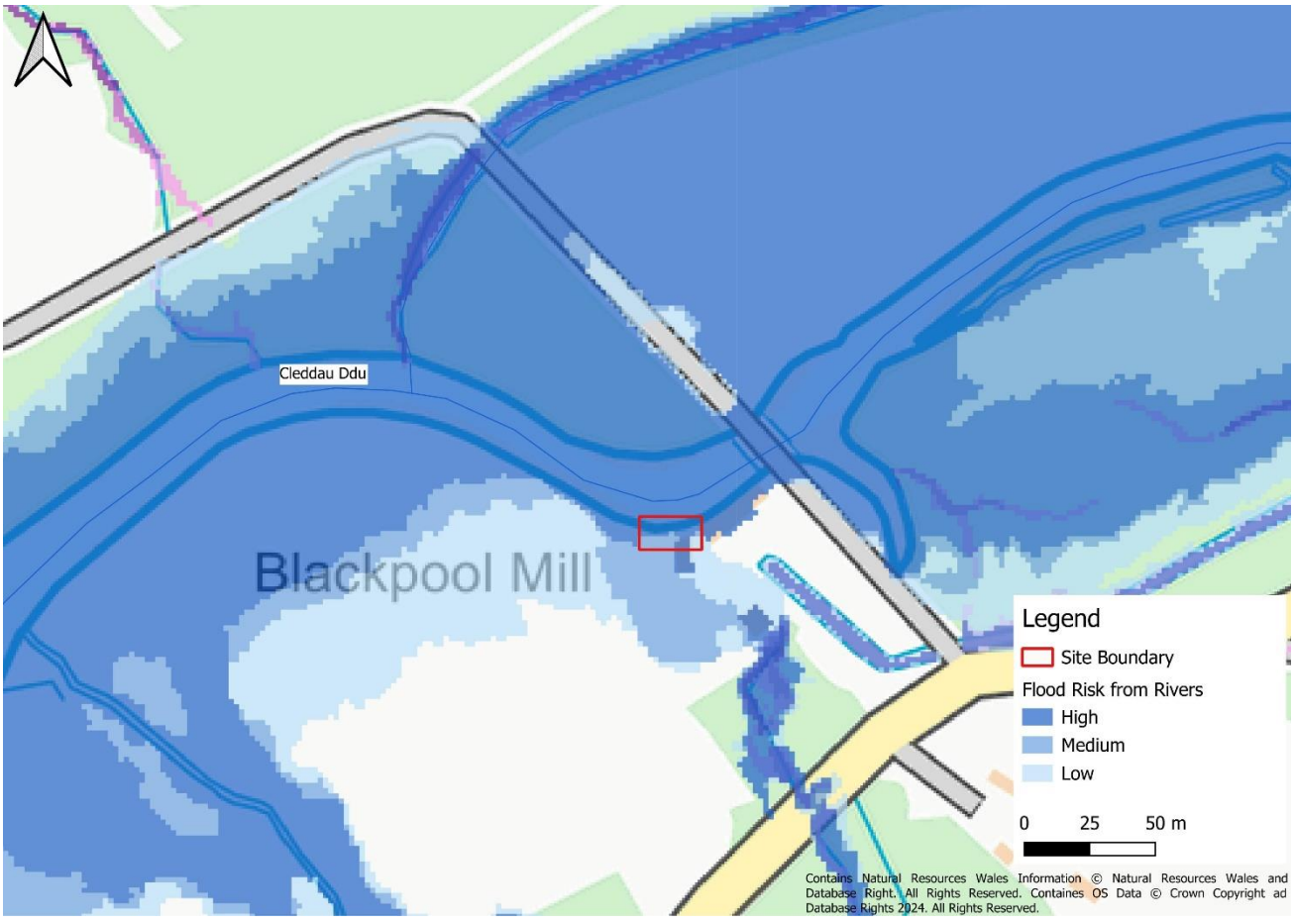


Figure 4-1 FRAW- Flood Risk from the Sea

4.4 Flood Risk from the Sea

The site is located in an area of High Risk from tidal flooding in the FRAW Map- Flood Risk from the Sea, as shown in Figure 4-2. High Risk means that each year, this area has a greater than 3.3% (1 in 30 years) of flooding from tidal sources each year.

The Cleddau Ddu is tidally influenced up to and beyond the site.

Again, a review of the 2020 Black Pool Mill FCA produced by WSP for a previous planning application for the Black Pool Mill site has provided information on predicted tide levels in the required design events, as determined by TAN-15. Climate change has been considered for the 75 year lifetime of development associated with the Black Pool Mill site.

Predicted peak water level in the 2095 0.5% AEP event is 6.3mAOD.

Predicted peak water level in the 2095 0.1% AEP event is 6.5mAOD.

During both design events, the crest level of the wall (4.3mAOD) is greatly exceeded. However, the proposed development is water-compatible by virtue of nature and is therefore resilient to this flood risk.

Any development susceptible to flooding could have a negative impact on flood risk elsewhere. However, as the proposals have been designed to tie in with the existing bank level and be a like-for-like replacement of the historic masonry wall, it is concluded that the development will have no impact on the flood risk to third parties.

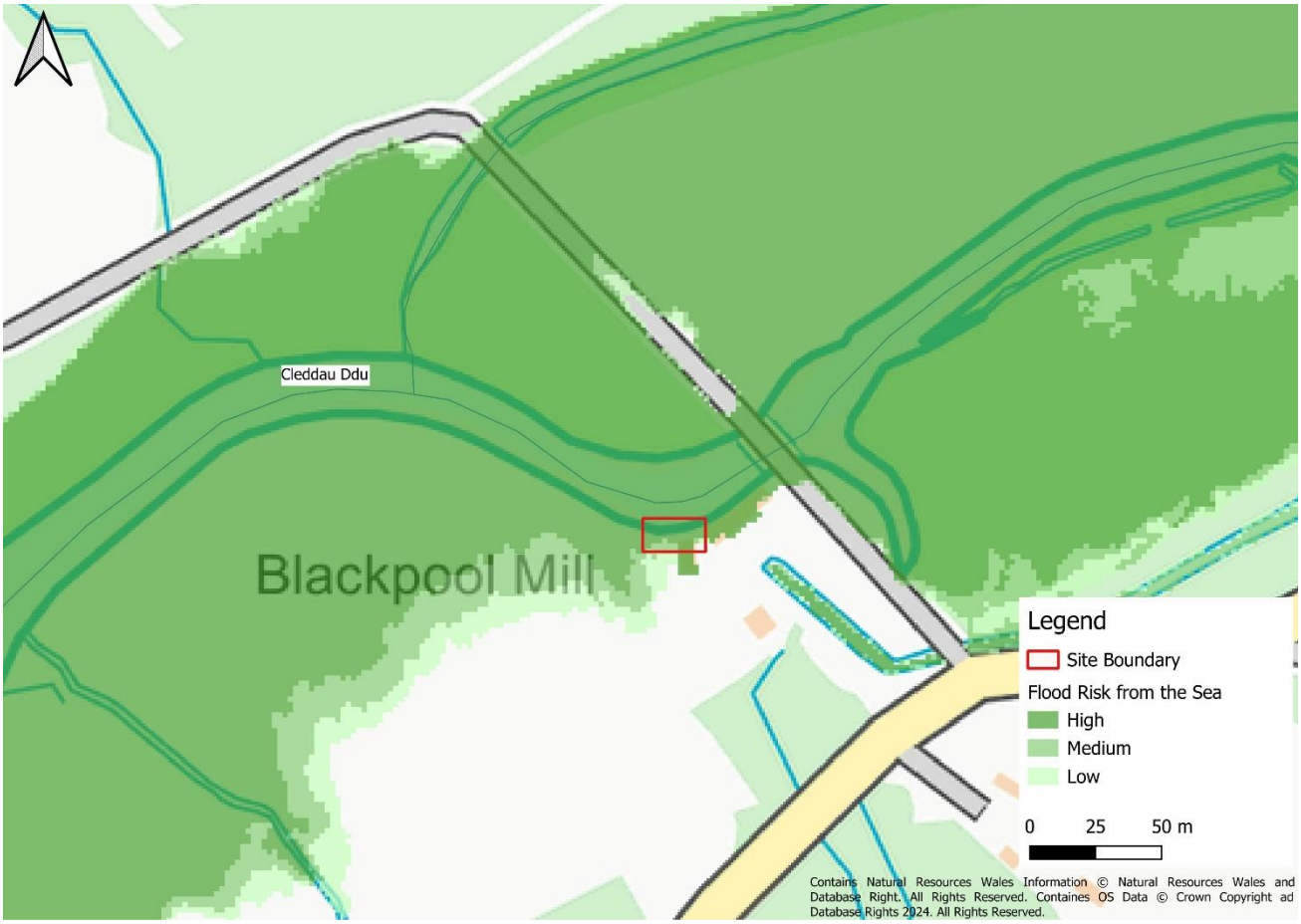


Figure 4-2 FRAW- Flood Risk from the Sea

4.5 Flood Risk from Surface Water and Small Watercourses

The site is shown to be at a **very low** risk of Surface Water and Small Watercourse flooding, as shown in Figure 4-3.

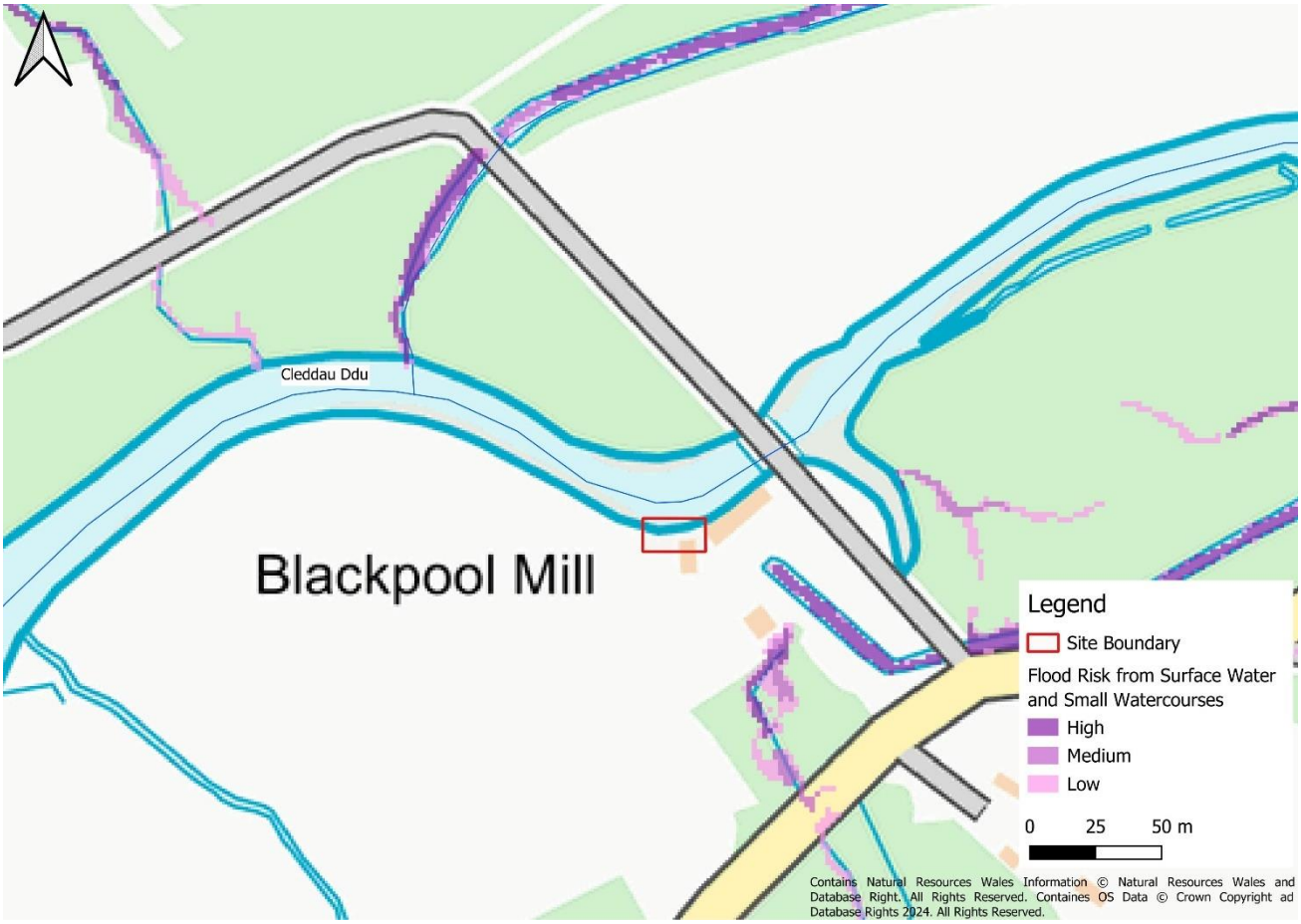


Figure 4-3 FRAW- Flood Risk from Surface Water and Small Watercourses

4.6 Flood Risk from Groundwater

Groundwater is known to be high within the local area and as such has been considered in the design of the retaining wall. However, the proposed construction of the wall will not increase the risk of groundwater flooding, nor is it highly sensitive to groundwater flooding. Therefore, the risk from groundwater flooding has been assessed to be **very low**.

4.7 Flood Risk from Reservoirs

The site is located within an area at risk of flooding as a result of reservoir failure/breach, as shown in Figure 4-4.

The risk is associated with the Lys-Y-Fran reservoir, located approximately 10km upstream from the site. Large reservoirs in Wales (those storing more than 10,000 cubic metres of water) are regulated under the Reservoirs Act 1975, where amended by the Flood and Water Management Act 2010. This legislation, which is enforced by NRW requires reservoirs to be routinely inspected and maintained to an appropriate standard.

Providing a reservoir is properly maintained, the likelihood of it failing and causing flooding is extremely **low**.

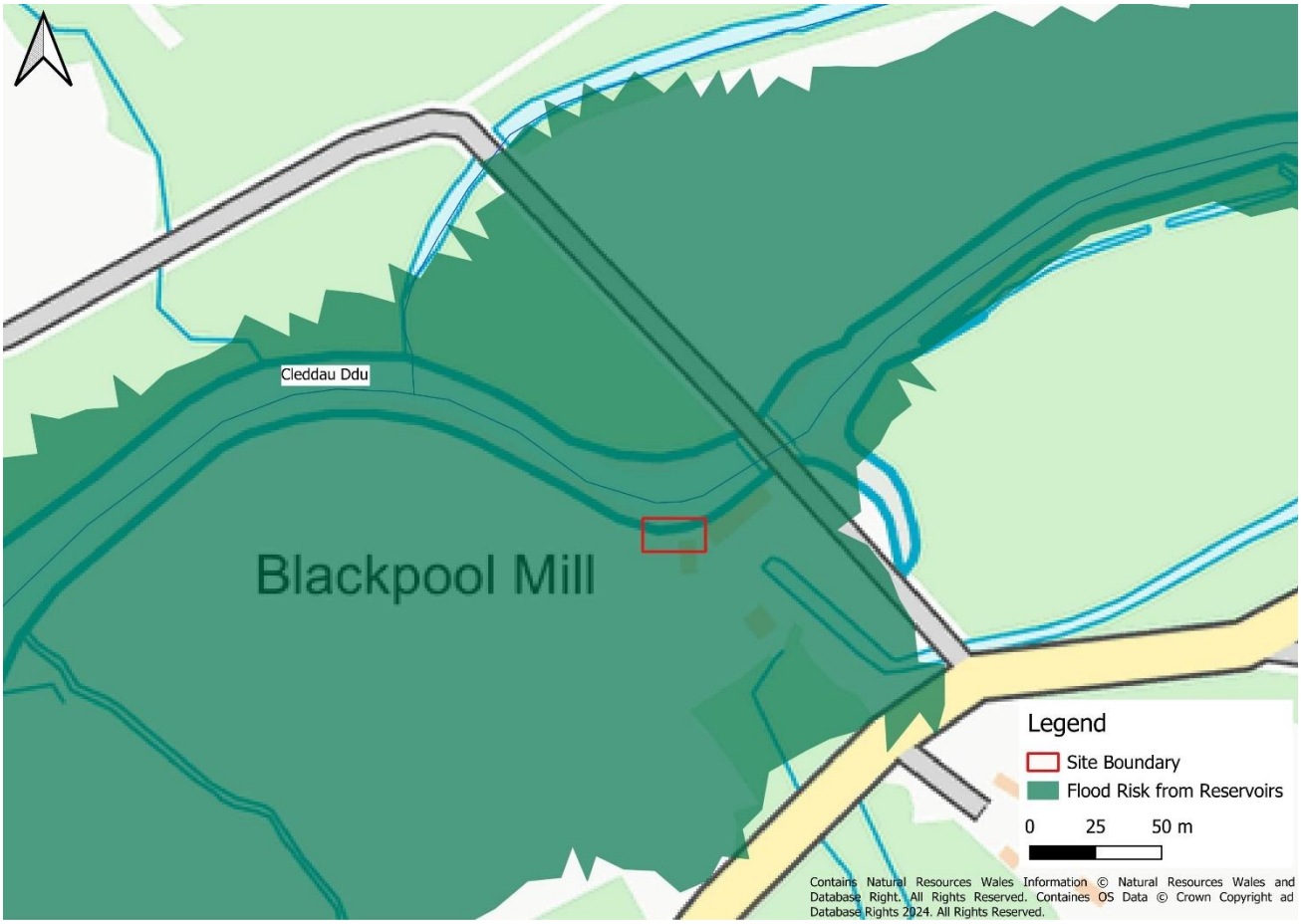


Figure 4-4 Flood Risk from Reservoirs

4.8 Flood Risk from Sewers

Records of utility searches provided by the client have indicated that there are no public sewers located within the site of the proposed work.

There are also no proposed any changes to the existing surface water drainage to the wider site.

Three drainage outfalls are proposed to discharge to the Cleddau Ddu through the proposed retaining wall. Two of these outfalls are direct downpipes from the roof of the existing store building on the Black Pool Mill site. The third outfall serves a wider drainage system.

Where required, it is proposed to provide a flap-valve to the drainage outfalls to mitigate the risk of backflow during high tidal and fluvial conditions within the Cleddau Ddu. This shall manage flood risk to the wider Black Pool Mill site from this source.

Therefore, it has been assessed that the risk of flooding from sewers is **very low**.

5 Assessment of Acceptability Criteria

As a water-compatible development, the proposed retaining wall is only subject to the assessment against the acceptability of consequences (see section 3.3). An assessment of the Acceptability criteria, as set out in TAN-15 is summarised in Table 5-1 below.

Table 5-1 TAN-15 Acceptability Criteria

TAN 15 Acceptability criteria	Comments	Achievable?
The development should be flood-free during the 1% AEP fluvial event and the 0.5% AEP tidal event for the design life of the development	The site floods during the 1% AEP Event. However, the proposed development is located on the southern bank of the Cleddau Ddu and is water-compatible by nature. Furthermore, the proposal at the site is a like-for-like change from the original wall.	No change to the existing conditions.
In respect of residual risk to the development it should be designed so that over its lifetime in an extreme (1 in 1000) chance) event there would be less than 600mm of water on access roads and within properties (Ref: TAN-15 A1.15)	The site floods during the 0.1% AEP Event. However, the proposed development is located on the southern bank of the Cleddau Ddu and is water-compatible by nature. Furthermore, the proposal at the site is a like-for-like change from the original wall.	No change to the existing conditions.
Flood defences must be shown by the developer to be structurally adequate, particularly under extreme overtopping conditions (i.e. that flood with a 1 in 1000 chance of occurring in any year)	The proposed development has been designed to be a like-for-like replacement for the original retaining wall, but does not constitute a defence to flood risk. This wall has been designed to be structurally adequate under extreme conditions within the river channel.	✓
The cost of future maintenance for all new/approved flood mitigation measures, including defences must be accepted by the developer and agreed with Natural Resources Wales	The site does not benefit from the presence of formal flood defences nor are any new defences proposed as part of this scheme**.** Maintenance of the proposed wall shall be the responsibility of the developer**.**	✓
Effective flood warnings are provided at the site	N/A- The proposed development is for a retaining wall along the bank of the Cleddau Ddu.	✓

TAN 15 Acceptability criteria	Comments	Achievable?
Escape/evacuation routes are shown by the developer to be operational under all conditions	N/A- The proposed development is for a retaining wall along the bank of the Cleddau Ddu.	✓
Flood emergency plans and procedures produced by the developer must be in place	N/A- The proposed development is for a retaining wall along the bank of the Cleddau Ddu.	✓
The development is designed by the developer to allow the occupier the facility for rapid movement of goods/possessions to areas away from floodwaters	N/A- The proposed development is for a retaining wall along the bank of the Cleddau Ddu.	✓
Development is designed to minimise structural damage during a flooding event and is flood-proofed to enable it to be returned to its prime use quickly in the aftermath of a flood	**T**he wall has been designed to be structurally adequate for the proposed design events.	✓
No flooding elsewhere	The proposed development is for a like-for-like replacement of the original masonry wall. **I**t is therefore concluded that the development will have no impact on the flood risk to third parties.	✓

6 Conclusion

- JBA Consulting (JBA) were commissioned by Bluestone Resorts Ltd in November 2023 to undertake the permanent design of a proposed retaining wall at Black Pool Mill, Pembrokeshire. This FCA supports the planning submission associated with the proposed works
- The site is located at Black Pool Mill, Narbeth, Pembrokeshire. Black Pool Mill is a heritage restaurant within Minwear Woods. The development site is a small 0.009Ha area located to the immediate west of the restaurant building, on the southern bank of the Cleddau Ddu.
- The proposed development is for the replacement of the Temporary Rock Bag Wall and replacement with a permanent Redi-Rock gravity retaining wall. The proposed retaining wall will be a replacement for the original masonry wall that was in place prior to its collapse following flooding of the Cleddau Ddu in October 2022.
- The proposed permanent Redi-Rock gravity retaining wall will form a similar replacement to the previous masonry wall at this location. There will be no change in wall crest level, channel geometry or impact on watercourse conveyance as a result of the proposals.
- The site is classed as a water-compatible by virtue of its nature.
- The site is located with DAM Zone C2, Zone C2, described as “areas of the floodplain without significant flood defence infrastructure. It's location within Zone C2 triggers the requirement for an FCA.
- The Site is located within Flood Zone 3 of the Flood Map for Planning for Rivers and the Sea.
- The site was found to be at low risk of groundwater and reservoir flooding and at very low risk of flooding from sewers and surface water/ small watercourses.
- Despite the sites location within zones of higher flood risk. The proposed development is considered to be water compatible. Furthermore, the development is modest in design with proposed crest levels tying in with the existing bank and replicated the original structure.
- The site does not have any impact on the flood risk to the Black Pool Mill site or to third parties located off site.
- The proposals are deemed to meet the acceptability criteria, as set out in TAN-15.
- Therefore, on the grounds of flood risk, the proposed development site complies with the aims and objectives of Planning Policy Wales and TAN-15.

Appendix A - Proposed Details of Replacement Retaining Wall

SAFETY, HEALTH, ENVIRONMENTAL, AND WELFARE INFORMATION

IN ADDITION TO THE HAZARDS / RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RISKS:

CONSTRUCTION

SC01	SUDDEN FURTHER FAILURE OF RIVERBANK WHEN REMOVING ROCK BAGS. INJURY TO OPERATIVES AND DAMAGES TO PLANT IF THE BANK FAILS SUDDENLY.
SC02	INSTABILITY OF EXISTING BUILDING DUE TO FURTHER SLIPPAGE OF THE BANK FROM REMOVAL OF ROCK BAGS.
SC03	LIFTING OPERATIONS FAILING AND CAUSING INJURY OR DEATH.
SC04	COLLAPSE OF REMAINING WALL ADJACENT TO EXISTING FAILURE.
SC05	UNIDENTIFIED SERVICE STRUCK LEADING TO PROPERTY DAMAGE, INJURY, OR DEATH.
SCO6	DROWNING.
C02	VIBRATION LEVELS EXCEEDING LIMITS CAUSING DAMAGE TO HERITAGE BUILDING.
C05	DAMAGE TO CONSTRUCTION PLANT AND SITE GROUND CONDITIONS: INSTABILITY IN SOFT GROUND.
C06	INJURY OR DEATH TO MEMBERS OF GENERAL PUBLIC FROM INTERFERING WITH CONSTRUCTION WORKS.
E01	DAMAGE TO DESIGNATED SITE.
E02	WORKING NEAR BAT POPULATION.
E03	DAMAGE/DESTRUCTION OF AQUATIC LIFE DURING REMOVAL OF ROCK BAGS.

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

FIGURE 3 - REDI-ROCK WALL COBBLESTONE BLOCK

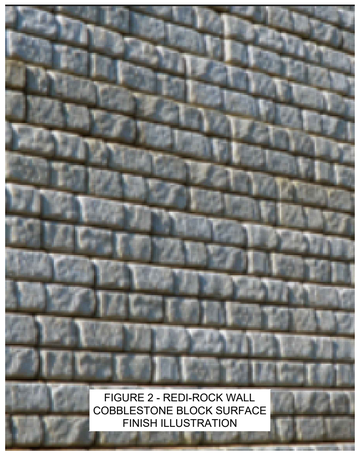


FIGURE 2 - REDI-ROCK WALL COBBLESTONE BLOCK SURFACE FINISH ILLUSTRATION

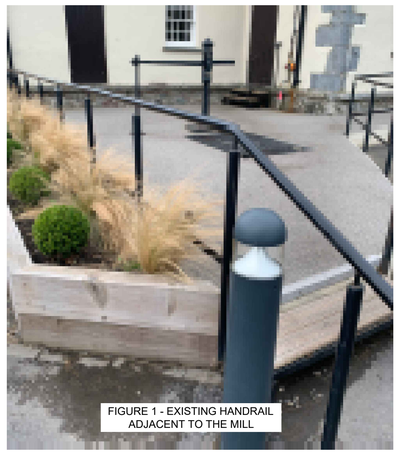
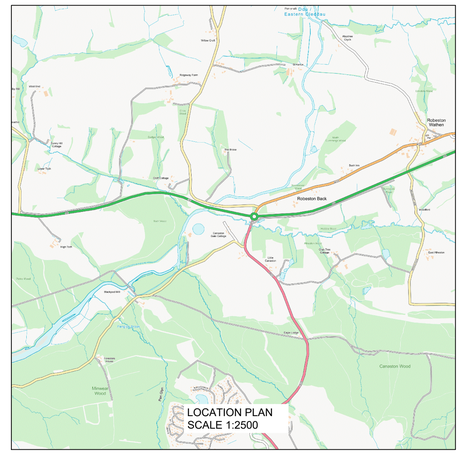
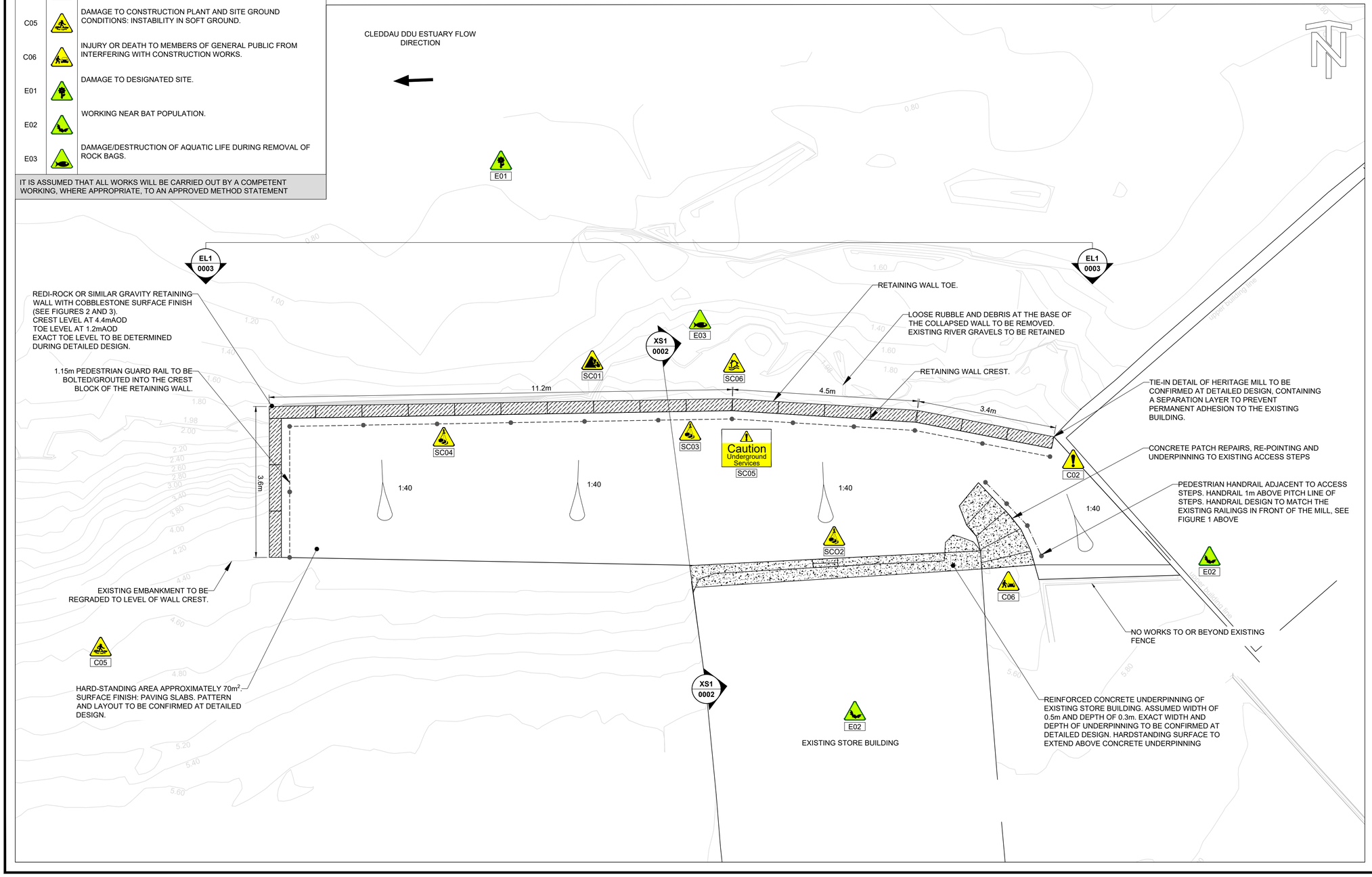


FIGURE 1 - EXISTING HANDRAIL ADJACENT TO THE MILL



LOCATION PLAN
SCALE 1:2500

CLEDDAU DDU ESTUARY FLOW DIRECTION



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3. ALL COORDINATES ARE IN METRES RELATIVE TO ORDNANCE SURVEY NATIONAL GRID.
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SITE ADDRESS

BLACK POOL MILL
NARBETH
SA67 8BL
UNITED KINGDOM

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1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH:
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   - LTU-JBA-XX-XX-DR-C-0003-Sections
   - LTU-JBA-XX-XX-DR-C-0004-Location_Plan

LEGEND

- CONCRETE REPAIR AND UNDERPINNING
- REDI-ROCK RETAINING WALL
- PEDESTRIAN HANDRAIL
- PEDESTRIAN GUARD RAIL
- REDI-ROCK OR SIMILAR RETAINING WALL

2.5 2.0 1.5 1.0 0.5 0 1 2 3
SCALE 1:50 (m)

Rev.	Description	Date	Author	Designer	Checker	Approver
P02	FOR PLANNING	04/11/2024	ES	JK	JK	JK
P01	FIRST DRAFT	13/09/24	ES	JW	JK	JK

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SKIPTON
BD23 3FD
T: +44 (0)1756 699500
E: info@jbaconsulting.com
www.jbaconsulting.com
Twitter @JBAConsulting

Project Title
BLACK POOL MILL - OUTLINE DESIGN

Drawing Title
BLACK POOL MILL PLAN

bluestone NATIONAL PARK RESORT

Parent Model
NOT FROM MODEL

Security Classification	Scale
OFFICIAL	**1:50**

Author	Designer	Checker	Approver
E Sherlock	**J Whitehouse**	**J King**	**J King**

Suitability	Status	Revision
SUITABLE FOR STAGE APPROVAL	**S4**	**P02**

Information Container — A1 Sheet Size
LTU-JBA-XX-XX-DR-C-0001-S3-P01.03-Plan.dwg

FIGURE 5 - REDI-ROCK WALL COBBLESTONE BLOCK

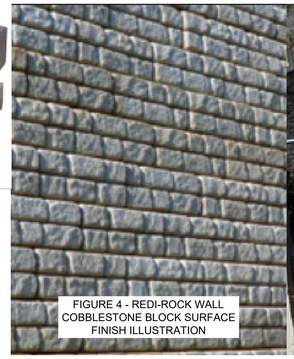
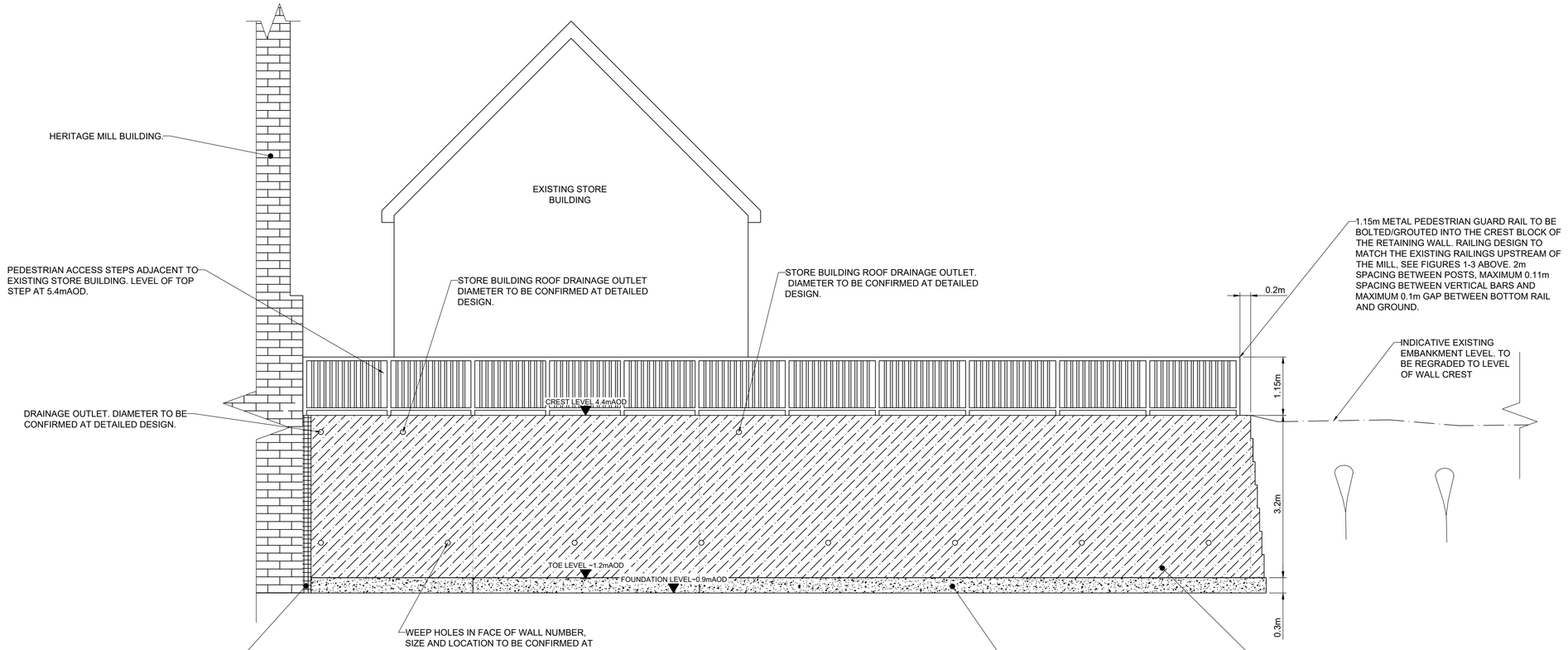


FIGURE 4 - REDI-ROCK WALL COBBLESTONE BLOCK SURFACE FINISH ILLUSTRATION

FIGURES 1, 2 AND 3 - EXISTING RAILINGS UPSTREAM AND ADJACENT TO THE MILL



ELEVATION VIEW EL1-EL1
SCALE 1:50

GENERAL NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN (OD) UNLESS NOTED OTHERWISE.
3. ALL COORDINATES ARE IN METRES RELATIVE TO ORDNANCE SURVEY NATIONAL GRID.
4. DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS MUST BE CHECKED/VERIFIED ON SITE.
5. ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE SUPERVISOR IMMEDIATELY.
6. THE ELECTRONIC VERSION OF THIS DRAWING IS NOT TO BE USED FOR SETTING OUT.

SITE ADDRESS

BLACK POOL MILL
NARBETH
SA67 8BL
UNITED KINGDOM

DRAWING NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH:
- LTU-JBA-XX-XX-DR-C-0001-Plan
- LTU-JBA-XX-XX-DR-C-0002-Elevation
- LTU-JBA-XX-XX-DR-C-0003-Sections
- LTU-JBA-XX-XX-DR-C-0004-Location_Plan

LEGEND

PEDESTRIAN HANDRAIL

REDI-ROCK OR SIMILAR RETAINING WALL

SEPARATION LAYER

HERITAGE MILL STRUCTURE

2.5 2.0 1.5 1.0 0.5 0 1 2 3
SCALE 1:50 (m)

Rev.	Description	Date	Author	Designer	Checker	Approver
P02	FOR PLANNING	04/11/24	ES	JK	JK	JK
P01	FIRST DRAFT	13/09/24	ES	JW	JK	JK

Document Control

Supplier
1 Broughton Park
Old Lane North
Broughton
SKIPTON
BD23 3FD
T: +44 (0)1756 699500
E: info@jbaconsulting.com
www.jbaconsulting.com
Twitter @JBAConsulting

Project Title
BLACK POOL MILL - OUTLINE DESIGN

Drawing Title
BLACK POOL MILL ELEVATION

bluestone NATIONAL PARK RESORT

Parent Model
NOT FROM MODEL

Security Classification	Scale
OFFICIAL	**AS SHOWN**

Author	Designer	Checker	Approver
E Sherlock	**J Whitehouse**	**J King**	**J King**

Suitability	Status	Revision
SUITABLE FOR STAGE APPROVAL	**S4**	**P02**

Information Container — A1 Sheet Size
LTU-JBA-XX-XX-DR-C-0002-S3-P01-Elevation.dwg

SAFETY, HEALTH, ENVIRONMENTAL, AND WELFARE INFORMATION

IN ADDITION TO THE HAZARDS / RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RISKS:

CONSTRUCTION

SC07		INSTABILITY OF GROUND CAUSING FALL LEADING TO INJURY OR DEATH TO CONSTRUCTION OPERATIVES DURING WORKS.
SC08		EXPOSING THE FOUNDATIONS OF THE EXISTING STORE BUILDING DURING UNDERPINNING WORKS COULD CAUSE STRUCTURAL INSTABILITY OR SECTION COLLAPSE.

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

SECTION XS1-XS1
CH: 0.00 - 9.59m
1:20

GENERAL NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN (OD) UNLESS NOTED OTHERWISE.
3. ALL COORDINATES ARE IN METRES RELATIVE TO ORDNANCE SURVEY NATIONAL GRID.
4. DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS MUST BE CHECKED/VERIFIED ON SITE.
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SITE ADDRESS

BLACK POOL MILL
NARBETH
SA67 8BL
UNITED KINGDOM

DRAWING NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH:
   - LTU-JBA-XX-XX-DR-C-0001-Plan
   - LTU-JBA-XX-XX-DR-C-0002-Elevation
   - LTU-JBA-XX-XX-DR-C-0004-Location_Plan
2. BLOCK REFERENCES SHOWN ARE INDICATIVE, TO BE CONFIRMED AT DETAILED DESIGN FOLLOWING COMPLETION OF GROUND INVESTIGATION WORKS. FOR FURTHER DETAILS, REFER TO THE REDI-ROCK BLOCK LIBRARY https://www.redi-rock.com.
3. BEDROCK LEVEL INTERPOLATED FROM TOPOGRAPHIC SURVEY. SEE 2023s1481-BLACK-POOL-MILL-K-Rev1

LEGEND

- REDI-ROCK RETAINING WALL
- CONCRETE REPAIR AND UNDERPINNING
- CLASS 6 ENGINEERING BACKFILL
- EXISTING BANK

1000 750 500 250 0 400 800 1200
SCALE 1:20 (mm)

Rev.	Description	Date	Author	Designer	Checker	Approver
P02	FOR PLANNING	04/11/24	ES	JK	JK	JK
P01	FIRST DRAFT	13/09/24	ES	JW	JK / BH	JK

Document Control

Supplier
1 Broughton Park
Old Lane North
Broughton
SKIPTON
BD23 3FD
T: +44 (0)1756 699500
E: info@jbaconsulting.com
www.jbaconsulting.com
Twitter @JBAConsulting

Project Title
BLACK POOL MILL - OUTLINE DESIGN

Drawing Title
BLACK POOL MILL RETAINING WALL SECTION

bluestone NATIONAL PARK RESORT

Parent Model
NOT FROM MODEL

Security Classification	Scale
OFFICIAL	**1:25**

Author	Designer	Checker	Approver
E Sherlock	**J Whitehouse**	**J King / B Hegde**	**J King**

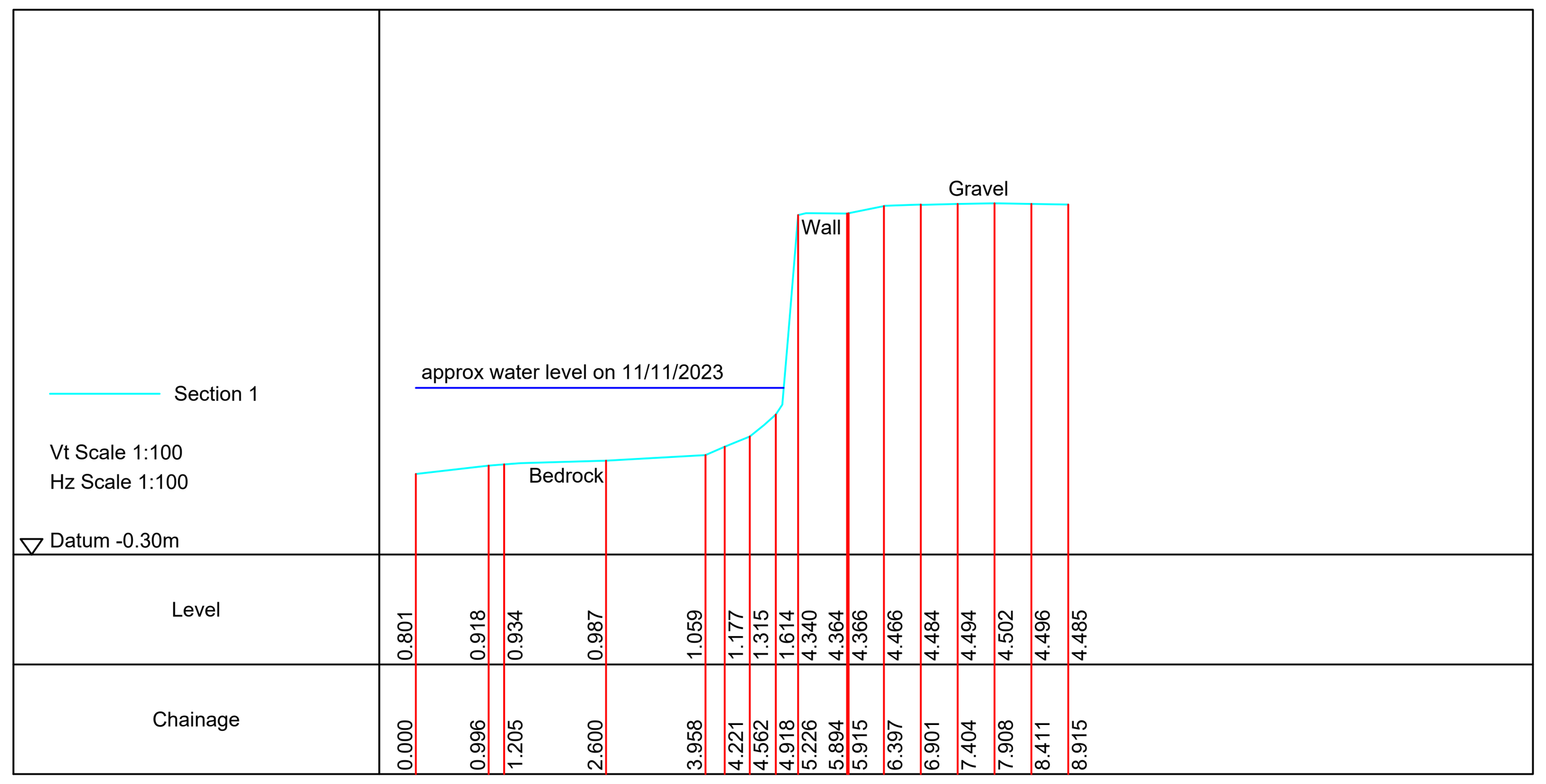
Suitability	Status	Revision
SUITABLE FOR STAGE APPROVAL	**S4**	**P02**

Information Container — A1 Sheet Size
LTU-JBA-XX-XX-DR-C-0003-S3-P01-Sections.dwg

Appendix B - Site Topographic Survey

Sheet Index

1



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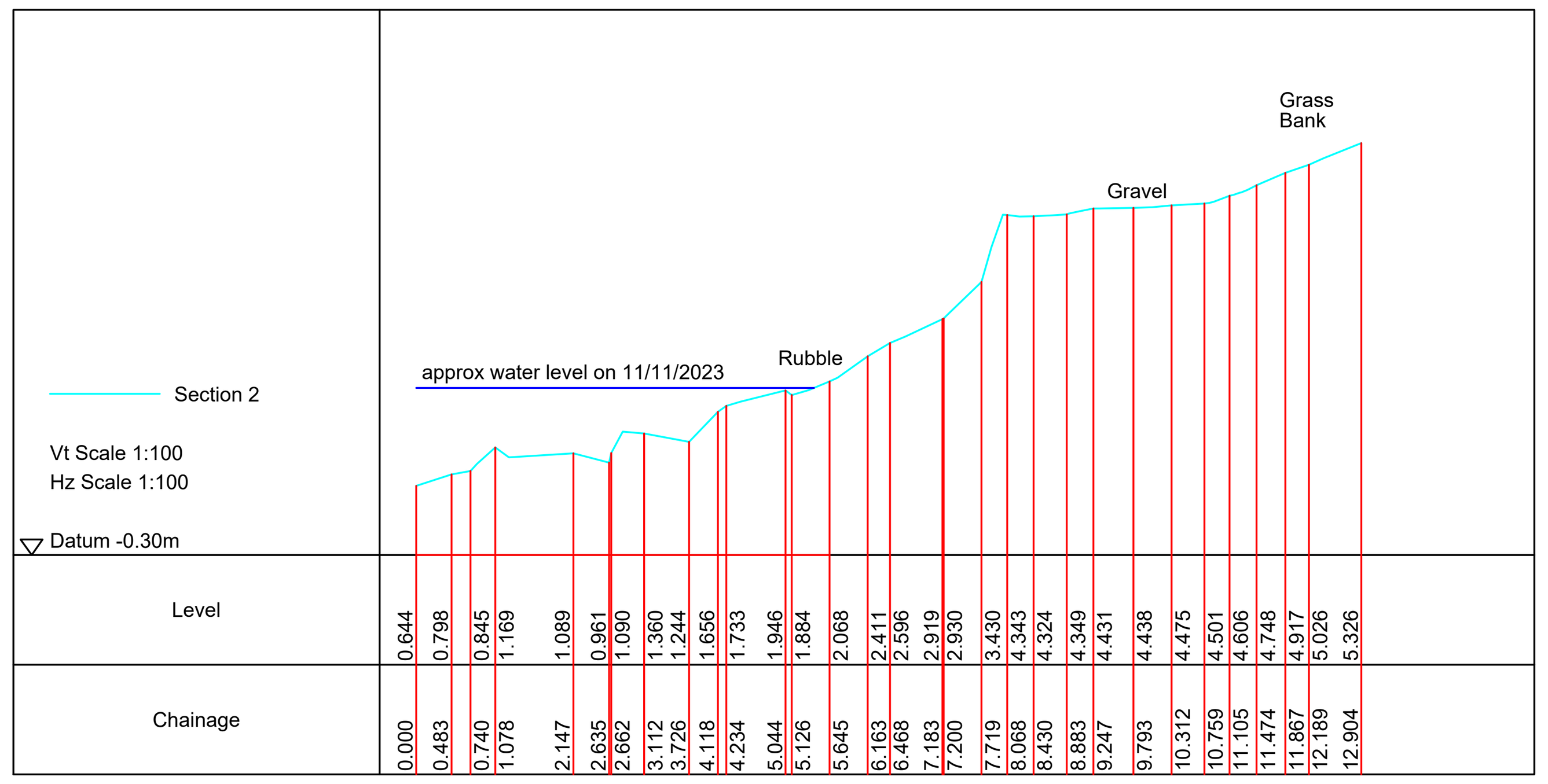

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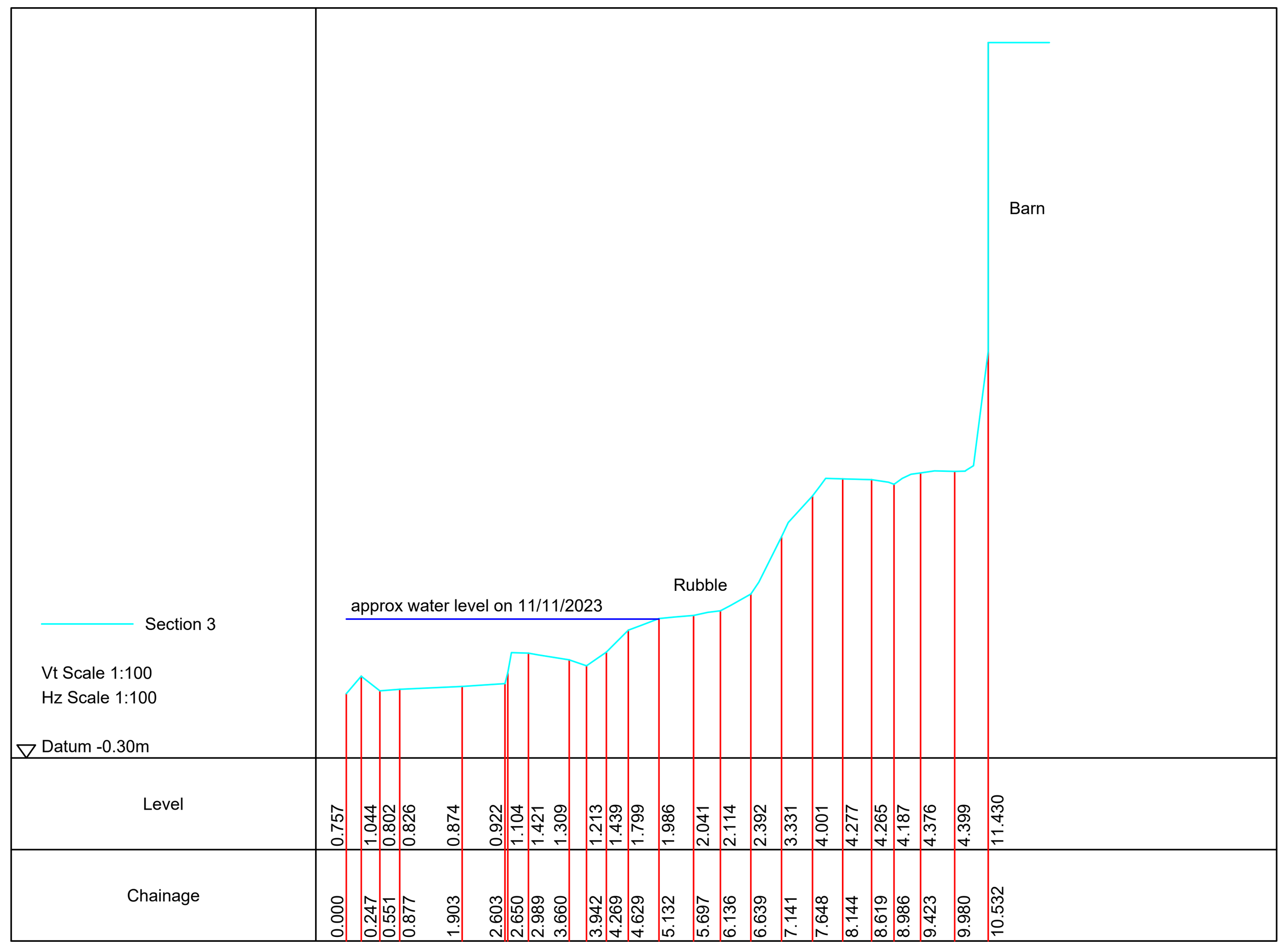

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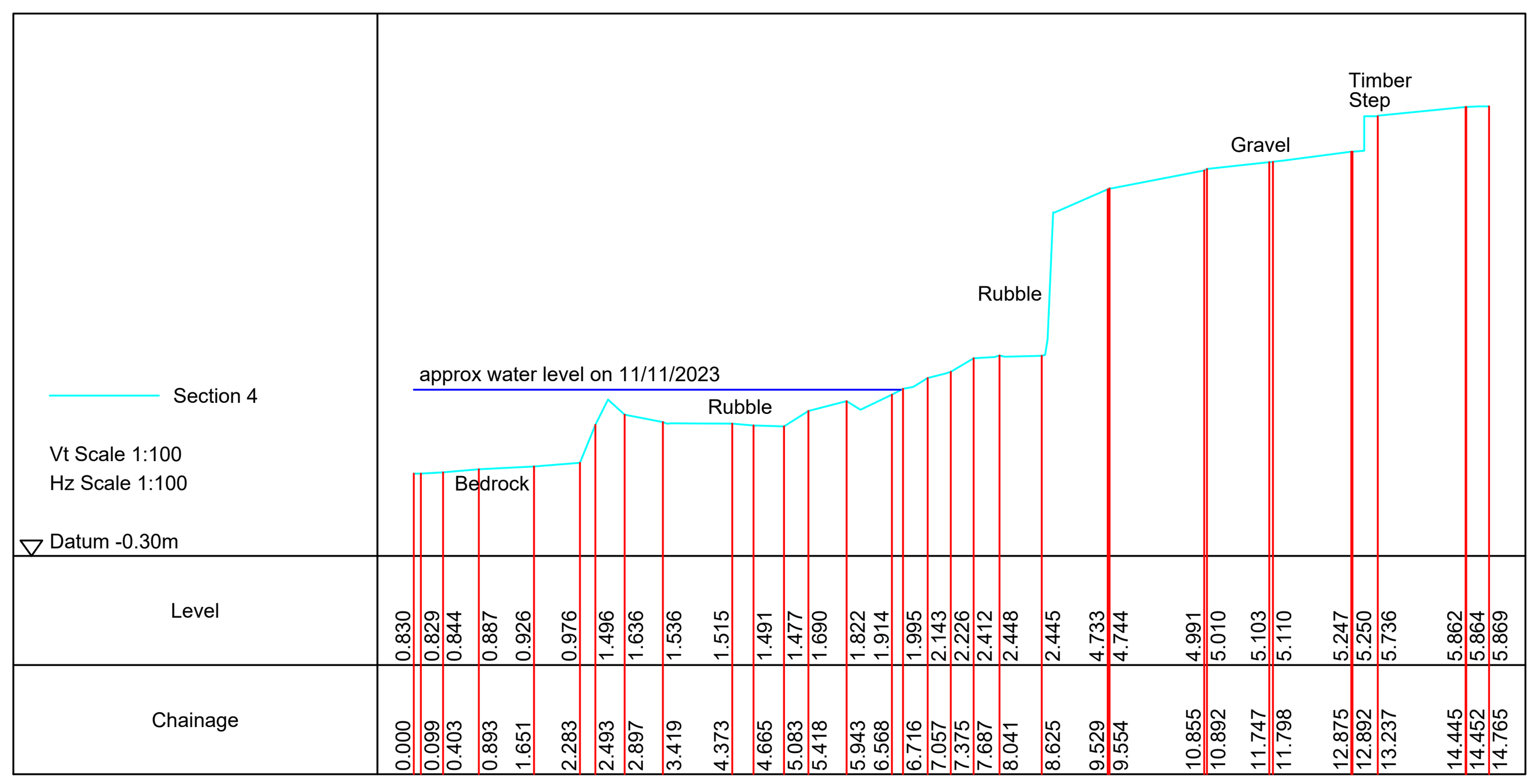

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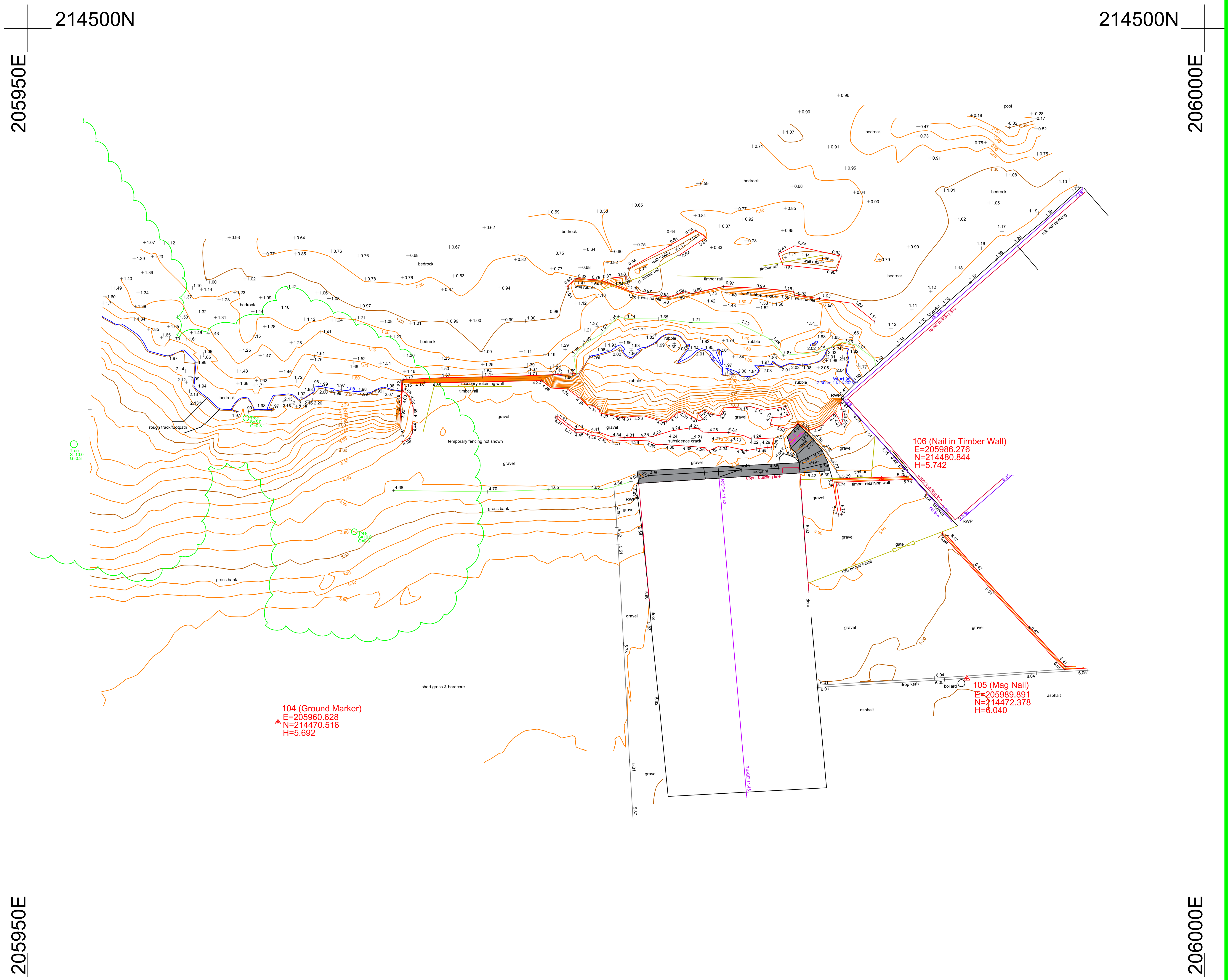

Revision 1: Sections 1-4 added

Legend

Abbreviations

SURVEY TIED BY GNSS TO OSTN15 / OSGM15

Client

JBA Consulting
Kings Chambers
8 High Street
Newport
NP20 1FQ

Project

Black Pool Mill Wall (Bluestone)

Surveyed: D.J & M.B
Apprd: D.J
Date: Nov 2023
File Ref:
Scale: 1/100 at A1

INFOMAP
SURVEYS AND MAPPING
CHARTERED SURVEYORS

Seymours House
Sunnyside Road North
Weston-super-Mare
North Somerset BS23 3PZ
Tel: 01934 644060 /fax 01934 644060
E-mail: mail@infomapsurveys.co.uk
Website: www.infomapsurveys.co.uk

ISO 9001 REGISTERED FIRM

DRAWING REFERENCE

2023s1481-JBA-ISM-BLACK-POOL-MILL

2023s1481-BLACK-POOL-MILL-K-REV1