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27.09.2023

**Received by Ashfield District Council**

**22.09.2025**



# Flood Risk Assessment & Drainage Strategy

**Proposed Lidl Foodstore,**

**Watnall Road, Hucknall**

February 2020

# Flood Risk Assessment & Drainage Strategy

## Proposed Lidl Foodstore, Watnall Road, Hucknall

February 2020

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## Revision History

<b>Rev.</b>	<b>Date</b>	<b>Prepared by</b>	<b>Details</b>
*	10 March 2020	JZ/PMM	1 <sup>st</sup> DRAFT
A	16 April 2020	JZ/PMM	Planning Issue
B	18 Oct 2022	PMM	Revised Site Layout
<b><i>C</i></b>	<b><i>22 Sept 2023</i></b>	<b><i>PMM</i></b>	<b><i>Section 73. Revised site layout and surface drainage strategy</i></b>

## Report Status

This report has been prepared by Hadfield Cawkwell Davidson Limited for the purposes of a Planning Application for the Client only. Hadfield Cawkwell Davidson Limited accepts no responsibility of whatever nature to any third party to whom this report is made known. This report is not intended for use in assessing the commercial implications of flooding for the proposed development or for insurance and should not be used in this context.

Revisions are shown in ***Bold Italics***

## 1.00 Introduction

- 1.01 This site specific Flood Risk Assessment (FRA) has been prepared by Hadfield Cawkwell Davidson Limited (HCD) on behalf of LiDI (UK) in connection with a planning application for the proposed development at Watnall Road, Hucknall, Nottingham
- 1.02 This FRA is undertaken with reference to the following:
- National Planning Policy Framework (NPPF) and National Planning Practice Guidance (NPPG).
  - CIRIA C753 'The SUDS manual' 2015 and DEFRA 'Sustainable Drainage Systems' Non-statutory technical standards for sustainable drainage systems March 2015.
  - GOV.UK websites interactive Flood map for planning and Long term flood risk assessment maps.
  - GOV.UK website - Environment Agency (EA)/DEFRA Groundwater Protection Guides, March 2017 (previously GP3 August 2013). Guidance on Flood Risk assessments: climate change allowances December 2019.
  - Nottinghamshire County Council (NSCC) Preliminary Flood Risk Assessment (PFRA) Final June 2011 + Nottingham City Council (NCC) PFRA Addendum 2017.
  - Nottingham City Council (NCC) Greater Nottingham Strategic Flood Risk Assessment Addendum (GNSFRA) Final Sept 2017.
  - Ashfield District Council (ADC) Strategic Flood Risk Assessment (SFRA), Level 1 Feb 2009.
  - Nottinghamshire County Council (NSCC) Local Flood Risk Management Strategy (LFRMS) 2016-2021 Final June 2016.
  - Nottinghamshire County Council (NSCC) Section 19 Report dated 11 Feb 2016 - Flooding in Hucknall July 2013.
  - Met Engineers Phase II Geo Environmental Site Assessment Report Ref: 13050/5009 Dated March 2017.
  - ***Remada Geo Consultants 'Additional Soakaways and Ground Water Monitoring' Report Ref: 896.05.02 dated 4 January 2023.***
- 1.03 The purpose of this assessment is to identify and address flood risk issues associated with the development only within the planning context of NPPF and is not intended for use in assessing the impact of flooding upon the viability of the particular development or activity or the availability of insurance.
- 1.04 The NPPF published by the Government sets out it's planning policies and how these are expected to be applied by local authorities when making decisions on planning applications. Local Planning Authorities have the overall responsibility for ensuring that new developments and redevelopments do not increase flood risk elsewhere and are located in the areas of lowest risk practicable. The NPPG adds further context to the NPPF and it is intended that the two documents be read together.
- 1.05 SuDS National Non-Statutory Technical Standards (NS) published by Defra give the requirements for the design, construction, maintenance and operation of SuDS. The NS are intended to be used alongside the NPPF.
- 1.06 The Lead Local Flood Authority (LLFA) for the proposed development is Nottinghamshire County Council.

## 2.00 Development Location and Setting

### Proposals

- 2.01 The proposal comprises a single storey Lidl food retail store and associated external works within the re-development of Hucknall Town football club site (refer to Appendix A of this report – Proposed Site Plan). It is understood that the remainder of the football club site is subject to planning permission for residential uses.

### Site Location

- 2.02 The site is located at the junction of Watnall Road (A6009) and the A611, Hucknall, Nottingham. The site is currently a football club with club house and associated car parking. The Lidl Store development occupies an area of approximately 0.9 Ha. The site is accessed from Watnall Road which forms the south east boundary. The A611 forms the north east boundary; the football ground forms the other boundaries (refer to Appendix B of this report – Aerial and Site Location Plans of Site).

### Topography

- 2.03 The site generally lies at the 95m OS contour. The existing overall site has relatively flat topography with a gentle fall in the order of 1m across the site from the south corner at the entrance to the north corner adjacent the A611. There is a slight embankment adjacent the site boundary down to Watnall Road (refer to Appendix B of this report – Topographical Survey of Site).

### Existing Drainage

- 2.04 Existing private below ground drainage for the football club development is not known.

### Rivers and Watercourses

- 2.05 The site lies within the River Leen catchment area which is situated approximately 2.0Km to the east of the site. Farley's Brook lies beyond the south of the site and an unnamed watercourse, which feeds into Farley's Brook, lies to the north of the site beyond the A611.

### Site History

- 2.06 According to a Phase 1 Desk Study Report dated August 2006 by White Young Green for the proposed residential development site, a limestone quarry was present beyond the south corner of the site from approximately 1900 until 1956. The remainder of the site was undeveloped prior to the establishment of the football club by 1956 when a sports ground and pavilion were shown. The current clubhouse is shown by 1993.

### Existing Ground Conditions

- 2.07 No landfills are identified within 250m of the site.
- 2.08 Published geological maps show the site underlain by the bedrock of the Cadeby Formation. No superficial deposits are recorded.
- 2.09 The Phase 2 geotechnical investigations revealed a thin layer of topsoil and/or made ground across the site, between 0.24 and 0.4m thick.
- 2.10 The made ground and topsoil were predominantly underlain *by weathered limestone bedrock, encountered as either a firm sandy gravelly clay or slightly clayey gravelly sand with low to medium cobble content to a maximum depth of 1.0m below ground level.***
- 2.11 *Beneath the weathered limestone, a weak to medium strong thinly to medium bedded limestone was encountered to a depth of at least 5.0m below ground level. This was recovered as sandy gravel and cobbles.***
- 2.12 *Seven soakaway tests were undertaken within three trial pits. Trial pits were excavated to 1.6m below ground level. Infiltration rate varied from  $1.52 \times 10^{-5}$  to  $4.73 \times 10^{-5}$  m/s.***
- 2.13 *Ground water was not encountered during excavation of the trial pits or during drilling of the boreholes.***

2.14 The site is not located within a groundwater Source Protection Zone, and it is not known if there are any ground water abstractions within the vicinity of the site.

## 3.00 Flood Information

### Environment Agency (EA)

#### Flood Zone

3.01 The GOV.UK (EA) Flood map for planning indicates which flood zone the site is in regarding flood risk from rivers & sea. The flood map for planning shows the site is located within Flood Zone 1 **Very low risk**. Very low risk means that each year this area has a chance of flooding of less than 0.1%. (Refer to Appendix C Flood Map for Planning report)

#### Surface water flooding

3.02 Surface water flooding occurs when rainwater does not drain away through the normal drainage systems or soak into the ground but collects and lies on or flows over the ground instead. Developed land, specifically with large areas of impermeable surfacing, can also be vulnerable to surface water flooding where an adequate drainage system is not present.

3.03 The GOV.UK Long term flood risk assessment indicates **Very low risk**. Very low risk means that each year this area has a chance of flooding of less than 0.1%. (Refer to Appendix C Long Term Flood Risk report).

#### Ground water flooding

3.04 Ground water flooding occurs typically after periods of abnormally high rainfall when the water held underground rises and emerges at the ground surface level in areas away from usual drainage pathways.

3.05 The GOV.UK Long term flood risk assessment indicates **No risk** of groundwater flooding. (Refer to Appendix C Long Term Flood Risk report).

#### Flooding from Reservoirs

3.06 Flooding if the reservoir were to fail and release the water it holds. The GOV.UK Long term flood risk assessment indicates there is **No risk** of reservoir flooding. (Refer to Appendix C Long Term Flood Risk report).

#### Groundwater Source Protection Zone

3.10 The EA website shows the site is not within a Groundwater Source Protection Zone.

#### Pre-planning Enquiries

3.11 The development is in Flood Zone 1, is not within 20m of a main river and is less than 1 Hectare therefore this FRA is based upon the GOV.UK web site Guidance for Flood risk assessments in flood zone 1 (Feb 2017), on this basis, the EA have not been approached for comments regarding the development.

3.12 In response to a pre-planning enquiry Severn Trent Water has confirmed:

- A gravity foul discharge from 1 commercial unit is likely to be very small and can be accepted into the public 525mm dia public combined sewer.
- If ground conditions are not suitable for soakaways/other SuDS techniques and it is not practical to discharge surface water to watercourse then discharge to existing combined sewer would be considered. Confirmation that surface water from the current development drains to the combined sewer is required. The proposed flow should not be greater than the existing flow less 30%. Where required attenuation will be provided on site.

### Nottinghamshire County Council/Nottingham City Council *Preliminary Flood Risk Assessments (PFRA)*

- 3.13 As LLFA, NSCC is required to prepare a Preliminary Flood Risk Assessment (PFRA) report under the Flood Risk Regulations. A PFRA is a high level screening exercise to identify areas where flood risk is significant in national terms for reporting to Europe (National Significant Flood Risk Areas). A PFRA covers the risk of flooding from local sources, namely Ordinary Watercourses, surface water (overland runoff), groundwater and artificial sources (i.e. canals). A PFRA also includes information on past flooding, where future flooding might occur and the consequences it might have to people, properties and the environment. PFRAs exclude flood risk from Main Rivers, the sea and reservoirs as these are assessed nationally by the Environment Agency in Flood Risk Management Plans (FRMPs).
- 3.14 The NCC PFRA Addendum (2017) reviews and updates the previous NSCC PFRA (2011) and concludes that, for the purposes of the Flood Risk Regulations, Nottingham City, North Area is a National Significant Flood Risk Area. The proposed development is not located within the north area of Nottingham therefore is not within a Significant Flood Risk area.

### *Greater Nottingham Strategic Flood Risk Assessment (GNSFRA)*

- 3.15 A Strategic Flood Risk Assessment (SFRA) looks at flood risk and its potential impact at a strategic level on a local planning authority scale, its purpose being to provide a risk based approach that steers development away from areas of high flood risk. The NPPF requires local planning authorities to appraise the risk of flooding in their areas by undertaking an SFRA. Hucknall is not within the study area of the GNSFRA and is covered by the Ashfield District Council SFRA.

### Ashfield District Council

#### *Strategic Flood Risk Assessment Level 1 (SFRA)*

- 3.16 The Ashfield SFRA indicates the flood risk from the River Leen and other water courses within the district. The site is within flood zone 1 and is not affected by the River floods. Table 9 and Plan Fifteen: Flood Risk, Hucknall address the other potential sources of flooding in Hucknall and indicate the site is not subject to any potential sources of flooding (refer to Appendix C Plan Fifteen: Flood Risk, Hucknall).
- 3.17 The SFRA does not indicate any specific location in the district that may flood from sewers because information was not available from Severn Trent Water.
- 3.18 The SFRA advises that, where possible, development proposals within the catchment of the River Leen should seek to reduce surface water generated, to pre-developed green field runoff (average 5 litres/sec/Hectare) in order to reduce flood risk downstream in the City of Nottingham.

### Nottinghamshire County Council

#### *Local Flood Risk Management Strategy (LFRMS)*

- 3.19 The NSCC LFRMS provides an overview and assessment of local flood risk throughout the Greater Nottingham study area. The LFRMS sets out 'Local Flood Hotspot Areas' that have been identified by comparing historic flood records and predicted flood risk for river flooding and surface water sources. Each Local Flood Hotspot Area was prioritised based on the numbers of domestic properties, businesses and critical infrastructure at risk of flooding.
- 3.20 The Site is not within a reported Local Flood Hotspot Area of the LFRMS requiring action to manage flood risk.

### *Section 19 Report - Flooding in Hucknall July 2013*

- 3.21 Following the severe flooding in many parts of the country in the summer of 2007, the Government commissioned an independent review (the "Pitt Review"), this resulted in The Flood and Water Management Act (2010) which requires a LLFA to report on flooding incidents within its area under Section 19 of the Act.
- 3.22 The Section 19 report indicates that the site was not affected in relation to the flooding that occurred in Hucknall on 23 July 2013.

## 4.00 Development & Flood Zone Compatibility

- 4.01 Flood zone compatibility of the development is classified in accordance with the flood zone and flood risk Tables 2 & 3 in NPPG. The site is in Flood Zone 1.
- 4.02 *Flood Risk Vulnerability Classification* – The proposed end use for the site is classified as ‘Less Vulnerable’ development in accordance with Table 2 of the NPPG.
- 4.03 *Flood Zone Compatibility* – Table 3 of NPPG indicates that the ‘Less Vulnerable’ classification of the development is compatible with Flood Zone 1 and is therefore appropriate development as defined in the following table:-

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	<b>Less vulnerable</b>	Water compatible
<b>Flood Zone 1</b>	✓	✓	✓	✓	✓
Flood Zone 2	✓	Exception Test required	✓	✓	✓
Flood Zone 3a	Exception Test required	X	Exception Test required	✓	✓
Flood Zone 3b	Exception Test required	X	X	X	✓

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

- 4.04 *Exception Test* - The development is located in FZ1 and is ‘Less Vulnerable’ classification therefore according to Table 3 of NPPG an Exception Test is not required.
- 4.05 *Sequential Test* – The table above does not show the application of the Sequential Test which should be applied first to guide development to FZ1, then FZ2. The site is in FZ1 therefore the application of the Sequential Test is not considered in this report.

## 5.00 Flood Hazards and Probability of Flooding

- 5.01 Based upon the Flood Information, the probability of flooding from the various sources to be considered for this site are as follows.
- Fluvial - River Leen*
- 5.02 The Flood Map for Planning shows the site to be in Flood Zone 1 and therefore beyond the flood line of the River Leen.
- Pluvial - Overland Flow from Adjacent Land*
- 5.03 Surface water flood map shows the proposed development is not within an area subject to surface water flooding.
- Ground water*
- 5.04 The Site is not within an area which is susceptible to groundwater flooding.
- Existing Sewers*
- 5.05 The Severn Trent sewer records indicate existing combined sewers at a depth of over 4m within Watnall Road (refer to Appendix D of this report – Severn Trent Sewer Records). There is no evidence of historical flooding of the site and any surcharge of the sewers would be contained within Watnall Road, therefore flooding of the site from sewers is considered low.

## 6.00 Surface Water Drainage

### *Proposed Surface Water Drainage Strategy*

- 6.01 Surface water run-off from the proposed development will be from the roofs and external hardstanding areas. The proposed development creates an impermeable plan area of approximately 0.9Ha.
- 6.02 The Building Regulations Approved Document H - Drainage and Waste Disposal, Requirement H3 stipulates that rainwater from roofs and paved areas is carried away from the surface to discharge to one of the following listed in order of priority:
- a) An adequate soakaway or some other adequate infiltration system, or where that is not reasonably practicable;
  - b) A watercourse, or where that is not practicable;
  - c) A sewer
- 6.03** Based upon the results of *Remada Geo Consultants 'Additional Soakaways and Ground Water Monitoring' report, infiltration methods of drainage would appear feasible. Seven soakaway tests were undertaken, infiltration rates of between  $1.52 \times 10^{-5}$  and  $4.73 \times 10^{-5}$  m/s were recorded. It is proposed to design the infiltration drainage system using a ground infiltration coefficient of  $2 \times 10^{-5}$  m/s and a factor of safety of 5.*
- 6.04** *Sub-base SuDS aggregate shall have a minimum porosity of 30% and a minimum permeability of  $6 \times 10^{-2}$  m/s when tested in accordance with HA (1990). To provide a suitable surface for heavy equipment that will be used for paver laid tarmac, an upper stabilisation layer of coarse graded aggregate with minimum porosity of 30% but lesser permeability will be used.*
- 6.05** *Where possible, permeable tarmac will be used directly above the sub-base SuDS aggregate. Impermeable tarmac will be used in areas trafficked by HGV delivery vehicles. HGV delivery vehicle manoeuvring areas will be drained via Permachannel with Permavoid/Biofilter to treat contaminated run-off before waters enter the sub-base SuDS aggregate.*
- 6.06** *In accordance with the CIRIA SuDS Manual 2015, the proposed development is 'commercial yard and delivery areas, non-residential car parking with frequent change (eg retail)'.*
- Pollution hazard level is 'medium' and the requirements for management of surface water quality has been considered using the 'Simple Index Approach'.*
- Table 26.2 of the SuDS Manual identifies the pollution hazard indices for a medium level of pollution hazard (see extract below)*

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very low	0.2	0.2	0.05
Other roofs (typically commercial/ industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways <sup>1</sup>	Medium	0.7	0.6	0.7
Sites with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways <sup>1</sup>	High	0.8 <sup>2</sup>	0.8 <sup>2</sup>	0.9 <sup>2</sup>

*Table 26.3 of the SuDS Manual provides indicative SuDS mitigation indices for various forms of SuDS component (see extract below)*

Type of SuDS component	Mitigation indices <sup>1</sup>		
	TSS	Metals	Hydrocarbons
Filter strip	0.4	0.4	0.5
Filter drain	0.4 <sup>2</sup>	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.0	0.0	0.0
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond <sup>4</sup>	0.7 <sup>3</sup>	0.7	0.5
Wetland	0.8 <sup>3</sup>	0.8	0.8
Proprietary treatment systems <sup>5,6</sup>	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.		

*It is proposed to adopt permeable paving and porous sub-base, permeable paving alone provides the level of surface water treatment required for the proposed development.*

### Calculation of Surface Water Drainage

- 6.07 In accordance with the GOV.UK website, climate change allowances for increases in rainfall intensity are to be considered. **The Upper End allowance for a 1% annual exceedance rainfall event in the Lower Trent and Erewash catchment is 40%.**
- 6.08 Whilst the site is not within the study area of the GNSFRA Addendum (2017), the guidance in Table 2.1: National SuDS Design Standards regarding consideration of flood risk within the site will be applied in the design of the drainage system as follows:
- SuDS NS7 - unless an area is designated to hold and/or convey water as part of the design, flooding does not occur on any part of the site for a 1 in 30 year rainfall event.
  - SuDS NS8 - unless an area is designated to hold and/or convey water as part of the design, flooding does not occur during a 1 in 100 year rainfall event in any part of a building (including a basement) within the development.
  - SuDS NS9 – The design of the site must ensure that, so far as is reasonably practicable, flows resulting from rainfall in excess of a 1 in 100 year rainfall event is managed in exceedance routes that minimise the risks to people and property.

### Exceedance and Surface Water Flow

- 6.10 Exceedance conditions resulting in above ground flood flow occur when the capacity of the drainage system is exceeded and/or where the rate of runoff exceeds the infiltration capacity of the system. When the drainage system is overloaded, the surface water runs down to low points on a site. For rainfall events with a return-period in excess of 30 years, surface flooding of open spaces such as landscaped areas or car parks is acceptable for short periods. The layout and topography of the development does not impact upon the potential surface water exceedance.
- 6.11 In times of exceedance, the runoff is directed above ground, around and away from properties and onto soft landscaped areas, which reduces the flow and residual risk. The proposed location of the development does not impact on surface water flow away from any vulnerable property.
- 6.12 If the drainage system suffers a blockage, surface water will back up the system, out of the attenuation tank and onto hardstanding. Falls in the hardstanding will be sculptured to reflect the surrounding topography and provide an element of storage before guiding water away from the buildings towards the existing flow paths, as is currently the case.
- 6.13 Other than for the proposed building finished floor levels and associated external hardstanding areas within the site, it is not proposed to significantly change the surrounding ground levels therefore topography will remain unchanged to that prior to development.

## 7.00 Foul Water Drainage

### Proposed foul Water Drainage Strategy

- 7.01 **Foul water will drain to a spur provided by Welbeck. This spur is located on the north eastern corner of the site,**

## 8.00 Off Site Impacts

- 8.01 The site is in Flood Zone 1 and rainfall run-off from the development does not impact on pre-development run-off and ground water.
- 8.02 The proposed site topography to that of pre-development, does not impact on pre-development overland flow routes.

## 9.00 Conclusions

- 9.01 The development is categorized as "Less Vulnerable"; is situated in Flood zone 1 and this FRA confirms that the development proposals are in accordance with national planning policy for the control of flood risk.
- 9.02 ***Infiltration methods of surface water drainage will be adopted on this development.***

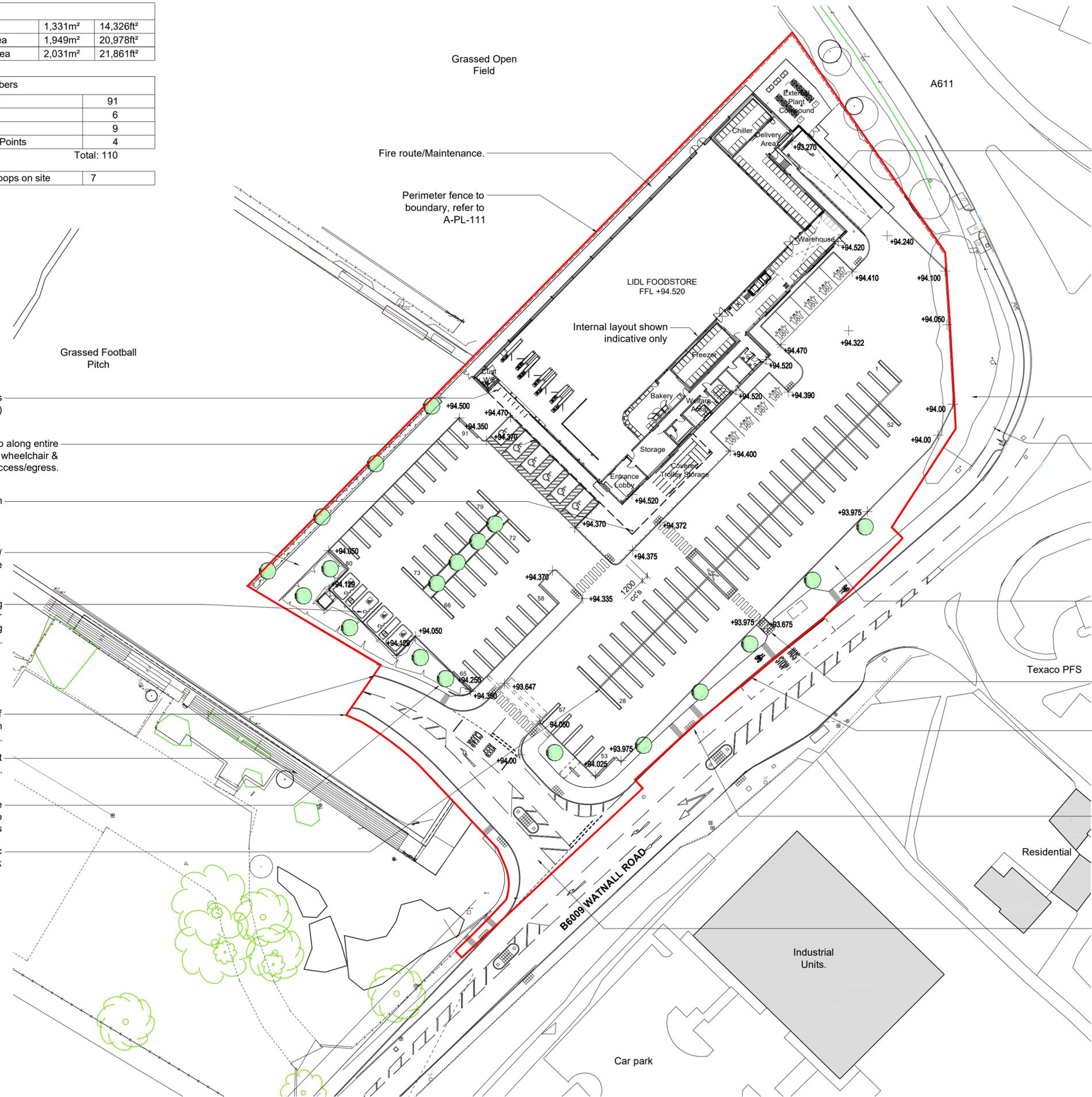
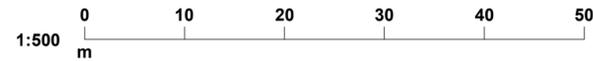
# Appendix A

***Proposed Site Plan***

Foodstore Areas		
Sales Area	1,331m <sup>2</sup>	14,326ft <sup>2</sup>
Gross Internal Area	1,949m <sup>2</sup>	20,978ft <sup>2</sup>
Gross External Area	2,031m <sup>2</sup>	21,861ft <sup>2</sup>

Car Parking Numbers	
Customer Parking	91
Disabled Parking	6
Parent & Child	9
Electric Charging Points	4
Total: 110	

Sheffield Cycle Hoops on site	7
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7no. Sheffield Cycle Hoops (under the shopfront canopy)

Flush kerb along entire shopfront for wheelchair & trolley access/egress.

External canopy column

Pedestrian access route/link with store entrance

4no. Electrical Charging points. Infrastructure for potential future charging points to be installed.

Temporary hoarding ahead of development coming forward on adjacent site.

Further development site by others.

All trees around the site shown indicative refer to Landscape Architects details

White thermoplastic lining to car park

Grassed Open Field

Fire route/Maintenance.

Perimeter fence to boundary, refer to A-PL-111

Internal layout shown indicative only

LIDL FOODSTORE  
FFL +94.520

Warehouse

Bakery

Warehouse

Storage

Covered Trolley Storage

Entrance Lobby

Freezer

Warehouse

A611

Lowered delivery dock.

Existing trees and landscaped retained.

Existing Lamppost.

All landscaping to be in accordance with Landscape Architect's details.

Texaco PFS

Pedestrian access route/link with main store entrance

Existing Bus Stop to be relocated refer to Highway Consultants details

Residential

Existing telephone pole to be relocated, refer to highways consultants details.

NEW MAIN JUNCTION. Refer to Highway Consultant's details

Industrial Units.

Car park

**NOTES:**  
THIS DRAWING IS STRICTLY NOT TO BE USED FOR CONSTRUCTION PURPOSES.  
PROPOSED LEVELS SUBJECT TO DESIGN DEVELOPMENT.  
DRAINAGE STRATEGY & RAIN WATER PIPES SUBJECT TO DESIGN DEVELOPMENT.  
THIS DRAWING CONSISTS OF THE FOLLOWING THIRD PARTY INFORMATION & DRAWINGS:-  
Technics Topographical Survey Information; drg. 4682-0120-01 Rev B dated 24-04-2020. HCD Received via email 18/05/2022  
Rayner Davies Architects Property Boundary; Drawing No: 2173(07)002c; Rev C dated 06-09-2019. HCD Received via email 13/11/2019  
Curtins highway junction details; X\_S278 Design (CAD drawing) received via email 27/01/2021. Amended by HCD to suit Curtins feedback (CAD model received 27/01/2023).  
Miller Goodall Ltd; Noise Assessment Report ref: 102240 (dated 15th April 2020).  
Weddles Landscape MasterPlan drg: LWR 01 E dated Feb 21 (received 25-02-2021).  
Treework Environmental Practice, Tree Constraints Plan, dated September 2022. HCD received on 27/09/2022 via email.  
TO BE READ IN CONJUNCTION WITH HCD DRAWINGS:  
A-PL-101 - SITE LOCATION PLAN  
A-PL-102 - EXISTING SITE PLAN  
A-PL-103 - PROPOSED SITE PLAN  
A-PL-104 - PROPOSED STORE PLAN  
A-PL-105 - PROPOSED STORE ROOF PLAN  
A-PL-106 - PROPOSED STORE ELEVATIONS  
A-PL-107 - PROPOSED SITE SECTIONS  
A-PL-108 - EXTERNAL WORKS DETAIL 1  
A-PL-109 - EXTERNAL WORKS DETAIL 2  
A-PL-110 - SURFACE TREATMENT  
A-PL-111 - PROPOSED BOUNDARY TREATMENT

**KEY**  
+ 196.900 - Proposed level

REVISION	BY	CHECKED	DATE
D	BS	DJW	20/09/2023
Site updated to suit new 1300 spec store. General site updates to suit. 3no. Additional CPS added.			
C	BS	DJW	12/06/2023
Site levels revised following permeable drainage strategy design change. ET16 EV Cabinet incorporated. Highways Consultants detailed revised. Pedestrian site access amended to steps to suit proposed Highways levels. Slate chipping's removed and replaced with landscaping. Sub-station removed resulting in landscaping change to east perimeter.			
B	BS	DJW	18/10/2022
1no. Additional cycle hoop added.			
A	DJW	DJW	14/10/2022
Electrical sub-station added to the site. Tree keep but relocated to rear pedestrian link to further development. Treeworks information incorporated into the drawing.			
*	MIC	DJW	19/07/2022
Issued for Planning			

# PLANNING

PLOT DATE:



CLIENT:  
**LIDL GB Ltd**  
**WATNALL ROAD**  
**HUCKNALL**

## PROPOSED SITE PLAN

DRAWING: MIC  
SCALE: 1:500 @ A2  
DATE: JULY 2022

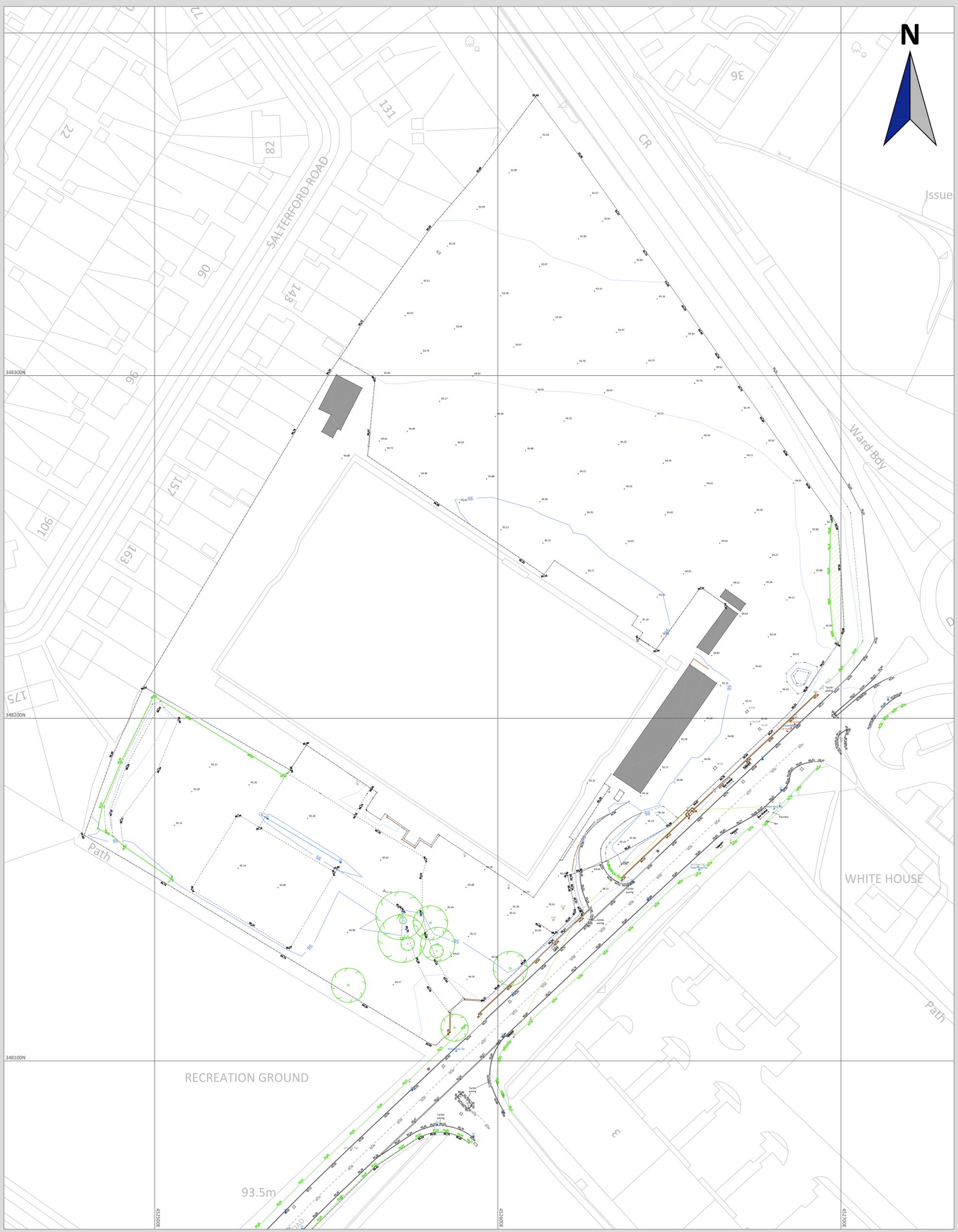
**Hadfield Cawkwell Davidson**  
Broomgrove Lodge, 13 Broomgrove Rd, Sheffield, S10 2LZ T 0114 266 8181 www.hcd.co.uk

# Appendix B

Site Aerial and Location Plans and Topographical Survey

**Lidl Hucknall FRA - Aerial and site location plans**





**LEGEND**

Bottom of Bank	Overhead Cable	Gully
Canopy	Road Centre Line	Inspection Cover
Change Of Surface	Top Of Bank	Lamp Post
Concrete	Topographic Contour (1m Interval)	Manhole Cover
Drain	Topographic Contour (5m Interval)	Post
Dropped Kerb	Verge	Telegraph Pole
Fence	Wall Bottom	Tree
Gate	Wall Top	Water Stop Tap
Hand Rail	Bollard	Building
Hedge	BT Cover	Vegetation
Kerb Channel	Fire Hydrant	
Kerb Top	Gas Stop Tap	

**NOTES:**  
 Site surveyed to Ordnance Survey orientation and datum based on Leica SmartNet.

DRAWN	RB	CHECKED	DH
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**SITE**  
**WATNALL ROAD,  
 HUCKNALL**

**PLAN**  
**SITE TOPOGRAPHIC SURVEY**  
 - 19 DECEMBER 2016 -

Scale: 1:500 @ A1    20 December 2016  
 PSS - 170 - 007 - 013  
Client No.    Project No.    Drawing No.




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# Appendix C

GOV.UK Flood Map for Planning and Log Term Flooding  
SFRA Plan Fifteen: Flood Risk, Hucknall

# Flood map for planning

Your reference	Location (easting/northing)	Created
<b>2017-094 Lidl Hucknall</b>	<b>452619/348208</b>	<b>17 Feb 2020 14:41</b>

**Your selected location is in flood zone 1, an area with a low probability of flooding.**

## **This means:**

- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

## **Notes**

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

The Open Government Licence sets out the terms and conditions for using government data.  
<https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

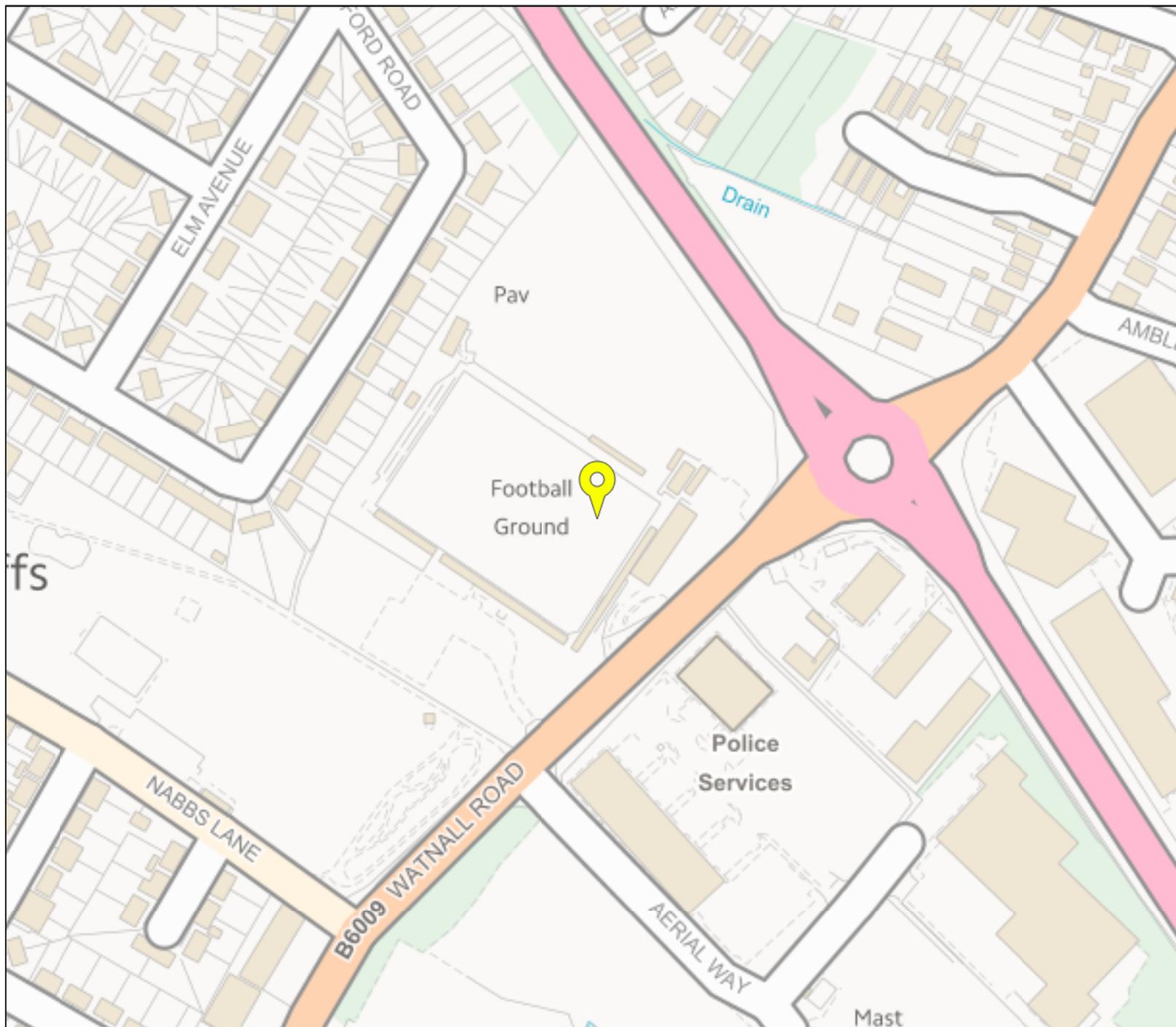
## Flood map for planning

Your reference  
**Lidl Hucknall**

Location (easting/northing)  
**452619/348208**

Scale  
**1:2500**

Created  
**17 Feb 2020 14:41**



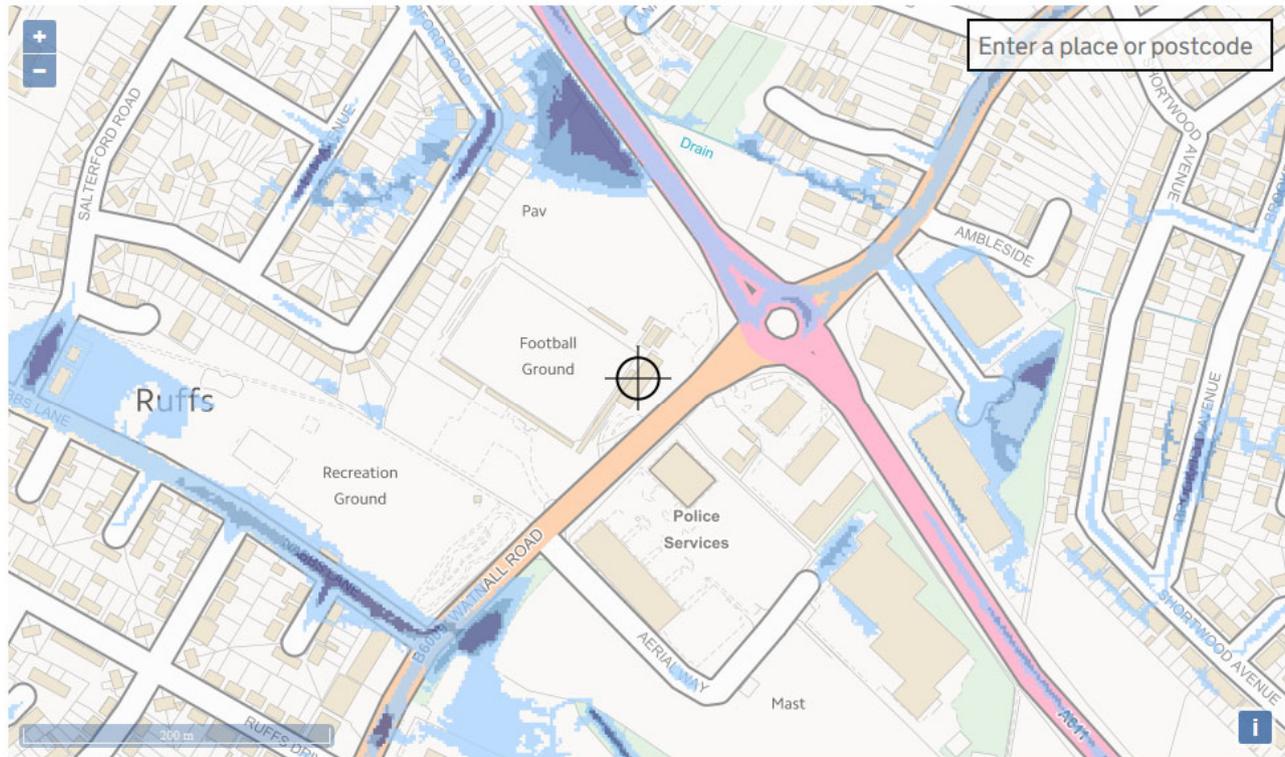
-  Selected point
-  Flood zone 3
-  Flood zone 3: areas benefiting from flood defences
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Flood storage area



# Learn more about this area's flood risk

Select the type of flood risk information you're interested in. The map will then update.

Extent of flooding Hucknall, Town FC



Extent of flooding from surface water

- High
- Medium
- Low
- Very low
- Location you selected

[View the flood risk information for the location you originally searched for](#)

[View the flood risk information for another location](#)

This information meets the requirements of the EU Floods Directive 2007/60/EC

**HUCKNALL TOWN FOOTBALL CLUB, WATNALL ROAD, HUCKNALL,  
NOTTINGHAM, NG15 6EY****Rivers and  
sea risk****Very low risk**

Very low risk means that each year this area has a chance of flooding of less than 0.1%.

---

**Surface  
water risk****Very low risk**

Very low risk means that each year this area has a chance of flooding of less than 0.1%.

Lead local flood authorities (LLFA) manage the risk from surface water flooding and may hold more detailed information. Your LLFA is **Nottinghamshire**.

---

**Reservoir  
risk**

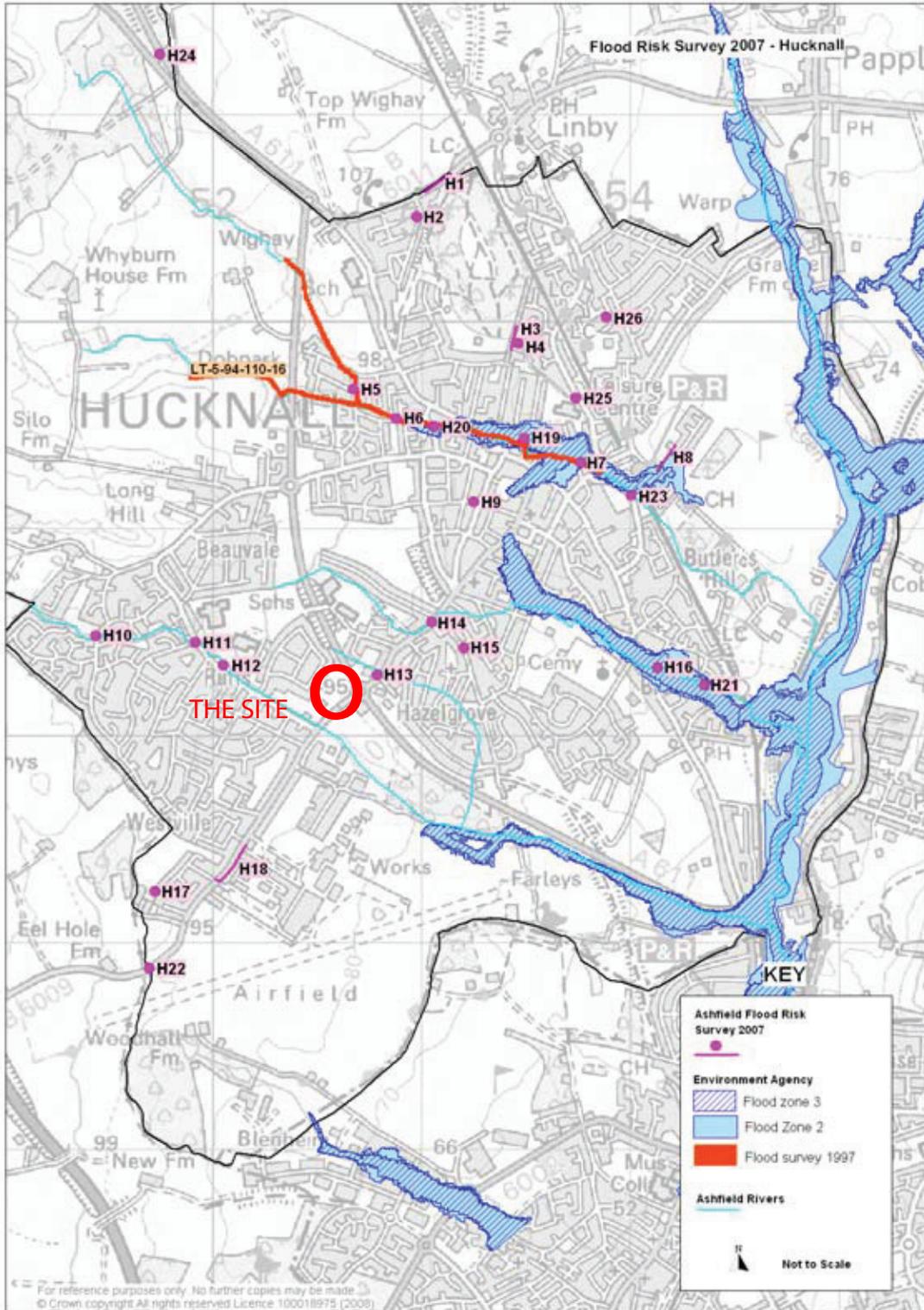
There is no risk of reservoir flooding

---

**Groundwater  
risk**

No risk of groundwater flooding

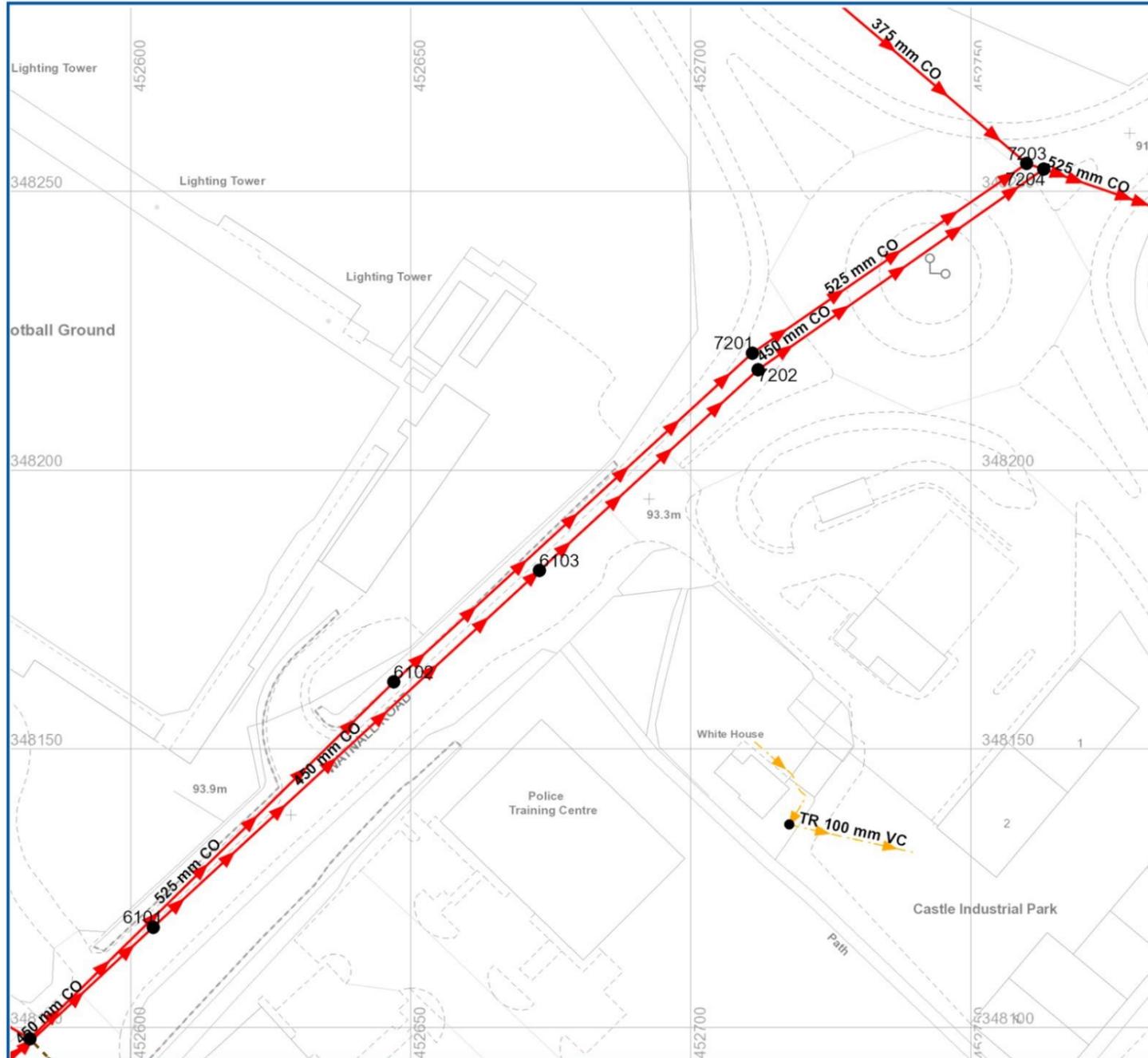
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**Plan Fifteen: Flood Risk, Hucknall**

# Appendix D

Severn Trent Water Sewer Record



Reference	Cover Level	Invert Level Upstream	Invert Level Downstream	Purpose	Material	Pipe Shape	Max Size	Min Size	Gradient	Year Laid
SK52487204	91.6999	87.68	87.41	C	CO	C	<UNK>	<UNK>	317.41	31/12/1899 00:00:00
SK52486103	93.87	88.17	87.91	C	CO	C	<UNK>	<UNK>	204.15	31/12/1899 00:00:00
SK52487201	92.9499	89	88.75	C	CO	C	<UNK>	<UNK>	238.56	31/12/1899 00:00:00
SK52487202	92.86	87.91	87.68	C	CO	C	<UNK>	<UNK>	271.43	31/12/1899 00:00:00
SK52486102	94.23	89.48	89	C	CO	C	<UNK>	<UNK>	181.35	31/12/1899 00:00:00
SK52486101	93.87	88.52	88.17	C	CO	C	<UNK>	<UNK>	268.89	31/12/1899 00:00:00
SK52485004	93.86	90.09	89.48	C	CO	C	<UNK>	<UNK>	149.54	31/12/1899 00:00:00
SK52487203	92.1999	88.64	87.66	C	CO	C	<UNK>	<UNK>	90.68	31/12/1899 00:00:00
<UNK>	<UNK>	<UNK>	<UNK>	F	VC	<UNK>	<UNK>	<UNK>	<UNK>	31/12/1899 00:00:00

**LEGEND**

<p><b>Ancillary</b></p> <ul style="list-style-type: none"> <li>Balancing Lagoon</li> <li>Grease Trap</li> <li>Interceptor</li> <li>Screen</li> </ul> <p><b>Chamber</b></p> <ul style="list-style-type: none"> <li>Flushing Chamber</li> <li>Scalway</li> <li>Overflow</li> </ul> <p><b>Connector</b></p> <ul style="list-style-type: none"> <li>Sewer Junctions</li> <li>Sewer Line Connection Node</li> </ul> <p><b>Fitting</b></p> <ul style="list-style-type: none"> <li>Blind Shaft</li> <li>Facility Connector</li> <li>Head Node</li> <li>Lamp Hole</li> <li>Sewerage Air Valve</li> <li>Sewerage Chemical Injection Point</li> <li>Sewerage Hatch Box</li> <li>Sewerage Pressure Washout</li> <li>Vent Column</li> <li>Waste Water Outfall</li> </ul>	<p><b>Control Valve</b></p> <ul style="list-style-type: none"> <li>Hydroblock</li> <li>Penstock</li> <li>Sewerage Isolation Valve</li> <li>Sewerage Non Return Valve</li> </ul> <p><b>Manhole</b></p> <ul style="list-style-type: none"> <li>Foul Effluence Manhole</li> <li>Combined Effluence Manhole</li> <li>Surface Water Effluence Manhole</li> <li>Dual Manhole</li> <li>Foul Single Manhole</li> <li>Combined Single Manhole</li> <li>Surface Water Single Manhole</li> <li>Twin Manhole</li> <li>Foul Adopted Manhole</li> <li>Combined Adopted Manhole</li> <li>Surface Adopted Manhole</li> <li>Transferred Manhole</li> <li>Unsurveyed Manhole</li> </ul> <p><b>Operational Site</b></p> <ul style="list-style-type: none"> <li>Waste Water Pump</li> <li>Waste Water Asset</li> </ul>	<p><b>S102</b></p> <ul style="list-style-type: none"> <li>Null STW</li> <li>Adopted Sewer</li> <li>None</li> <li>Highway Drain</li> <li>Null Private</li> <li>S24</li> </ul> <p><b>Storage</b></p> <ul style="list-style-type: none"> <li>Disposal Site</li> <li>Off-Line Waste Water Storage</li> <li>On-Line Waste Water Storage</li> <li>Weir Well</li> </ul> <p><b>Waste Water Process Structure</b></p> <ul style="list-style-type: none"> <li>Sewage Treatment Point</li> <li>Sewage Treatment Structure</li> <li>Sludge Treatment Point</li> <li>Sludge Treatment Structure</li> </ul> <p><b>Graverty Sewer Pipe</b></p> <ul style="list-style-type: none"> <li>Foul Gravity Sewer</li> <li>Combined Gravity Sewer</li> <li>Surface Water Gravity Sewer</li> <li>S104 Surface Water Gravity Sewer</li> <li>S104 Combined Gravity Sewer</li> </ul>	<p><b>S104 Foul Gravity Sewer</b></p> <ul style="list-style-type: none"> <li>Private Surface Water Gravity Sewer</li> <li>Private Combined Gravity Sewer</li> <li>Private Foul Gravity Sewer</li> <li>Surface Water Unsurveyed Pipe</li> <li>Combined Unsurveyed Pipe</li> <li>Transferred Surface Water Sewer</li> <li>Transferred Combined Sewer</li> <li>Transferred Foul Sewer</li> <li>Disposal Pipe</li> <li>Overflow Pipe</li> <li>Culverted Water Course</li> <li>Waste Internal Site Pipe</li> <li>Sewer Service Connection</li> <li>Graverty Sewer Others</li> <li>Pressure Sewer Pipe</li> <li>Surface Water Pressure Sewer</li> <li>Combined Pressure Sewer</li> <li>Foul Pressure Sewer</li> <li>S104 Surface Water Pressure Sewer</li> <li>S104 Combined Pressure Sewer</li> <li>S104 Foul Pressure Sewer</li> </ul>	<p><b>Private Surface Water Pressure Sewer</b></p> <ul style="list-style-type: none"> <li>Private Combined Pressure Sewer</li> <li>Private Foul Pressure Sewer</li> <li>Surface Water Vacuum Sewer</li> <li>Foul Vacuum Sewer</li> <li>Combined Vacuum Sewer</li> <li>S104 Surface Water Vacuum Sewer</li> <li>S104 Combined Vacuum Sewer</li> <li>S104 Foul Vacuum Sewer</li> <li>Private Surface Water Vacuum Sewer</li> <li>Private Combined Vacuum Sewer</li> <li>Private Foul Vacuum Sewer</li> <li>Surface Water Siphon</li> <li>Combined Siphon</li> <li>Foul Siphon</li> <li>Private Surface Water Siphon</li> <li>Private Combined Siphon</li> <li>Private Foul Siphon</li> <li>S104 Surface Water Siphon</li> <li>S104 Combined Siphon</li> <li>S104 Foul Siphon</li> </ul>	<p><b>Foul Unsurveyed Pipe</b></p> <ul style="list-style-type: none"> <li>Disposal Pipe</li> <li>Service Pipe</li> <li>Surface Water Lateral Drain</li> <li>Combined Lateral Drain</li> <li>Foul Lateral Drain</li> <li>S104 Surface Water Lateral Drain</li> <li>S104 Combined Lateral Drain</li> <li>S104 Foul Lateral Drain</li> <li>Private Surface Water Lateral Drain</li> <li>Private Combined Lateral Drain</li> <li>Private Foul Lateral Drain</li> <li>Transferred Surface Water Lateral Drain</li> <li>Transferred Combined Lateral Drain</li> <li>Transferred Foul Lateral Drain</li> <li>Print50mLine</li> </ul>
--	--	--	--	---	---

**MATERIALS**

- NONE
- AC - ASBESTOS CEME
- BR - BRICK
- CC - CONCRETE BOX CULVERT
- CI - CAST IRON
- CO - CONCRETE
- CSB - CONCRETE SEGMENTS (BOLTED)
- CSU - CONCRETE SEGMENTS (UNBOLTED)
- DI - DUCTILE IRON
- GRP - GLASS REINFORCED PLASTIC
- MAC - MASONRY IN REGULAR COURSES
- MAR - MASONRY RANDOMLY COURSED
- PE - POLYETHYLENE
- PF - PITCH
- PP - POLYPROPYLENE
- PSC - PLASTIC STEEL COMPOSITE
- PVC - POLYVINYL CHLORIDE
- RPM - REINFORCED PLASTIC MATRIX
- SI - SPUN (GREY) IRON
- ST - STEEL
- U - UNKNOWN
- VC - VITRIFIED CLAY
- XXX - OTHER

**CATEGORIES**

- W - WEIR
- C - CASCADE
- DB - DAMBOARD
- SE - SIDE ENTRY
- FV - FLAP VALVE
- BD - BACK DROP
- S - SIPHON
- D - HIGHWAY DRAIN
- S104 - SECTION 104

**SHAPE**

- C - CIRCULAR
- E - EGG SHAPED
- O - OTHER
- R - RECTANGLE
- S - SQUARE
- T - TRAPEZOIDAL
- U - UNKNOWN

**PURPOSE**

- C - COMBINED
- E - FINAL EFFLUENT
- F - FOUL
- L - SLUDGE
- S - SURFACE WATER



Severn Trent Water Limited  
 Asset Data Management  
 PO Box 5344  
 Coventry  
 CV3 9FT  
 Telephone: 0345 601 6616

**SEWER RECORD (Tabular)**

O/S Map Scale: 1:1,000  
 Date of Issue: 05-03-20  
 This map is centred upon:  
 X: 452680.29 Y: 348188.71

**Disclaimer Statement**

1 Do not scale off this Map.

2 This plan and any information supplied with it is furnished as a general guide, is only valid at the date of issue and no warranty as to its correctness is given or implied. In particular this plan and any information shown on it must not be relied upon in the event of any development or works (including but not limited to excavations) in the vicinity of SEVERN TRENT WATER assets or for the purposes of determining the suitability of a point of connection to the sewerage or distribution systems.

3 On 1 October 2011 most private sewers and private lateral drains in Severn Trent Water's sewerage area, which were connected to a public sewer as at 1 July 2011, transferred to the ownership of Severn Trent Water and became public sewers and public lateral drains. A further transfer takes place on 1 October 2012. Private pumping stations, which form part of these sewers or lateral drains, will transfer to ownership of Severn Trent Water on or before 1 October 2016. Severn Trent Water does not possess complete records of these assets. These assets may not be displayed on the map.

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# Appendix E

## *Proposed Surface Water and Foul Water Drainage Strategy*

THE STORM WATER INFILTRATION SOLUTION SHOWS PRELIMINARY POLYPIPE PRODUCTS AND SIZES WHICH ARE SUBJECT TO POLYPIPE DESIGN AND SPECIFICATION.

FOUL WATER DRAINAGE RUN OUTSIDE THE SITE BOUNDARY IS AN ASSUMED ROUTE. THE SOLUTION IS DEPENDANT ON AGREEMENT WITH WELBECK. EXISTING SERVICES ALONG THE ROUTE ARE UNKNOWN AND WILL NEED TO BE CONFIRMED TO DETERMINE WHETHER THEY OBSTRUCT CONSTRUCTION OF THE PROPOSED DRAIN.

THE PROPOSED DRAINAGE SCHEME WILL NEED TO BE SUBMITTED TO AND ACCEPTED BY THE LOCAL PLANNING AUTHORITY AND THEIR RELEVANT CONSULTANTS, AND THE RELEVANT APPLICATIONS MADE TO SEVERN TRENT WATER FOR NEW CONNECTIONS TO THE PUBLIC SEWERAGE SYSTEM.

- This drawing is to be read in conjunction with all other relevant drawings, specifications & reports prepared by HCD & any other consultants or specialists.
- Do not scale this drawing - work to figured dimensions only. Interrogation and manipulation of the drawing in any format provided is at the user's own risk.
- All dimensions & setting out to be in accordance with Architect's details. All dimensions are to be checked on site by the contractor before commencement of works. Any discrepancies found are to be reported to the Architect & HCD.
- All dimensions in millimetres & all levels in metres unless noted otherwise.
- Not Used
- Proposed drainage layout is subject to confirmation of LIDL/SPECIALIST M&E requirements
- All condensate drainage from fridge, freezer, air handling units and like should discharge to the foul sewer.
- This drawing shows intent only and is to assist the contractor in preparing its contract proposals.
- Manhole levels are approximate - actual cover levels to match/suit proposed external levels.
- All redundant drains are to be grubbed up.
- The site is brownfield, there may be below ground drains on site that have not been identified by survey to date. If drains are encountered during the works they will need to be surveyed to determine their origin and points of discharge from site. live drains may need to be diverted in accordance with LIDL requirements.
- Where drainage pipes pass through foundations rocker pipes should be provided either side of the foundation.
- The storm drainage solution is based on infiltration into the underlying natural ground - see Remada Phase 2 Ground Investigation Report November 2021 and Additional Soakaway Tests report January 2023.
- The storm water system is designed for a 100 year storm with 40% increase in rainfall intensity for climate change.
- The infiltration design is based on a ground infiltration coefficient of  $2 \times 10^{-2}$  m/s and a factor of safety of 5.
- Sub-base SUDs aggregate shall have a minimum porosity of 30% and a minimum permeability of  $6 \times 10^{-2}$  m/s when tested in accordance with HA(1990), for example Aggregate Industries 'SuperFlow 20'. To provide a suitable surface for heavy equipment used for paver laid tarmac an upper stabilisation layer of coarse graded aggregate with minimum porosity of 30% but lesser permeability, such as 'SuperFlow SuDSAgg' is subject to agreement with the drainage design Engineer.
- Stainless steel mesh filters shall be provided in storm water chambers S03, S04 and S05 on outgoing pipes to the sub-base.

**KEY**

- 1500 @1:150 Surface water drain
- S0? Surface water chamber
- S0? Syphonic break chamber (with vented cover)
- S0? Surface water silt trap chamber
- G Gully
- RWP Rainwater downpipe
- SDP Syphonic rainwater downpipe (location to be confirmed by others)
- RE Rodding eye
- RE Pumped rising main
- S0? Surface water pump chamber
- Polypipe Permachannel
- Polypipe Permavoid and Biofilter
- Polypipe Permavoid soakaway
- Permeable tarmac
- and formation level
- SUDS Aggregate (Min 30% porosity)
- 1500 @1:70 Foul water drain
- F0? Foul water chamber
- Proposed Welbeck Surface water drainage
- Proposed Welbeck Foul water drainage

PROPOSED DRAINAGE LAYOUT IS SUBJECT TO CONFIRMATION OF LIDL/SPECIALIST M&E REQUIREMENTS

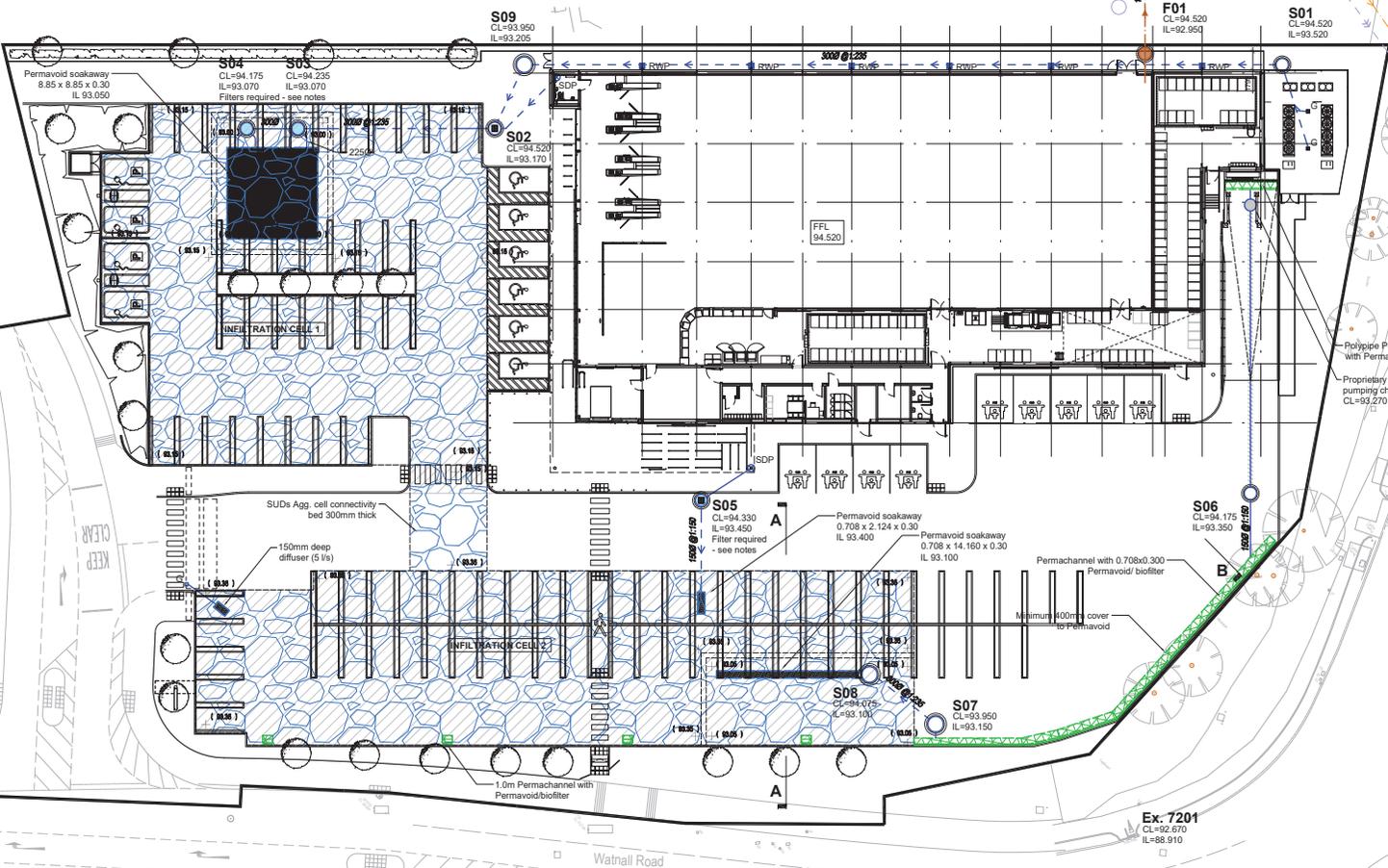
ALL CONDENSATE DRAINAGE FROM FRIDGE, FREEZER, AIR HANDLING UNITS AND LIKE SHOULD DISCHARGE TO THE FOUL SEWER.

MANHOLE LEVELS ARE APPROXIMATE. ACTUAL COVER LEVELS TO MATCH/SUIT PROPOSED EXTERNAL LEVELS.

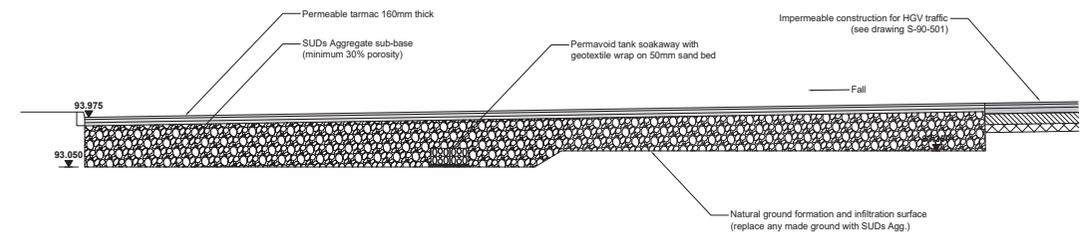
ALL REDUNDANT DRAINS ARE TO BE GRUBBED UP.

WHERE DRAINAGE PIPES PASS THROUGH FOUNDATIONS ROCKER PIPES SHOULD BE PROVIDED EITHER SIDE OF THE FOUNDATION.

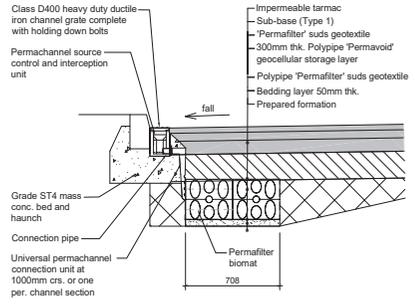
THE FOUL WATER DRAINAGE RUN OUTSIDE THE SITE BOUNDARY IS AN ASSUMED ROUTE. THE SOLUTION IS DEPENDANT ON AGREEMENT WITH WELBECK. EXISTING SERVICES ALONG THE ROUTE ARE UNKNOWN AND WILL NEED TO BE CONFIRMED TO DETERMINE WHETHER THEY OBSTRUCT CONSTRUCTION OF THE PROPOSED DRAINS



**PROPOSED DRAINAGE STRATEGY**  
SCALE 1:250 @ A1



**SECTION A - A**  
SCALE 1:50 @ A1



**SECTION B - PERMACHANNEL AND PERMAVOID**  
SCALE 1:20 @ A1

**S2 | FOR INFORMATION**

REVISIONS:  
 2017-094 HCD AD ZZ DR S-52-502  
 2017-094 HCD AD ZZ DR S-52-502

**LIDL**

**LIDL GB Ltd**  
**WATNALL ROAD**  
**HUCKNALL**

**PROPOSED SURFACE WATER AND FOUL WATER DRAINAGE STRATEGY**

**Hadfield Cawkwell Davidson**  
 Bromsgrove Lodge, 13 Bromsgrove Rd, Sheffield, S10 2LZ, T0114 266 8181 www.hcd.co.uk

As Indicated @ A1  
**P02**

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# Flood Risk Assessment & Drainage Strategy

**Proposed Lidl Foodstore Development,**

**Watnall Road, Hucknall, Nottingham**

**February 2020**