COW SHED – BLACK MOSS FARM

Flood Risk Assessment Report

Elmridge Lane, Preston, PR3 2NY

CSH-BML-XX-XX-RP-C-0511

Thursday, 08th August 2024

BarnsleyMarshall

BarnsleyMarshall Limited
4 & 5 Prior Wharf,
Harris Business Park,
Stoke Prior,
Worcester,
B60 4FG
Tel 01905 330 550
Web barnsleymarshall.co.uk

Company Registered in England No. 4926185

BarnsleyMarshall

Contents Amendment Record

This report has been issued and amended as follows:

Revision	Description	Issued by	Checked by	Date
P02	Updated to suit new masterplan	Indira Withana	Nigel Johns	2024-08-08
P01	First Issue for Planning	Indira Withana	Nigel Johns	2024-07-12

Barnsley Marshall Limited have prepared this report in accordance with the instructions of their client, FI Real Estate Management, for their sole and specific use. Any other persons who use any information contained herein do so at their own risk.

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APPENDIX A : SITE LOCATION PLAN

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APPENDIX C : SITE GEOLOGY

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1. Introduction

1.1 Project Background

Barnsley Marshall Ltd was appointed by FI Real Estate Management to provide a Flood Risk Assessment for the proposed extension of Black Moss Farm located at Elmridge Lane, Chipping, Preston, PR3 2NY.

The report provides an assessment of flood risk from various sources on the proposed development based on Government and local authority guidance with regard to flood risk assessments.

The report is based on currently available information and preliminary discussions.

Proposals contained or forming part of this report represent the design intent and may be subject to alteration or adjustment in completing the detailed design for this project. Where such adjustments are undertaken as part of the detailed design and are deemed a material deviation from the intent contained in this document, prior approval shall be obtained from the relevant authority in advance of commencing such works.

Where the proposed works to which this report refers are undertaken more than twelve months following the issue of this report, Barnsley Marshall shall reserve the right to re-validate the findings and conclusions by undertaking appropriate further investigations at no cost to Barnsley Marshall.

1.2 Scope of Flood Risk Assessment

The assessment has been undertaken in accordance with the standing advice and requirements of the Environment Agency for Flood Risk Assessments as outlined in the Communities and Local Governments Planning Practice Guidance (PPG) to the National Planning Policy Framework (NPPF).

The assessment has:

- Investigated all potential risks of current or future flooding to the site
- Considered the impact the development may have elsewhere with regards to flooding risk
- Considered design proposals to mitigate any potential risk of flooding determined to be present
- Determine any constraints to be imposed on the development layout or drainage systems

In April 2015, the Government made changes to the National Planning Policy Framework which made Sustainable Urban Drainage Systems (SUDS) a material

consideration in the determination of planning applications for new developments. This report has therefore been produced to support the Planning Application in accordance with the Town and Country Planning Order 2015.

The Strategy reviews the following information:

- Environment Agency flood maps for rivers and sea flooding.
- Local Flood Risk Management Strategy – Herefordshire Council
- Sustainable Drainage Systems Handbook – Herefordshire Council
- Welsh Water Public Sewer Records.
- Design and Construction Guidance Version 1 - Oct 2019
- Part H of the Building Regulations: Drainage and waste disposal
- BE EN12056 Part 2 Gravity Drainage Systems Inside Buildings
- Technical Guidance to the National Planning Polity Framework
- CIRIA Report C753 SUDS Manual 2016.
- BS EN 752:2008 Drain and sewer systems outside buildings.
- BS 8582:2013, Code of Practice for surface water management for development sites.
- BS 8533:2011, Assessing and managing flood risk in development – Code of practice.
- CIRIA C635 Designing for exceedance in urban drainage - good practice
- Flood Estimation Handbook (FEH) /Flood Studies Report (FSR) methods.
- Institute of Hydrology (IH) Reports No. 124.
- Environmental Agency (EA) / Department for Environment, Food and Rural Affairs (DEFRA) recommendations.
- Floods and Water Management Act 2010
- Flood plan guidance for communities and groups – EA
- Adapting to Climate Change: Advice for Flood and Coastal Erosion Risk Management Authorities – EA

2. Existing Site Details

2.1 Location and Description

The proposed development is located at Black Moss Farm, Elmridge Lane, Chipping, Preston, PR3 2NY. The farm is set over approximately 348 Acres, but the proposed cattle building development site (that this report refers to) is set over an area of approximately 2.5Ha. The farm is approximately 3km north of Longridge Town centre. An unnamed stream / large ditch passes approximately 300m north-east of the development site, flowing in an easterly direction. The watercourse is a tributary to the River Loud approximately 1.5 km further to the east. The farm currently has a range cottages and farm buildings which are accessed via Elmridge Lane, refer to ***Figure 1.***

For a site location plan refer to ***Appendix A.***

Figure 1: Development Site shown with red border

(Source: Google Maps, Accessed on 2024-07-08, 1500hrs)

2.2 Topography

The current topographical survey demonstrates that the proposed development site slopes generally from the north-west (with ground levels at approximately 107.000mAOD) to the south-east (with ground levels at approximately 104.200mAOD). Further survey is being undertaken by the Contractor to determine topographical information towards south of the site.

Refer to ***Appendix B*** for the site topography.

2.3 Existing Watercourses

There are two existing Ponds on the farm. One which is located adjacent to the proposed development site is to be abandoned and the land around the existing pond is generally at a level of 105.100mAOD. The other Pond is located near proposed access road to the farm and is to remain on site.

An unnamed stream / large ditch passes approximately 300m north-east of the development site, flowing in an easterly direction. The watercourse is a tributary to the River Loud approximately 1.5 km further to the east.

2.4 Existing Public Drainage

Being in the middle of farmland, there is no existing public drainage known within or in the vicinity of the site. The postcode of the site falls within a region supplied by United Utilities.

2.5 Existing Private Drainage

The existing site is severed by a private drainage system (information provided by the topographical survey and briefing from the client). However, the extent of the private drainage network is currently unknown.

2.6 Site Geology

A Site Investigation (SI) was carried out on site by Sub Surface Site Investigation Specialists. In summary, the report indicates that the site is made up of 0.2m deep topsoil underlaid by soft to firm grey and brown sandy silty Clay.

Refer to ***Appendix C*** for details.

3. Policy and Guidance

3.1 National Planning Policy Framework

In March 2012, the Department of Communities and Local Government published the National Planning Policy Framework document (NPPF) which provides guidance on how flood risk should be assessed during the planning and development process. The main Framework is supplemented by a technical guidance document ("Planning Practice Guidance" - PPG) which advises specifically with respect to flooding. The most critical aspects are extracted below.

3.2 Flood Zone Classification

Table 1: Flood Zone Classification

(Source: Planning Practice Guidance Table 1, Accessed on 2020-05-26, 1110hrs)

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	**This zone comprises land where water has to flow or be stored in times of flood.** Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

3.3 Flood Risk Vulnerability Classification

Table 2: Flood Risk Vulnerability Classification

(Source: Planning Practice Guidance Table 2, Accessed on 2020-05-26, 1140hrs)

Essential Infrastructure

- Essential transport infrastructure (including mass evacuation routes) which must cross the area at risk.
- Essential utility infrastructure which must be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood.
- Wind turbines.

Highly Vulnerable

- Police stations, ambulance stations and fire stations and command centres and telecommunications installations required to be operational during flooding.
- Emergency dispersal points.
- Basement dwellings.
- Caravans, mobile homes and park homes intended for permanent residential use.
- Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as “essential infrastructure”).

More Vulnerable

- Hospitals.
- Residential institutions such as residential care homes, children’s homes, social services homes, prisons and hostels.
- Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels.
- Non–residential uses for health services, nurseries and educational establishments.
- Landfill and sites used for waste management facilities for hazardous waste.
- Sites used for holiday or short-let caravans and camping, *subject to a specific warning and evacuation plan*.

Less Vulnerable

- Police, ambulance and fire stations which are not required to be operational during flooding.
- Buildings used for shops, financial, professional and other services, restaurants and cafes, hot food takeaways, offices, general industry, storage and distribution, non–residential institutions not included in “more vulnerable”, and assembly and leisure.
- Land and buildings used for agriculture and forestry.
- Waste treatment (except landfill and hazardous waste facilities).
- Minerals working and processing (except for sand and gravel working).
- Water treatment works which do not need to remain operational during times of flood.
- Sewage treatment works (if adequate measures to control pollution and manage sewage during flooding events are in place).

Water Compatible

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.
- Sand and gravel working.
- Docks, marinas and wharves.
- Navigation facilities.
- Ministry of Defence installations.
- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.
- Essential ancillary sleeping or residential accommodation for staff required by uses in this category, *subject to a specific warning and evacuation plan*.

3.4 Flood Risk Vulnerability and Flood Zone 'Compatibility'

Table 3: Flood Risk Vulnerability & 'Compatibility'

(Source: Planning Practice Guidance Table 3, Accessed on 2020-05-26, 1200hrs)

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	✗	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	✗	✗	✗	✓*

Key:
✓ Development is appropriate
✗ Development should not be permitted.

Notes to table 3:

- This table does not show the application of the Sequential Test which should be applied first to guide development to Flood Zone 1, then Zone 2, and then Zone 3; nor does it reflect the need to avoid flood risk from sources other than rivers and the sea;
- The Sequential and Exception Tests do not need to be applied to minor developments and changes of use, except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site;
- Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts.

† In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

* In Flood Zone 3b (functional floodplain) essential infrastructure that has to be there and has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows and not increase flood risk elsewhere.

4. Development and Flood Risk

4.1 Proposed Development Vulnerability Classification

The proposed development is located at Black Moss Farm, Elmridge Lane, Chipping, Preston, PR3 2NY. The site is approximately 12km north-east of Preston city centre and 3km north of Longridge Town Centre on National Grid Reference SD601404. The site currently consists of a farmhouse with some existing cattle sheds and farmhouse buildings surrounded by a greenfield parcel of land.

From ***Table 2*** above (Table 2 in the Planning Policy Guidance), the proposed development falls under *'**Less Vulnerable'*** due to the fact that the proposed site falls within land and building used for agriculture and forestry category.

4.2 Flood Risk from Rivers and the Sea

The Environment Agency website provides basic flood mapping data as a general guide to whether a site is at risk of flooding from various sources including rivers and seas for Flood Zoning classification.

This mapping indicates that the site is wholly located within an area with an undefended risk of flooding from rivers and the sea of less than 0.1% (or the 1 in 1000-year event), classified as Flood Zone 1. The development site is therefore at ***Very Low Risk*** of flooding from rivers and the sea.

Figure 2 shows the extents of the risk of river flooding from the River Loud.

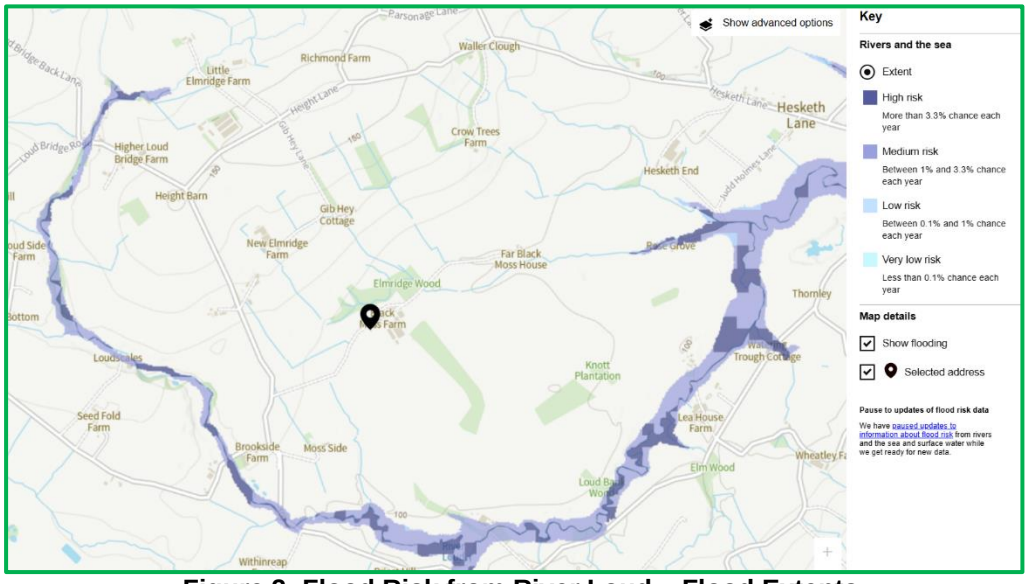


Figure 2: Flood Risk from River Loud – Flood Extents

(Source: https://check-long-term-flood-risk.service.gov.uk/risk, Accessed on 2024-07-09, 1230hrs)

4.3 Historic Flooding

There is no evidence or data to report any historic flooding within the site bounds. An unnamed stream / large ditch passes approximately 300m north-east of the development site, flowing in an easterly direction. The watercourse is a tributary to the River Loud approximately 1.5 km further to the east. The site generally slopes from north-west (with ground levels at approximately 107.000mAOD) to the south-east (with ground levels at approximately 104.200mAOD).

4.4 Flood Defences

There are no formal flood defences recorded on the Environment Agency maps in the immediate vicinity of the site. The site is also not indicated as being used for flood storage, therefore, the flood risk to the development from failed or breached flood defences is considered to be low.

4.5 Flooding induced by Climate Change

The nearest flood zone - Flood Zones 2 and 3 - are approximately 800m to the south of the site and is associated with maximum flood extents of River Loud, refer to ***Figure 2.***

There is no record of any historical flooding of the current site, therefore the proximity of the EA Flood Zone 3 (around River Loud) is not considered a risk.

4.6 Flooding from Groundwater

A Site Investigation (SI) was carried out on site by Sub Surface Site Investigation Specialists (refer to **Appendix C)**. A borehole was drilled close to existing pond near the sheds up to a depth of 2.0m below ground level (bgl) and following pertinent information were recorded.

- Overburden to a depth of 0.2m bgl, underlain by:
- Soft to firm grey and brown sandy silty clay, underlain by:
- Firm greyish brown slightly gravelly slightly sandy silty clay, underlain by:

In summary, the report indicates that the site is made up of 0.2m deep topsoil underlaid by soft to firm grey and brown sandy silty Clay. No groundwater has been encountered up to the depth of 2.0m.

From the borehole log data, it appears that the existing ground water levels are reasonably low and are potentially capped by the sandy silty Clay strata. It is

therefore considered unlikely that any seasonal rise in ground water would result in surface flooding of the site due to rising ground water.

4.7 Flooding from Adopted Sewers

There is no record of flooding from the adopted sewers within the site, refer to ***section 2.4*** of this report.

4.8 Flooding from Private Drainage

The existing site is severed by a private drainage system (information provided by the topographical survey and briefing from the client). However, the extent of the private drainage network is currently unknown. A detailed CCTV & Drainage Survey shall be commissioned to determine the information related to existing sewers on site and propose remedial works if required to ensure continuity of sewers during and after construction works.

4.9 Flooding from Surface Water

The UK government *Long Term Flood Risk Information Flood Map* was consulted to check the risk of site flooding from surface water; an extract from the map is presented in ***Figure 3***. The figure indicates that the extent of flooding risk for the site from surface water is considered very low.

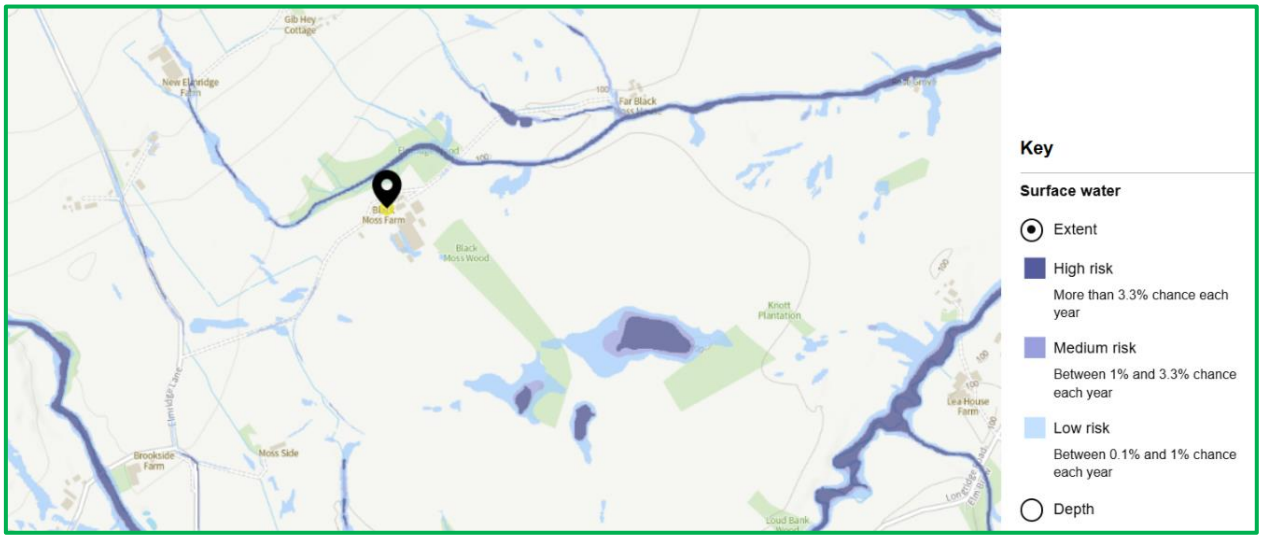


Figure 3: Flood Risk from Surface Water - 'Extent of flooding'

(Source: https://check-long-term-flood-risk.service.gov.uk/risk, Accessed on 2024-07-09, 1230hrs)

4.10 Flooding from Reservoirs, Canals and Artificial Sources

The UK government *Long Term Flood Risk Information Flood Map* was consulted to check the risk of site flooding from reservoirs, and it indicates that the flooding from reservoirs is unlikely in the site area.

4.11 Overall Flood Risk

As noted in the previous sections the flood risk to the proposed development is considered to be ***very low*** from all sources. The fact that the development site is within ***Flood Zone 1***, coupled with that the type of development is classed as ***Less Vulnerable,*** implies that this site is suitable for the type of development proposed.

4.12 The Sequential Test

The aim of the Sequential Test is to guide development away from areas at risk of flooding towards land situated within the Environment Agency's Flood Zone 1 classification. As the site is already situated within Flood Zone 1 the requirements of the Sequential Test are satisfied.

4.13 The Exception Test

As the site is situated within Flood Zone 1 the Exception Test is not required.

5. Drainage Strategy

5.1 Recommended Surface Water Drainage Strategy

The proposed development has a plan area of approximately 2.5Ha, with approximately 2.0Ha being impermeable. The IH124 method was used to estimate the greenfield runoff rates from the site since the site is less than 200Ha. *Because the site is also less than 50Ha, the ICP SUDS tool in InfoDrainage Source Control module was used to calculate the greenfield runoff rates*. The tool uses the IH124 approach to calculate the greenfield runoff for 50Ha, then linearly interpolate to get the flows for smaller catchments. The 1-year, 30-year, and 100-year Greenfield runoff rates were found to be 15.4 l/s, 30.1 l/s, and 36.9 l/s respectively, refer to ***Appendix D*.**

Qbar is 17.7 l/s for both rural and urban.

It is recommended that, to prevent increased flows post-development and offer an improvement to existing downstream flash flooding, runoff from the development shall be controlled to 15.0 l/s maximum for all storm events up to and including the 100-year + 40% CC storm event. It is to be noted that, the runoff rate is limited to 15.0 l/s which is less than calculated 1-year Greenfield Runoff Rate of the site.

Details of proposed SuDS-based drainage layout for the development are given in ***CSH-BML-XX-XX-RP-C-0510 Drainage Strategy Report***.

APPENDICES

Appendix A

Site Location Plan & Masterplan

Contractors are not to scale dimensions from this drawing.

Rev	Description	Date
P1	Planning Issue	29.07.24
P2	Planning Issue	30.07.24

Existing Building A
Workshop Refurbishment

Studio
(was pigsty)

Existing Farmhouse

Existing Building B
Cattle Shed / Storage

Barn
Conversion

Existing Farmhouse

Existing agricultural
barns removed

Existing Generator
Housing and Main
Switch Room

Existing Building F
Cattle Shed

Silage clamps

Existing Building G
Cattle Shed

Existing Building H
Cattle Shed

Existing
slurry
removed

Existing
slurry
removed

Existing Building I
Cattle Shed

Existing Building K
Cattle Shed

Existing Building J
Cattle Shed

Existing Building L
Cattle Shed

Existing Building O
Machine Shed

Red fuel
station under

Existing Building N
Cattle Shed

Wash Bay

Existing
Pond

Track

Trees

New pond

Trees

Farmhouse
extension

Farmhouse

Blackmoss Farm Cottage

Existing Building M1
Calving Shed

Proposed Building M2
New Calving Shed
960m2

Existing Building P1
New Shed

Proposed M&E
Housing
36m2

Proposed Building M2
Farm Office / Welfare
250m2

Proposed Building P1
Robotic Milking Shed
1,550m2

Proposed Chemical Store
and Compressor Housing
36m2

Proposed Building S1
New Calving Shed
960m2

Proposed
Silo's

25m turning circle

Proposed Midden

Existing slurry tank

Existing slurry tank

Milk lorry and access
for farm activities

Cattle Grid

Existing pond

Planning Application Legend:

- PHASE 1:
  - Studio and Barn Holiday Lets
- PHASE 2:
  - Farmhouse Extension
- PHASE 3:
  - Cattle Sheds and Farm Buildings
- New tree.
  Refer to Landscape Architect design.
- New hedgerow.
  Refer to Landscape Architect design.

N

0m 10 20 30 40 50m

MCAU
Modern City
Architecture & Urbanism

Avenue HQ
17 Mann Island
Liverpool
L3 1BP

t: 0161 974 7203
e: info@mcau.co.uk
www.mcau.co.uk

Client
FI Real Estate Management

Project
Blackmoss Farm, Chipping

Description
Planning - Farm Site Plan

Status
Stage 3 Planning

Drawn By
JT

Job Number
1243-MCAU

Scale
1:500

Date
Jul 24

Drawing Number
02-P00

Revision
P2

Appendix B

Site Topography

Notes

Coordinates and levels are all relative to Ordnance Survey National Grid GPS system (OSGB36 (15))
A true OSGB36(15) coordinate has been established at M2 and another value established at M1 and M3 to determine a bearing - no scale factor or transformation.

Where tree species are to be critically identified, this should be undertaken by an arboriculturalist.

Survey Control

Foul Drainage

An existing foul drain has been approximated in location after exposing the trench in which it is believed to be located. A singular cover has been surveyed within the site and plotted.

Surface Water Drainage

It is not clear whether there is a surface water drainage connection available.

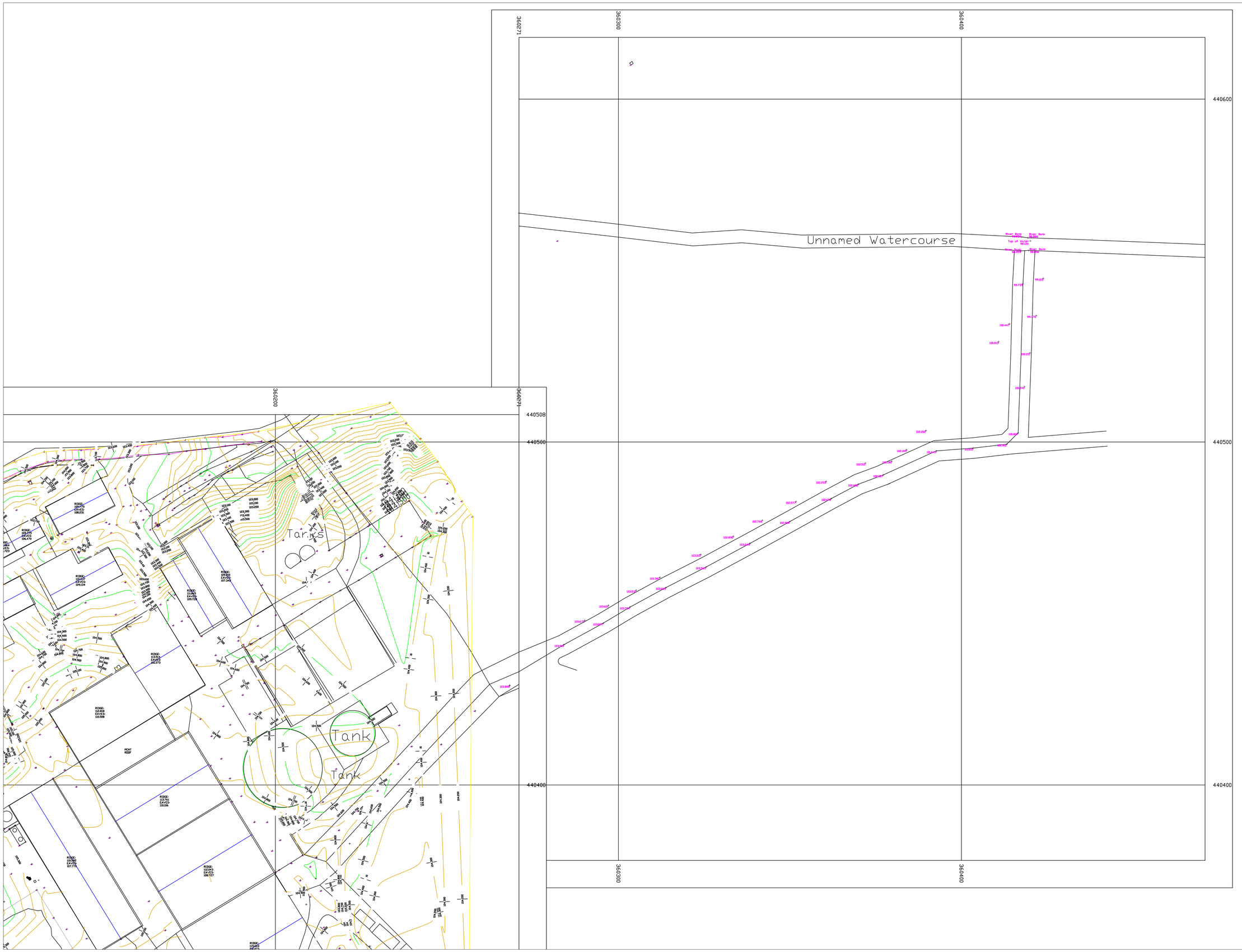
Key

	GAS CHAMBER
	GATE
	HEDGE
LP	LAMPOST
	MANHOLE
	POST AND RAIL
	ROAD CHANNEL
RS	ROAD SIGN
	STOCK FENCE
	SURVEY CONTROL
TP	TELEGRAPH POLE
	TOP OF KERB
	TREE
	MISC FENCE

Survey Grid:	LOCAL SITE GRID
	M PHILLIPS ENGINEERING LIMITED
Client:	FI CONSTRUCTION
Drawing Title:	Blackmoss Farm - Topographical Survey

Scale:	Sheet Size	Drawn:	Date:
1:500	A1	MP	01/12/2023

Drawing Number:	Revision:
BMF_TS_001	DRAFT



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TP	TELEGRAPH POLE
	TOP OF KERB
	TREE
	MISC FENCE

Survey Grid:	
LOCAL SITE GRID	
M PHILLIPS ENGINEERING LIMITED	
Client:	
FI CONSTRUCTION	
Drawing Title:	
Blackmoss Farm - Topographical Survey	

Scale:	Sheet Size	Drawn:	Date:
1:500	A1	MP	01/12/2023

Drawing Number:	Revision:
BMF_TS_001	DRAFT

Appendix C

Site Geology

SUB SURFACE
SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907

Insitu Test Results

Site: BLACKMOSS FARM, ELMRIDGE LANE, LONGRIDGE, PRESTON, PR3 2NY

Client: FI CONSTRUCTION LIMITED

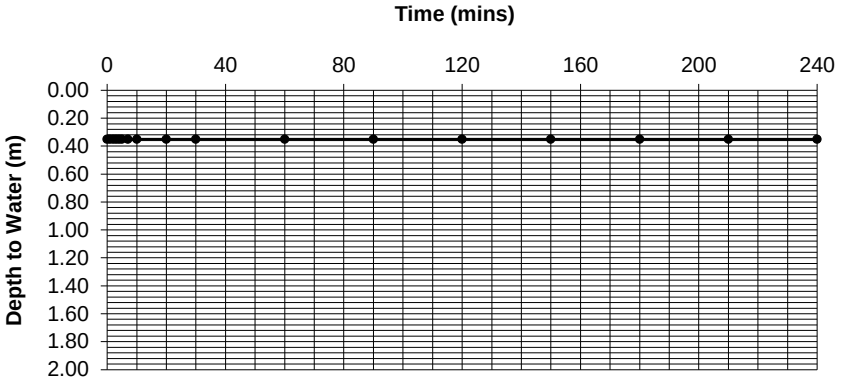
Job Number: 7856

Sheet: 1 / 1

SOAKAWAY TEST

Position: TP1

Test Number: 1
Date: 22/11/23



Time (min)	Depth (m)
0	0.35
1	0.35
2	0.35
3	0.35
4	0.35
5	0.35
7	0.35
10	0.35
20	0.35
30	0.35
60	0.35
90	0.35
120	0.35
150	0.35
180	0.35
210	0.35
240	0.35

Length of pit:	L =	1.70	m
Width of pit:	W =	0.60	m
Depth of pit	D =	2.00	m
Base area of pit:	A =	1.02	m^2
100% effective depth	D100 =	0.35	m
75% effective depth	D75 =	0.76	m
50% effective depth	D50 =	1.18	m
25% effective depth	D25 =	1.59	m
time to D75	T75 =	-	sec
time to D25	T25 =	-	sec
time from D75 to D25 (T25 - T75)	t_{p75-25} =	-	sec
volume between D75 & D25 (A x (D25 - D75))	V_{p75-25} =	0.84	m^3
surface area to D50 inc. base ((2x(D-D50)x(W+L)) + A)	a_{p50} =	4.82	m^2

SOIL INFILTRATION RATE **f =** $\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$

f = - m/sec *

Test Strata: See TP1 Log.

Remarks: * Unable to calculate Soil Infiltration Rate due to very low permeability of strata.

SUB SURFACE

SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907

Site	Trial Pit Number
BLACKMOSS FARM, ELMRIDGE LANE, LONGRIDGE, PRESTON, PR3 2NU	TP1

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
MECHANICAL EXCAVATOR	0.6m x 1.70m		FI CONSTRUCTION LTD	7856
	Location AS PLAN	**Dates** 22/11/2023	**Engineer**	**Sheet** 1/1

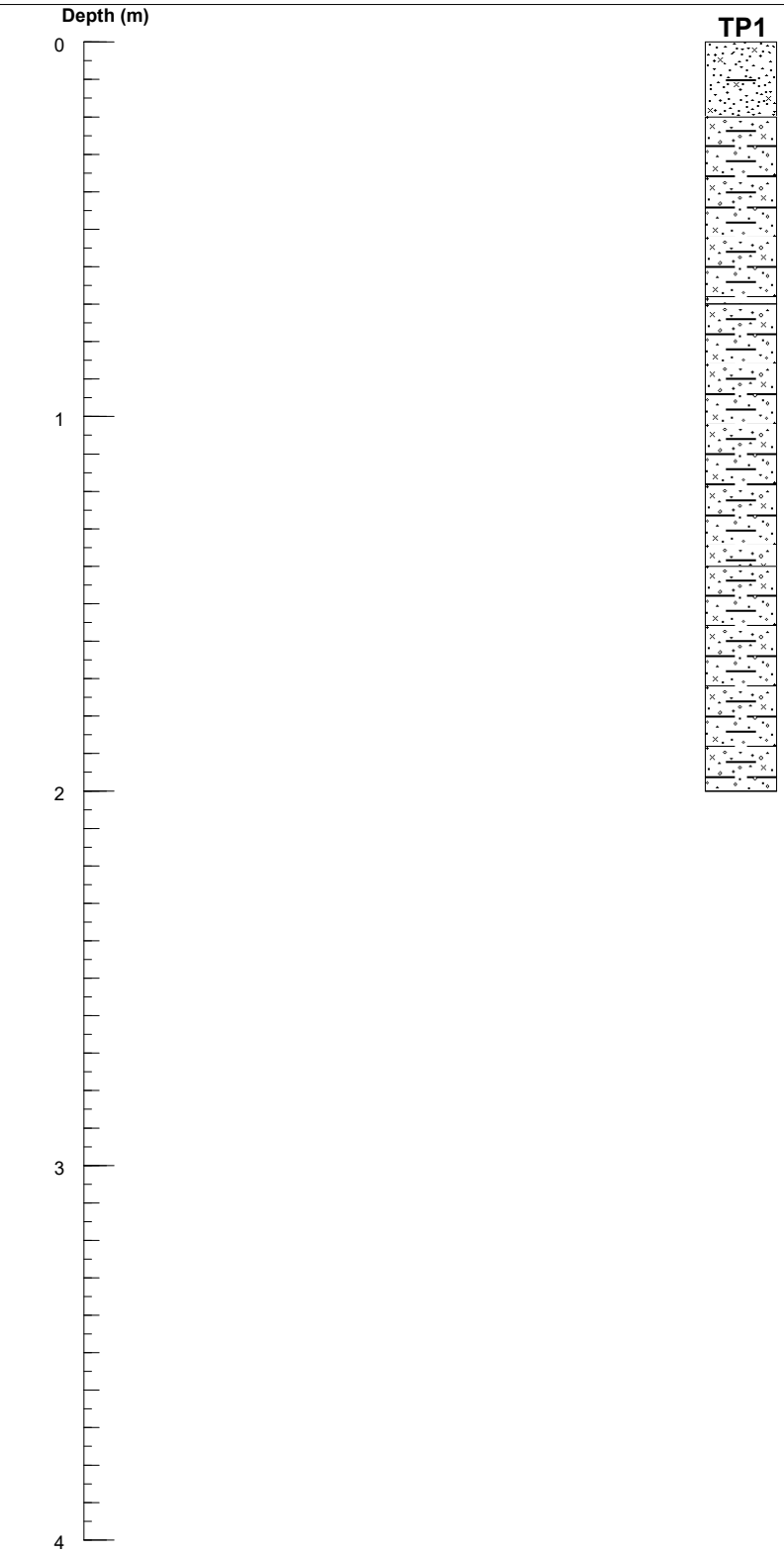
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.20	B				(0.20) 0.20	Dark brown slightly clayey silty fine SAND with occasional roots and some rootlets. (Possible made ground)		
0.20-0.40	B				(0.50) 0.70	Soft to firm grey and occasional greyish brown mottled slightly gravelly slightly sandy silty CLAY. Gravel is subangular to subrounded fine to coarse siltstone, sandstone and quartz		
0.70-0.90	B				(0.70) 1.40	Firm greyish brown and occasional grey and orangish brown mottled slightly gravelly slightly sandy silty CLAY with low siltstone cobble content. Gravel is subangular to subrounded fine to coarse sandstone, siltstone and quartz		
1.40-1.60	B				(0.60) 2.00	Firm greyish brown and occasional grey mottled slightly gravelly slightly sandy silty CLAY with low sandstone and siltstone cobble content. Gravel is subangular to subrounded fine to coarse sandstone, siltstone and quartz ...below 1.8m: occasional pockets of sand		
1.80-2.00	B		22/11/2023:DRY			Complete at 2.00m		

Plan

Remarks

Trial pit remained vertical and stable
No groundwater encountered
On completion backfilled with arisings

Scale (approx)	Logged By	Figure No.
1:25	WJP/HB	7856.TP1



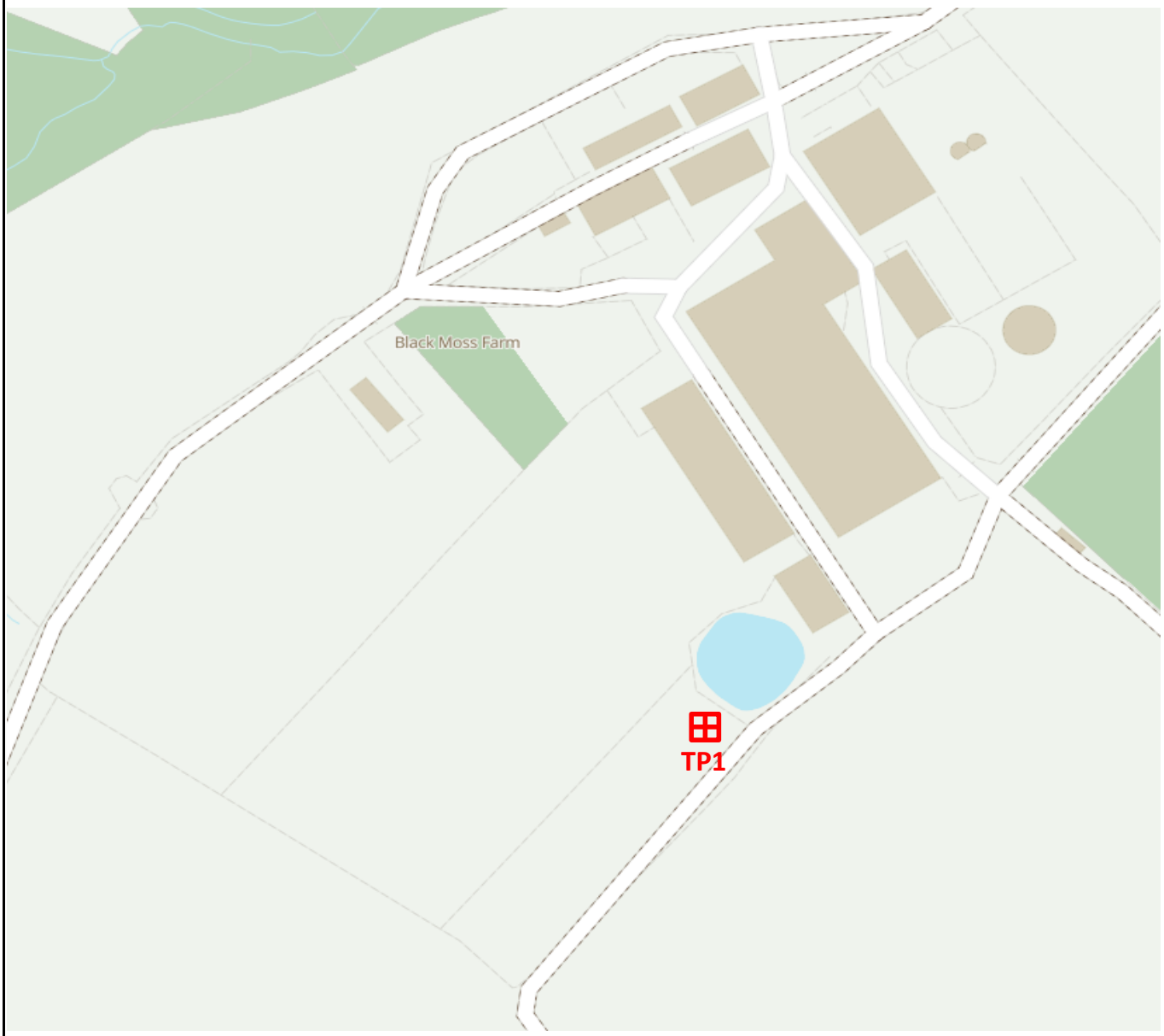
Key

- Groundwater Strike
- Strike Rise Level
- Silty sandy gravelly CLAY
- Clayey silty SAND

SUB SURFACE
SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907

Nominal Section

Site	Date Drawn	Date Checked	Sheet	Job Number
BLACKMOSS FARM, ELMRIDGE LANE, LONGRIDGE, PRESTON, PR3 2NU	30/11/2023		1/1	7856
Client	**Drawn By**	**Checked By**	**Scale**	**Figure No.**
FI CONSTRUCTION LTD			1:20[V]	7856.1



SUB SURFACE SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907	Soakaway Location Plan			
Site BLACKMOSS FARM, ELMRIDGE LANE, LONGRIDGE, PRESTON, PR3 2NY	Date Drawn 28-Nov-23	Date Checked –	Orientation N	Job No. 7856
Client FI CONSTRUCTION LIMITED	Drawn By SS	Checked By –	Scale –	Figure No. 1

Appendix D

Greenfield Runoff Rates

Region	QBAR Rural (L/s)	QBAR Urban (L/s)	Q 20 (years) (L/s)	Q 1 (years) (L/s)	Q 30 (years) (L/s)	Q 100 (years) (L/s)
Region 10	17.7	17.7	27.9	15.4	30.1	36.9