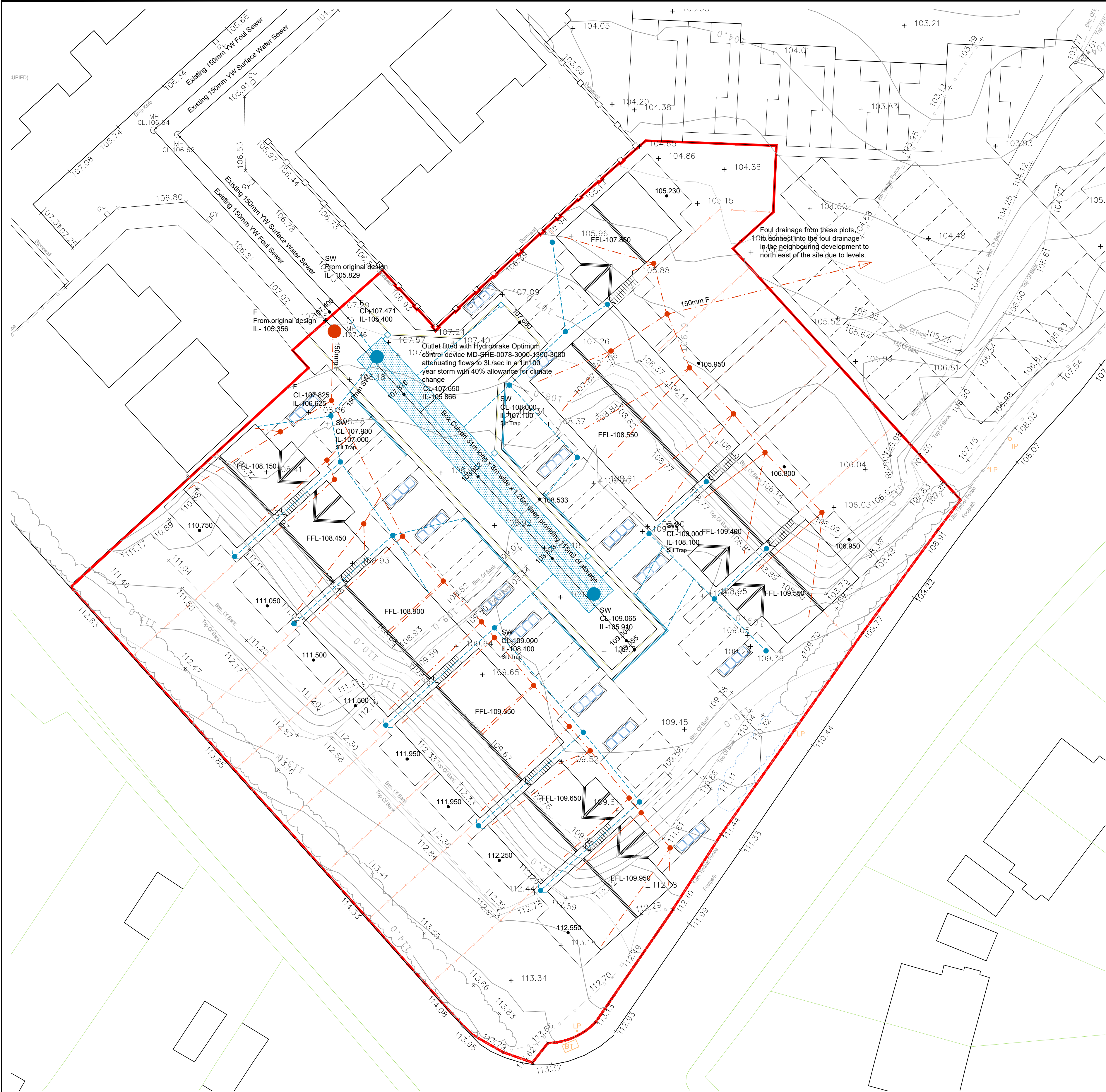
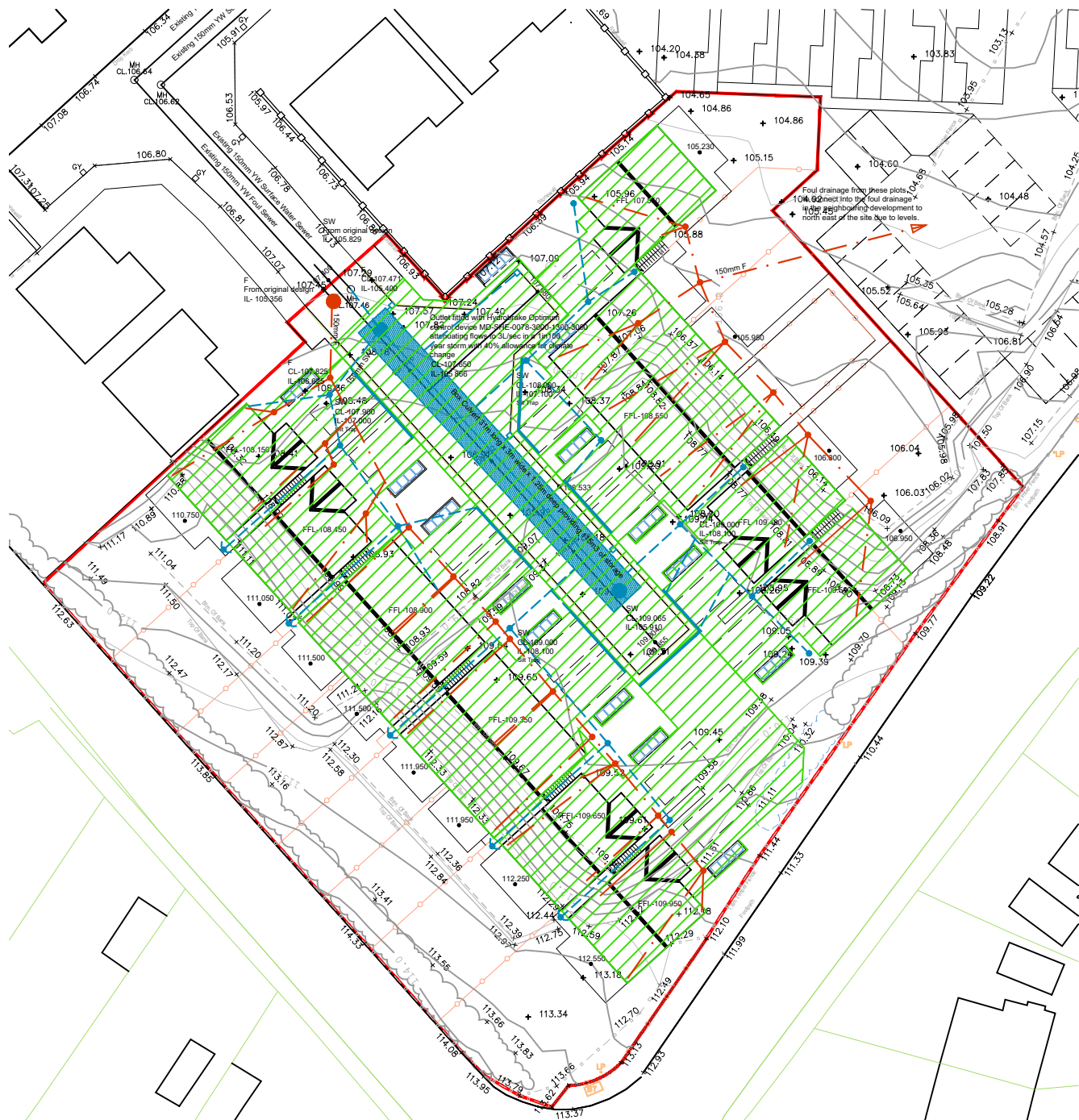


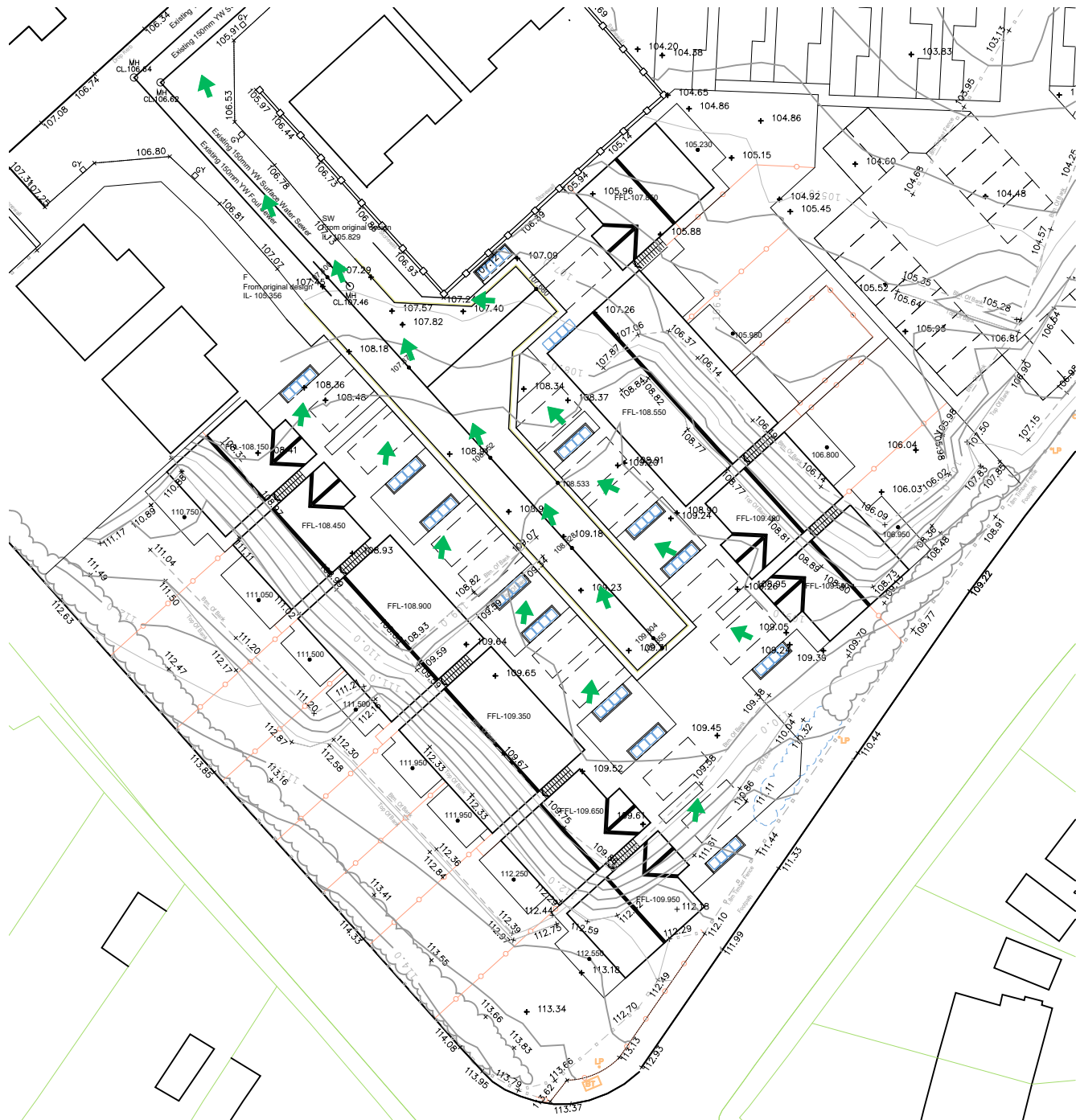


Proposed Drainage Plan (1:200)

- Key**
- Existing Drainage
 - Proposed Surface Water
 - Proposed Foul
 - Proposed Levels



Proposed Catchment Area Plan (1:500)



Exceedance Flow Plan (1:500)

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DO NOT SCALE OFF THIS DRAWING

Notes:

1. This drawing is to be read in conjunction with all relevant architect's and engineer's drawings.
2. It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement.

Drainage Strategy

Surface Water

The site is located within flood zone 1 with a low risk of flooding from rivers or the sea.

The site is not shown to be susceptible to surface water or reservoir flooding. Therefore a site specific flood risk assessment will not be required.

Planning permission has previously been granted for the site, foul and surface water drainage has been installed in Hawshaw Bank, with stubs formed into the site. This drainage is adopted by Yorkshire Water.

NPPF guidelines require that surface water arising from a developed site should as far as practicable be managed in a sustainable manner to mimic the surface water flows arising from the site prior to development.

The national planning policy guidance sets out the hierarchy of drainage to promote the use of sustainable drainage systems. The aim of the hierarchy is to drain surface water run-off as high up the drainage hierarchy as reasonably practical.

1. Into the ground (Infiltration).
2. A surface water body.
3. To a surface water sewer.
4. To a combined sewer.

Consideration has been given to the use of infiltration as a drainage solution.

A phase 1 and phase 2 site investigation has been carried out by Groundsolve Ltd on April 2023. The boreholes show Devensian Till over mudstone. Paragraph 10.6 concludes the firm/stiff clay over weathered clayey bedrock is not suitable for infiltration.

There are no watercourses in close proximity to the site.

Therefore draining the surface water to Yorkshire Waters surface water sewer network appears to be the most appropriate means of draining the site.

Greenfield run off calculations have been prepared, which show the Qbar run off rate to be 1.928L/sec/Ha. See micro-drainage calculations.

Based on a catchment area of 1870m2 this would be 0.362L/sec.

Its not practical to attenuate the flows down to this level, current guidelines recommend the min discharge rate that should be applied is 3L/sec. This is to ensure the control device will be less prone to blockages.

The minimum size control device Yorkshire Water will adopt is 75mm.

We have therefore designed an attenuated drainage scheme based on an allowable discharge rate of 3.0L/sec in a 1in100 year storm, with a 40% allowance for climate change. No allowance has been made for urban creep as the topography of the site would prevent extensions being formed in the garden areas.

The flows will be attenuated using a MD-SHE-0078-3000-1300-3000 Hydrobrake Optimum control device and 115.2m3 of storage. Various storage devices could be utilised, but as the tank will be under the roadway and likely to be offered for adoption we are showing a concrete box culvert. See micro-drainage calculations.

Foul Drainage

The foul drainage will drain as a separate network and connect into the existing foul sewer in the access road. The foul drainage from the lower ground floor level of the northern units will need to connect into the foul drainage of the recently constructed development to the north of the site, or be pumped up higher level foul drainage in the new access road.

No.	Revision	Date	Drwn
Status		Approval	
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Client Newman Group Ltd			
Project Development at Hawshaw Bank Hoyland, Barnsley			
Drawing title Drainage Strategy			
Drawn PB	Chkd	Date June 2024	Scale var
Contract No. 24154	Drg No. DR-C-0101	Revision	-