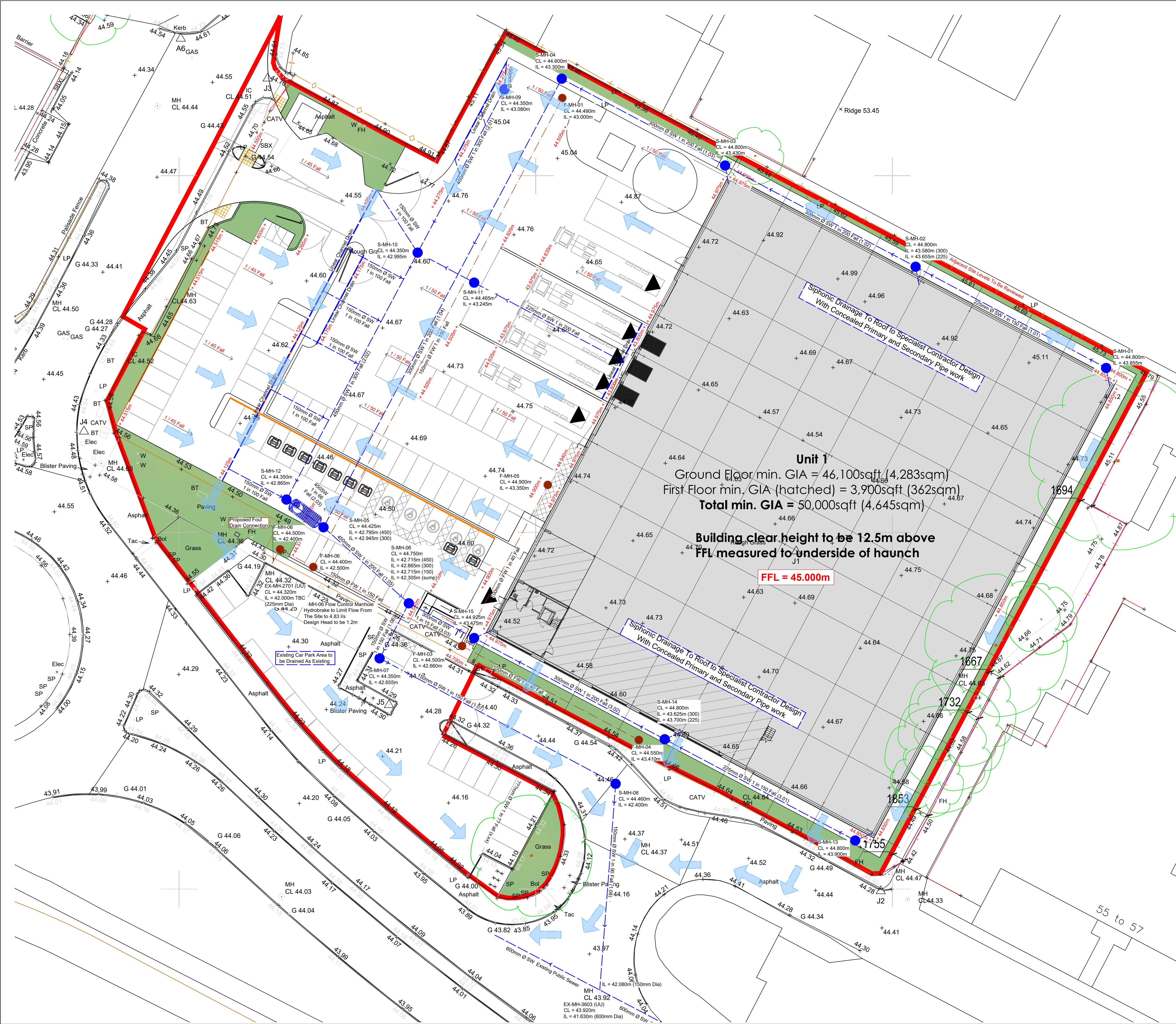
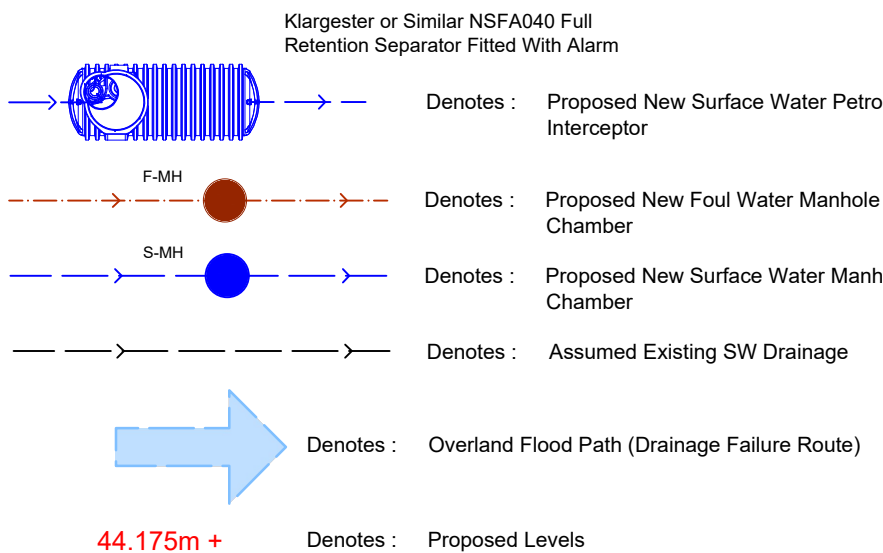




NOTES

1. This drawing to be read in conjunction with all relevant architect's, engineer's and mechanical and electrical engineer's drawings, specifications etc.
2. All dimensions to be checked on site.
3. Any discrepancies, contradictions to be notified to project architect / engineer.

Drainage Key



General Notes

1. The Contractor must check all existing drainage levels prior to undertaking any works on site and Report in Writing the Findings.
2. Any connections to existing public sewer will be subject to Agreement with the statutory undertaker of the existing apparatus.
3. All rainwater positions are shown indicative and the final building drainage is to be agreed prior to undertaking any drainage works on site.
4. All proposed cover and invert levels are subject to final design and to be in conjunction with the finalised building layout and levels.
5. Final discharge rate to be agreed with LLFA and Statutory Authority (United Utilities)

Proposed Surface Water Drainage Strategy & Flood Risk Assessment

The proposed development site has been identified as being located within Flood Zone 1, Land and Property having Low Probability of Flooding (<0.1%)

The existing ground conditions on site are generally unsuitable for the use as soakaways to be considered to deal with the increased volumes of surface water drainage as a result of the proposed development, due to a number of the infiltration tests which were carried out providing insufficient fall in water level to allow a reliable calculation to be determined.

The design looks to incorporate a pass forward flow rate of 4.82 l/s which is based on the existing greenfield rate for the site.

It is proposed to use below ground piped drainage system with a flow control device fitted to the outfall manhole.

The system will provided attenuation within the below ground pipes and manholes to accommodate the surcharge for up to and including the 1 in 100 + 40% climate change allowance with no flooding occurring on or off site. The system will be design to achieve a 1 in 30 + 0% with no surcharging of the below ground system.

The maintenance of the system will be undertaken by the building owner/occupier and will consist of periodic inspections of both the system and flow control device to ensure these are working to their full capacity with all silt and debris being removed periodically typically every 12 months.

All of the proposed finished floor levels and external levels will be set to mitigate any risk of overland flooding from sites in and around the development site by way of maintaining service yard levels below the levels of the buildings.

A Full Retention petrol interceptor to restrict oil from entering the system prior to discharge into the public surface water sewers will be incorporated due to the areas of external service yards being used for parking of HGV's in addition to cars.

Planning Issue - Not For Construction

P3	26.11.2022	Overland Flood Route Pathways Shown - Planning Issue	Planning Issue	MDJ
P2	21.11.2022	Planning Issue	Planning Issue	MDJ
P1	31.10.2022	First Issue - Pre Development Application	Preliminary Issue	MDJ
Rev.	Date	Description	Status	Rev. by

Project	Knowsley East Hub	 MUIR ASSOCIATES (UK) LIMITED Trinity Chambers, 18, Ivy Street, Birkenhead, Merseyside, CH41 3EP Tel: 0151 650 1200 Fax: 0151 650 1201
Title	Proposed Site Drainage Layout	

This drawing is the property of Muir Associates (UK) LIMITED and must not be reproduced without permission.

Director	Proj. Eng.	Client	Redsun Projects Limited	Rev.
	M.D.Jones			
Drawn by	Checked by	Drawing Number	1132-22-01-002	P3
M.D.Jones				
Scale	Date			
1:250 @ A1	April 2022			