



FLOOD RISK ASSESSMENT & DRAINAGE STRATEGY

Proposed Industrial Development, Broomers Hill Park,
Codmore Hill, Pulborough, West Sussex on Behalf of
W.T. Lamb Holdings Ltd

Date: June 2026
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1.0 INTRODUCTION

- 1.1 This *Flood Risk Assessment & Drainage Strategy* has been prepared by Cole Easdon Consultants (CE) on behalf of W.T. Lamb Holdings Ltd in respect of approved industrial development on land at Broomers Hill Park, Codmore Hill, Pulborough West Sussex. The development has been approved under planning reference DC/13/1048. This report has been prepared to accompany a Section 73 application to vary conditions related to part B of the planning decision notice. Refer to CE Figure 4528/500/Figure 1 [*Site Location Plan*] in Appendix 1.

Development Proposals

- 1.2 The approved development proposal comprises construction of 10 No. two storey light industrial units with 55 parking spaces, 2 disabled spaces & 10 LGV parking spaces and outline consent for a further light industrial unit with 10 car parking spaces. Refer to Drawing No. 1749-1100(G) [*Proposed Site Plan*] (by Place By Design Architecture) in Appendix 2.
- 1.3 The proposed changes seek to combine the previously consented two blocks of industrial units into one single block with associated updates to approved infrastructure, and landscape and associated plans. Refer to Drawing No. 1749-2100 [*Proposed Site Plan*] (by Place By Design Architecture) in Appendix 2.

Approved Surface Water Drainage Strategy

- 1.4 The approved surface water drainage strategy as shown on Drawing 4528/SK100A comprised permeable subbase attenuation storage with discharge to watercourse restricted to 5 l/s for storms up to the 1:100 year + 30% climate change event. The drainage strategy was prepared in 2015 and changes in SuDS guidance and climate change allowances since that time have meant that the approved drainage strategy has had to be updated to reflect current guidance. This has resulted in betterment when compared to the approved drainage strategy in terms of discharge rate and attenuation storage requirements. In accordance with *National Standards for SuDS* requirements, the post development surface water discharge rate has now been restricted to the QBAR greenfield rate of 3.1 l/s for all storms up to the 1 in 100 year + climate change storm event where the climate change allowance is now 45%. Thus the attenuation storage requirement has increased resulting in betterment over the approved drainage scheme. The changes are summarised in Table 1.1 below.

Table 1.1: Summary of Changes to Surface Water Drainage Strategy

	Approved SuDS	S75 Application SuDS	Comments
Post Development Discharge Rate (l/s) to Watercourse	5.0	3.1	38% reduction in post development discharge rate
1:100 year Climate Change Allowance	30%	45%	

Need for Study

- 1.5 The purpose of this assessment is to demonstrate that suitable foul and surface water drainage infrastructure will be provided for the development, without increasing flood risk to the locality, in accordance with the National Planning Policy Framework (NPPF).

Scope of Study

- 1.6 In Section 2.0, we describe the characteristics of the development site and surrounding area. Flood risk is assessed in Section 3.0. In Section 4.0 we discuss the proposed surface water drainage strategy. In Section 5.0 we cover the proposed foul water drainage strategy, and conclusions are presented in Section 6.0.
- 1.7 The following resources have been used for this study:
- Topographical Survey Drawing;
 - Southern Water Public Sewer Records;
 - Defra's Multi-Agency Geographic Information for the Countryside (MAGIC) Map (EA, accessed May 2026);
 - Flood Map for Planning – Environment Agency (EA, accessed May 2026);
 - Surface Water Flood Risk Mapping – Environment Agency (EA, accessed May 2026);
 - Geological Map - British Geological Survey (BGS, accessed May 2026); and
 - Revised Climate Change Allowances (EA, May 2022);
- 1.8 The following publicly available documents have also been reviewed as part of this assessment:
- *Building Regulations 2010 – Approved Document H (Drainage and Waste Disposal)*;
 - *C753 The SuDS Manual (CIRIA, November 2015)*;
 - *National Planning Policy Framework (NPPF) (updated February 2025)*;
 - *Planning Practice Guidance (Flood Risk & Coastal Change) (updated September 2025)*
 - *Rainfall Runoff Management for Developments (R&D Technical Report W5-074/A/TR/1 Revision E, Defra, June 2012)*;

-
- *National Standards for SuDS (updated July 2025); and*
 - *Non-Statutory Technical Standards for Sustainable Drainage Systems (Defra, July 2025);*

1.9 The following abbreviations are used in this Report:

- AOD – Above Ordnance Datum;
- BGL – Below Ground Level
- BGS – British Geological Survey;
- EA – Environment Agency;
- FEH - Flood Estimation Handbook;
- FMP – Flood Map for Planning;
- LPA – Local Planning Authority;
- NPPF – National Planning Policy Framework;
- SuDS – Sustainable Urban Drainage Systems;
- SW – Southern Water;
- 1% event – 1 in 100 Year return period storm; and
- 1% + CC event – 1 in 100 Year return period storm including a 45% allowance for climate change.

2.0 THE EXISTING SITE

Refer to CE Figure 4528/500/Figure 1 [*Site Location Plan*] in Appendix 1.

- 2.1 The site is located adjacent to Broomers Hill Park Industrial Park, Codmore Hill, Pulborough, West Sussex, RH20 2RY. Grid reference X 505909 Y 120484. It falls within the administrative boundary of Horsham District Council.
- 2.2 The site currently comprises a car park surfaced with gravel/chippings, and an undeveloped area of grass and vegetation.
- 2.3 The site forms a roughly rectangular parcel of land bounded to the north – east by Broomers Hill Lane; to the south east by farmland with a railway line cutting beyond; to the south west by an unnamed watercourse and farmland further to the south west; and by the existing Broomers Hill Park to the north west.
- 2.4 With the exception of Broomers Hill Park and a scrap yard/car workshop on the north western side of the A29, land use in the vicinity of the site is primarily agricultural. Residential use associated with the villages of Codmore Hill and Pulborough is located to the south west of the site.
- 2.5 The site topography falls in a south westerly direction towards the existing watercourse at the site's south western boundary. The existing car parking area in the north of the site slopes relatively gently at gradient of 1 in 50, and the land to the south of the car park is steeper with a gradient of approximately 1 in 20. Existing ground levels bank down steeply from the existing Broomers Hill Park access road into the Industrial Park itself. Existing ground levels within the site are between 27.00mAOD and 31.00mAOD.

Nearby Watercourses/Drainage Features

- 2.6 The River Arun, a Main River, drains the locality. The watercourse follows a southerly route approximately 2.5km west of the development site, and outfalls into the English Channel at Littlehampton.
- 2.7 An unnamed tributary of the River Arun flows north west along the site's south westerly boundary. It passes under the A29, then flows west through 2.5km of farmland before meeting the River Arun near Harwoods Green.

- ## Existing Sewers

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Existing Ground Conditions

- 2.13 An intrusive site investigation has not yet been undertaken. Online British Geological Survey mapping indicates that the site is underlain by Weald Clay mudstone bedrock. Refer to Figure 2.2 below. There are no superficial deposits.
- 2.14 Groundwater levels are unconfirmed. As the sub strata at the site comprise impermeable clays/mudstones which do not readily store or transmit water, groundwater is likely to be absent.
- 2.15 Defra's Multi-Agency Geographic Information for the Countryside (MAGIC) map classifies bedrock beneath the area as an unproductive Aquifer.
- 2.16 Defra's MAGIC map confirms that the site does not lie within a Groundwater Source Protection Zone.
- 2.17 The study site is located within a Drinking Water Safeguard Zone (Surface Water). These are zones established around public water supplies where additional pollution control measures are required.

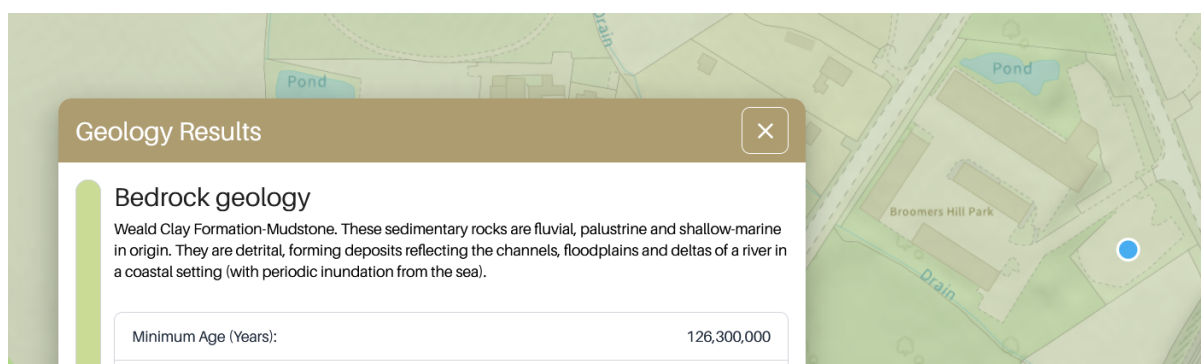


Figure 2.2: Bedrock Geology
Source: <https://geologyviewer.bgs.ac.uk>

- 2.18 The EA's Flood Map for Surface Water confirms that the site does not lie within an area at risk of surface water flooding.

3.0 FLOOD RISK ISSUES

3.1 This Section presents an assessment of flood risk to the development from external sources. Recommended flood risk mitigation measures appropriate to the level of perceived risk are included in the assessment. The mitigation measures are summarised in Table 3.1 below.

Historic Flooding

3.2 There are no known recorded flood events at the site.

Assessment of Flood Risk from Fluvial Sources

3.3 The Flood Map for Planning (FMP) for the locality as produced by the EA is shown in Figure 3.1 below. It indicates that the site area is within Flood Zone 1 (Low Risk).

3.4 The *NPPF* identifies Flood Zone 1 as low flood risk areas with an annual probability of flooding of less than a 1 in 1000 (0.1%) from rivers or sea. In accordance with *NPPF PPG Table 2: Flood Risk Vulnerability Classification*, industrial/commercial development is classified as 'less vulnerable'. *PPG Table 3: Flood Risk Vulnerability and Flood Zone Compatibility* relates that less vulnerable land use is acceptable in Flood Zone 1. As such, the flood vulnerability of the proposed site use is compatible with the fluvial flood risks associated with the site.

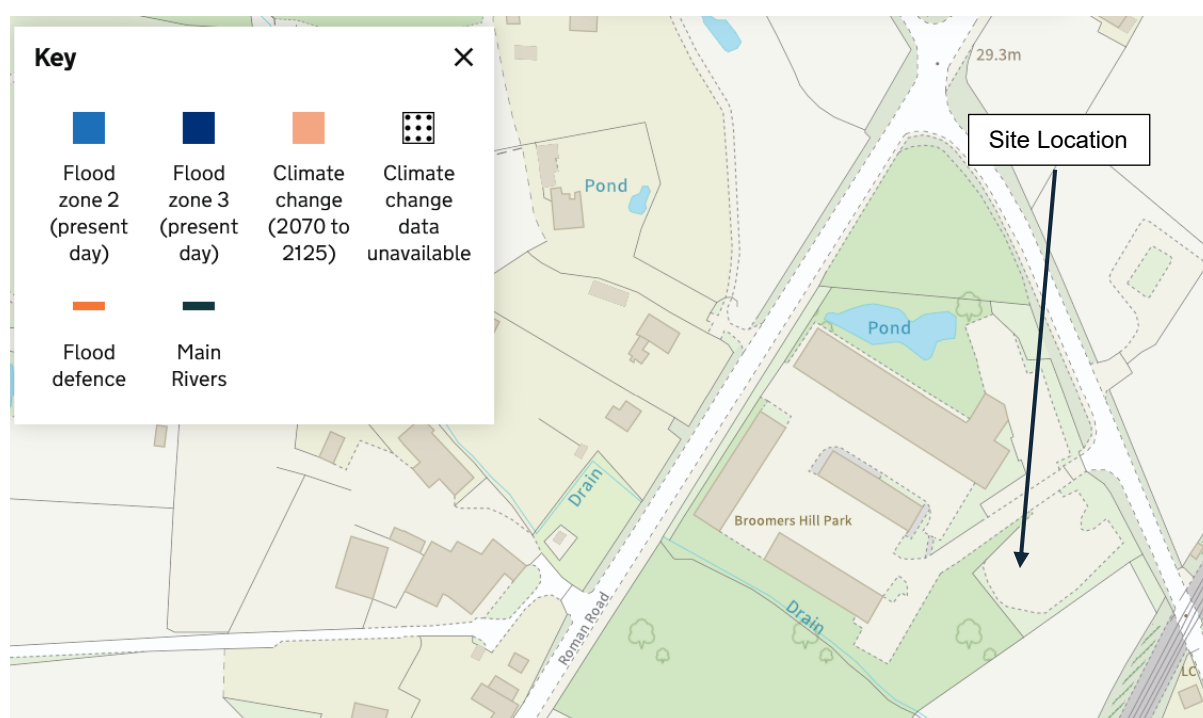


Figure 3.1: Flood Map for Planning

Source : <https://flood-map-for-planning.service.gov.uk/>

Fluvial Flood Risk Mitigation Measures

- 3.5 No mitigation is required.

Assessment of Pluvial Flood Risk

- 3.6 The EA Map 'Risk of Flooding from Surface Water' includes pluvial flood mapping for the present day and 2040-2060 epoch. Mapping indicates that during the climate change scenario (2040 – 2060 epoch) the site is at very low risk of surface water flooding occurring. Refer to Figure 3.2 below.

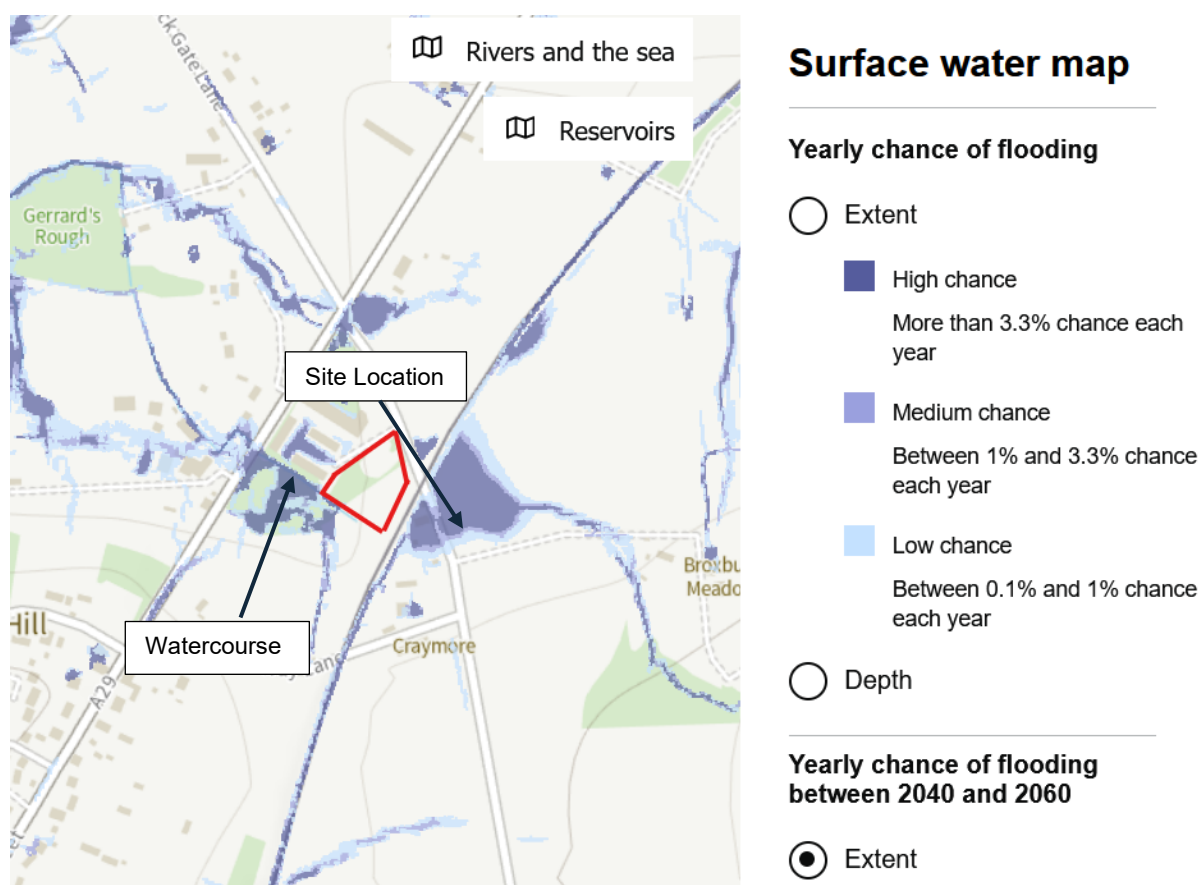


Figure 3.2: EA Yearly chance of surface water flooding between 2040 and 2060 map – Extent (Potential Development Area shown in brown hatch)

Source : <https://check-long-term-flood-risk.service.gov.uk/map>

Pluvial Flood Risk Mitigation Measures

- 3.7 No mitigation is required.

Assessment of Flood Risk from Existing Sewers/Drains

- 3.8 Southern Water sewer records confirm that there are no public sewers in proximity of the site. Refer to Appendix 4.

3.9 Flood risk from public sewers is considered to be very low.

[Sewer/Drain Flood Risk Mitigation Measures](#)

3.10 No mitigation is required

[Assessment of Flood Risk from Groundwater](#)

3.11 British Geological Survey mapping indicates that the site is underlain by bedrock geology consisting of Weald Clay formation (mudstone) which does not readily store or transmit water. As such, groundwater is likely to be absent. Furthermore, Defra's Multi-Agency Geographic Information for the Countryside (MAGIC) map classifies bedrock beneath the area as an unproductive Aquifer.

3.12 Flood risk from this source is considered to be low.

[Groundwater Flood Risk Mitigation Measures](#)

3.13 No mitigation is required..

[Assessment of Flood Risk from Reservoirs](#)

3.14 The EA Risk of Flooding from Artificial Sources map shows the site is not at risk of flooding from artificial sources. Refer to Figure 3.3 below. Flood risk is considered to be very low.

[Artificial Sources Flood Risk Mitigation Measures](#)

3.15 No mitigation is required.

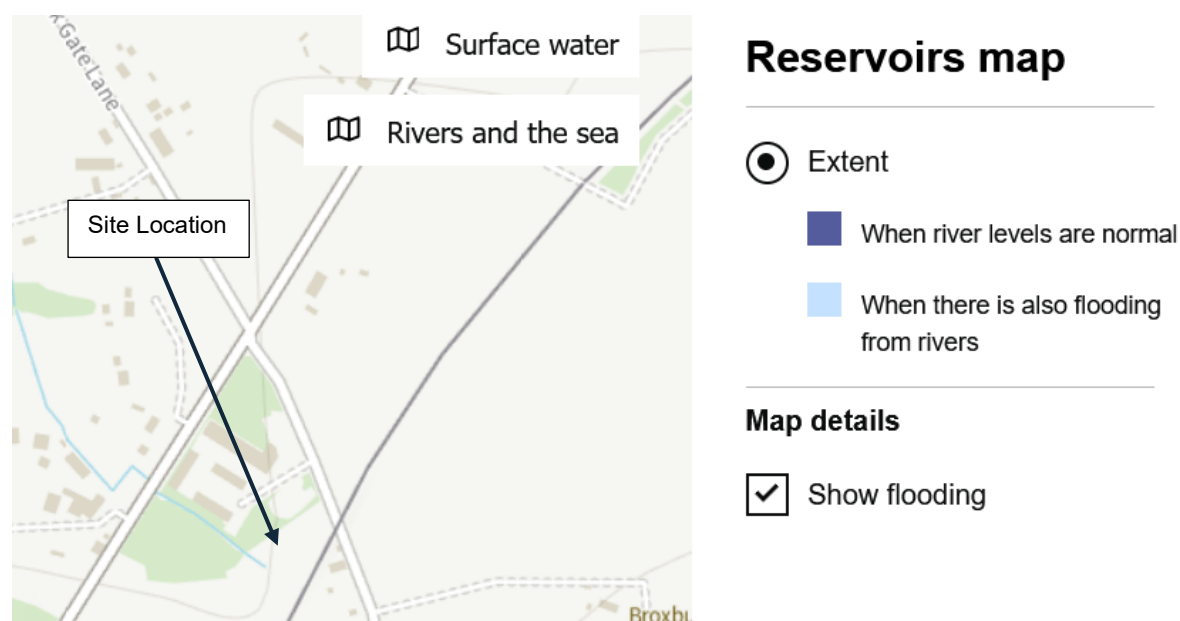


Figure 3.3: EA Risk of Flooding from Reservoirs

Source : <https://flood-map-for-planning.service.gov.uk>

Table 3.1: Assessment of Flood Risk

Source of Potential Flooding to the Development Site	Flood Risk	Mitigation/Comments
Fluvial	Low	- Site is located within Flood Zone 1 (Low Risk) - No mitigation is required
Overland Flow (Pluvial)	Very Low	No mitigation is required
Public Sewer/Drains	Very Low	No mitigation is required.
Groundwater	Low	No mitigation is required.
Artificial Sources	Very Low	No mitigation is required

4.0 PROPOSED SURFACE WATER DRAINAGE STRATEGY

Refer to CE Plan 4528/502(B) [*Proposed Drainage Strategy*] in Appendix 5.

- 4.1 The proposed development will result in the introduction of an impermeable catchment of roofs, access roads and car parking/hardstanding areas covering some 3,520m². Without appropriate management, runoff from these surfaces could increase flood risk to the site and the locality.

Drainage Hierarchy

- 4.2 The drainage strategy for the site has been prepared according to the drainage discharge hierarchy set out in the *National Standards for SuDS*, as follows. Refer to Table 4.1 below.
- priority 1: collected for non-potable use
 - priority 2: infiltrated to ground
 - priority 3: discharged to an above ground surface water body
 - priority 4: discharged to a surface water sewer, or another piped surface water drainage system
 - priority 5: discharged to a combined sewer

Collection for non-potable use.

- 4.3 Rainwater harvesting is not proposed.

Infiltration Potential

- 4.4 No infiltration testing has been conducted on site. The site is underlain by mudstone which is typically impermeable and therefore unsuitable for infiltration SuDS. An attenuation based with discharge to watercourse has been proposed.

Discharge to Watercourse

- 4.5 Post development discharge will be to the watercourse along the southern site boundary.

Table 4.1: Review of SuDS Components in Accordance with the Drainage Hierarchy

SuDS Technique	Proposed	Not proposed	Reason
Store rainwater for later use		X	Rainwater harvesting is proposed
Use infiltration techniques		X	Infiltration not feasible, discharge to existing ditch proposed.
Discharge direct to a watercourse	X		
Discharge to a surface water drain		X	
Discharge to a combined sewer		X	

Existing Runoff Rates

- 4.6 The existing site is greenfield. The equivalent greenfield rates for the post development impermeable areas are shown in Table 4.2 below. Refer also to Appendix 3.

Table 4.2: Greenfield Runoff Rates

Catchment Area	Site condition	Calculation Method	1:2.3y (l/s) (QBAR)	1:30y (l/s)	1:100y (l/s)
Site (3,520m ²)	Greenfield	FEH Statistical Method	3.1	7.2	9.9

Proposed Discharge Rate

- 4.7 It is proposed that runoff from the site is discharged into the unnamed watercourse at the south western boundary of the site. Discharge to the watercourse will be limited to the QBAR discharge rate (3.1 l/s) for all storms up to the 1:100 yr + 45% climate change event by means of a Hydrobrake flow control. Refer to Table 4.3 below, and Appendix 3 for greenfield runoff calculations.

Proposed Sustainable Urban Drainage Systems (SuDS)

- 4.8 On-site Sustainable Urban Drainage Systems (SuDS) will be provided to manage runoff from the site. The SuDS will accommodate post development runoff from storms up to the 1 in 100 year + 45% climate change event, in accordance with NPPF requirements, and will therefore remain effective for the lifetime of the development, accounting for future increases in rainfall intensity predicted to occur due to climate change.

Attenuation Tank

- 4.9 Modelling of the proposed drainage system confirms that a total of 320.4 cubic metres of on-site storage will be required to accommodate the design storm, at the proposed discharge rate. The storage volume will be provided in a 924 sqm x 0.4m deep cellular tank located beneath the proposed hardstanding in the centre of the site. Refer to Appendix 3 for drainage design calculations including 1:30 year + 40% climate change and 1:100 year + 45% climate change events. All calculations have been undertaken using Infodrainage software.
- 4.10 A hydrobrake flow control will reduce the outflow into the watercourse to no greater than 3.1 l/s for all storms up to the 1:100 year + 45% climate change event.
- 4.11 The tank will have a minimum cover depth of 1300mm to permit expected vehicle loadings.

Table 4.3: Summary of Existing & Proposed Surface Water Discharge Rates

Catchment area (m ²)		Discharge Point	Calculation Method	Discharge Rate (l/s)				Attenuation Volume (m ³)
				1:2yr	1:30 yr	1:100 yr	1:100 yr +45%	
Greenfield	3520	To watercourse	FEH	3.1	7.2	9.9	-	-
Proposed Hard Area	3520	To watercourse	Info Drainage	3.1	3.1	3.1	3.1	320.4

Design Exceedance

- 4.12 In the event of blockage, failure or a storm in excess of the design parameters, floodwaters would emanate from the flow control chamber and enter the watercourse as overland flow. Any water issuing from the upstream drainage system would follow the topography of the site and gravitate towards the watercourse. Overland flow routes are shown on CE Plan 4528/502(B) [*Proposed Drainage Strategy*] in Appendix 5.

Water Quality

- 4.13 Water quality has been assessed in line with the Simple Index approach from Chapter 26 of CIRIA C753 *The SuDS Manual*:
- Step 1 – Allocate suitable pollution hazard indices for the proposed land use.
 - Step 2 – Select SuDS with a total pollution mitigation index that equals or exceeds the pollution hazard index.
- 4.14 The highest pollution hazard level for the proposed land use is Medium (commercial yards, delivery areas and non-residential parking). The pollution hazard indices for the proposed land uses are shown in Table 4.4 below.

Table 4.4: Pollution Hazard Indices for the Proposed Site (from Table 26.2 of CIRIA C753 The SuDS Manual)

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Commercial yards, delivery areas & non-residential parking	Medium	0.7	0.6	0.7

- 4.15 Permeable pavement will be used in all parking spaces. The individual Pollution Mitigation Indices for permeable pavement are the same as the Pollution Hazard Indices for commercial yards, delivery areas and non-residential parking. Refer to Table 4.5 below. Therefore, the proposed drainage strategy will provide sufficient water quality treatment.
- 4.16 Additional treatment for runoff from hardstanding areas and roofs will be provided by pre-treatment systems including gullies and catchpits.

Table 4.5: Pollution Mitigation Indices for Discharge to Surface Water from the Proposed Site (from Table 26.3 of CIRIA C753 The SuDS Manual)

SuDS Feature	Total suspended solids (TSS)	Metals	Hydrocarbons
Permeable Pavement	0.7	0.6	0.7

Adoption & Maintenance

- 4.17 It is proposed that all drainage devices will be maintained in perpetuity by a private management company acting on behalf of the site owners.
- 4.18 A draft Maintenance Schedule is outlined in Table 4.2 below.

Attenuation Tank

- 4.19 It is not envisaged that silt build up within the attenuation tank will require a rigorous maintenance regime so long as silt is removed from upstream catch pits and inspection chambers on a regular basis. Notwithstanding this, a suitable maintenance regime for the systems will comprise of routine inspection and silt removal (as necessary). Inspection should be undertaken using CCTV equipment within the attenuation tank. Camera access can be gained via inspection chambers and inlet pipework located at each end of the tunnels.
- 4.20 Silt removal can be achieved by jetting the inspection tunnels. Jetting should be undertaken in accordance with current jetting guidelines, in particular the Code of Practice for Sewer Jetting published by The Water Research Centre. Jetting at 150bar at 300l/min should be more than adequate in removing any build-up of material within the attenuation tank.
- 4.21 A standard jet head with rear facing nozzles should be used. The head should be fed to the far end of the crate tunnel via the nearest inspection chamber, activated and retracted. As the nozzle is removed, debris will be swept back into the inspection chamber where it can then be removed with the use of a standard gully sucker. This method will ensure the effective removal of gross solids (carrier bags, cans, leaf litter etc.) from the system. Whilst 100% removal cannot be guaranteed, it has been shown that this jetting method will also remove an element of finer material which would otherwise be 'lost' within the system.

Proposed Surface Water Drainage Pipework and Flow Controls

- 4.22 The inspection/catchpit chambers in the proposed surface water drainage pipework should be inspected every 6 months and silt removed as necessary. The Hydro-Brake or other flow control device should be inspected for blockages every 6 months, and debris removed as necessary.

Permeable Pavement

- 4.23 Permeable surfaces need to be regularly cleaned of silt and other sediments to preserve their infiltration capability. A brush and suction cleaner, which can be a lorry-mounted device or a smaller precinct sweeper, should be used and the sweeping regime should be as follows:
1. End of winter (April) – to collect winter debris.
 2. Mid-summer (July/August) – to collect dust, flower and grass-type deposits.
 3. After autumn leaf fall (November).
- 4.24 If reconstruction is necessary, the following procedure should be followed:
1. Lift surface layer and laying course.
 2. Remove any geotextile filter layer.
 3. Inspect sub-base and remove, wash and replace if required.
 4. Renew any geotextile layer.
 5. Renew laying course, jointing material and concrete block paving.
- 4.25 Materials removed from the voids or the layers below the surface of the paving may contain hazardous substances such as heavy metals and hydrocarbons which may need to be disposed of as controlled waste.

Table 4.6: Maintenance Regime for Elements of the Drainage Infrastructure

Drainage Element	Schedule	Maintenance Requirement	Frequency
Permeable Pavement	Regular	▪ Cleaning over whole surface	▪ Once a year, after autumn leaf fall
	Occasional	▪ Removal of weeds	▪ As required
	Remedial	▪ Remedial work to any depressions or damage considered a hazard to end users or detrimental to performance ▪ Rehabilitation of surface and upper sub-structure by replacement	▪ As required ▪ Every 10 – 15 years, or as required
	Monitoring	▪ Initial inspection ▪ Inspect for evidence of weed growth or poor operation ▪ Inspect silt accumulation rates ▪ Monitor inspection chambers	▪ Monthly for 3 months after installation ▪ Three monthly, 48 hours after large storms in first six months ▪ Annually ▪ Annually
Pipework, catchpits and Flow Control	Regular	▪ Inspect for accumulation of silt ▪ Inspect for debris and litter	▪ Every six months

Drainage Element	Schedule	Maintenance Requirement	Frequency
		Inspect inlets and outlets for blockages	
	Occasional	- Remove debris and litter - Remove silt	As required
Cellular Attenuation Storage	Regular	- Inspect and identify any areas that are not operating correctly - Remove debris from the catchment surface - Remove sediment from pre-treatment structures and internal forebays	- Monthly for 3 months, then annually - Monthly Annually, or as required
	Remedial	Repair and rehabilitate inlets, outlets, overflows and vents	As required
	Monitoring	Inspect inlets, outlets, overflows and vents to ensure they are operating as designed	Annually
		Survey inside of tank for sediment build-up and remove as necessary	Every 5 years, or as required

Note: In addition to the above maintenance requirements, it is recommended that all drainage elements are inspected:

- Following the first storm event
- Monthly for the first 3 months following commissioning

5.0 PROPOSED FOUL WATER DRAINAGE STRATEGY

Refer to CE Plan 4528/502(B) [*Proposed Drainage Strategy*] in Appendix 5.

- 5.1 Foul flows will be discharged to the public foul sewer via the existing private foul drain which serves the existing industrial park.
- 5.2 Based on Sewer Sector Guidance, the proposed industrial development covering 0.35ha will generate a small peak foul flow rate of 0.2 l/s.
- 5.3 A sewer capacity check application has been sent to Southern Water to understand if capacity exists within the downstream public sewer system to accommodate the proposed foul flows. A response is awaited.

6.0 SUMMARY AND CONCLUSIONS

- 6.1 Flood risk to the proposed development from various sources, such as fluvial, sewers, groundwater, reservoirs, drains, ditches and overland flow has been considered in this study. Flood risk from all sources is considered to be low or very low. No mitigation is required.
- 6.2 The proposed development comprises industrial units and access/parking areas forming an impermeable catchment of 3,520m². It is proposed that surface water runoff from this catchment is disposed of by discharge into the watercourse at the site's south western boundary, at the QBAR discharge rate (3.1) l/s for all storms up to the 1 in 100 year + 45% storm event.
- 6.3 Attenuation will be provided within a Sustainable Urban Drainage System (SuDS) cellular storage tank beneath the hardstanding in the centre of the site. The tank has been designed to accommodate post development runoff from storms up to the 1 in 100 year + 45% storm event, in accordance with NPPF requirements.
- 6.4 In the event of blockage, failure or a storm in excess of the design parameters, floodwaters would emanate from the flow control chamber and enter the watercourse as overland flow. Any water issuing from the upstream drainage system would follow the topography of the site and gravitate towards the watercourse.
- 6.5 Water quality has been assessed in line with the Simple Index approach from Chapter 26 of CIRIA C753 The SuDS Manual. The proposed SuDS will provide adequate treatment for post development runoff.
- 6.6 It is proposed that all drainage devices will be maintained in perpetuity by a private management company acting on behalf of the site owner.
- 6.7 Foul flows will be connected to the existing private foul drain in the adjacent industrial park, which discharges into a public foul sewer in the A29. Based on Sewer Sector Guidance, the proposed industrial development covering 0.35ha will generate a small peak foul flow rate of 0.2 l/s. A sewer capacity check application has been sent to Southern Water to understand if capacity exists within the downstream public sewer system to accommodate the proposed foul flows. A response is awaited.

6.8 In conclusion, providing the development adheres to the conditions advised within this Report, the proposals can be accommodated without increasing flood risk within the locality in accordance with the requirements of the National Planning Policy Framework.

Cole Easdon Consultants Limited

June 2026

Appendix 1



Scale 1:10,000



Scale 1:50,000

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Job Title:

Proposed Development
Codmore Hill Industrial Estate
Pulborough
West Sussex

Drawing Title:

Site Location Plan

Client:

WT Lamb Holdings Limited

Drawn By

HP

Date Drawn

April 2015

Scale

As shown (A4)

Checked By

DF

Drawing No.

4528-500 Figure 1

Revision

Appendix 2



- Red Line
- Proposed Tree
- Existing Tree

Total 100 parking spaces:
86 Standard spaces
2 Disabled spaces
10 LGV Loading spaces

10 Motorcycle spaces

Areas;

- Unit 1 - 162m2 (Mezzanine 88m2)
- Unit 2 - 162m2
- Unit 3 - 162m2
- Unit 4 - 162m2
- Unit 5 - 162m2
- Unit 6 - 162m2 (Mezzanine 88m2)
- Unit 7 - 108m2
- Unit 8 - 108m2
- Unit 9 - 108m2
- Unit 10 - 108m2

Max Total Gross Internal Area - 1620m2

Prepared By:



Client:



Rev.	Date	Description	Drawn by
A	09/05/16	Survey updated, parking layout and unit sizes amended	CB
B	10/05/16	Units 1-6 moved 1m, planting removed.	CB
C	27/02/17	Potential spaces increased, motorcycle bay moved.	CB
D	13/06/17	Unit footprints updated to include SVP locations.	CB
E	29/06/17	SVP locations updated	CB
F	21/08/17	Parking layout amended	CB
G	18.01.18	Parking amended following CDA comments	CB

Contractors must work only to figured dimensions which are to be checked on site.

Project No:
1749

Dwg No:
1100

Rev: G Scale:
1:500@A3

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Project:
Codmore Hill Industrial Estate Phase 2, Broomers Hill Lane

Drawing:
Proposed Site Plan

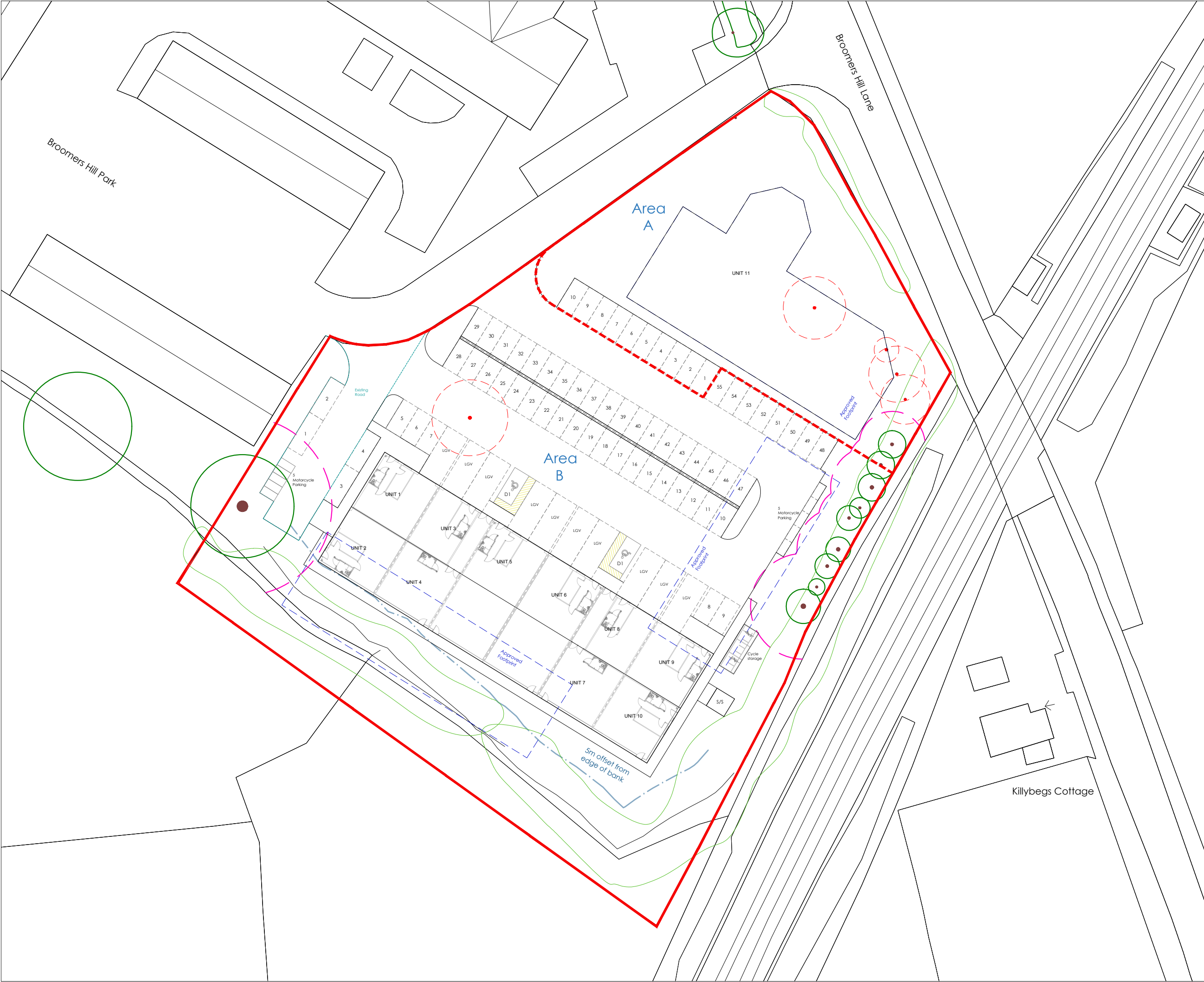
Place By Design is a trading name of Burrough Hawkins Limited

Drawing Status:
PLANNING

Date:
23.03.16

Drawn by: CB Checked by: SH





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2025 OS 0100031673
Contractors must work only to figured dimensions which are
to be checked on site.

- Red Line
- Proposed tree
- Existing tree
- Removed tree

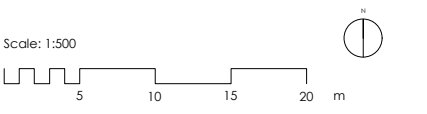
Parking spaces:
65 Car Parking (10 Area A and 55 Area B)
2 Disabled spaces
10 LGV Loading spaces
10 Motorcycle spaces

Areas:

- Unit 1 - 80m2
- Unit 2 - 80m2
- Unit 3 - 80m2
- Unit 4 - 80m2
- Unit 5 - 162m2
- Unit 6 - 162m2
- Unit 7 - 80m2
- Unit 8 - 80m2
- Unit 9 - 80m2
- Unit 10 - 80m2

Max Total Gross Internal Area - 964m2

Rev.	Date	Description	Drawn by
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-



Project No: 1749	Drawing Status: PLANNING		
Dwg No: 2100	Date: 14.05.26		
Rev: -	Scale: 1:500@A3	Drawn by: CB	Checked by: PM

Project:
Codmore Hill Industrial Estate Phase 2

Drawing:
Proposed Site Plan

Client:

Prepared By:

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Appendix 3



Greenfield runoff rate estimation tool

www.uksuds.com | Greenfield runoff rate estimation tool (<https://www.uksuds.com/>)

hr wallingford

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	05/05/2026
Calculated by	
Reference	
Model version	2.2.3

Location

Site name	
Site location	



Site easting (British National Grid)	505970
Site northing (British National Grid)	120412

Site details

Total site area (ha)	0.352	ha
----------------------	-------	----

Greenfield runoff

Method

Method

FEH statistical (2025)

SAAR9120 (mm)

My value

873

Map value

mm

BFIHOST19scaled

My value

0.295

Map value

QMed-QBar conversion

1.136

1.136

QMed (l/s)

2.7

l/s

QBar (FEH statistical 2025) (l/s)

3.1

l/s

Growth curve factors

Hydrological region

My value

7

Map value

7

1 year growth factor

0.85

2 year growth factor

0.88

10 year growth factor

1.62

30 year growth factor

2.3

100 year growth factor

3.19

200 year growth factor

3.74

Results

Method

FEH statistical (2025)

Flow rate 1 year (l/s)

2.6

l/s

Flow rate 2 year (l/s)

2.7

l/s

Flow rate 10 years (l/s)

5.0

l/s

Flow rate 30 years (l/s)

7.2

l/s

Flow rate 100 years (l/s)

9.9

l/s

Flow rate 200 years (l/s)

11.6

l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent 'zero' figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at uksuds.com (https://www.uksuds.com/). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (https://www.uksuds.com/terms-conditions). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

Project: 4528 30CC	Date: 20/03/2026			
	Designed by: NJ	Checked by: DF	Approved By: DF	
Report Details: Type: Inflows Storm Phase: Phase	Company Address:			



Catchment Area (1)

Type : Catchment Area

Area (ha)	0.054
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area

Type : Catchment Area

Area (ha)	0.014
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (2)

Type : Catchment Area

Area (ha)	0.257
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Project: 4528 30CC	Date: 20/03/2026			
	Designed by: NJ	Checked by: DF	Approved By: DF	
Report Details: Type: Inflows Storm Phase: Phase	Company Address:			



Catchment Area (3)

Type : Catchment Area

Area (ha)	0.028
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Project: 4528 30CC	Date: 20/03/2026		
	Designed by: NJ	Checked by: DF	Approved By: DF
Report Details: Type: Junctions Storm Phase: Phase	Company Address:		

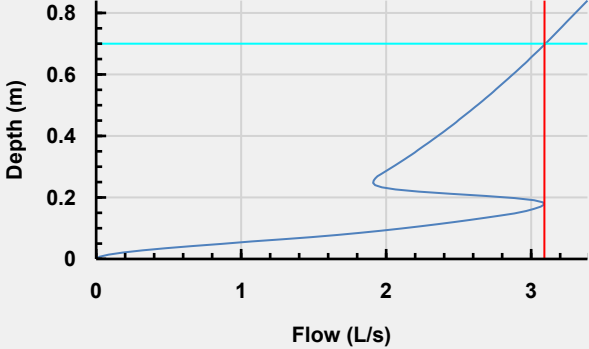


Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
Simple Junction	Simple Junction	505917.231	120413.343					
S1	Manhole	505920.828	120416.700	28.850	0.725	28.125	Circular	1.200
S5	Manhole	505974.677	120417.263	28.750	1.260	27.490	Circular	1.200
S3	Manhole	505983.389	120410.605	28.850	1.286	27.564	Circular	1.200
S7	Manhole	505934.638	120441.430	28.750	1.589	27.161	Circular	1.200
S8 (FC)	Manhole	505918.861	120415.944	28.280	1.319	26.961	Circular	1.200
S2	Manhole	505968.959	120387.095	28.850	1.102	27.748	Circular	1.200
S4	Manhole	505981.178	120413.474	28.750	1.210	27.540	Circular	1.200
S6	Manhole	505939.920	120438.213	28.750	1.548	27.202	Circular	1.200

Name	
Simple Junction	
S1	None
S5	None
S3	None
S7	None
S8 (FC)	None
S2	None
S4	None
S6	None

Project: 4528 30CC	Date: 20/03/2026			
	Designed by: NJ	Checked by: DF		Approved By: DF
Report Details: Type: Junctions Storm Phase: Phase	Company Address:			

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
S1	Outlet	Pipe	Free Discharge
S5	Outlet	Pipe (4)	Free Discharge
S3	Outlet	Pipe (2)	Free Discharge
S7	Outlet	Pipe (7)	Free Discharge
S8 (FC)	Outlet	Pipe (8)	Hydro-Brake®
	Invert Level (m)	26.961	
	Design Depth (m)	0.700	
	Design Flow (L/s)	3.1	
	Objective	Minimise Upstream Storage Requirements	
	Application	Surface Water Only	
	Sump Available	☐	
	Unit Reference	CHE-0085-3100-0700-3100	
			
S2	Outlet	Pipe (1)	Free Discharge
S4	Outlet	Pipe (3)	Free Discharge
S6	Outlet	Pipe (6)	Free Discharge

Project: 4528 30CC	Date: 20/03/2026			
	Designed by: NJ	Checked by: DF	Approved By: DF	
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:			



Cellular Storage

Type : Cellular Storage

Dimensions	
Exceedance Level (m)	28.950
Depth (m)	0.400
Base Level (m)	27.245
Number of Crates Long	1
Number of Crates Wide	1
Number of Crates High	1
Porosity (%)	95
Crate Length (m)	54.4
Crate Width (m)	17
Crate Height (m)	0.4
Total Volume (m³)	352.729

Outlets	
Outlet	
Outgoing Connection	Pipe (5)
Outlet Type	Free Discharge

Project: 4528 30CC	Date: 20/03/2026		
	Designed by: NJ	Checked by: DF	Approved By: DF
Report Details: Type: Connections Storm Phase: Phase	Company Address:		



Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Cross Section	Upstream Cover Level (m)
Pipe (5)	6.484	Pipe	150.789		0.6	225		28.950
Pipe (7)	29.975	Pipe	149.873		0.6	225		28.750
Pipe (2)	3.623	Pipe	150.942		0.6	225		28.850
Pipe (3)	7.524	Pipe	150.471		0.6	225		28.750
Pipe (1)	27.585	Pipe	149.918		0.6	225		28.850
Pipe (4)	2.235	Pipe	9.122		0.6	225		28.750
Pipe	56.507	Pipe	149.887		0.6	225		28.850
Pipe (6)	6.185	Pipe	150.851		0.6	225		28.750
Pipe (8)	3.069	Pipe	146.149		0.6	225		28.280

Name	Upstream Invert Level (m)	Downstream Cover Level (m)	Downstream Invert Level (m)	Part Family	Lock	Flow Restriction (L/s)	Culvert Type	Culvert Entrance
Pipe (5)	27.245	28.750	27.202		None		(None)	(None)
Pipe (7)	27.161	28.280	26.961		None		(None)	(None)
Pipe (2)	27.564	28.750	27.540		None		(None)	(None)
Pipe (3)	27.540	28.750	27.490		None		(None)	(None)
Pipe (1)	27.748	28.850	27.564		None		(None)	(None)
Pipe (4)	27.490	28.950	27.245		None		(None)	(None)
Pipe	28.125	28.850	27.748		None		(None)	(None)
Pipe (6)	27.202	28.750	27.161		None		(None)	(None)
Pipe (8)	26.961	27.650	26.940		None	3.4	(None)	(None)

Name	Wall Thickness (mm)	Material	Trench Width (mm)	Bedding Material	Surrounding Material
Pipe (5)	0		0		
Pipe (7)	0		0		
Pipe (2)	0		0		
Pipe (3)	0		0		
Pipe (1)	0		0		
Pipe (4)	0		0		
Pipe	0		0		
Pipe (6)	0		0		
Pipe (8)	0		0		

Project: 4528 30CC		Date: 20/03/2026			
		Designed by: NJ	Checked by: DF		Approved By: DF
Report Details: Type: Inflow Summary Storm Phase: Phase		Company Address:			

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	S1		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (1)	S2		Time of Concentration	0.054	100	0	100	0.054
Catchment Area (2)	Cellular Storage		Time of Concentration	0.257	100	0	100	0.257
Catchment Area (3)	S8 (FC)		Time of Concentration	0.028	100	0	100	0.028
TOTAL		0.0		0.353				0.353

Project: 4528 30CC	Date: 20/03/2026			
	Designed by: NJ	Checked by: DF	Approved By: DF	
Report Details: Type: Outfall Details Storm Phase: Phase	Company Address:			

Outfalls

Outfall	Outfall Type	Gated	Fixed Surcharged Level (m)	Level Curve
Simple Junction	Free Discharge			

Project: 4528 30CC	Date: 20/03/2026			
	Designed by: NJ	Checked by: DF	Approved By: DF	
Report Title: Rainfall Analysis Criteria	Company Address:			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall		
30CC		Type: FEH
Site Location	GB 505700 120750 TQ 05700 20750	
Rainfall Version	2022	
Summer	☒	
Winter	☒	

Return Period

Return Period (years)	Increase Rainfall (%)
30.0	40.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Project: 4528 30CC	Date: 20/03/2026		
	Designed by: NJ	Checked by: DF	Approved By: DF
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address:		





Critical Storm Per Item: Rank By: Max. Resident Volume

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Simple Junction	30CC: 30 years: +40 %: 15 mins: Summer		26.940	26.976	0.036	2.4			2.4	3.526	OK
S1	30CC: 30 years: +40 %: 15 mins: Summer	28.850	28.125	28.192	0.067	9.4	0.076	0.000	8.7	4.068	OK
S5	30CC: 30 years: +40 %: 15 mins: Summer	28.750	27.490	27.581	0.091	37.4	0.103	0.000	37.1	19.735	OK
S3	30CC: 30 years: +40 %: 15 mins: Summer	28.850	27.564	27.760	0.196	39.9	0.222	0.000	38.2	19.755	OK
S7	30CC: 30 years: +40 %: 480 mins: Winter	28.750	27.161	27.519	0.358	2.8	0.405	0.000	2.7	108.754	Surcharged
S8 (FC)	30CC: 30 years: +40 %: 480 mins: Winter	28.280	26.961	27.518	0.557	3.4	0.630	0.000	3.0	131.365	Surcharged
S2	30CC: 30 years: +40 %: 15 mins: Summer	28.850	27.748	27.943	0.195	45.0	0.221	0.000	39.9	19.779	OK
S4	30CC: 30 years: +40 %: 15 mins: Summer	28.750	27.540	27.704	0.164	38.2	0.185	0.000	37.4	19.737	OK
S6	30CC: 30 years: +40 %: 480 mins: Winter	28.750	27.202	27.520	0.318	3.3	0.359	0.000	2.8	109.688	Surcharged

Project: 4528 30CC	Date: 20/03/2026		
	Designed by: NJ	Checked by: DF	Approved By: DF
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:		





Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	30CC: 30 years: +40 %: 480 mins: Winter	27.520	27.520	0.275	0.275	24.4	241.469	0.000	0.000	3.3	110.206	31.543	OK

Project: 4528 30CC	Date: 20/03/2026		
	Designed by: NJ	Checked by: DF	Approved By: DF
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address:		





Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe (5)	30CC: 30 years: +40 %: 180 mins: Summer	Pipe	Cellular Storage	S6	28.950	27.493	0.225	32.680	0.5	0.09	3.7	Surcharged
Pipe (7)	30CC: 30 years: +40 %: 4320 mins: Summer	Pipe	S7	S8 (FC)	28.750	27.423	0.225	421.458	0.1	0.07	2.9	Surcharged
Pipe (2)	30CC: 30 years: +40 %: 15 mins: Summer	Pipe	S3	S4	28.850	27.760	0.180	19.755	1.1	0.9	38.2	OK
Pipe (3)	30CC: 30 years: +40 %: 15 mins: Summer	Pipe	S4	S5	28.750	27.704	0.127	19.737	1.6	0.89	37.4	OK
Pipe (1)	30CC: 30 years: +40 %: 15 mins: Summer	Pipe	S2	S3	28.850	27.943	0.195	19.779	1.1	0.94	39.9	OK
Pipe (4)	30CC: 30 years: +40 %: 15 mins: Summer	Pipe	S5	Cellular Storage	28.750	27.581	0.081	19.735	3.5	0.21	37.1	OK
Pipe	30CC: 30 years: +40 %: 15 mins: Summer	Pipe	S1	S2	28.850	28.192	0.131	4.068	0.4	0.2	8.7	OK
Pipe (6)	30CC: 30 years: +40 %: 600 mins: Summer	Pipe	S6	S7	28.750	27.516	0.225	140.437	0.6	0.07	3.1	Surcharged
Pipe (8)	30CC: 30 years: +40 %: 7200 mins: Winter	Pipe	S8 (FC)	Simple Junction	28.280	27.318	0.042	539.171	0.6	0.07	3.1	Surcharged

Project: 4528 100CC	Date: 20/03/2026			
Report Details: Type: Inflows Storm Phase: Phase	Designed by: NJ	Checked by: DF	Approved By: DF	
Company Address:				



Catchment Area (1)

Type : Catchment Area

Area (ha)	0.054
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area

Type : Catchment Area

Area (ha)	0.014
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (2)

Type : Catchment Area

Area (ha)	0.257
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Project: 4528 100CC	Date: 20/03/2026			
	Designed by: NJ	Checked by: DF	Approved By: DF	
Report Details: Type: Inflows Storm Phase: Phase	Company Address:			



Catchment Area (3)

Type : Catchment Area

Area (ha)	0.028
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

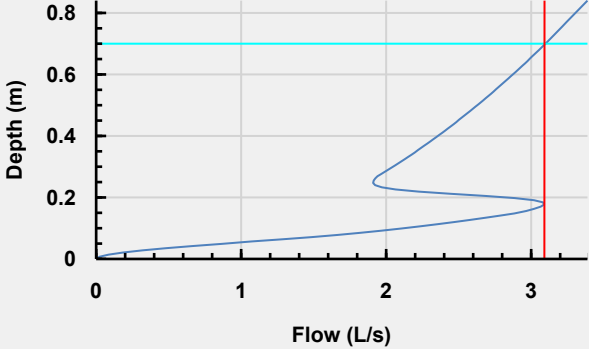
Project: 4528 100CC		Date: 20/03/2026			
Report Details: Type: Junctions Storm Phase: Phase		Designed by: NJ	Checked by: DF		Approved By: DF
		Company Address:			

Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
Simple Junction	Simple Junction	505917.231	120413.343					
S1	Manhole	505920.828	120416.700	28.850	0.725	28.125	Circular	1.200
S5	Manhole	505974.677	120417.263	28.750	1.260	27.490	Circular	1.200
S3	Manhole	505983.389	120410.605	28.850	1.286	27.564	Circular	1.200
S7	Manhole	505934.638	120441.430	28.750	1.589	27.161	Circular	1.200
S8 (FC)	Manhole	505918.861	120415.944	28.280	1.319	26.961	Circular	1.200
S2	Manhole	505968.959	120387.095	28.850	1.102	27.748	Circular	1.200
S4	Manhole	505981.178	120413.474	28.750	1.210	27.540	Circular	1.200
S6	Manhole	505939.920	120438.213	28.750	1.548	27.202	Circular	1.200

Name	
Simple Junction	
S1	None
S5	None
S3	None
S7	None
S8 (FC)	None
S2	None
S4	None
S6	None

Project: 4528 100CC	Date: 20/03/2026			
Report Details: Type: Junctions Storm Phase: Phase	Designed by: NJ	Checked by: DF		Approved By: DF
Company Address:				

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
S1	Outlet	Pipe	Free Discharge
S5	Outlet	Pipe (4)	Free Discharge
S3	Outlet	Pipe (2)	Free Discharge
S7	Outlet	Pipe (7)	Free Discharge
S8 (FC)	Outlet	Pipe (8)	Hydro-Brake®
	Invert Level (m)	26.961	
	Design Depth (m)	0.700	
	Design Flow (L/s)	3.1	
	Objective	Minimise Upstream Storage Requirements	
	Application	Surface Water Only	
	Sump Available	☐	
	Unit Reference	CHE-0085-3100-0700-3100	
			
S2	Outlet	Pipe (1)	Free Discharge
S4	Outlet	Pipe (3)	Free Discharge
S6	Outlet	Pipe (6)	Free Discharge

Project: 4528 100CC	Date: 20/03/2026			
	Designed by: NJ	Checked by: DF	Approved By: DF	
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:			



Cellular Storage

Type : Cellular Storage

Dimensions	
Exceedance Level (m)	28.950
Depth (m)	0.400
Base Level (m)	27.245
Number of Crates Long	1
Number of Crates Wide	1
Number of Crates High	1
Porosity (%)	95
Crate Length (m)	54.4
Crate Width (m)	17
Crate Height (m)	0.4
Total Volume (m³)	352.729

Outlets	
Outlet	
Outgoing Connection	Pipe (5)
Outlet Type	Free Discharge

Project: 4528 100CC	Date: 20/03/2026		
	Designed by: NJ	Checked by: DF	Approved By: DF
Report Details: Type: Connections Storm Phase: Phase	Company Address:		



Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Cross Section	Upstream Cover Level (m)
Pipe (5)	6.484	Pipe	150.789		0.6	225		28.950
Pipe (7)	29.975	Pipe	149.873		0.6	225		28.750
Pipe (2)	3.623	Pipe	150.942		0.6	225		28.850
Pipe (3)	7.524	Pipe	150.471		0.6	225		28.750
Pipe (1)	27.585	Pipe	149.918		0.6	225		28.850
Pipe (4)	2.235	Pipe	9.122		0.6	225		28.750
Pipe	56.507	Pipe	149.887		0.6	225		28.850
Pipe (6)	6.185	Pipe	150.851		0.6	225		28.750
Pipe (8)	3.069	Pipe	146.149		0.6	225		28.280

Name	Upstream Invert Level (m)	Downstream Cover Level (m)	Downstream Invert Level (m)	Part Family	Lock	Flow Restriction (L/s)	Culvert Type	Culvert Entrance
Pipe (5)	27.245	28.750	27.202		None		(None)	(None)
Pipe (7)	27.161	28.280	26.961		None		(None)	(None)
Pipe (2)	27.564	28.750	27.540		None		(None)	(None)
Pipe (3)	27.540	28.750	27.490		None		(None)	(None)
Pipe (1)	27.748	28.850	27.564		None		(None)	(None)
Pipe (4)	27.490	28.950	27.245		None		(None)	(None)
Pipe	28.125	28.850	27.748		None		(None)	(None)
Pipe (6)	27.202	28.750	27.161		None		(None)	(None)
Pipe (8)	26.961	27.650	26.940		None	3.4	(None)	(None)

Name	Wall Thickness (mm)	Material	Trench Width (mm)	Bedding Material	Surrounding Material
Pipe (5)	0		0		
Pipe (7)	0		0		
Pipe (2)	0		0		
Pipe (3)	0		0		
Pipe (1)	0		0		
Pipe (4)	0		0		
Pipe	0		0		
Pipe (6)	0		0		
Pipe (8)	0		0		

Project: 4528 100CC		Date: 20/03/2026			
		Designed by: NJ	Checked by: DF		Approved By: DF
Report Details: Type: Inflow Summary Storm Phase: Phase		Company Address:			

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	S1		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (1)	S2		Time of Concentration	0.054	100	0	100	0.054
Catchment Area (2)	Cellular Storage		Time of Concentration	0.257	100	0	100	0.257
Catchment Area (3)	S8 (FC)		Time of Concentration	0.028	100	0	100	0.028
TOTAL		0.0		0.353				0.353

Project: 4528 100CC	Date: 20/03/2026			
	Designed by: NJ	Checked by: DF	Approved By: DF	
Report Details: Type: Outfall Details Storm Phase: Phase	Company Address:			

Outfalls

Outfall	Outfall Type	Gated	Fixed Surcharged Level (m)	Level Curve
Simple Junction	Free Discharge			

Project: 4528 100CC	Date: 20/03/2026			
	Designed by: NJ	Checked by: DF	Approved By: DF	
Report Title: Rainfall Analysis Criteria	Company Address:			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall		
FEH		Type: FEH
Site Location	GB 505700 120750 TQ 05700 20750	
Rainfall Version	2022	
Summer	☒	
Winter	☒	

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	45.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Project: 4528 100CC	Date: 20/03/2026		
	Designed by: NJ	Checked by: DF	Approved By: DF
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address:		





Critical Storm Per Item: Rank By: Max. Resident Volume

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Simple Junction	FEH: 100 years: +45 %: 15 mins: Summer		26.940	26.977	0.037	2.6			2.6	3.728	OK
S1	FEH: 100 years: +45 %: 15 mins: Summer	28.850	28.125	28.203	0.078	12.2	0.088	0.000	11.3	5.262	OK
S5	FEH: 100 years: +45 %: 600 mins: Winter	28.750	27.490	27.610	0.120	5.4	0.135	0.000	5.4	77.411	OK
S3	FEH: 100 years: +45 %: 15 mins: Summer	28.850	27.564	27.802	0.238	48.8	0.269	0.000	47.3	25.647	Surcharged
S7	FEH: 100 years: +45 %: 600 mins: Winter	28.750	27.161	27.609	0.448	3.1	0.507	0.000	2.9	147.014	Surcharged
S8 (FC)	FEH: 100 years: +45 %: 600 mins: Winter	28.280	26.961	27.608	0.647	3.5	0.732	0.000	3.1	177.510	Surcharged
S2	FEH: 100 years: +45 %: 15 mins: Summer	28.850	27.748	28.082	0.334	58.5	0.377	0.000	48.8	25.666	Surcharged
S4	FEH: 100 years: +45 %: 15 mins: Summer	28.750	27.540	27.723	0.183	47.3	0.207	0.000	46.2	25.627	OK
S6	FEH: 100 years: +45 %: 600 mins: Winter	28.750	27.202	27.609	0.407	3.1	0.461	0.000	3.1	148.029	Surcharged

Project: 4528 100CC	Date: 20/03/2026		
	Designed by: NJ	Checked by: DF	Approved By: DF
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:		





Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FEH: 100 years: +45 %: 600 mins: Winter	27.610	27.610	0.365	0.365	26.0	320.427	0.000	0.000	3.1	148.628	9.158	OK

Project: 4528 100CC	Date: 20/03/2026			
	Designed by: NJ	Checked by: DF	Approved By: DF	
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address:			



Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe (5)	FEH: 100 years: +45 %: 240 mins: Summer	Pipe	Cellular Storage	S6	28.950	27.584	0.225	47.848	0.6	0.09	3.6	Surcharged
Pipe (7)	FEH: 100 years: +45 %: 2880 mins: Winter	Pipe	S7	S8 (FC)	28.750	27.514	0.225	478.260	0.1	0.07	2.9	Surcharged
Pipe (2)	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S3	S4	28.850	27.802	0.210	25.647	1.2	1.12	47.3	Surcharged
Pipe (3)	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S4	S5	28.750	27.723	0.143	25.627	1.7	1.09	46.2	OK
Pipe (1)	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S2	S3	28.850	28.082	0.225	25.666	1.2	1.15	48.8	Surcharged
Pipe (4)	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S5	Cellular Storage	28.750	27.594	0.104	25.627	3.5	0.26	45.8	OK
Pipe	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	S1	S2	28.850	28.203	0.206	5.262	0.3	0.27	11.3	OK
Pipe (6)	FEH: 100 years: +45 %: 480 mins: Winter	Pipe	S6	S7	28.750	27.608	0.225	114.557	0.6	0.07	3.1	Surcharged
Pipe (8)	FEH: 100 years: +45 %: 10080 mins: Summer	Pipe	S8 (FC)	Simple Junction	28.280	27.412	0.042	738.237	0.6	0.07	3.1	Surcharged

Appendix 4



Cole Easdon Consultants
Unit 2, York House
Dorcan Way
Edison Park
Swindon
Wiltshire
SN3 3RB

Your Ref (4528) Lodmore Hill Pulborough
Our Ref 193527
Date 23 April 2015
Contact searches@southernwater.co.uk
Fax 01634 844514
DX:400450 Chatham 5

Attention: Sarah Coates

Dear Sirs

Provision of Public Sewer and Water Main Record Extracts – VAT Receipt
Phase 2 Lodmore Hill, Pulborough. RH20 2RY

Further to your recent enquiry regarding the provision of Southern Water apparatus record extracts for the above location.

Please be aware that there are areas within our region in which there are neither sewers nor water mains. Similarly, whilst the enclosed extract may indicate the approximate location of our apparatus in the area of interest, it should not be relied upon as showing that further infrastructure does not exist and may subsequently be found following site investigation. Therefore actual positions of the disclosed (and any undisclosed) infrastructure should be determined on site, because Southern Water does not accept any responsibility for inaccuracy or omission regarding the enclosed plan and accordingly it should not be considered to be a definitive document.

I confirm payment of the appropriate fee in the sum of £ **49.92**

The breakdown of costs is as follows: -

- Provision of record extracts £ 41.60
- VAT @ 20.0% £ 8.32

VAT Registration Number 813 0378 56

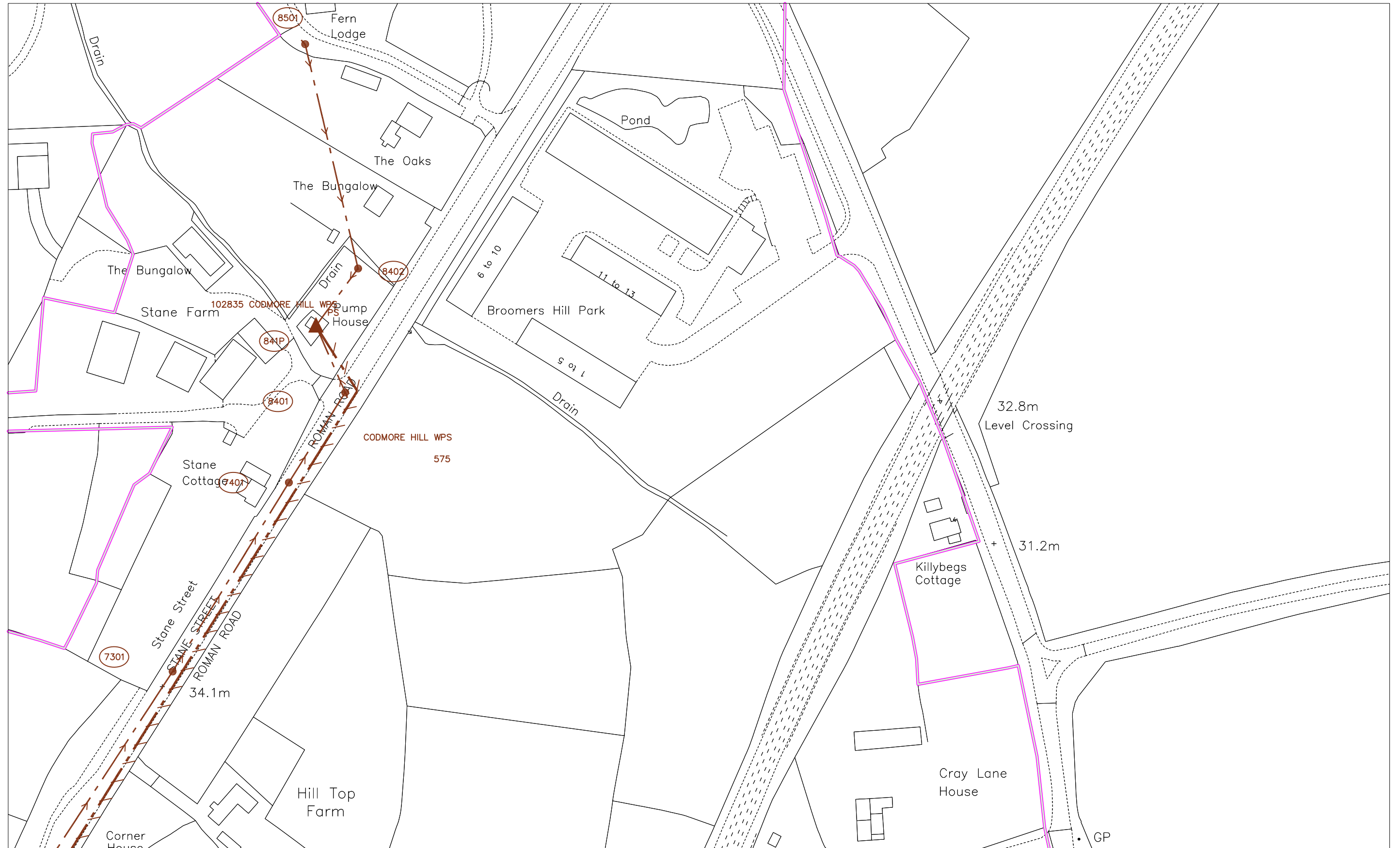
Should you require any additional information regarding this matter please contact this office at the address given at the foot of this letter.

Yours faithfully

Land Search Department

SEWER RECORDS PAGE 1 OF 2

120572



120284

505703

O.S.	REF.

TQ0520SE

Title: 193527_Phase 2 Lodmore Hill

Drawn by: wrennl

Scale: 1:1250

Date: 23/04/2015

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy.
The actual positions should be determined on site.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement
WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement

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Southern Water

1
2
3
4
5

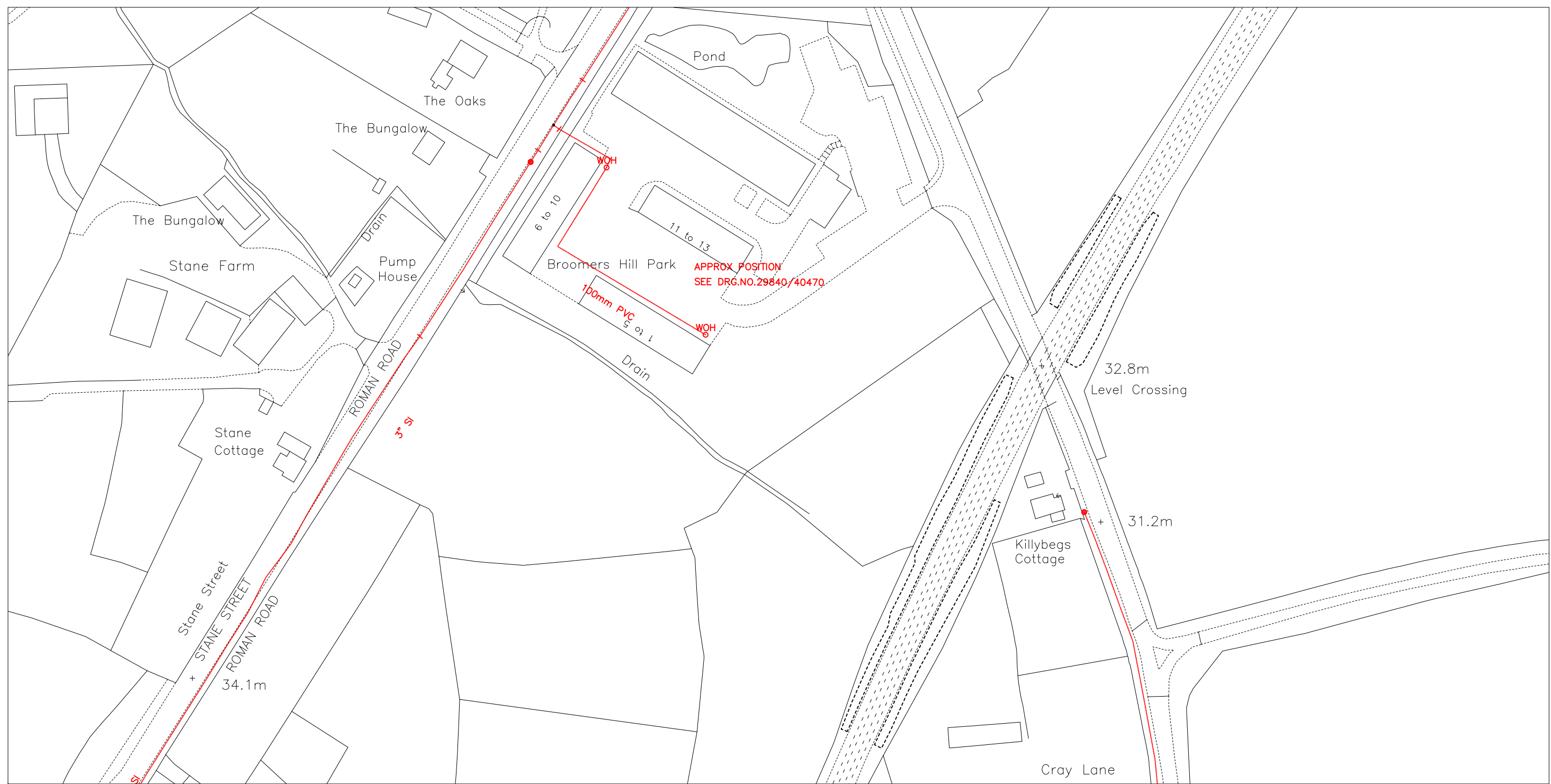
SEWER RECORDS PAGE 2 OF 2

Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape
7301X	33.78	32.02	150	CP	CIRC																		
7401X	28.4	25.99	150	CP	CIRC																		
8401X	27.28	25.37	150	CP	CIRC																		
8402X	26.62	25.25	150	CP	CIRC																		
841PX	26.89		100	PE	CIRC																		
8501X	28.44	27.22	150	CP	CIRC																		

LINE STYLES / COLOURS		MATERIALS		LEGEND - SEWERS					
Brown		AK	Alkathene		Washout (SW)		Other (s)		Wastewater treatment works
		BAC	Bonded Asbestos Cement		Washout (F&C)		Change		Marine treatment works
		BRC	Brick (Common)		Lamp hole (SW)		Change in sewer (s)		Outfall headworks
		BRE	Brick (Engineering)		Lamp hole (F&C)		Change in sewer		Vent
		CC	Concrete Box Culvert		Pumping Station (SW)		Reflex valve		Total storage tank
		CI	Cast Iron		Pumping Station (F&C)		Flap valve		Blank area
		CO	Concrete (In-Situ)		Side entry manhole (SW)		Cascade		Head of Public Sewer
Red		CC	Concrete (Pre-Cast)		Side entry manhole (F&C)		Anode		Micro Pumping Station
		CSB	Concrete Segments (bolted)		Blind shaft (SW)		Closed Valve		
Orange		CSU	Concrete Segments (unbolted)		Blind shaft (F&C)		Air Valve		
		GRC	Glass Reinforced Concrete		Ejector station (SW)		Barrel		
Dark Blue		GRP	Glass Reinforced Plastic		Ejector station (F&C)		Circular Hatch box (SW)		
		MAR	Masonry in regular Courses		Ejector station		Egg Hatch box (F&C)		
Purple		PE	Polyethylene		Waterlight door (SW)		Direction arrow		
		PF	Pitch Fibre		Waterlight door (F&C)		Emptying valve		
Light Blue		PVC	Polypropylene		Flushing ch. Mne (SW)		Catchpot		
		PVC	PolyVinyl Chloride		Flushing ch. Mne (F&C)		Sewerway		
Yellow		RPM	Reinforced Plastic Matrix		Flushing ch. No4 (SW)		Inlet		
		SI	Spun Iron		Flushing ch. No4 (F&C)		Balancing Pond		
Green		ST	Steel		Flushing ch. No4				
		VV	Vitrified Clay		Flushing ch. No4				
Decommissioned		XXX	Other		Decommissioned				
		ZCC	Unknown		Decommissioned				

120549

120306



505697

506180

LEGEND - MAINS

	Distribution Main / Communication pipe		Clockwise closing valve
	Trunk Main		Fire Hydrant
	Raw water main		Washout
	Non potable		Washout hydrant
	Abandoned main		Meter
	Proposed Main		Capped end
	Fire main		Emptying plug
	Non SWS		Stopcock
	Sluice valve		Leak Noise Correlator Survey Point
	Air valve		Anode
	Butterfly valve		Telemetry cable
	Pressure reducing valve		Access point / hatchbox
	Reflux valve		
	Motorised valve		

MATERIALS

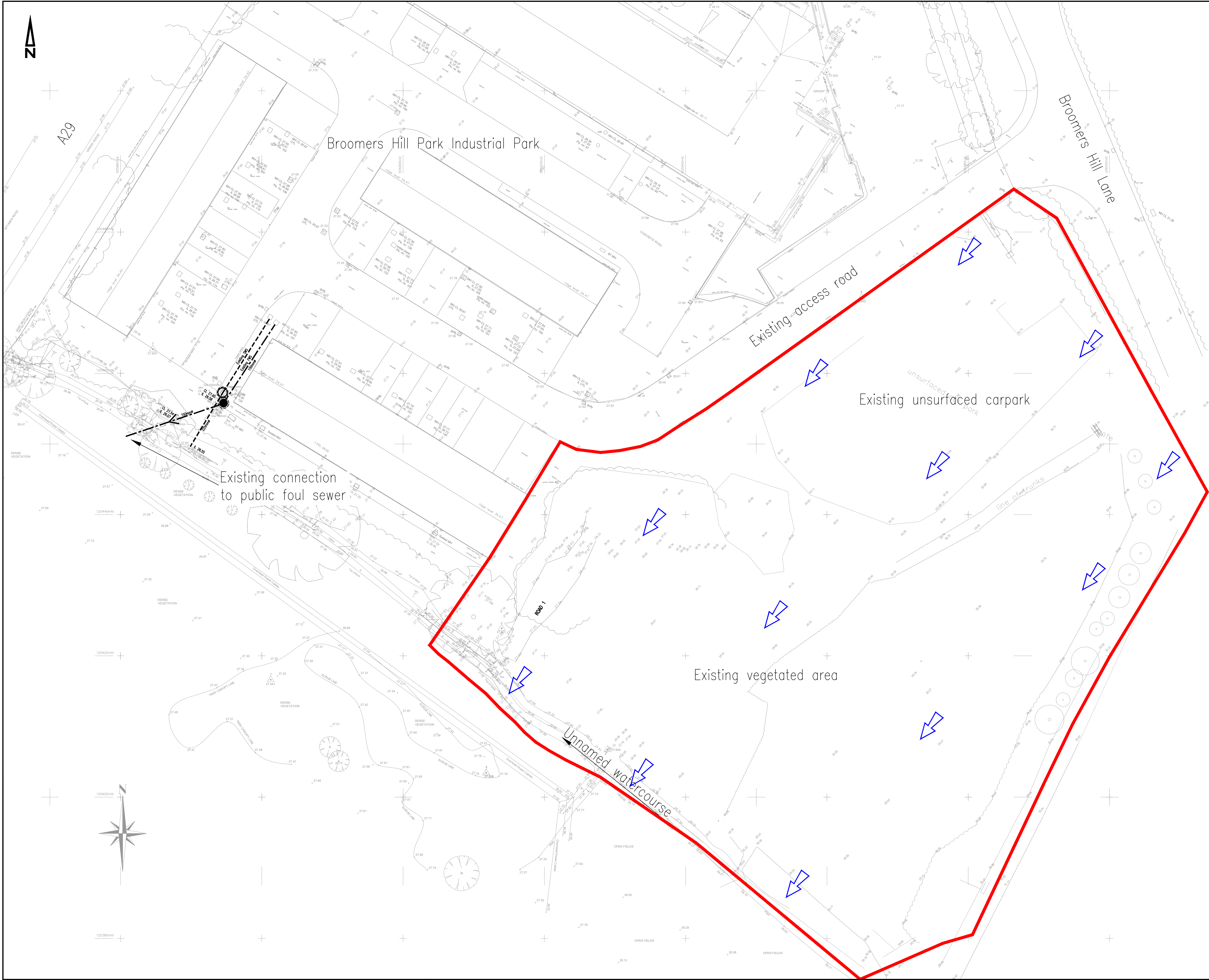
	Dialysis machine	Alkathene
	Break pressure tank	Cast iron
	Change node	Spun (grey) iron
	Pumping station	Concrete
	Booster station	Ductile iron
	Insertion Flow Meter Point	Bonded Asbestos Cement
	Water tower	Glass reinforced plastic
	Service reservoir	Glass reinforced epoxy
	Water Supply Works	(Unplasticised) Polyvinyl chloride
	Bore hole / Well	Polyethylene
	Intake	Steel
	Customer site	Concrete segments bolted
	Swab insertion point	Concrete segments unbolted
		Galvanised iron
		Ductile sleeve
		Concrete pre-stressed
		High performance polyethylene
		Unknown

AK	Drawn by:	wrennl
CI	Scale:	1:1250
SI	Date:	23/04/2015
CO	The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd. accept no responsibility in the event of inaccuracy. The actual positions of pipes should be determined on site.	
DI		
BAC	Based upon Ordnance Survey Digital Data with the permission of the controller of H.M.S.O. Crown Copyright Reserved Licence No. WU 298530.	
GRP		
GRE		
PVC		
PE		
ST		
CSB		
CSU		
GI		
DS		
CPS		
HPE		
??		

WARNING: BAC pipes are constructed of Bonded Asbestos Cement

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement

Appendix 5

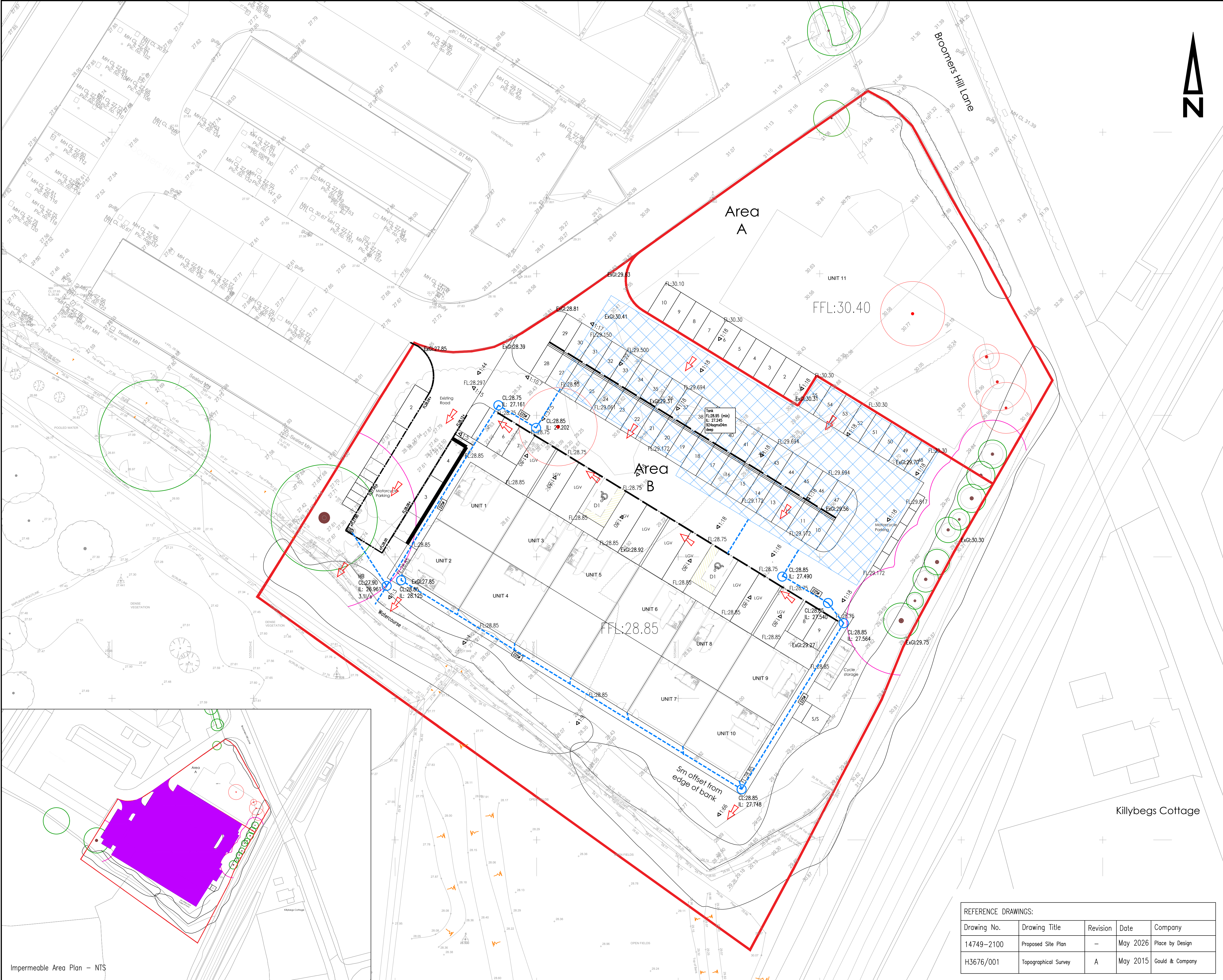


KEY:

- SITE BOUNDARY. AREA = 0.67ha
- EXISTING PRIVATE SURFACE WATER CHAMBER
- EXISTING PRIVATE SURFACE WATER DRAIN
- EXISTING PRIVATE FOUL WATER CHAMBER
- EXISTING PRIVATE FOUL WATER DRAIN
- EXISTING OVERLAND FLOW ROUTE
- EXISTING GROUND LEVEL

- GENERAL NOTES:
1. All levels are in metres above Ordnance datum.
 2. Existing drainage details based on the topographical survey

No.	By	Date	Revision Details	
© Copyright				
			YORK HOUSE EDISON PARK DORCAN WAY SWINDON WILTSHIRE SN3 3RB Tel : 01793 619965	
COLE EASDON CONSULTANTS			Web Site	www.ColeEasdon.com
			E-mail	cec@ColeEasdon.com
Client WT Lamb Holdings Limited				
Job Title Proposed Development Codmore Hill Industrial Estate Pullborough West Sussex				
Drawing Title Existing Site Plan				
Designed by:		Drawn by: SS	Checked by: DF	
Date February 2018		Scale 1:250 @ A1		
Dwg. No. 4528/500			Rev.	



KEY

Site boundary

Proposed impermeable area

Proposed impermeable area (not included in design)

Proposed cellular storage tanks

Proposed surface water drainage pipework

Proposed ACO Drain

+FFL

Proposed finished internal floor level

+FL

Proposed Finished Level

◁1:80

Proposed Fall

+ExGl

Existing ground level

Design exceedance flow route

Notes:

- All levels are in metres above Ordnance Datum (m AOD).
- All dimensions are in metres unless otherwise stated.

B	NJ	21.05.26	Layout updated
A	NJ	05.05.26	Layout updated
No.	By	Date	Revision Details
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Cole Easdon

01793 619 965 | cec@ColeEasdon.com | www.ColeEasdon.com

Client
WT Lamb Holdings

Job Title
Proposed Development
Codmore Hill Industrial Estate
Pulborough
West Sussex

Drawing Title
Proposed Surface Water Drainage Layout

Drawing Status

FOR COMMENT

FOR PLANNING

FOR TENDER

FOR APPROVAL

FOR CONSTRUCTION

AS BUILT

CONSTRUCTION AT CLIENT / CONTRACTOR RISK

Designed by	NJ	Checked by	DF
Date	March 2026	Scale	1:250 @ A1
Dwg No.	4528/502	Rev.	B

REFERENCE DRAWINGS:				
Drawing No.	Drawing Title	Revision	Date	Company
14749-2100	Proposed Site Plan	-	May 2026	Place by Design
H3676/001	Topographical Survey	A	May 2015	Gould & Company

Impermeable Area Plan - NTS