Surface Water Drainage – Closes Hall Farm

Surface water drainage will be by means of infiltration to ground. Infiltration tests have been carried out to determine the suitability of ground for the proposed system in line with BRE 365 guidance.

The Infiltration rate is calculated from the test results as 0.043 m/h

A site plan showing the location of the test pits and the proposed site of the soakaway crates is shown below.

A Rainbox geocellular attenuation crate is the chosen system. (See attached)

The size of the soakaway has been determined to ensure the tank will provide sufficient capacity for 100 year return period with a 45 year climate change factor.

Details of the infiltration results and calculations for sizing the soakaway accounting for climate change are shown below. A maintenance plan and statement is provided.

The crates will be installed in line with the manufacturer's technical guidance.

Project	Closes Hall Farm
Date	13/11/2025
Site Address	Closes Hall Farm, Stump Cross Lane, Bolton-by-Bowland, BB7 4LX

Catchment details				
Buildings	1x	686.0	m^2	x 100%
	-	-	m^2	x 100%
	Total	686.0	m^2	x 100%
Dense Surfacing	-	-	m^2	x 100%
Effective Area	686.0		m^2	

Storage Details (Assumed)		
Tank Size (m)	40 x 0.9 x 2 @95%	
Outflow Details		
Infiltration Rate	0.043	m/hr
Attenuation Control	-	N/A

Rainfall Details - FSR Method		
Return Period	100	Years
Climate Change Factor	45	%
r Value	0.21	
M5-60	20	mm

Results		
Outcome	Pass	
Critical Storm Duration	10	hours
Hmax	1.94	m
Required Volume	**69.7**	m^3
Time to half empty	10.4	hours

Duration (min)	**Intensity (mm)**	**Required Storage (m^3)**
30	28.4	26.6
60	40.0	36.3
120	53.8	46.6
240	70.4	56.2
360	83.2	62.0
600	**101.5**	**66.2**
1440	137.1	53.4

Note
A 'worst case scenario' approach has been applied throughout calculations to ensure the effectiveness of the soakaway.

SuDS Maintenance
The actual maintenance regime, plans, and method statements will be the responsibility of the Management Company of the development. Included within this section is guidance on how the maintenance should be carried out, along with an example Method Statement.

Maintenance Plan

- Regular inspection and cleaning of catchment gutters reduces the likelihood of contamination typically every 3 to 6 months.
- Regular jet-washing of permeable block paving can be used to keep joints and voids clear, this should be carried out every 6 months.
- The catch pit chamber/leaf catcher and flow control chamber should be emptied every 3 months, and after every large storm event to ensure that there are no blockages.
- The inlets and outlets to the rainwater harvesting tanks should be checked every 3 months, and after every large storm event to ensure that there are no blockages

Method Statement
Below is a typical method statement, and something similar should be adopted by the Management Company.

- All operatives must wear suitable PPE including high visibility clothing
- Traffic management to be installed in accordance with the Safety at Street Works and Road Works Code of Practice
- Using hand tools only, remove any debris from gully gratings and/or drainage channels
- Use hand tools to reform channel if necessary to facilitate flow of surface water
- Remove traffic management

Additional notes

- Do not attempt to lift any ironwork
- Do not attempt to use any mechanical equipment on this drainage maintenance activity

Infiltration Tests

MD Cornthwaite
Closes Hall Farm
Bolton-by-Bowland
BB7 4LX

November 4th 2025
Conditions – Showery
Soil – Loam/clay

Test Hole Dimensions
Length 1800mm
Width 600mm
Depth 1200mm

Test Hole 1	**Time from 75cm to 25cm**
1	209 min
2	219 min

Test Hole 2	**Time from 75cm to 25cm**
1	198 min
2	210 min

Percolation Test

Site: Closes Hall

Date 4/11/2025

Conditions Showers - wet previous days

Test Pit 2

Length 1800 mm

Width 600 mm

Depth 1200 mm

Test No	Time @ 750mm	Time @ 250mm	Mins
1	13:00	16:18	198
2	13:10	16:40	210
3			

Notes:

Percolation Test

Site: Closes Hall Farm 4th Nov 2025

Date 4/11/25

Conditions Showery / cloudy (previous days wet)

Test Pit 1

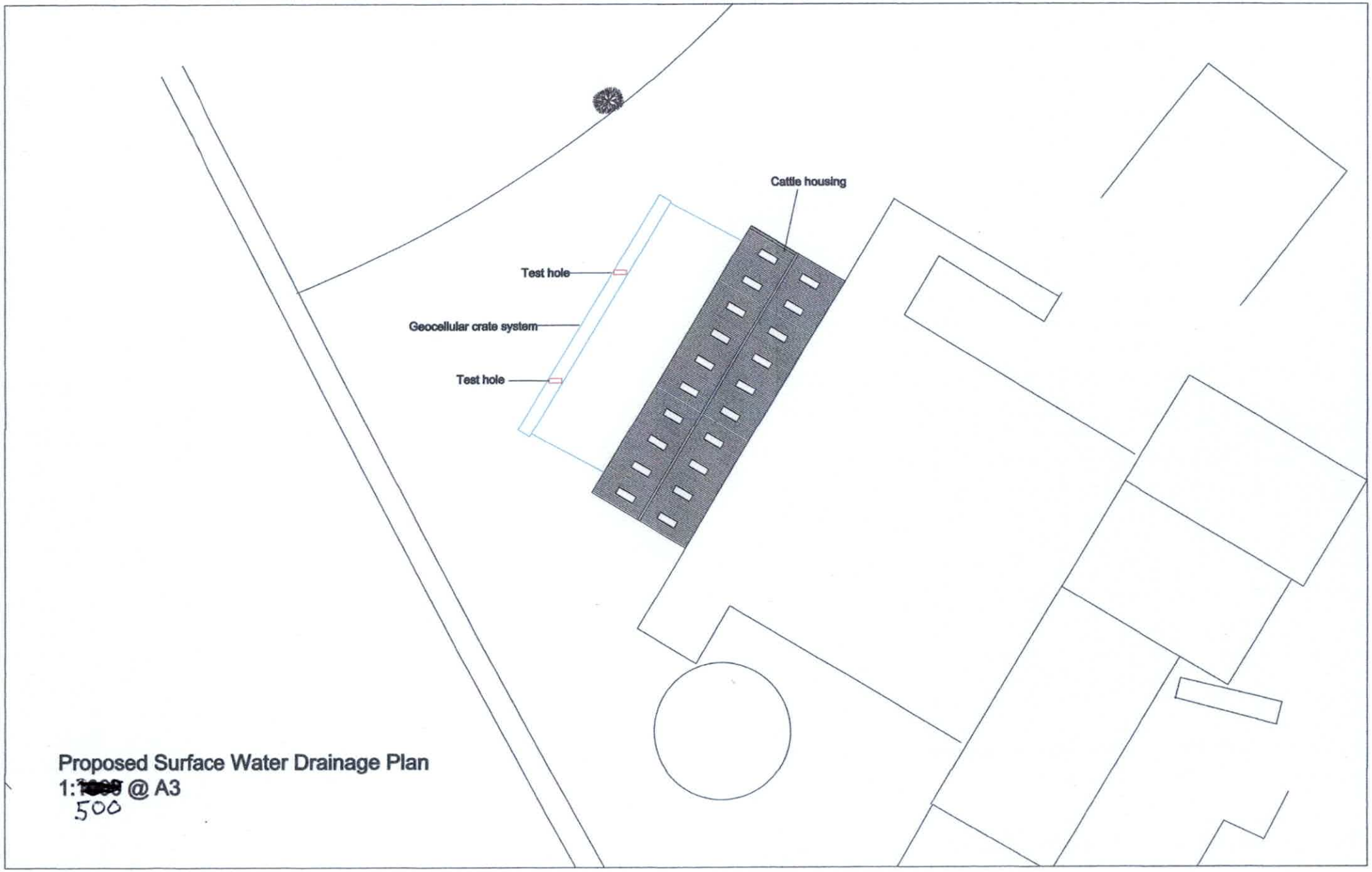
Length 1800 mm

Width 600 mm

Depth 1200 mm

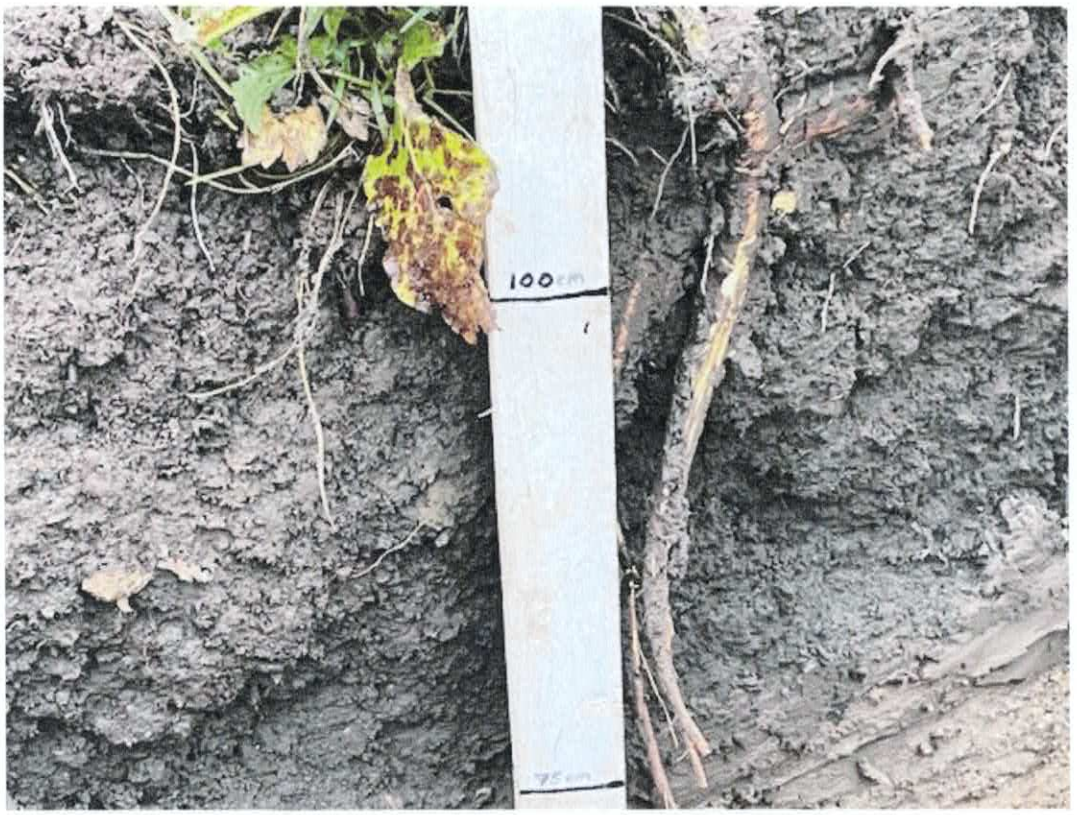
Test No	Time @ 750mm	Time @ 250mm	Mins
1	8:30	11:59	209
2	8:45	12:24	219
3			

Notes:



Proposed Surface Water Drainage Plan
1:~~1000~~ 500 @ A3

Closes Hall 4/11/2025


100cm


100


100
75