



**LIDL GREAT BRITAIN LTD
EASTERN WAY
MELKSHAM**

**FLOOD RISK ASSESSMENT AND
DRAINAGE STRATEGY**

MARCH 2026



the journey is the reward

**LIDL GREAT BRITAIN LTD
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MELKSHAM**

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DRAINAGE STRATEGY**

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Report Reference:	LIDLMELKSHAM.23
Project Code:	LIDLMELKSHAM.23
Prepared by:	AR
Approved by:	SF
Issue Date:	16.03.2026
Status:	2nd Issue

Lidl Great Britain Ltd
Eastern Way
Melksham
Flood Risk Assessment and Drainage Strategy

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1 Introduction

- 1.1 Mayer Brown Ltd has been appointed by Lidl Great Britain Limited (Lidl) to prepare this Surface and Foul Water Drainage Technical Note in support of the planning application at their site located at Eastern Way, Melksham.

Flood Risk

- 1.2 According to the Environment Agency's flood map for planning the **1.89-hectare** greenfield site is located entirely within **Flood Zone 1**. As such the site is suitable for all development. Given the site area is more than one hectare a site-specific flood risk assessment is required under NPPF guidelines.

Methodology

- 1.3 This drainage strategy underlines the drainage principles for the safe and sustainable disposal of surface water produced by the development. The conditions currently existing in the location of the site are described, together with the methods used to identify and assess potential impacts caused by the development proposals. The mitigation measures proposed have been identified to avoid and/or reduce the impacts caused by the development proposals.
- 1.4 This report has been compiled in accordance with the "National Planning Policy Framework (NPPF)" published by Communities and Local Government in February 2019, "Technical Guidance to the National Planning Policy Framework" and 'CIRIA C624: Development and Flood Risk Guidance'.

2 Site Location & Description

Site Location

- 2.1 The site is located to the east of Eastern Way and falls under the administrative boundary of Wiltshire Council. The nearest postcode is SN12 7QS and the approximate co-ordinates to the centre are E392213, N164276. Refer to figure 2.1 below and Appendix A for the site location plan.
- 2.2 The site is bound by Eastern Way to the west, Sandridge Common to the north and green fields to the west and south.



Figure 2.1: Existing Site (Extract from DAS)

Topography

Site Makeup

- 2.3 The existing site is currently greenfield. A topographical survey was undertaken in January 2024 by EDI Surveys Ltd and can be seen in Appendix C.

Levels

- 2.4 The topography of the site generally falls from West to East. The levels range from approximately 44.22m AOD in the West to 43.14m AOD in the East.

Site Investigation

- 2.5 Intrusive site investigation works were undertaken by Obsidian Geo Consulting Ltd and the resulting interpretive report was issued in November 2025. An extract from the report is attached in Appendix G. The flood risk and drainage related findings are as follows:

Geology

- 2.6 There are no superficial deposits mapped on site. The bedrock is Oxford Clay Formation.

Hydrogeology

- 2.7 There is no superficial aquifer identified on the site, and the bedrock is unproductive strata.
- 2.8 The site is not located within a Groundwater Source Protection Zone.

Hydrology (Rivers, Watercourses & Ditches)

- 2.9 The River Avon runs northeast to southwest, approximately 1.5km west of the site. The nearest surface water feature is located approximately 129m west of the site and is a tributary of the River Avon.

Existing Drainage

Public Sewers

- 2.10 The Wessex Water sewer records in Appendix D show there is a 150mm foul sewer in the road draining from north to south on Sandridge Common to Eastern Way. There are no surface water sewers by Wessex Water near the site.
- 2.11 The topographic survey shows there is an existing 225mm highway surface water sewer just west of the site and crossing Eastern Way.

Site Drainage

- 2.12 The CCTV surveys by EDI Surveys Ltd show no drainage systems within the site boundary.
- 2.13 The site investigation reports there are a number of newly formed drainage ditches to the west, adjacent to Eastern Way. Refer to Appendix C for CCTV survey.

3 Proposed Development

- 3.1 The proposed development is for a new Lidl supermarket with associated parking and access. Access to the new store will be via Eastern Way. Refer to Figure 3.1 below and Appendix E for the Proposed Site Layout.

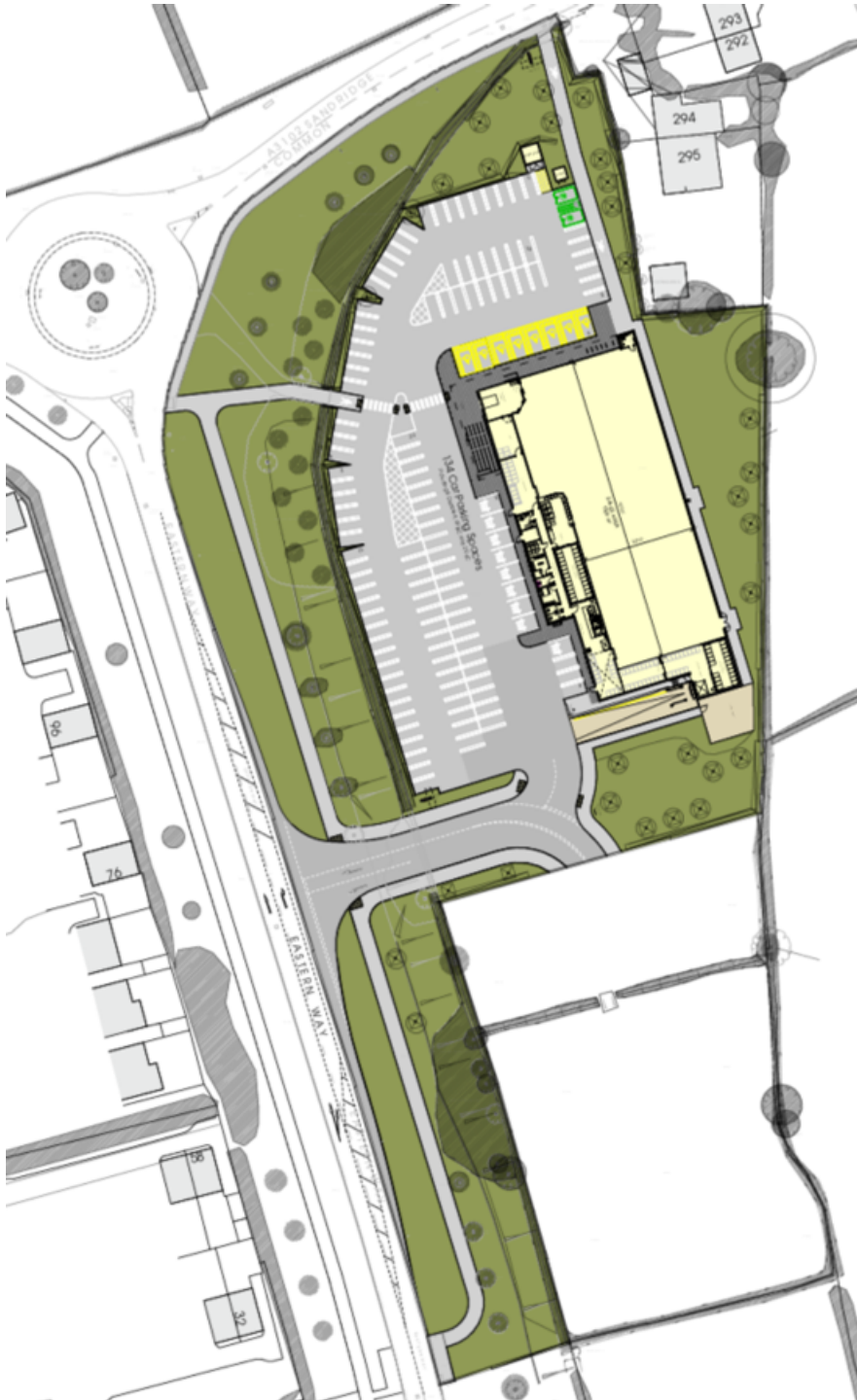


Figure 3.1: Proposed Site Plan (Refer to Appendix E)

- 3.2 A large proportion of the Development will be impermeable hardstanding area and the store building, with soft landscaping situated around the perimeter. The total amount of **impermeable area** to be positively drained is **0.8 hectares**. The surface water strategy is discussed in section 5.
- 3.3 The development is in a low-risk Flood Zone 1 area, so the proposed store and car park levels are dictated by boundary and engineering constraints as opposed to predicted fluvial or tidal levels. The proposed levels design is contained in Appendix F.

4 Flood Risk Overview

4.1 In theory there are five principal types/sources of flooding that could affect the proposed development. These are outlined below with proposed mitigation measures described where necessary. The relevant sections and mitigation measures have come about through a review Obsidian Geo Consultants ground investigation report and the EA Flood Maps for Planning. Refer to Appendix B.

- **Fluvial** – The site is in a low-risk Flood Zone 1. This means it has an annual probability of <0.1% of experiencing flooding from fluvial sources. Therefore, there are no mitigation measures required.
- **Tidal** – The planning flood maps show there is no tidal flood risk
- **Groundwater** – The results of the groundwater monitoring programme from the ground investigation showed groundwater was initially encountered within the standpipes at depth of 4m below ground level. Follow up visits showed water in standpipes at 3.60, 1.21m and 3.80m below ground level. It is noted that the follow up visit was after a period of significant rainfalls and therefore concluded that the increase is likely trapped and perched surface water rather than true groundwater. The site is therefore classified as having a low risk of groundwater flooding.
- **Surface Water Runoff** –The latest EA flood maps also show there is no surface water flooding on the site for up to the 1in1000yr return period. Therefore, the risk of surface water flooding occurring at the site is very low and no mitigation measures are required.
- **Infrastructure Failure** – There are no sewer flood records at the site vicinity due to surcharging public sewers. Therefore, the site is at a low risk of flooding from infrastructure failure is low and no mitigation measures required.

Flood Mechanism	Source	Flood Risk to the Development	Mitigation Required?
Fluvial	N/A	Low	No
Tidal	N/A	Low	No
Groundwater	Underlying geology and groundwater levels	Low	No
Surface Water / Overland Flow	Surface water flooding along surrounding roads	Very Low	No
Infrastructure Failure	Surface water systems and Water mains	Low	No

Table 4.1: Flood Risk Summary

5 Surface Water Drainage

Existing Surface Water Drainage

- 5.1 The Topographic and CCTV survey by EDI Surveys Ltd show no drainage systems within the site boundary. It shows there is an existing 225mm highway surface water sewer just west of the site boundary line and crossing Eastern Way.
- 5.2 The site investigation reports there are a number of newly formed drainage ditches to the west, adjacent to Eastern Way. Refer to Appendix C for CCTV survey.

Underlying Geology & Infiltration

- 5.3 The Intrusive site investigation works undertaken by Obsidian Geo Consultants.
- 5.4 There are no superficial deposits mapped on site. The bedrock is Oxford Clay Formation. Based on the nature of the underlying geology, which is generally considered to be cohesive, the use of infiltration for the disposal of surface water runoff is unlikely to be feasible.
- 5.5 BRE 365 infiltration testing is needed to confirm suitability for surface water infiltration.

Drainage Hierarchy

- 5.6 Wiltshire Council as the Lead Local Flood Authority (LLFA) are predominantly concerned about the quantity, rate and quality of surface water run-off leaving the development site.
- 5.7 Sustainable Urban Drainage Systems (SUDS) are a range of techniques that aim to mimic the way rainfall drains in natural systems and so reduces the hydraulic and hydrological impact on the local area and downstream catchments. There are several options available to impose surface water restrictions on proposed developments such as oversized sewers, below ground storage tanks, attenuation ponds and basins, swales, permeable paving, or infiltration systems.
- 5.8 To determine the most sustainable method of surface water disposal the hierarchy from approved document part H was used, see below:
- **An adequate soakaway or some other adequate infiltration system** – Based on the above in paragraph 5.4, it is anticipated the use of infiltration for the disposal of surface water runoff generated by development would not be feasible.
 - **A Watercourse** – There are no rivers or main watercourses within the site boundary. The closest watercourse is located in a highway verge very far to the south. The route for discharge to the watercourse is not reasonably practicable with the added difficulty of crossing through two separate privately owned lands.

- **A Sewer** – There is an existing 225mm highway surface water sewer just west of the site boundary line and crossing Eastern Way. Permission will be needed from the local highway authority to discharge into it.

5.9 With the above in mind the proposed surface water system is **proposed to discharge into the highway sewer near the site. A conversation to obtain permission from the local highway authority has already begun.** The proposed drainage strategy shows the proposed connection point and is contained in Appendix H.

Proposed Discharge Rate and Calculations

Greenfield Run-off

5.10 The greenfield run off rate from the 0.8 hectares of impermeable area has been calculated and are as follows: (for full calculations refer to Appendix J):

- Q1 years: 4.4 litres/sec
- Q30 years: 11.1 litres/sec
- Q100 years: 13.8 litres/sec
- **QBAR: 5.3 litres/sec**

Proposed Discharge Rate

5.11 The proposed peak discharge from the site will be **5.3 litres/second**, for all storm events and return periods up to and including the 1 in 100year + 45% climate change allowance.

Causeway Flow Calculations

5.12 The proposed surface drainage system has been designed in Causeway Flow (Appendix M), which shows it can contain the surface water run-off for up to and including the critical 1in100yr+45% climate change storm event. A Cv value of 1.0 has been applied and FEH rainfall has been modelled in the simulation.

5.13 In order to restrict the run-off to **5.3 litres / second** a total volume of approximately **784m3** will be required for the critical 1in100yr+45% climate change event.

5.14 The drainage design ensures that all flows are safely contained within the site for up to and including the 1in100year event +45% climate change. All the attenuation volume will be in the below ground network and attenuation tank.

5.15 The roof system and treated car park system will discharge into the attenuation tank, where a hydro-brake chamber (Appendix M) located just downstream of the tank will restrict the discharge to a peak rate of 5.3 litres / second.

Surface Water Disposal

- 5.16 A site-specific surface water drainage plan for the proposed development has been created and can be found in Appendix H.
- 5.17 A site-specific surface water catchment plan for the proposed development can be found in Appendix J.
- 5.18 A levels strategy has also been produced by Mayer Brown Ltd that has been used to inform the drainage strategy, refer to Appendix F.
- 5.19 The following outlines how water from the new store will drain:
- Water from the roof of the store building will drain via a piped network directly into the attenuation tank.
 - The store car park will drain via a gully system and through a petrol interceptor, Appendix K, to provide treatment, before discharging into the proposed attenuation tank.
- 5.20 The proposed attenuation tank will be a proprietary crate system chosen by the Main Contractor based on availability and price. (A typical product is the Geolight system manufactured and supplied by SDS limited as shown in Appendix L).

Surface Water Treatment

- 5.21 A Class 1 bypass separator will be included in the surface water drainage system, which will remove any oil, silts and sediments present in the water prior to discharging into the infiltration tanks. A SPEL Stormceptor “ESR” has been specified as can be seen in Appendix K. (ESR stands for Enhanced Silt Removal)
- 5.22 Table 26.2 of the SuDS Manual identifies the pollution hazard level associated with the land uses within the approved new store as being ‘Medium’. For a medium hazard, the pollution mitigation indices are as follow:
- Total Suspended Solids = 0.7 Required
 - Metals = 0.6 Required
 - Hydrocarbons = 0.7 Required
- 5.23 The SPEL Stormceptor Class 1 by-pass separator ESR achieves the follows mitigation.
- Total Suspended Solids: 0.8 provided. Complies.
 - Metals: 0.6 provided. Complies.
 - Hydrocarbons: 0.9 provided. Complies.
- 5.24 The method of collection and conveyance in the upstream drainage network will use gullies and catchpits to capture silt prior to reaching the separator.

Adoption and Maintenance

- 5.25 The proposed surface water sewer water network will remain in Lidl's ownership. This will enable tight control over the operation and maintenance of the drainage/SuDS systems on site.

Design Criteria

- 5.26 The proposed development has been designed to current best practice for both piped drainage (Part H of the Building Regulations), adoptable sewers (Sewers for Adoption 7th Edition) and Sustainable Drainage (CIRIA C753 – The SUDS Manual), and any subsequent revisions or further publications of best practice. In this way, the surface water drainage design for the site has been developed in accordance with all relevant standards and guidelines.

- 5.27 The positive surface water system will be designed such that:
- The pipes remain unsurcharged during the 1 in 2-year design storm.
 - The system will not flood during the worst case 1 in 30-year storm with a free outfall.
 - The surface water run-off from the proposed development will be contained on site for up to and including the worst case 1 in 100-year storm event, plus an additional 45% for climate change;
 - The pipe velocities are such that self-cleansing is achieved at lesser more moderate storm intensities: -
 - Pipe roughness (k_s) = 0.6
 - Minimum pipe velocity at full flow = 1.0m/s
 - Percentage Impermeable areas:
 - Buildings = 100%
 - Roads & Footpaths = 100%
 - Parking = 100%
 - Soft Landscaping = 0%

6 Foul Drainage

Existing Foul Drainage

- 6.1 The Wessex Water sewer records in Appendix D show there is a 150mm foul sewer in the road draining from north to south on Sandridge Common to Eastern Way.

Proposed Foul Layout

- 6.2 The proposed foul network serving the new store will discharge by gravity into the foul sewer on Easter Way. Refer to the MBL drainage general arrangement drawing in Appendix H.

Proposed Foul Flows

- 6.3 The application is for a new supermarket where the foul flows from the welfare facilities and refrigeration units will be minimal, anticipated to be no more than 1 litre/second.

Design Criteria

- 6.4 The proposed foul sewers will be designed in accordance with the Design and Construction Guidance, BS EN 752 – Drain and sewer systems outside buildings and Building Regulations - part H (2015).

Adoption and Maintenance

- 6.5 The proposed foul network will be maintained by Lidl which should enable tight control over the operation and maintenance of the drainage systems on site.

7 Summary & Conclusion

Flood Risk

- 7.1 The development is in a low-risk Flood Zone 1 area, so the proposed levels are dictated by boundary and engineering constraints as opposed to a predicted fluvial or tidal flood level.
- 7.2 The development is also at low risk from flooding from the following sources summarised in Table 7.1 below:

Flood Mechanism	Source	Flood Risk to the Development	Mitigation Required?
Fluvial	N/A	Low	No
Tidal	N/A	Low	No
Groundwater	Underlying geology and groundwater levels	Low	No
Surface Water / Overland Flow	Surface water flooding along surrounding roads	Very Low	No
Infrastructure Failure	Surface water systems and Water mains	Low	No

Table 7.1: Flood Risk Summary

Surface Water Drainage

- 7.3 The design satisfies the SuDS hierarchy by assessing the potential means of surface water disposal and determining that discharging to the highway sewer on Eastern Way is the most appropriate discharge location.
- 7.4 The peak rate of surface water run-off from the completed development will be 5.3 litres/second (QBAR).plot
- 7.5 The drainage design and SuDS features have been designed so all surface water run-off will be safely contained within the site boundary for return periods up to and including the 1in100year event +45% climate change allowance.

Foul Drainage

- 7.6 The foul sewers serving the new store will discharge by gravity into the existing Wessex Water foul sewer on Eastern Way.

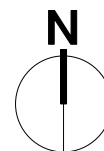
Maintenance & Management

- 7.7 An operation, maintenance and management plan (O&M Plan) for the SuDS systems will be secured by planning condition. The proposed SuDS elements will be maintained by a Management Company, organised by the Applicant, in accordance with the planning approved O&M Plan.

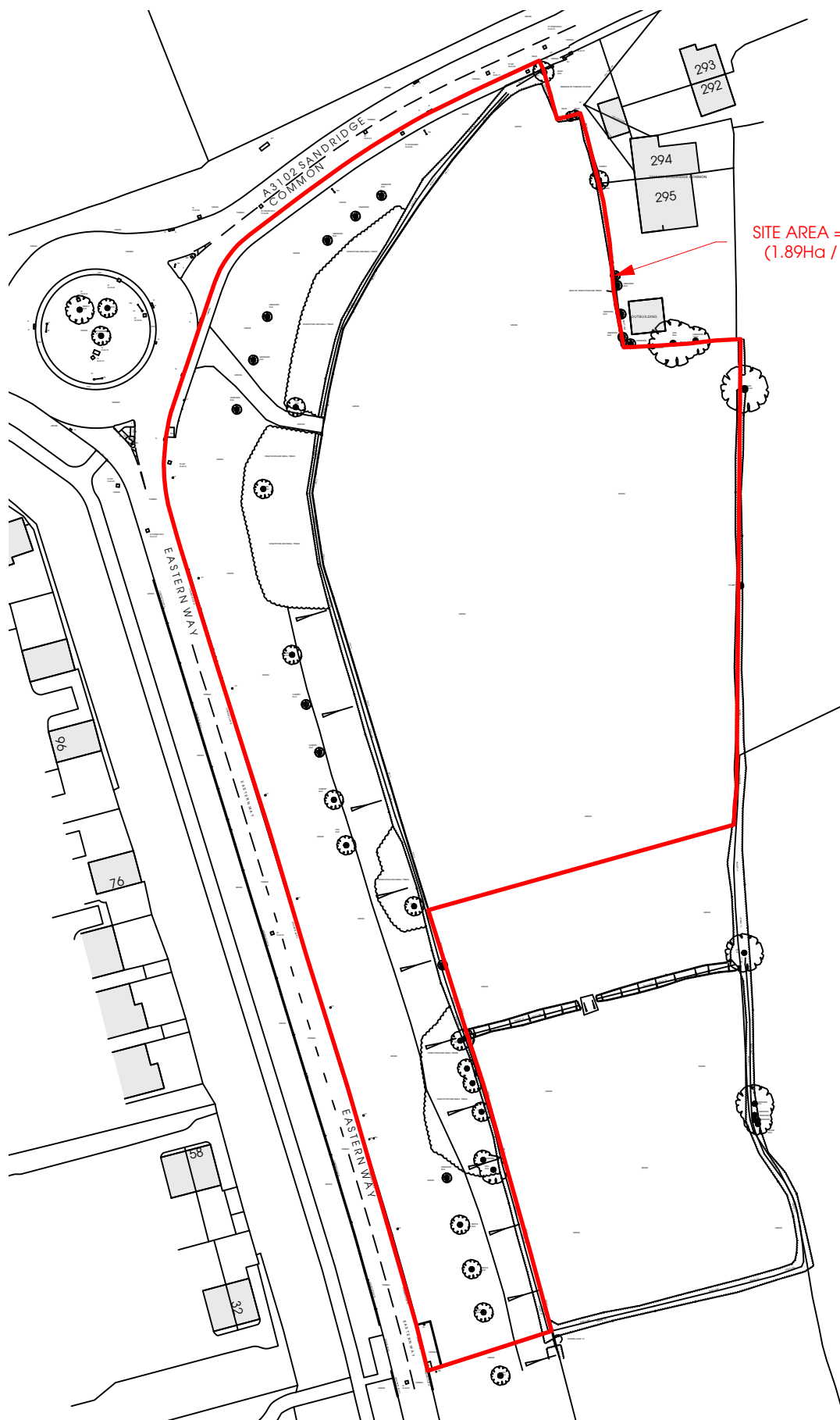
Conclusion

- 7.8 Having completed this drainage technical note, the conclusion is the proposed new Lidl supermarket at Eastern Way, Melksham is not at risk of flooding and can be safely constructed without flooding itself and/or increasing the risk of flooding to downstream/surrounding properties.

APPENDIX A: Site Location



SITE AREA = 18,920 sqm
(1.89Ha / 4.67Acres)



Drawn	Scale	Description	Drawn
-------	-------	-------------	-------

htcarchitects

York Place Studio
8 Bellinco Street
Leeds
LS1 2DZ
T: 0113 264 3457

W: www.htcarchitects.co.uk
E: info@htcarchitects.co.uk

client

Lidl GB Ltd.



project

Melksham,
Eastern Way

drawing title

Site Location Plan

date December 2025

status Planning

scale 1:1250 @ A4

drawn NG checked IC

job no. 4034 dwg no. P400 rev.



APPENDIX B: Flood Map for Planning

Flood map for planning

Your reference	Location (easting/northing)	Created
Unspecified	392234/164239	17 December 2025 10:18

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

You will need to do a flood risk assessment if your site is **any of the following**:

- bigger than 1 hectare (ha)
- in an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

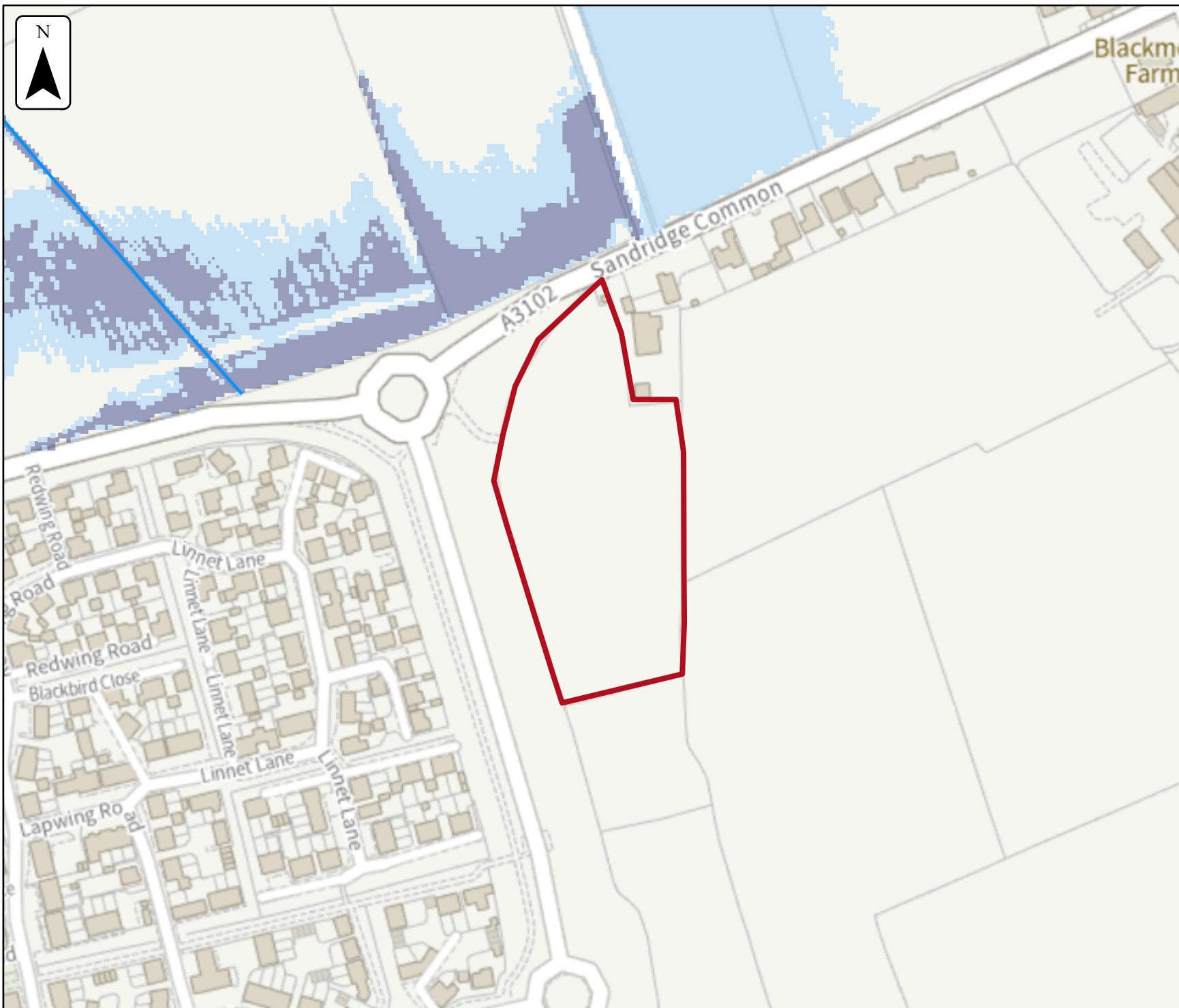
Notes

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.

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

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2025 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference

Unspecified

Location (easting/northing)
392234/164239

Scale
1:2,500

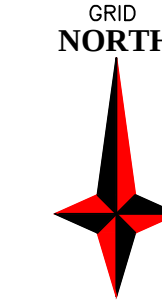
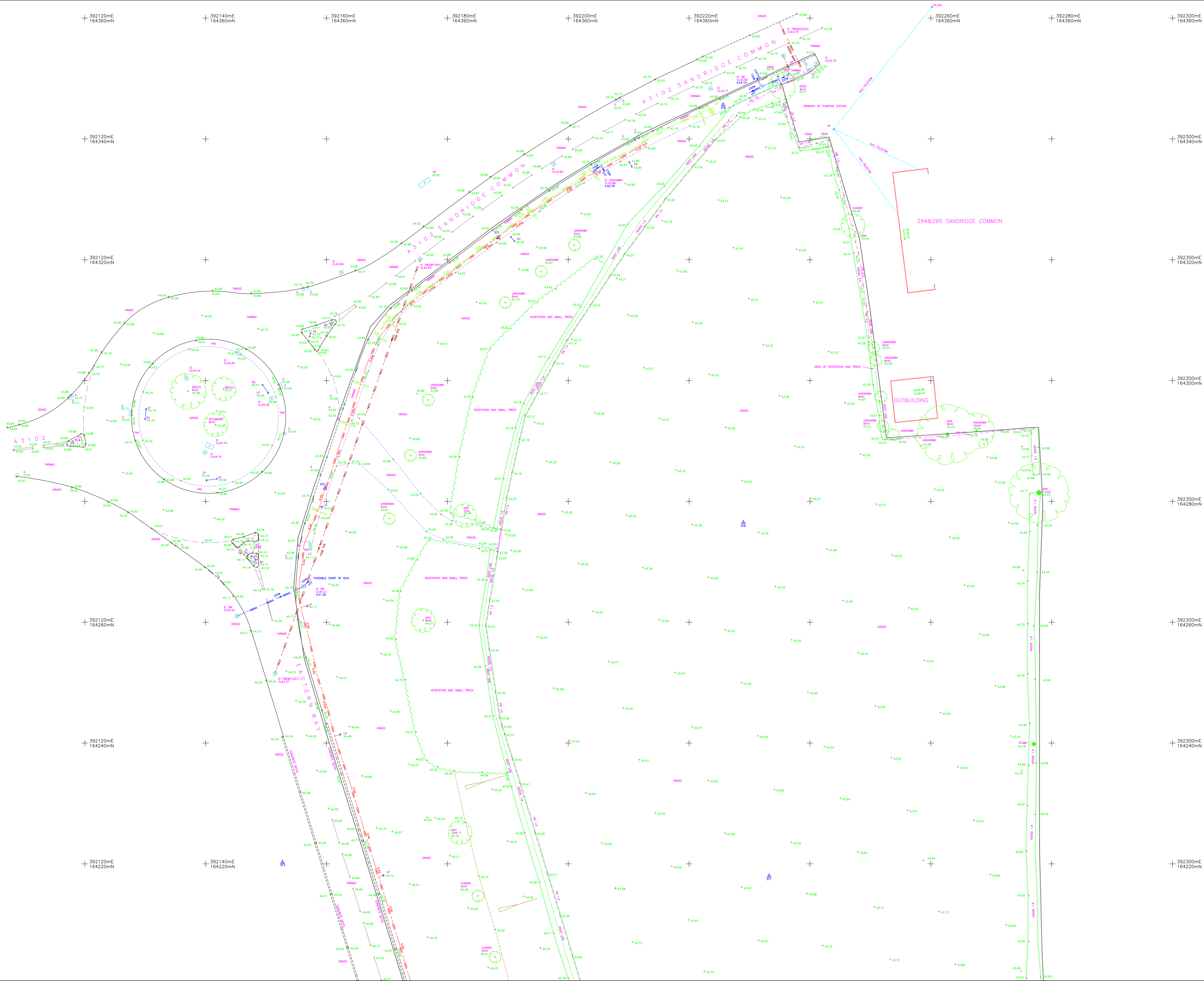
Created
17 Dec 2025 10:18

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area



0 20 40 60m

APPENDIX C: Topographic and CCTV Survey

[illegible]

Station		Schedule		
Station	Easting	Northing	Level	Type
	392180.118	164321.815	44.050	HtHt Ngt
	392159.745	164282.164	43.895	HtHt Ngt
	392152.718	164220.276	44.405	HtHt Ngt
	392173.817	164150.715	45.073	HtHt Ngt
	392211.452	164078.884	45.192	HtHt Ngt
	392247.363	164129.460	44.694	Peg
	392183.244	164179.799	43.685	Peg
	392228.987	164278.498	43.465	Peg
9	392225.648	164345.645	43.783	HtHt Ngt

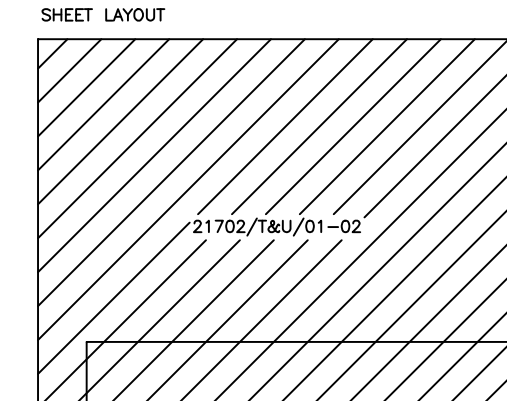
This survey has been carried out to PMS 120 Detection Method K2; EMZ sector transects of 5m intervals and 2m for GPR.

Utility Depth:-
Depths obtained by EMZ are to the centre of the utility
Depths obtained by GPR are to the top of the utility
All depths are shown in metres in the format 0.7d
Utility Confidence Level:-

- (a) Horizontal and vertical position verified visually (Accuracy: Horizontal $\pm 250mm$; Vertical $\pm 150mm$)
- (b) Horizontal and vertical position detected by multiple methods (Accuracy: Horizontal $\pm 150mm$; Vertical $\pm 100mm$ depth)
- (c) Horizontal and vertical position detected by a single method (Estimated Accuracy: $\pm 250mm$ Horizontal; $\pm 400m$ of detected depth)
- (d) Horizontal and vertical position detected by a single method (Estimated Accuracy: $\pm 500mm$ in the Horizontal - Depth is undefined)

Notes:- A utility segment is considered as suspected but has not been confirmed if the surface shown on assumed record

- (a) Routes transcribed from utility asset plans and correlated to visual inspection of surface
- (b) Routes transcribed from utility asset plans (accuracy undefined)



 Lidl Great Britain Ltd Central Park Palmer Avenue Severn Beach BS35 4DF	CLIENT
Topographic and Buried Utilities Survey Site off Eastern Way Melksham SN12 7QT	PROJECT



EDI SURVEYS LTD

163-165 Rowleigh Road, Ipswich, Suffolk IP2 6AH
 Telephone : 01473 211122
 Email : admin@edisurveys.co.uk

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 Surveying and CCTV, Drainage Investigations

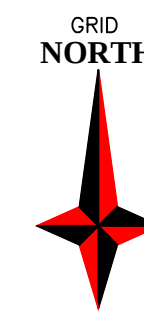
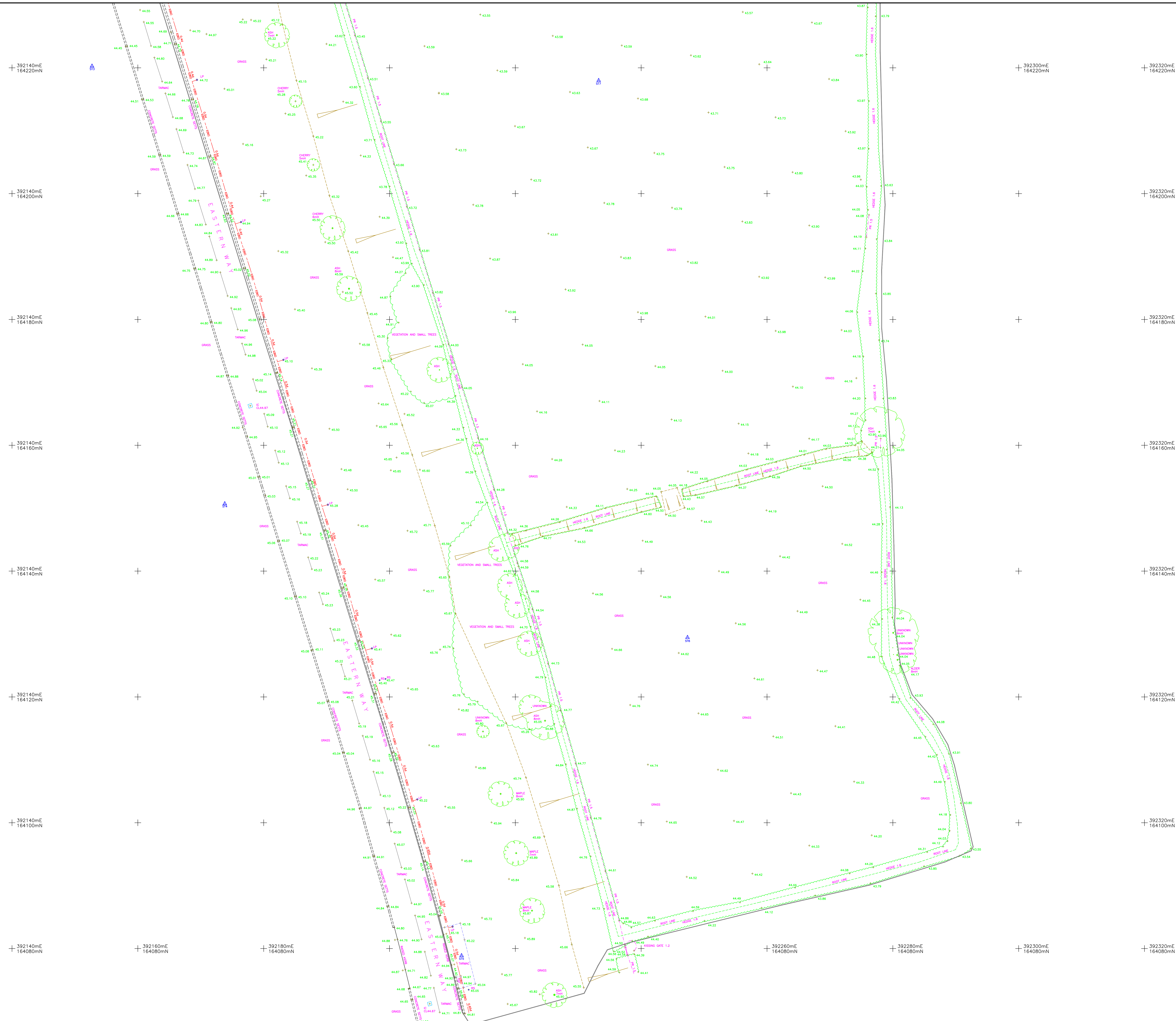
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DRAWING No. 21702/T&U/01-02	REV. -
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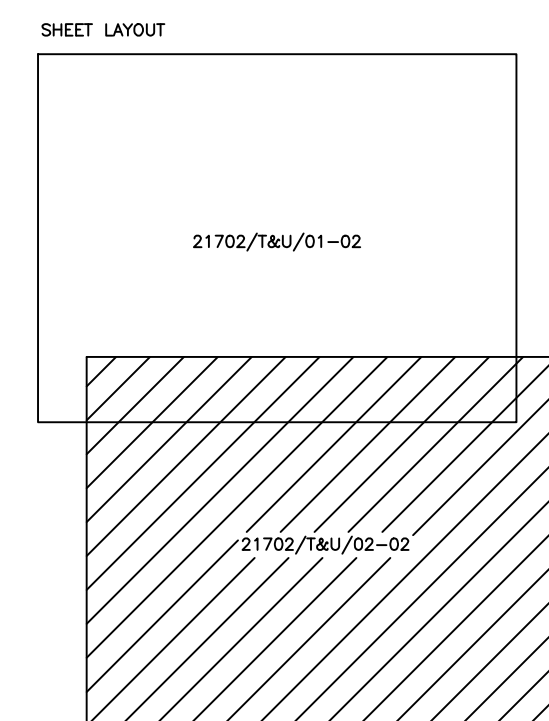
Station		Schedule		
Station	Easting	Northing	Level	Type
1	392188.419	164323.615	44.060	Hill Nail
2	392159.745	164282.164	43.895	Hill Nail
3	392152.718	164220.276	44.505	Hill Nail
4	392173.817	164150.715	45.073	Hill Nail
5	392211.452	164078.894	45.192	Hill Nail
6	39227.363	164129.460	44.694	Peg
7	392233.244	164217.394	43.685	Peg
8	392228.987	164276.498	43.465	Peg
9	392225.648	164345.645	43.783	Hill Nail

This survey has been carried out to PMS 128 Detection Method M2. EMI search intersects of 5m intervals and 2m for GPS.

Utility Depth:-
Depth is obtained by EMI, are to the centre of the utility. Depths obtained by GPS are to the top of the utility. All depths are shown in metres in the format 0.7d

Utility Confidence Levels:-

- (a) Horizontal and vertical position verified visually
Accuracy: Horizontal $\pm 250mm$ Vertical $\pm 150mm$
- (b) Horizontal and vertical position verified by multiple methods
Estimated Accuracy: $\pm 150mm$ OR $\pm 12\%$ of detected depth
- (c) Horizontal and vertical position detected by a single method
Estimated Accuracy: $\pm 250mm$ OR $\pm 20\%$ of detected depth
- (d) Horizontal position detected by a single method
Estimated Accuracy: $\pm 500mm$ in the Horizontal - Depth is unfettered
- (e) Horizontal position detected by a single method - has not been detected and is therefore shown as an assumed route
- (f) Route transcribed from utility asset plane and correlated to visual indicators
- (g) Route transcribed from utility asset plane (accuracy unfettered)
- (h) Route transcribed from utility asset plane (accuracy unfettered)

[illegible]

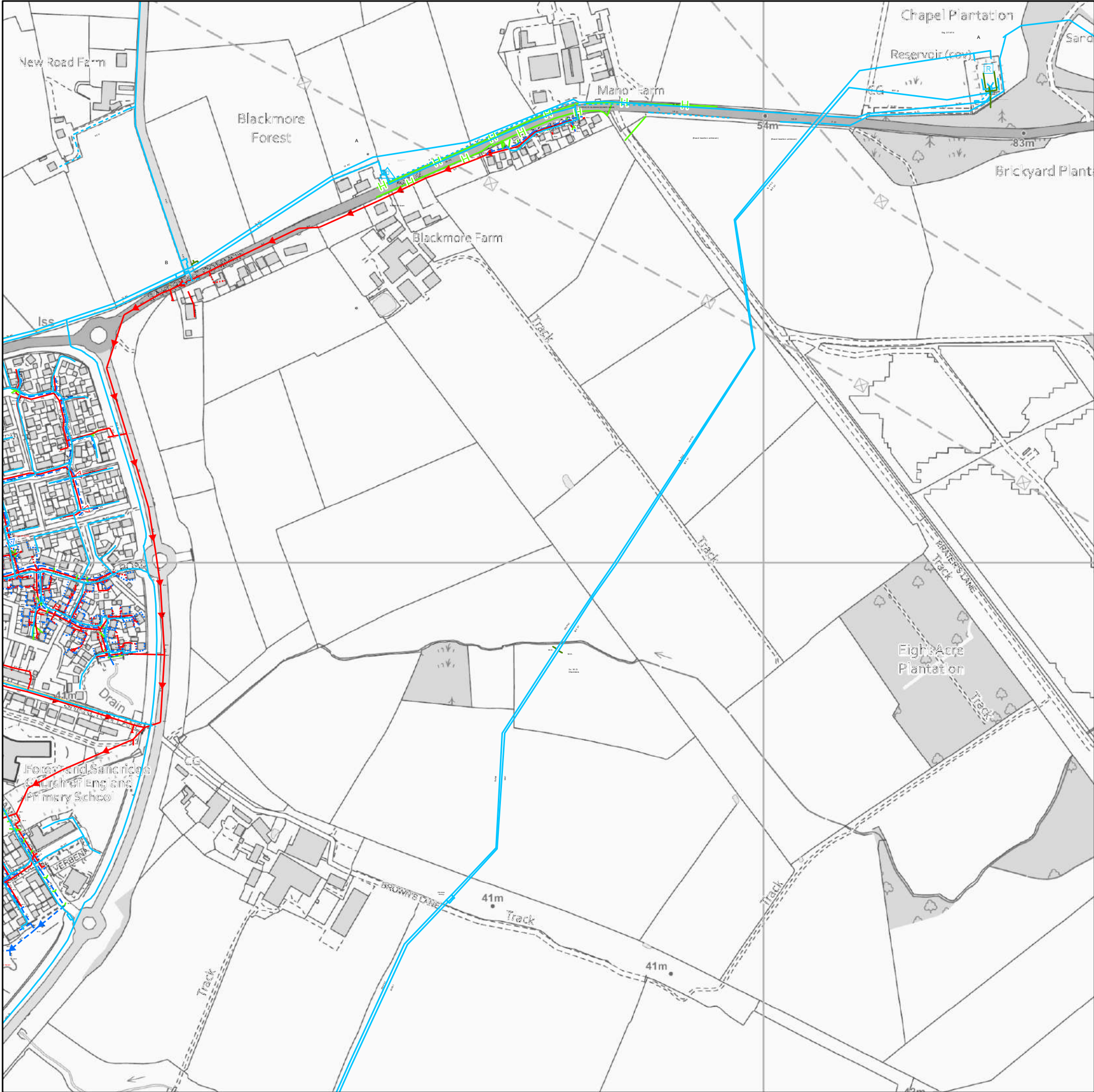
Rev/Job No	Date	Revision Detail	Surveyor	Checked
CLIENT				
Lidl Great Britain Ltd Central Park Palmer Avenue Severn Beach SS16 1DF				

PROJECT
Topographic and Buried Utilities Survey
Site off Eastern Way
Melksham
SN12 7QT

Job No.	Surveyor	Checked	Date	Scale
21702	A Kennell	TA	Jan. 2024	1:200

APPENDIX D: Wessex Water Sewer Records

Blackmore Farm, Melksham



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WATER MAINS		SEWERS		PUBLIC		PRIVATE		SECTION 104		OTHER WESSEX PIPES		NON-WESSEX / UNKNOWN	
	Distribution Main		Foul								Rising Mains		Private Rising Mains
	Washout Main		Surface								Effluent Disposal		Culverted Watercourse
	Raw Water Main		Combined								Overflow		Highway Drain
	Abandoned Main		Abandoned								Syphon		Use Unknown
	Private Main										Status Unknown		
Colours generally indicate the use of the sewer/drain (i.e Red - Foul, Dark Blue - Surface, Magenta - Combined/Dual Use, Light Green - Highway Drain, Mid Green - Overflow) styles of line are shown on the key in sample/typical colours.													
SITES		STRUCTURES								OTHER STRUCTURES			
	Source		Manhole - Foul		Pumping Station - Surface		Attenuation Tank		Tunnel		Interceptor		
	Reservoir		Manhole - Surface		Pumping Stn - Foul/Combined		Gully						
	Pump		Manhole - Combined		Vent Column		Rodding Eye						
	Treatment Works		Outfall		Catchpit		Flushing Chamber						
			Inlet		Soakaway		Non Return Valve						
			Lamphole		Washout		Air Valve						
			Bifurcation - Foul		Hatch Box								
			Bifurcation - Surface										
			Bifurcation - Combined										
			Combined Sewage Overflow										
Information in this plan is provided for identification purposes only. No warranty as to accuracy is given or implied. The precise route of pipe work may not exactly match that shown. Wessex Water does not accept liability for inaccuracies. Sewers and lateral drains adopted by Wessex Water under the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 are to be plotted over time and may not yet be shown. In carrying out any works, you accept liability for the cost of any repairs to Wessex Water apparatus damaged as a result of your works. You are advised to commence excavations using hand tools only. Mechanical digging equipment should not be used until pipe work has been precisely located. If you are considering any form of building works and pipe work is shown within the boundary of your property or a property to be purchased (or very close by) a surveyor should plot its exact position prior to commencing works or purchase. Building over or near Wessex Water's apparatus is not normally permitted.													
FITTINGS													
	Valve - Open												
	Valve - Closed												
	Fire Hydrant												
	Pressure Reducing Valve												
	Meter												

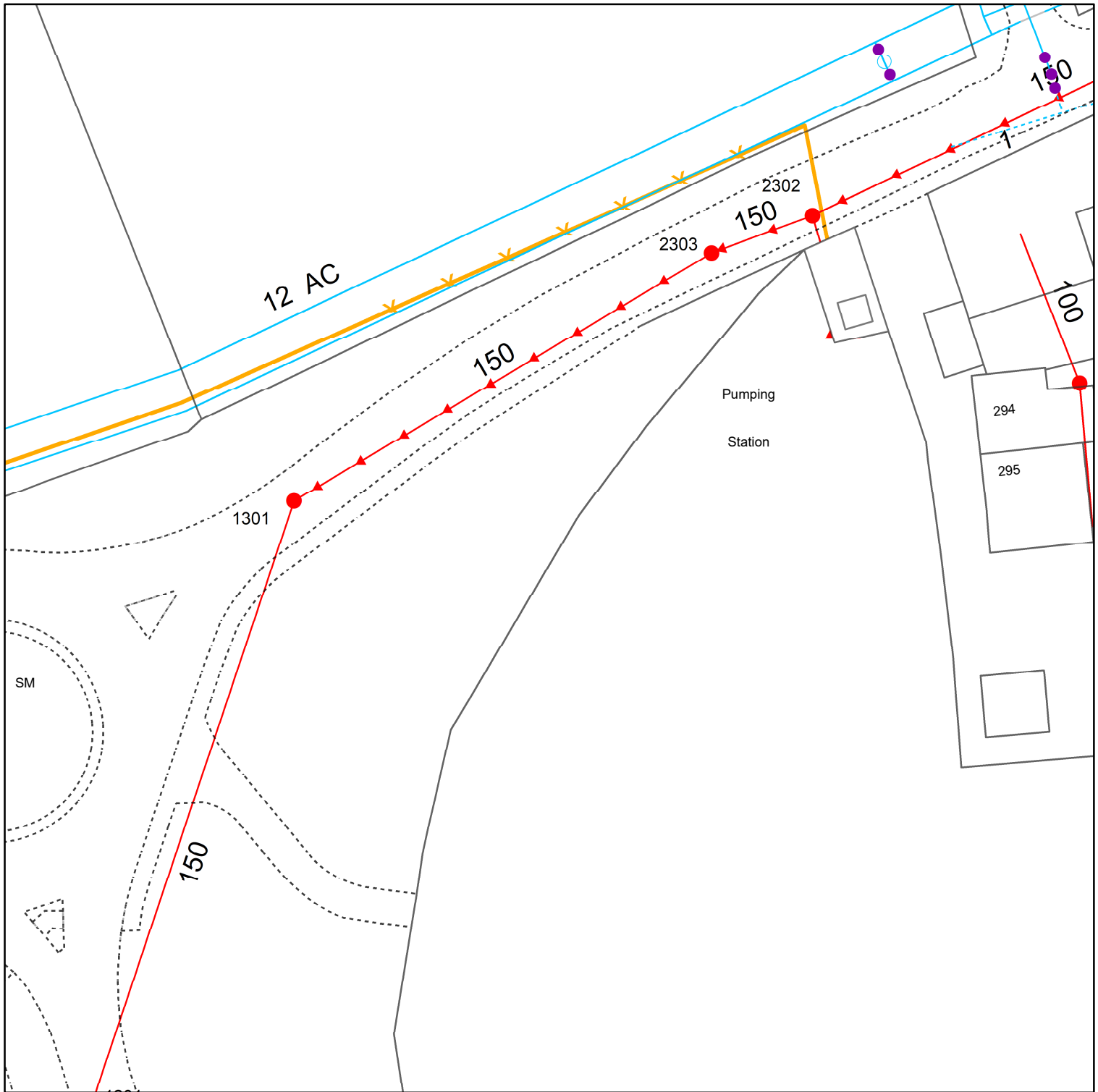
Wessex Water
YTL GROUP

Date: 06/05/2021, 12:36:07

Scale: 1:5000

Centre: 392723, 164021

Wessex Water Network Map



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WATER MAINS		SEWERS		STRATEGIC		PUBLIC		PRIVATE		SECTION 104		OTHER WESSEX PIPES		NON-WESSEX / UNKNOWN	
	Distribution		Foul		Surface								Rising Mains		Private Rising Mains
	Washout		Surface		Combined								Standby Rising Mains		Culverted Watercourse
	Raw Water		Abandoned										EDM Effluent Disposal		Highway Drain
	Abandoned												Overflow		Use Unknown
	Private												Syphon		Status Unknown
Colours generally indicate the use of the sewer/drain (i.e Red - Foul, Dark Blue - Surface, Magenta - Combined/Dual Use, Light Green - Highway Drain, Mid Green - Overflow). Some styles of line and symbol are shown on the key in sample/typical colours.															
FITTINGS		STRUCTURES													
	Hydrant		Manhole - Foul		Pumping Station - Surface										
	Other		Manhole - Surface		Pumping Stn - Foul/Combined										
			Manhole - Combined		Gully										
			Inlet		Vent Column										
			Outfall		Rodding Eye										
			Lamphole		Catchpit										
			Bifurcation - Foul		Flushing Chamber										
			Bifurcation - Surface		Soakaway										
			Bifurcation - Combined		Non Return Valve										
			Combined Sewage Overflow		Air Valve		Hatch Box		Washout						
OTHER STRUCTURES Attenuation Tank Chamber Storage Tank Tunnel Interceptor															
Wessex Water YTL GROUP															

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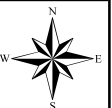
OTHER STRUCTURES

	Attenuation Tank		Chamber
	Storage Tank		Tunnel
			Interceptor

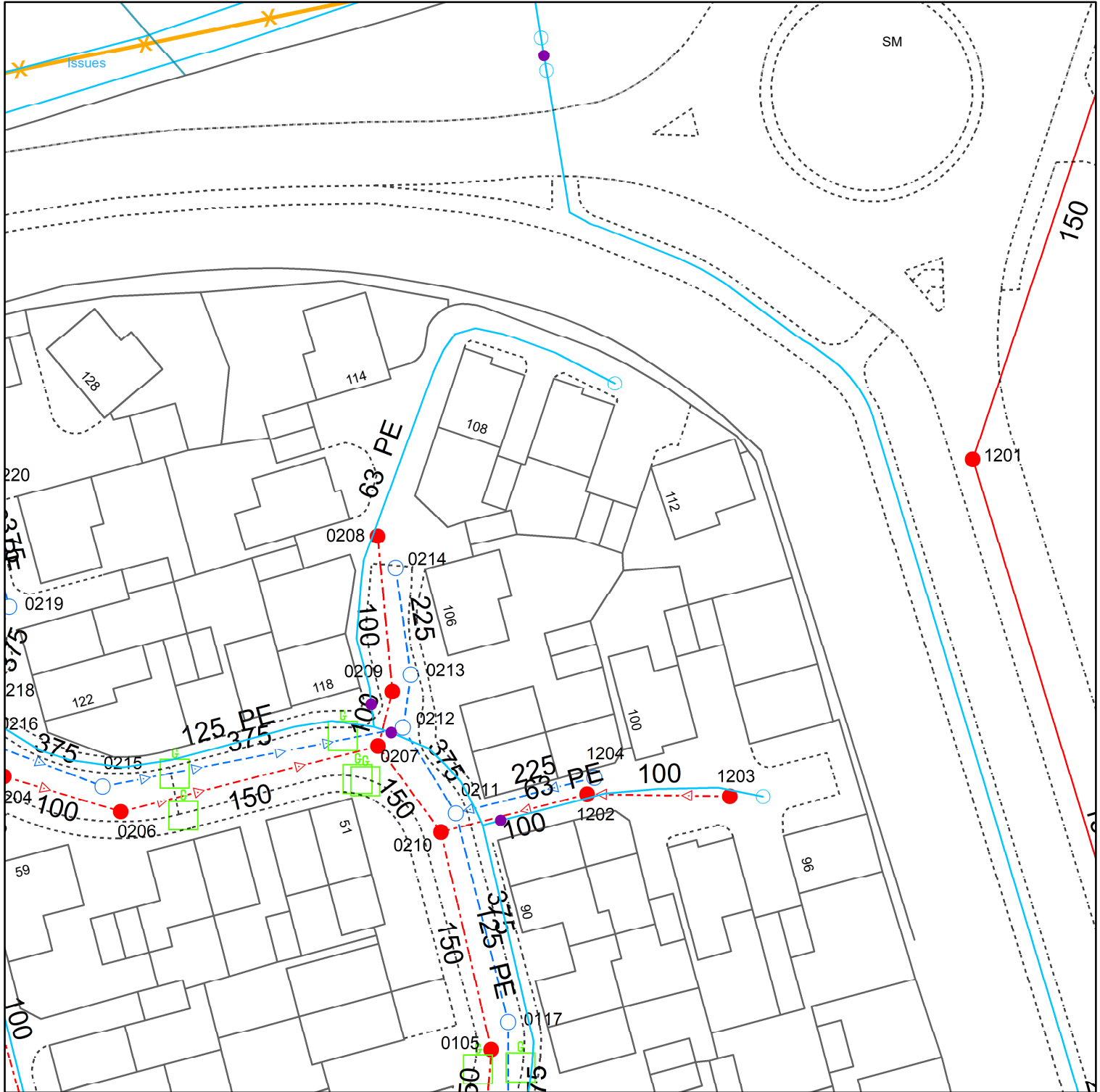
Wessex Water
YTL GROUP



Date: 12/03/2024
Centre: 392204, 164315
Scale: 1:625
(when printed at A4 size)



Wessex Water Network Map



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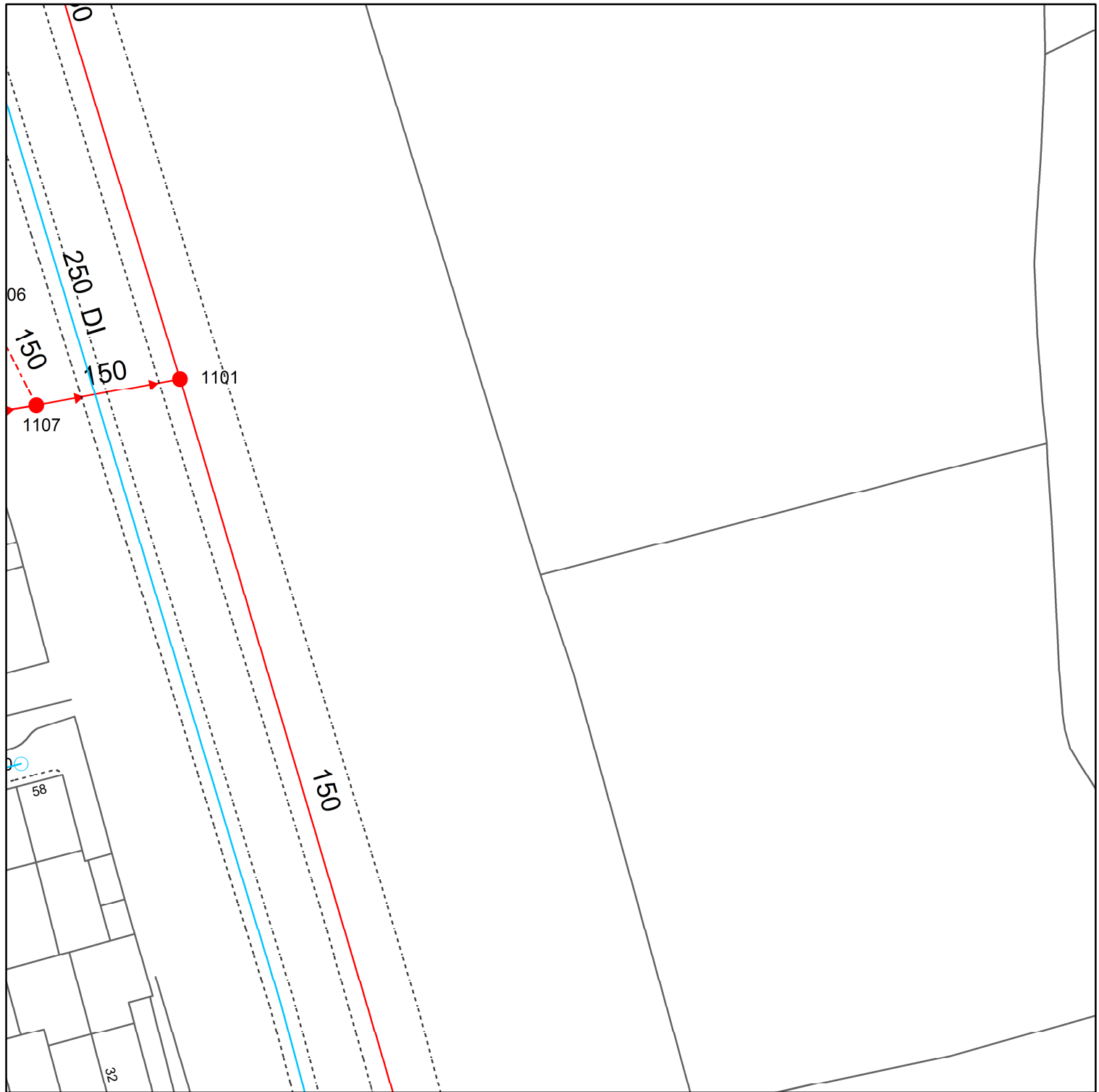
WATER MAINS	SEWERS	STRATEGIC PUBLIC	PRIVATE	SECTION 104	OTHER WESSEX PIPES	NON-WESSEX / UNKNOWN
Distribution	Foul	Surface	Surface	Surface	Rising Mains	Private Rising Mains
Washout	Surface	Combined	Combined	Combined	Standby Rising Mains	Culverted Watercourse
Raw Water	Abandoned	Abandoned	Abandoned	Abandoned	EDM Effluent Disposal	Highway Drain
Abandoned	Colours generally indicate the use of the sewer/drain (i.e. Red - Foul, Dark Blue - Surface, Magenta - Combined/Dual Use, Light Green - Highway Drain, Mid Green - Overflow).	Abandoned	Abandoned	Abandoned	Overflow	Use Unknown
Private	Some styles of line and symbol are shown on the key in sample/typical colours.	Abandoned	Abandoned	Abandoned	Syphon	Status Unknown
FITTINGS	STRUCTURES	STRUCTURES	STRUCTURES	STRUCTURES	OTHER STRUCTURES	OTHER STRUCTURES
Hydrant	Manhole - Foul	Pumping Station - Surface	Pumping Stn - Foul/Combined	Gully	Attenuation Tank	Chamber
Other	Manhole - Surface	Vent Column	Rodding Eye	Catchpit	Storage Tank	Tunnel
	Manhole - Combined	Flushing Chamber	Soakaway	Non Return Valve		Interceptor
	Inlet	Air Valve	Hatch Box	Washout		
	Outfall					
	Lamphole					
	Bifurcation - Foul					
	Bifurcation - Surface					
	Bifurcation - Combined					
	Combined Sewage Overflow					

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Wessex Water
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Date: 12/03/2024
Centre: 392104, 164242
Scale: 1:625
(when printed at A4 size)

Wessex Water Network Map

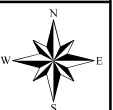


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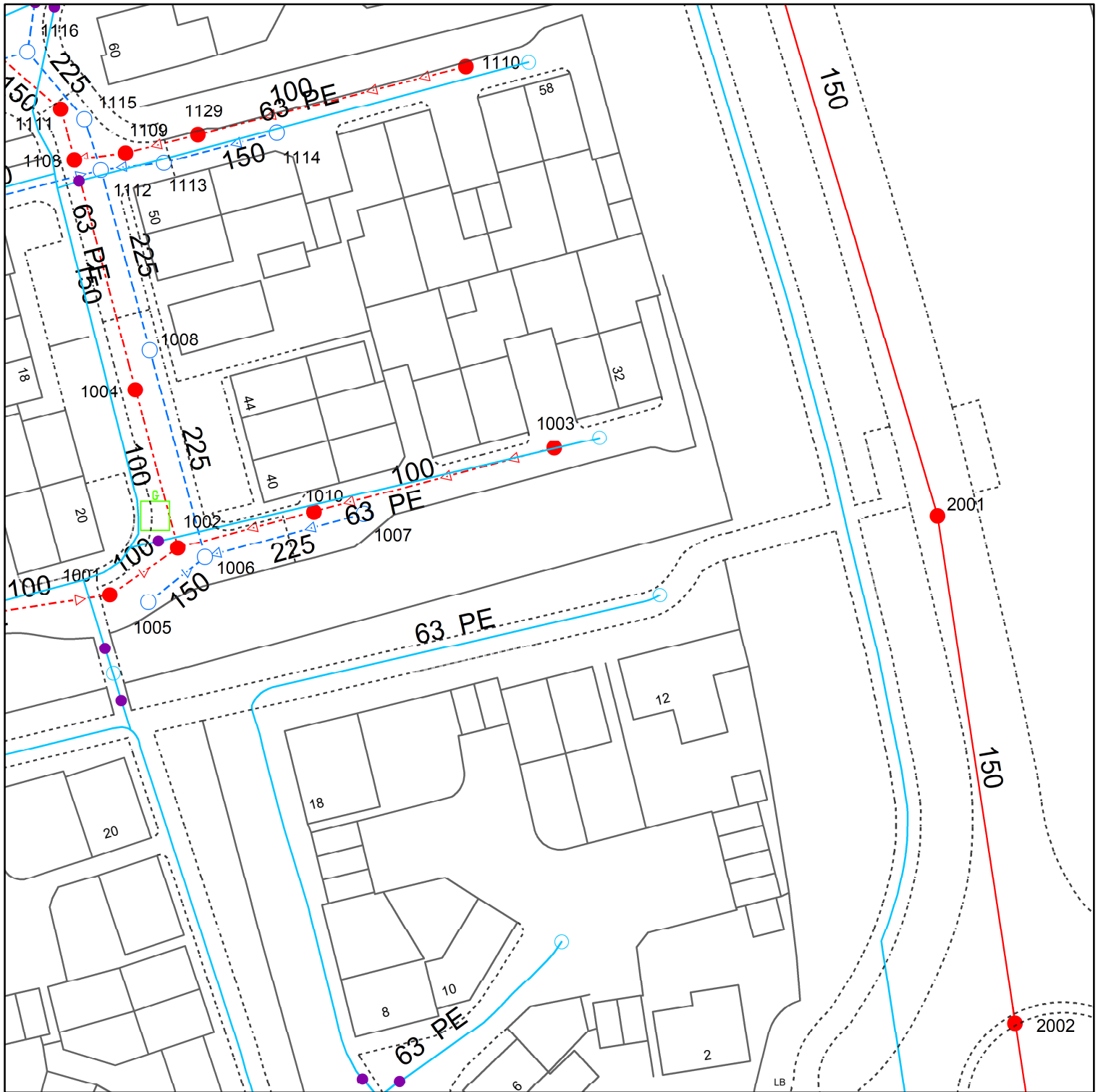
WATER MAINS	SEWERS	STRATEGIC	PUBLIC	PRIVATE	SECTION 104	OTHER WESSEX PIPES	NON-WESSEX / UNKNOWN
Distribution	Foul	Surface	Combined	Abandoned	Private	Rising Mains	Private Rising Mains
Washout	Surface	Combined	Abandoned	Private	Section 104	Standby Rising Mains	Culverted Watercourse
Raw Water	Abandoned	Private	Foul	Surface	Combined	EDM	Highway Drain
Abandoned	Foul	Surface	Combined	Abandoned	Private	Overflow	Use Unknown
Private	Foul	Surface	Combined	Abandoned	Private	Syphon	Status Unknown
FITTINGS	STRUCTURES	STRUCTURES	STRUCTURES	STRUCTURES	STRUCTURES	OTHER STRUCTURES	OTHER STRUCTURES
Hydrant	Manhole - Foul	Manhole - Surface	Manhole - Combined	Inlet	Outfall	Attenuation Tank	Chamber
Other	Lamphole	Bifurcation - Foul	Bifurcation - Surface	Bifurcation - Combined	Combined Sewage Overflow	Storage Tank	Tunnel
	Pumping Station - Surface	Pumping Stn - Foul/Combined	Gully	Vent Column	Rodding Eye		Interceptor
	Catchpit	Flushing Chamber	Soakaway	Non Return Valve	Air Valve		
	Hatch Box	Washout					

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Date: 12/03/2024
Centre: 392220, 164147
Scale: 1:625
(when printed at A4 size)



Wessex Water Network Map



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WATER MAINS		SEWERS		STRATEGIC		PUBLIC		PRIVATE		SECTION 104		OTHER WESSEX PIPES		NON-WESSEX / UNKNOWN	
	Distribution		Foul		Surface								Rising Mains		Private Rising Mains
	Washout		Surface		Combined								Standby Rising Mains		Culverted Watercourse
	Raw Water		Abandoned										EDM Effluent Disposal		Highway Drain
	Abandoned												Overflow		Use Unknown
	Private												Syphon		Status Unknown
Colours generally indicate the use of the sewer/drain (i.e Red - Foul, Dark Blue - Surface, Magenta - Combined/Dual Use, Light Green - Highway Drain, Mid Green - Overflow). Some styles of line and symbol are shown on the key in sample/typical colours.															
FITTINGS		STRUCTURES													
	Hydrant		Manhole - Foul		Pumping Station - Surface										
	Other		Manhole - Surface		Pumping Stn - Foul/Combined										
			Manhole - Combined		Gully										
			Inlet		Vent Column										
			Outfall		Rodding Eye										
			Lamphole		Catchpit										
			Bifurcation - Foul		Flushing Chamber										
			Bifurcation - Surface		Soakaway										
			Bifurcation - Combined		Non Return Valve										
			Combined Sewage Overflow		Air Valve		Hatch Box		Washout						
OTHER STRUCTURES Attenuation Tank Chamber Storage Tank Tunnel Interceptor															
Wessex Water YTL GROUP															

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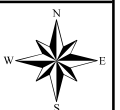
OTHER STRUCTURES

	Attenuation Tank		Chamber
	Storage Tank		Tunnel
			Interceptor

Wessex Water
YTL GROUP



Date: 12/03/2024
Centre: 392162, 164067
Scale: 1:625
(when printed at A4 size)



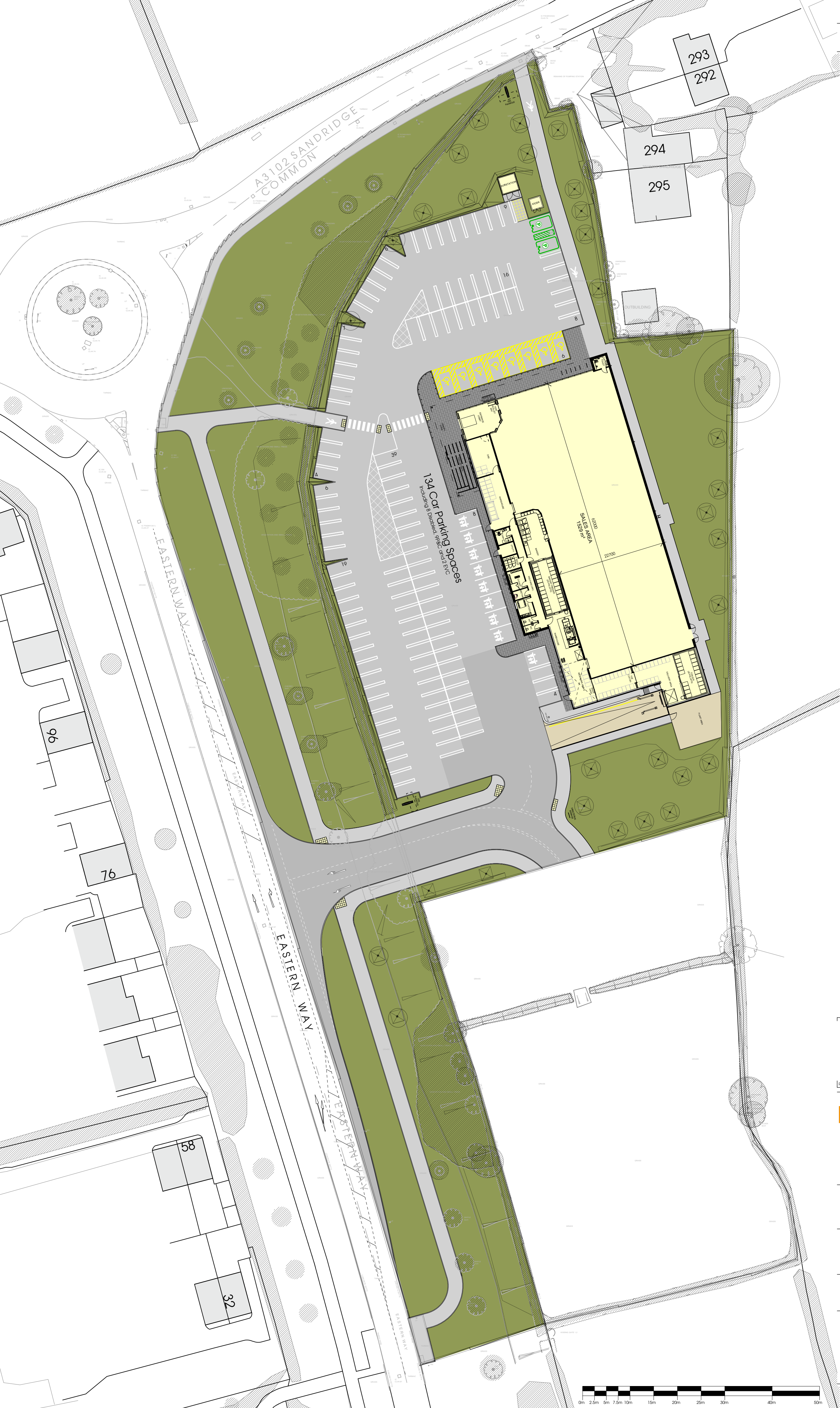
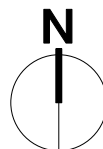
APPENDIX E: Proposed Site Plan

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TOPOGRAPHIC SURVEY - EDI SURVEYS REF: 21702

PELL FRISCHMAN LAYOUT
105414-PEF-XX-XX-DR-Y-001001-P06



B	14/01/2026	Additional 2no. accessible spaces added	IC
A	08/01/2026	Landscaping scheme overlaid	IC
Rev.	Date	Description	Drawn

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York Place Studio
8 Britannia Street
Leeds
LS1 2DZ
T: (0113) 244 3457

W: www.htcarchitects.co.uk
E: info@htcarchitects.co.uk

client
Lidl GB Ltd.

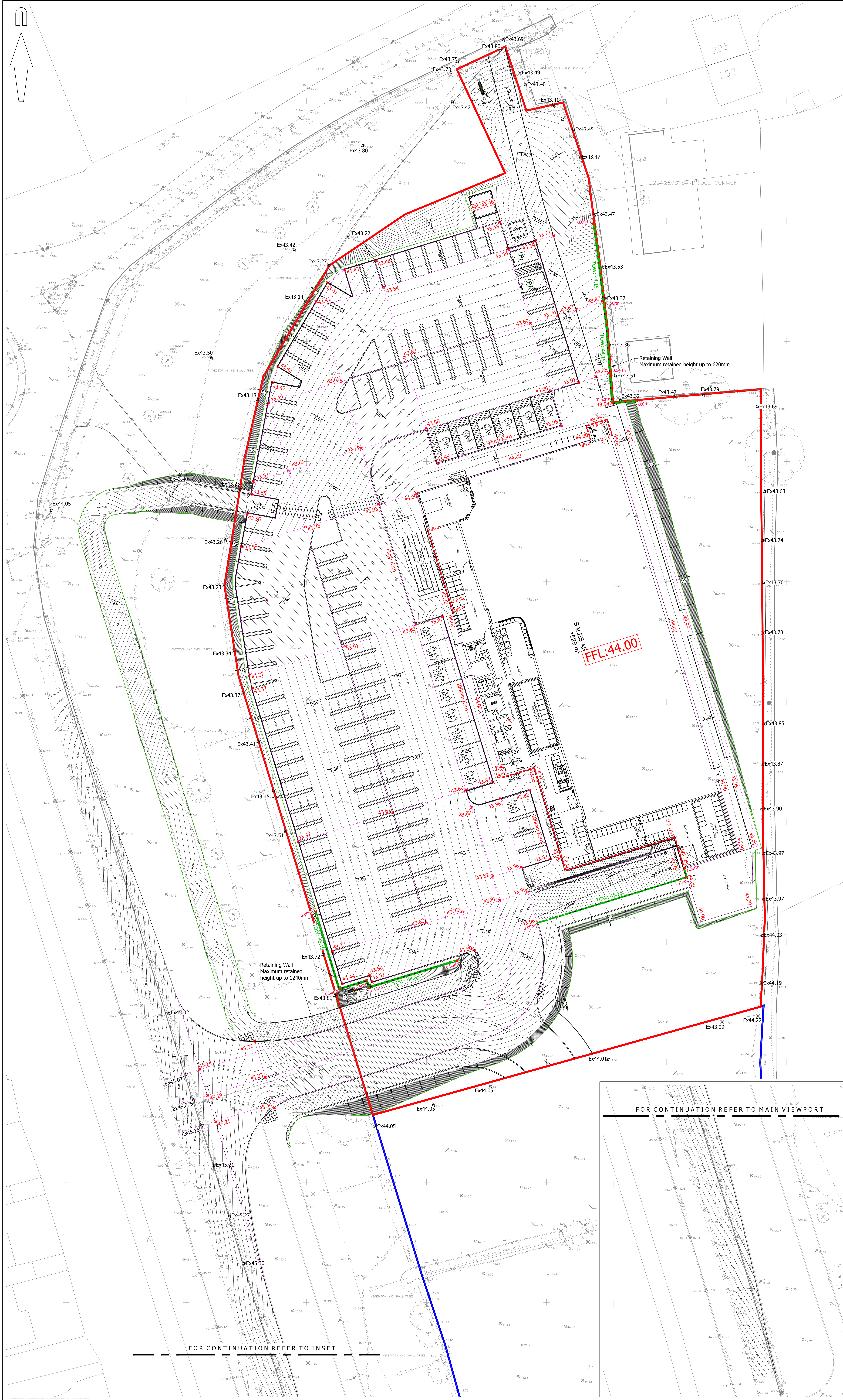


project
**Melksham,
Eastern Way**

drawing title
Proposed GA Site Plan

date **December 2025**
status **Planning**
scale **1:500 @ A2**
drawn **NG** checked **IC**
job no. **4034** dwg no. **P403** rev. **B**

APPENDIX F: Proposed Levels



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A0 ORIGINAL

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KEY:

- 39.35 ✖ PROPOSED SPOT LEVEL
- Ex39.35 EXISTING LEVELS
- 1/100 PROPOSED GRADIENT
- TOWN EX PROPOSED RETAINING WALL
- UB PROPOSED EXPOSED BRICKWORK
- CONSTRUCTION LINE
- RED LINE BOUNDARY

NOTES:

- This drawing is not to be scaled.
- Levels shown are in metres above Ordnance Datum (m AOD).
- Drawing based on HTC Architects' "1402" Proposed Setting Out Site Plan" revision A received on 08/12/2025.
- This drawing is to be read in conjunction with the following Mayer Brown drawing reference:
 - LIDLMELKSHAM.23/20 - Surface & Foul Water Drainage General Arrangement

KEY TO HEALTH AND SAFETY SYMBOLS

- INDICATES A RESIDUAL RISK REQUIRING A COMPULSORY ACTION.
- INDICATES A RESIDUAL RISK FOR INFORMATION.
- INDICATES A RESIDUAL RISK REQUIRING A PROHIBITIVE ACTION.
- INDICATES A RESIDUAL RISK AS A WARNING.

FOR INFORMATION

rev.	amendment	checked	date
P4	Levels design and contours updated. (TC)	SF	17/02/2026
P3	Levels Design Updated	SF	24/12/2025
P2	Surface Water Drainage Added	SF	11/09/2025
P1	Initial Issue. (TC)	SF	22/04/2024

client	project
LIDL GREAT BRITAIN LIMITED	PROPOSED LIDL FOODSTORE MELKSHAM, EASTERN WAY

scale	drawn by	checked by
1:200	TC	SF

date	cad file
DECEMBER 2025	11.DWG

ENGINEERING LAYOUT - LEVELS & RETENTION		
Mayer Brown Limited jobcode	subality	revision
		P4

drawing number
LIDLMELKSHAM.23/11

APPENDIX G: Obsidian Geo Consultants SI Report Extracts

Any plans appended to this report should not be used for scaling purposes.

2 The Site

2.1 Site Location

The site area is approximately 1.12 hectares, centred around National Grid Reference: 392230, 164250. The nearest postcode to this site is: SN12 7QS. The site is shown on the appended Site Location Plan (24-1905-P-P/01/A).

2.2 Site Description

The proposed plot comprises a grassed field which is bounded to the north, east and west by a livestock fence with hedgerow and tree coverage along the boundaries. The southern boundary is not defined with the field extending further southwards. The field is accessed through a wooden livestock gate within the north-western boundary.

During the walkover in March 2024, the ground surface across the field was wet and boggy and exhibited significant water retention. Although the field was grassed and relatively level, the soft and loose nature of the near surface soil may suggest that it has been ploughed in the past resulting a greater degree of near surface disturbance. This observation can be proven with aerial imagery.

During the ground investigation in October 2025, the ground surface across the field was dry.

The highway verges and roads of Eastern Way and Sandridge Common are present to the west and north respectively. The wider areas to the north, east and south are agricultural fields with sparse residential coverage to the northeast and a newly constructed residential estate to the west. There are a number of newly formed drainage ditches to the west, adjacent to Eastern Way and the residential estate potentially indicating wider issues around surface water drainage and infiltration.

Photographs are presented as Appendix A.

3 Review of Previous Desk Study Report

The site has been the subject of a previous Geo-Environmental Desk Study:

- Obsidian Geo-Consulting Limited, Geo-Environmental Desk Study Report 24-1905-P-R1 dated March 2024.

The salient points of the Desk Study are detailed within the following sections.

3.1 Site History

A review of the available historical maps from 1881 indicate that the site has not been subject to development itself, however, there have been some significant residential and infrastructure developments to the west and north of the site. Historical aerial imagery indicates that the agricultural field has been used for both crops and grazing.

3.2 Geology, Hydrogeology and Hydrology

3.2.1 Geology and Hydrogeology

There are no superficial deposits mapped on site. The bedrock is Oxford Clay Formation.

There is no superficial aquifer identified on the site, and the bedrock is unproductive strata.



3.2.2 Hydrology

The River Avon runs northeast to southwest, approximately 1.5km west of the site. The nearest surface water feature is located approximately 129m west of the site and is a tributary of the River Avon.

According to the Envirocheck report, the northern area of the site is considered to be at low risk from surface water flooding.

3.3 Environmental Considerations from Desk Study

Limited low-level risks have been identified relating to identified human health and buried infrastructure receptors posed by the presence of localised metals, PAH, TPH pesticides, herbicides, and asbestos associated with historical activity and Made Ground.

There is also a potential low-level risk for ground gases from both Made Ground and natural strata.

These risks cannot be removed through a desk-based risk assessment alone and hence it is recommended that these potential risks are assessed further through an appropriate intrusive investigation which should be sufficient in scope to assess the potential risks and enable development of a remedial strategy for the site if required.

The data from the Envirocheck Report indicates that no Radon protective measures are required on site.

3.4 Geotechnical Considerations from Desk Study

Based on the anticipated geology, it is likely that conventional strip or trench fill foundations will be appropriate, subject to confirmation.

Elevated pH and water-soluble sulphates can arise from Made Ground and natural strata; however, this is deemed to be low risk.

There is a likelihood of limited tree/hedgerow influence on proposed foundations. It was recommended that a tree survey be undertaken, and the findings assessed in conjunction with a geotechnical assessment.

3.5 Preliminary Source-Pathway-Receptor Relationships

The preliminary Source-Pathway-Receptor relationships identified for the site bearing in mind the anticipated redevelopment proposals are summarised as follows:

Table 3.1: Preliminary Source-Pathway-Receptor Relationships

Source Material/Activity	Potential Contaminant	Pathways	Receptor	Risk
Made Ground on site and off site	Metals, PAH, TPH	Inhalation, Ingestion, Dermal contact	Future Site Workers, Customers, Construction workers	Low
	Asbestos	Inhalation	Future site workers, Customers, Construction workers	Low
Agriculture on site	Herbicides, Pesticides, TPH	Inhalation, Ingestion, Dermal contact	Future site workers, Customers, Construction workers	Low
Made Ground and Natural Strata on site	Water-soluble Sulphate	Aggressive attack	Buried concrete	Low



5.1.1 Made Ground Topsoil

Made Ground Topsoil was encountered in all exploratory points (WS101-WS112) from surface to typically 0.10m bgl. Borehole WS109 identified Topsoil to 0.20m bgl. It comprised a dark brown, slightly sandy clay with frequent rootlets.

5.1.2 Made Ground

Made Ground was found beneath the Topsoil in all exploratory points (WS101-WS112) to between 0.30m and 0.50m bgl, with the exception of borehole WS106, where Made Ground was found to 0.80m bgl. It typically comprised brown or brown mottled, orange brown, gravelly clay. Gravel included mainly brick fragments with some charcoal and quartzite.

5.1.3 Oxford Clay Formation

The Oxford Clay Formation was found beneath the Made Ground Topsoil in all exploratory points (WS101-WS112) to the base of the boreholes at 5.00m bgl. It was generally encountered as a brown mottled, orange brown clay overlying a grey mottled orange brown clay. These two layers are considered to be weathered in nature. Beneath the weathered layers, a brown mottled dark grey overlying a grey mottled brown clay was encountered. Throughout these layers, calcareous concretions, selenite crystals, shell fragments, and relict rootlets were observed. Occasional iron nodules were also noted.

5.2 Standard Penetration Tests (SPTs)

SPTs were undertaken within the window sample boreholes at regular intervals. The recorded, uncorrected SPT 'N' Values for the window samples are summarised in Table 5.1.

Table 5.1: Uncorrected SPT 'N' Values from the Window Sample Boreholes

Depth (m bgl)	Exploratory Hole											
	WS101	WS102	WS103	WS104	WS105	WS106	WS107	WS108	WS109	WS110	WS111	WS112
1.00	15	21	21	15	16	22	16	15	15	18	17	13
2.00	21	14	17	17	17	17	18	16	19	17	15	20
3.00	21	22	19	16	24	16	18	23	18	19	21	22
4.00	20	23	20	19	19	16	17	23	18	20	19	15
5.00	23	24	23	25	27	24	26	28	29	30	30	29

 Oxford Clay Formation

SPT results indicate that the Oxford Clay Formation is competent and will provide a suitable founding strata for the proposed store building.

5.3 Groundwater

Groundwater was encountered in borehole WS106 only at 4.00m bgl. This is likely to be perched surface water within the clay.

During the subsequent monitoring visits, the following, standing groundwater levels were recorded:

Table 5.2: Recorded Standing Groundwater Levels

Monitoring Well	Recorded Water Depth (m bgl)			
	27/10/2025	06/11/2025	12/11/2025	21/11/2025
WS101	Dry	Dry	4.22	3.60
WS107	Dry	Dry	4.28	1.21
WS112	Dry	Dry	4.13	3.80



All boreholes were dry during the first and second visits. Significant rainfall has occurred since the second visit, with some water recorded in the monitoring wells. However, this is likely trapped and perched surface water rather than true groundwater.

A monitoring well (WS01) from a previous ground investigation was also monitored during this period. The first visit recorded groundwater at 3.10m bgl and the second at 2.95m bgl. The final two visits within the period of significant rainfall found the borehole to be flooded. As previously mentioned, this water is likely to be trapped and perched surface water within the monitoring well.

5.4 Chemical Laboratory Analysis Results

The results of the chemical laboratory analysis have been reviewed and screened in line with the current legislative framework and criteria to assess the risk to human health.

The screening has been undertaken using the Obsidian OB-Screen Human Health Screening Tool which compares the recorded concentrations to the DEFRA 'Category 4 Screening Levels' (C4SL's) and the LQM/CIEH 'Suitable 4 Use Levels' (S4UL's) to be protective of human health. Where C4SL's and S4UL's are not available, the EIC/AGS/CL:AIRE Generic Assessment Criteria (GAC's) have been used. Given the proposals, the Commercial end use scenario has been adopted.

Soil Organic Matter (SOM) analysis has been undertaken to determine the most appropriate screening values for organic contaminants. Based on the average values, 6.0% SOM has been adopted for the screening assessment.

5.4.1 Metals

Eight samples have been analysed for metals. None of the recorded concentrations exceed their adopted screening values.

5.4.2 Total Cyanide and Phenol

Eight samples have been analysed for total cyanide and phenol. None of the recorded concentrations exceed their adopted screening values.

5.4.3 PAHs

Eight samples were analysed for a suite of speciated PAHs with three additional samples also analysed for PAHs as part of a WAC suite. None of the recorded concentrations exceed their adopted screening values.

5.4.4 Asbestos

Eight samples were screened for the presence of fibrous asbestos materials. No asbestos fibres were detected in any of the samples.

5.4.5 TPH CWG, BTEX & MTBE

Two samples were analysed for speciated TPH and BTEX including MTBE with three additional samples also analysed for BTEX as part of a WAC suite. None of the recorded concentrations exceeded their adopted screening values.

5.4.6 OCP Pesticides and Triazine Herbicides

Two samples were analysed for OCP pesticides and triazine herbicides. Neither sample recorded contaminants exceeding the limit of detection.

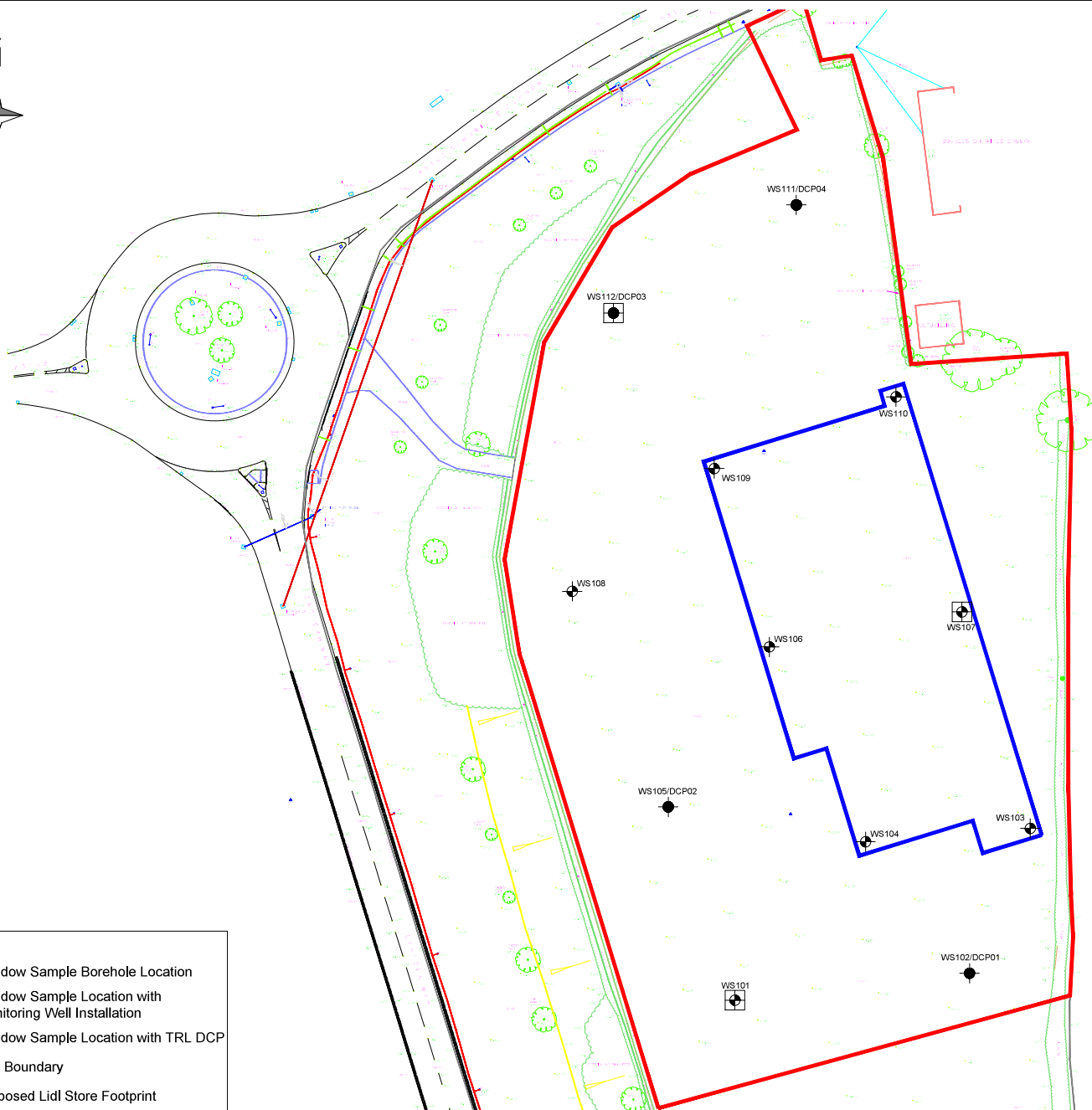
The results of the screening assessments are presented in Appendix E.





Key:

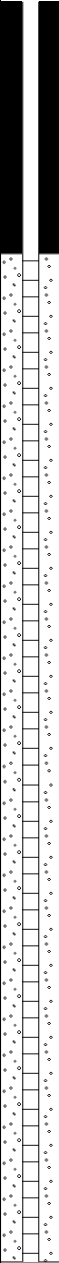
	Window Sample Borehole Location
	Window Sample Location with Monitoring Well Installation
	Window Sample Location with TRL DCP
	Site Boundary
	Proposed Lidl Store Footprint



PROJECT:
Proposed Lidl Store, Eastern Way, Melksham

TITLE:
Exploratory Hole Location Plan

PROJECT NO:	24-1905-P	DRAWING NO:	02
REVISION:	A	SCALE:	NTS
DRAWN BY:	BM	DATE:	23/10/2025
APPROVED BY:	SMD	DATE:	23/10/2025

		Percussion Drilling Log													
Project Name: Lidl, Eastern Way				Client: Lidl Great Britain Ltd				Date: 21/10/2025							
Location: Melksham				Contractor: Obsidian Geo-Consulting Ltd											
Project No. : 24-1905-P				Crew Name: Boreworx Ltd				Drilling Equipment: Window Sampling Rig							
Borehole Number WS101		Hole Type WS		Level		Logged By NK		Scale 1:30		Page Number Sheet 1 of 1					
Well 	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description							
		Depth (m)	Type	Results											
		0.05	ES					0.10				MADE GROUND TOPSOIL: Grass over dark brown, slightly sandy clay with frequent rootlets.			
		0.20	ES					0.30				MADE GROUND: Brown, gravelly CLAY. Gravel of fine to coarse, subangular to subrounded brick fragments, quartzite and charcoal. Frequent rootlets.			
								0.70				Stiff, brown mottled orange brown and light grey CLAY with occasional rootlets. OXFORD CLAY FORMATION			
								1.00				Stiff, greyish brown mottled orange brown CLAY with occasional calcareous concretions. OXFORD CLAY FORMATION			
		1.00	SPT	N=15 (3,3/3,4,4,4)				1.00				Stiff, brownish grey mottled orange brown CLAY with calcareous concretions. OXFORD CLAY FORMATION			1
		1.20	D					1.50				Stiff, grey mottled orange brown CLAY with occasional relict rootlets and calcareous concretions. Rare shell fragments. OXFORD CLAY FORMATION			
								2.00							
		2.00	SPT	N=21 (4,4/4,4,6,7)											2
		2.20	D												
								3.00							
		3.00	SPT	N=21 (3,4/4,5,5,7)											3
		3.20	D												
								4.00							
4.00	SPT	N=20 (3,4/4,4,6,6)							4						
			4.60												
			5.00			Stiff, dark grey mottled brown CLAY with rare shell fragments and sand sized selenite crystals. OXFORD CLAY FORMATION									
															
															
															
															
															
															
															
															
															
															
															
															
															
															
End of Borehole at 5.000m												5			
												6			
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation							
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation				
Remarks															
1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Gas and groundwater monitoring well installed as detailed above.															

Percussion Drilling Log

Project Name: Lidl, Eastern Way		Client: Lidl Great Britain Ltd		Date: 21/10/2025	
Location: Melksham		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1905-P		Crew Name: Boreworx Ltd		Drilling Equipment: Window Sampling Rig	
Borehole Number WS102	Hole Type WS	Level	Logged By NK	Scale 1:30	Page Number Sheet 1 of 1

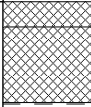
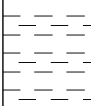
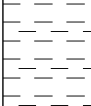
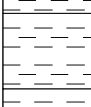
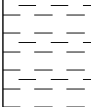
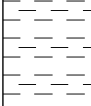
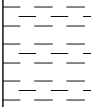
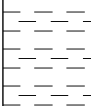
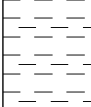
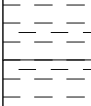
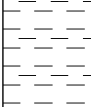
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05	ES		0.10			MADE GROUND TOPSOIL: Grass over dark brown, slightly sandy clay with frequent rootlets.	1
		0.20	ES		0.30			MADE GROUND: Brown gravelly CLAY. Gravel of fine to coarse, subangular to subrounded brick fragments and charcoal. Frequent rootlets.	
								Stiff, brown mottled orange brown and grey CLAY with occasional rootlets. OXFORD CLAY FORMATION	
		0.90	D		0.80			Stiff, dark grey mottled orange brown CLAY with calcareous concretions.	2
		1.00	SPT	N=21 (4,5/5,5,5,6)				OXFORD CLAY FORMATION	
					1.70			Stiff, grey mottled orange brown CLAY with calcareous concretions and relict rootlets. Occasional iron nodule pockets and shell fragments.	3
		1.90	D					OXFORD CLAY FORMATION	
		2.00	SPT	N=14 (5,3/3,3,4,4)				Stiff, brown mottled dark grey CLAY with occasional shell fragments and sand sized selenite crystals.	4
					3.00			OXFORD CLAY FORMATION	
		2.90	D		3.50			Stiff, dark grey mottled brown CLAY with occasional shell fragments and sand sized selenite crystals. Some iron staining in places.	5
		3.00	SPT	N=22 (4,4/4,5,6,7)				OXFORD CLAY FORMATION	
		3.90	D					Stiff, dark grey mottled brown CLAY with occasional shell fragments and sand sized selenite crystals. Some iron staining in places.	6
		4.00	SPT	N=23 (4,5/5,5,6,7)				OXFORD CLAY FORMATION	
		5.00	SPT	N=24 (4,5/5,6,6,7)	5.00			End of Borehole at 5.000m	

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
 1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Borehole backfilled with arisings upon completion.

Percussion Drilling Log

Project Name: Lidl, Eastern Way		Client: Lidl Great Britain Ltd		Date: 21/10/2025	
Location: Melksham		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1905-P		Crew Name: Boreworx Ltd		Drilling Equipment: Window Sampling Rig	
Borehole Number WS103	Hole Type WS	Level	Logged By NK	Scale 1:30	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05	ES		0.10			MADE GROUND TOPSOIL: Grass over dark brown, slightly sandy clay with frequent rootlets.	1
		0.30	ES		0.40			MADE GROUND: Brown gravelly clay. Gravel of fine to coarse, subangular brick fragments and charcoal. Frequent rootlets.	
		1.00	SPT	N=21 (4,4/4,5,6,6)	1.30			Stiff, grey mottled brown becoming orange brown CLAY with occasional rootlets and calcareous concretions. OXFORD CLAY FORMATION	
		1.10	D		1.60			Stiff, grey slightly mottled orange brown CLAY with frequent calcareous concretions. OXFORD CLAY FORMATION	
		1.50	D					Stiff, grey mottled orange brown CLAY with occasional calcareous concretions, shell fragments and relict rootlets. Coarse gravel sized selenite crystals from 2.50m. OXFORD CLAY FORMATION	2
		2.00	SPT	N=17 (3,3/4,4,4,5)					
		2.10	D						3
		2.50	D						
		3.00	SPT	N=19 (4,4/4,4,5,6)					
		4.00	SPT	N=20 (4,4/5,5,5,5)	4.00			Stiff, brown mottled dark grey CLAY with coarse gravel sized selenite crystals. OXFORD CLAY FORMATION	4
		5.00	SPT	N=23 (4,4/5,5,6,7)	5.00				
								End of Borehole at 5.000m	5
									6

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Borehole backfilled with arisings upon completion.



Project Name: Lidl, Eastern Way

Location: Melksham

Project No. : 24-1905-P

Client: Lidl Great Britain Ltd

Contractor: Obsidian Geo-Consulting Ltd

Crew Name: Boreworx Ltd

Date: 21/10/2025

Drilling Equipment: Window Sampling Rig

Borehole Number
WS104

Hole Type
WS

Level

Logged By
NK

Scale
1:30

Page Number
Sheet 1 of 1

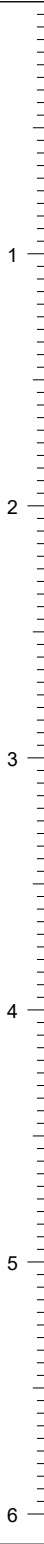
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05	ES		0.10		MADE GROUND TOPSOIL: Grass over dark brown, slightly sandy clay with frequent rootlets. MADE GROUND: Brown, gravelly clay. Gravel of fine to coarse, subangular brick fragments. Stiff, brown mottled orange brown and grey CLAY with occasional rootlets. OXFORD CLAY FORMATION Stiff, brown mottled orange brown CLAY with occasional rootlets. OXFORD CLAY FORMATION Stiff, grey mottled orange brown CLAY with frequent calcareous concretions and occasional sand sized selenite crystals. Some relict rootlets and shell fragments from 2.00m. OXFORD CLAY FORMATION	1	
		0.20	ES		0.30				
					0.50				
		0.70	D		0.80				
		1.00	SPT	N=15 (3,3/3,4,4,4)					
		1.30	D						
		2.00	SPT	N=17 (3,3/3,4,5,5)					
		2.30	D						
		3.00	SPT	N=16 (3,3/3,3,4,6)	3.00		Stiff, brown mottled dark grey CLAY with occasional sand sized selenite crystals and shell fragments. OXFORD CLAY FORMATION	3	
		4.00	SPT	N=19 (3,4/4,4,5,6)					
					4.50		Stiff, dark grey mottled brown CLAY with occasional shell fragments. OXFORD CLAY FORMATION		
		5.00	SPT	N=25 (4,4/5,5,7,8)	5.00		End of Borehole at 5.000m	5	
								6	

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

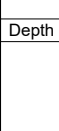
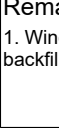
1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Borehole backfilled with arisings upon completion.



		Percussion Drilling Log									
Project Name: Lidl, Eastern Way				Client: Lidl Great Britain Ltd				Date: 21/10/2025			
Location: Melksham				Contractor: Obsidian Geo-Consulting Ltd							
Project No. : 24-1905-P				Crew Name: Boreworx Ltd				Drilling Equipment: Window Sampling Rig			
Borehole Number WS105		Hole Type WS		Level		Logged By NK		Scale 1:30		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.05	ES		0.10			MADE GROUND TOPSOIL: Grass over dark brown, slightly sandy clay with frequent rootlets.			
					0.30			MADE GROUND: Brown, gravelly clay. Gravel of fine to coarse, subangular brick fragments.			
		0.60	ES		0.70			Stiff, grey mottled brown and orange brown CLAY. Occasional iron nodules. OXFORD CLAY FORMATION			
		1.00	SPT	N=16 (3,3/4,4,4,4)	1.00			Stiff, grey mottled orange brown CLAY with calcareous concretions. OXFORD CLAY FORMATION			
		1.60	D					Stiff, grey mottled orange brown CLAY with calcareous concretions and relict rootlets. OXFORD CLAY FORMATION			
		2.00	SPT	N=17 (3,4/3,4,5,5)	2.00			Stiff, dark grey mottled brown CLAY with sand sized selenite crystals and occasional shell fragments. OXFORD CLAY FORMATION			
		2.60	D								
		3.00	SPT	N=24 (4,4/5,5,6,8)	3.00			Stiff, brown mottled dark grey CLAY with coarse gravel sized selenite crystals and shell fragments. OXFORD CLAY FORMATION			
		4.00	SPT	N=19 (3,3/4,4,5,6)							
		4.60	D		4.50			Stiff, dark grey mottled brown CLAY with coarse gravel sized selenite crystals and occasional shell fragments. OXFORD CLAY FORMATION			
		5.00	SPT	N=27 (5,5/5,6,7,9)	5.00			End of Borehole at 5.000m			
	Hole Diameter		Casing Diameter		Chiselling					Inclination and Orientation	
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks 1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Borehole backfilled with arisings upon completion.											

Percussion Drilling Log

Project Name: Lidl, Eastern Way		Client: Lidl Great Britain Ltd		Date: 21/10/2025	
Location: Melksham		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1905-P		Crew Name: Boreworx Ltd		Drilling Equipment: Window Sampling Rig	
Borehole Number WS106	Hole Type WS	Level	Logged By NK	Scale 1:30	Page Number Sheet 1 of 1

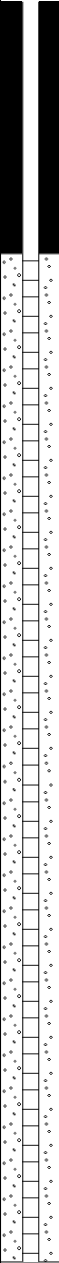
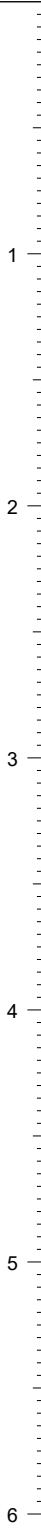
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05	ES		0.10			MADE GROUND TOPSOIL: Grass over dark brown, slightly sandy clay with frequent rootlets.	1
					0.30			MADE GROUND: Brown gravelly clay. Gravel of fine to coarse, subangular brick fragments. Occasional rootlets.	
		0.60	ES		0.50			MADE GROUND: Grey mottled orange brown clay. Occasional iron nodules.	
					0.80			MADE GROUND: Orange brown mottled brown, slightly gravelly clay. Gravel of fine to coarse, subangular brick fragments.	
		1.00	SPT	N=22 (4,4/4,6,6,6)				Stiff, grey mottled orange brown CLAY with calcareous concretions, iron nodules and sand sized selenite crystals. Wet pocket at 2.20m.	
		1.30	D					OXFORD CLAY FORMATION	
									
		2.00	SPT	N=17 (4,4/4,4,4,5)					
		2.30	D						
		2.60	D						
		3.00	SPT	N=16 (2,3/3,3,5,5)	3.00				3
		3.30	D						
									
									
									
									
									
									
									
									
		4.00	SPT	N=16 (3,3/3,4,4,5)					4
									
									
									
									
									
									
									
									
									
		5.00	SPT	N=24 (5,5/5,6,6,7)	5.00				5
									6

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Window sample position scanned with CAT and Genny. 2. Groundwater encountered at 4.00m bgl during drilling. 3. Borehole backfilled with arisings upon completion.										
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Percussion Drilling Log

Project Name: Lidl, Eastern Way		Client: Lidl Great Britain Ltd		Date: 21/10/2025	
Location: Melksham		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1905-P		Crew Name: Boreworx Ltd		Drilling Equipment: Window Sampling Rig	
Borehole Number WS107	Hole Type WS	Level	Logged By NK	Scale 1:30	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05	ES		0.10			MADE GROUND TOPSOIL: Grass over dark brown, slightly sandy clay with frequent rootlets.	
		0.30	ES		0.50			MADE GROUND: Brown to orange brown, gravelly clay. Gravel of fine to coarse, subangular brick fragments and charcoal. Occasional rootlets.	
		1.00	SPT	N=16 (3,3/3,4,4,5)				Stiff, grey mottled orange brown CLAY with calcareous concretions, relict rootlets and occasional sand sized selenite crystals. OXFORD CLAY FORMATION	
		1.10	D						
		1.50	D						
		2.00	SPT	N=18 (3,3/3,4,5,6)					
		2.10	D						
		2.50	D						
		3.00	SPT	N=18 (3,3/3,4,5,6)	3.00			Stiff, brown mottled dark grey CLAY with occasional sand sized selenite crystals, shell fragments and iron nodules/staining. OXFORD CLAY FORMATION	
		3.20	D						
		4.00	SPT	N=17 (3,3/4,4,4,5)					
					4.50			Stiff, dark grey mottled brown CLAY with coarse gravel sized selenite crystals and shell fragments. OXFORD CLAY FORMATION	
		5.00	SPT	N=26 (5,5/5,6,7,8)	5.00			End of Borehole at 5.000m	

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
 1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Gas and groundwater monitoring well installed as detailed above.

Percussion Drilling Log

Project Name: Lidl, Eastern Way		Client: Lidl Great Britain Ltd		Date: 21/10/2025	
Location: Melksham		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1905-P		Crew Name: Boreworx Ltd		Drilling Equipment: Window Sampling Rig	
Borehole Number WS108	Hole Type WS	Level	Logged By NK	Scale 1:30	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05	ES	N=15 (3,3/3,4,4,4)	0.10			MADE GROUND TOPSOIL: Grass over dark brown, slightly sandy clay with frequent rootlets.	1
		0.30	ES		0.50			MADE GROUND: Brown with some orange brown, gravelly clay. Gravel of fine to coarse, subangular brick fragments and charcoal. Occasional rootlets.	
					0.90			Stiff, brown mottled orange brown and grey CLAY. Occasional rootlets, calcareous concretions and iron nodules. OXFORD CLAY FORMATION	
		1.00	SPT					Stiff, grey mottled orange brown CLAY with calcareous concretions, sand sized selenite crystals and relict rootlets. OXFORD CLAY FORMATION	
		1.20	D						
		2.00	SPT	N=16 (4,4/3,4,4,5)					
		2.20	D						
		3.00	SPT	N=23 (4,4/4,6,6,7)	3.00				
		3.20	D					Stiff, brown mottled dark grey CLAY with coarse gravel sized selenite crystals. OXFORD CLAY FORMATION	
									
		4.00	SPT	N=23 (4,4/4,6,6,7)	4.50			Stiff, dark grey mottled brown CLAY with coarse gravel sized selenite crystals and shell fragments. OXFORD CLAY FORMATION	4
		5.00	SPT	N=28 (4,4/6,7,7,8)	5.00		End of Borehole at 5.000m		5
									6

Percussion Drilling Log

Project Name: Lidl, Eastern Way		Client: Lidl Great Britain Ltd		Date: 22/10/2025	
Location: Melksham		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1905-P		Crew Name: Boreworx Ltd		Drilling Equipment: Window Sampling Rig	
Borehole Number WS109	Hole Type WS	Level	Logged By NK	Scale 1:30	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.20			MADE GROUND TOPSOIL: Grass over dark brown, slightly sandy clay with frequent rootlets.	1
		0.40	ES		0.50			MADE GROUND: Brown, gravelly clay. Gravel of fine to coarse, subangular brick fragments. Occasional rootlets.	
					0.80			Stiff, brown mottled orange brown CLAY with occasional rootlets. OXFORD CLAY FORMATION	
		1.00	SPT	N=15 (4,4/3,4,4,4)	1.00			Stiff, brownish grey mottled orange brown CLAY. OXFORD CLAY FORMATION	
		1.10	D					Stiff, grey mottled orange brown CLAY with calcareous concretions, sand sized selenite crystals and relict rootlets. OXFORD CLAY FORMATION	
		1.60	D						2
		2.00	SPT	N=19 (3,3/4,5,5,5)	2.00			Stiff, brown mottled grey CLAY with occasional relict rootlets and shell fragments. Some calcareous concretions. OXFORD CLAY FORMATION	
		2.10	D						
		2.50	D						
		3.00	SPT	N=18 (4,3/4,4,5,5)					3
		3.10	D						
									
		4.00	SPT	N=18 (3,3/4,4,5,5)					4
					4.50				
									
									5
									
									
		5.00	SPT	N=29 (6,6/6,7,8,8)	5.00			End of Borehole at 5.000m	6

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
 1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Borehole backfilled with arisings upon completion.

Percussion Drilling Log

Project Name: Lidl, Eastern Way		Client: Lidl Great Britain Ltd		Date: 22/10/2025	
Location: Melksham		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1905-P		Crew Name: Boreworx Ltd		Drilling Equipment: Window Sampling Rig	
Borehole Number WS110	Hole Type WS	Level	Logged By NK	Scale 1:30	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05	ES		0.10			MADE GROUND TOPSOIL: Grass over dark brown, slightly sandy clay with frequent rootlets.	1
		0.30	ES		0.40			MADE GROUND: Brown, gravelly clay. Gravel of fine to coarse, subangular brick fragments. Occasional rootlets.	
					0.80			Stiff, brown mottled orange brown CLAY with occasional rootlets. OXFORD CLAY FORMATION	
		1.00	SPT	N=18 (4,4/4,4,5,5)	1.00			Stiff, brown mottled grey CLAY. OXFORD CLAY FORMATION	
		1.20	D					Stiff, grey mottled orange brown CLAY with calcareous concretions and sand sized selenite crystals. Rare relict rootlets and shell fragments, which increase in number from 2.00m. OXFORD CLAY FORMATION	
		1.70	D						
		2.00	SPT	N=17 (3,4/3,4,5,5)					
		2.20	D						
		2.70	D						
		3.00	SPT	N=19 (3,3/4,4,5,6)	3.00			Stiff, brown mottled grey CLAY with selenite crystals and shell fragments. OXFORD CLAY FORMATION	
		3.50	D						
		4.00	SPT	N=20 (4,4/4,5,5,6)					
		4.50			4.50			Stiff, dark grey mottled brown CLAY with shell fragments. OXFORD CLAY FORMATION	
		4.70	D						
		5.00	SPT	N=30 (5,5/6,7,8,9)	5.00			End of Borehole at 5.000m	

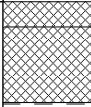
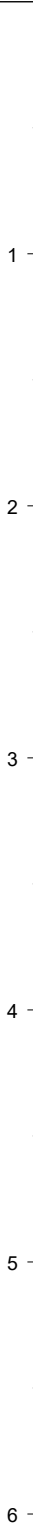
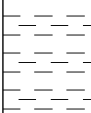
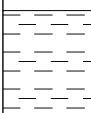
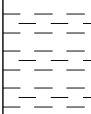
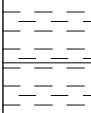
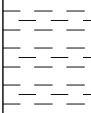
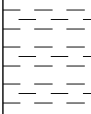
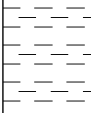
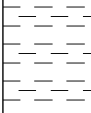
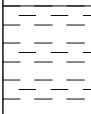
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
 1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Borehole backfilled with arisings upon completion.



Percussion Drilling Log

Project Name: Lidl, Eastern Way		Client: Lidl Great Britain Ltd		Date: 22/10/2025	
Location: Melksham		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1905-P		Crew Name: Boreworx Ltd		Drilling Equipment: Window Sampling Rig	
Borehole Number WS111	Hole Type WS	Level	Logged By NK	Scale 1:30	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05	ES		0.10			MADE GROUND TOPSOIL: Grass over dark brown, slightly sandy clay with frequent rootlets.	
		0.30	ES		0.40			MADE GROUND: Brown, gravelly clay. Gravel of fine to coarse, subangular brick fragments, charcoal and quartzite.	
								Stiff, brown mottled orange brown CLAY with occasional rootlets. OXFORD CLAY FORMATION	
		1.00	SPT	N=17 (3,4/4,4,4,5)	0.90			Stiff, grey mottled orange brown CLAY with calcareous concretions, sand sized selenite crystals and relict rootlets. OXFORD CLAY FORMATION	
		1.50	D						
		2.00	SPT	N=15 (3,3/4,3,4,4)	2.00			Stiff, grey mottled brown CLAY with relict rootlets and shell fragments. Occasional sand sized selenite crystals and iron nodules. OXFORD CLAY FORMATION	
		2.50	D						
		3.00	SPT	N=21 (5,4/4,5,6,6)					
		3.50	D						
		4.00	SPT	N=19 (3,4/4,4,5,6)	4.00			Stiff, brown mottled dark grey CLAY with medium to coarse gravel sized selenite crystals and shell fragments. OXFORD CLAY FORMATION	
		5.00	SPT	N=30 (5,6/6,7,8,9)	5.00			End of Borehole at 5.000m	

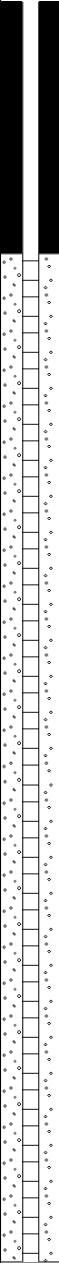
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Borehole backfilled with arisings upon completion.

Percussion Drilling Log

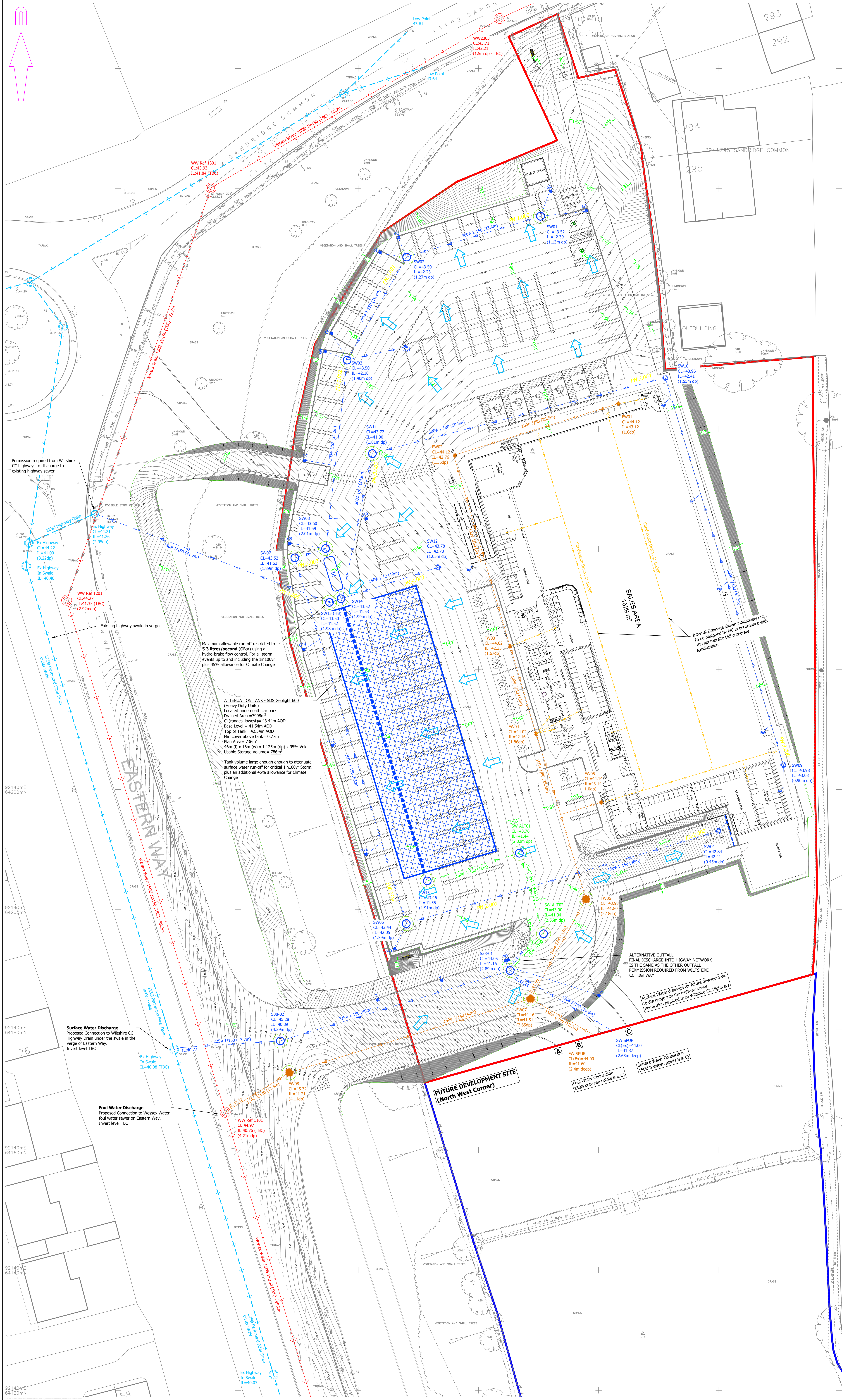
Project Name: Lidl, Eastern Way		Client: Lidl Great Britain Ltd		Date: 22/10/2025	
Location: Melksham		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1905-P		Crew Name: Boreworx Ltd		Drilling Equipment: Window Sampling Rig	
Borehole Number WS112	Hole Type WS	Level	Logged By NK	Scale 1:30	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05	ES		0.10			MADE GROUND TOPSOIL: Grass over dark brown, slightly sandy clay with frequent rootlets.	
		0.20	ES		0.30			MADE GROUND: Brown, gravelly clay. Gravel of fine to coarse, subangular brick fragments.	
					0.70			Stiff, orange brown mottled brown with some grey, CLAY with occasional rootlets. OXFORD CLAY FORMATION	
		1.00	SPT	N=13 (3,4/3,3,4,3)				Stiff, grey mottled orange brown CLAY with calcareous concretions, sand sized selenite crystals and relict rootlets. OXFORD CLAY FORMATION	1
		1.20	D						
									
		2.00	SPT	N=20 (4,4/4,5,5,6)					2
		2.20	D						
									
		3.00	SPT	N=22 (4,3/5,5,6,6)	3.00				3
		3.20	D					Stiff, brown mottled dark grey CLAY with medium to coarse gravel sized selenite crystals and shell fragments. OXFORD CLAY FORMATION	
									
		4.00	SPT	N=15 (3,4/3,3,4,5)					4
		4.50	D		4.40			Stiff, dark grey mottled orange brown CLAY with medium gravel sized selenite crystals and shell fragments. OXFORD CLAY FORMATION	
		5.00	SPT	N=29 (5,5/6,7,7,9)	5.00				5
								End of Borehole at 5.000m	
									6

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Gas and groundwater monitoring well installed as detailed above.										
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APPENDIX H: Surface & Foul Drainage Plan



AO ORIGINAL

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KEY:

PROPOSED SURFACE WATER SEWER AND MANHOLE

PROPOSED SURFACE WATER SEWER AND INSPECTION CHAMBER

PROPOSED PUMPING CHAMBER

PROPOSED HYDROBRAKE

PROPOSED SURFACE WATER LINEAR DRAINAGE CHANNEL

PROPOSED PERFORATED PIPE

PROPOSED PETROL INTERCEPTOR

PROPOSED ATTENUATION TANK

PROPOSED RAIN WATER PIPE

PROPOSED GULLY AND GULLY LEAD

PROPOSED FOUL WATER SEWER AND INSPECTION CHAMBER

PROPOSED FOUL WATER SEWER AND MANHOLE

PROPOSED FOUL DRAINAGE RODDING EYE

EXISTING FOUL SEWER AND MANHOLE

EXISTING SURFACE WATER SEWER AND MANHOLE

EXCEEDANCE FLOW ROUTES

NOTES:

1. This drawing is not to be scaled.

2. Drawing based on htc Architect's '4034 P402A Proposed Setting Out Site Plan' received on 08/12/2025.

3. This drawing is to be read in conjunction with the following Mayor Brown drawing reference:

- LIDLMEKSHAM.23/11 - Proposed Engineering Layout

KEY TO HEALTH AND SAFETY SYMBOLS

INDICATES A RESIDUAL RISK REQUIRING A COMPULSORY ACTION.

INDICATES A RESIDUAL RISK FOR INFORMATION.

INDICATES A RESIDUAL RISK REQUIRING A PROHIBITIVE ACTION.

INDICATES A RESIDUAL RISK AS A WARNING.

FOR INFORMATION

NOT FOR CONSTRUCTION

P4	Surface and foul water drainage provision for future disposal land updated (SF)	SF	16/03/2026
P3	Wessex Water & Highway sewers added. S38 drainage added. Surface and foul water outfalls amended. Disposal land future connection spurs revised. (AR)	SF	11/03/2026
P2	Initial Issue. (AR)	SF	06/03/2026
P1	Draft Issue. (AR)	SF	24/12/2025

rev.	amendment	checked	date

m3

mayer brown

client

LIDL GREAT BRITAIN LIMITED

project

MELKSHAM EASTERN WAY

scales

1:200

drawn by

AR

checked by

SF

date

December 25

cad file

20.DWG

title

DRAINAGE GENERAL ARRANGEMENT

Mayer Brown Limited jobcode

suitability

revision

P4

drawing number

LIDLMEKSHAM.23/20

APPENDIX I: Greenfield Run-off Calculations

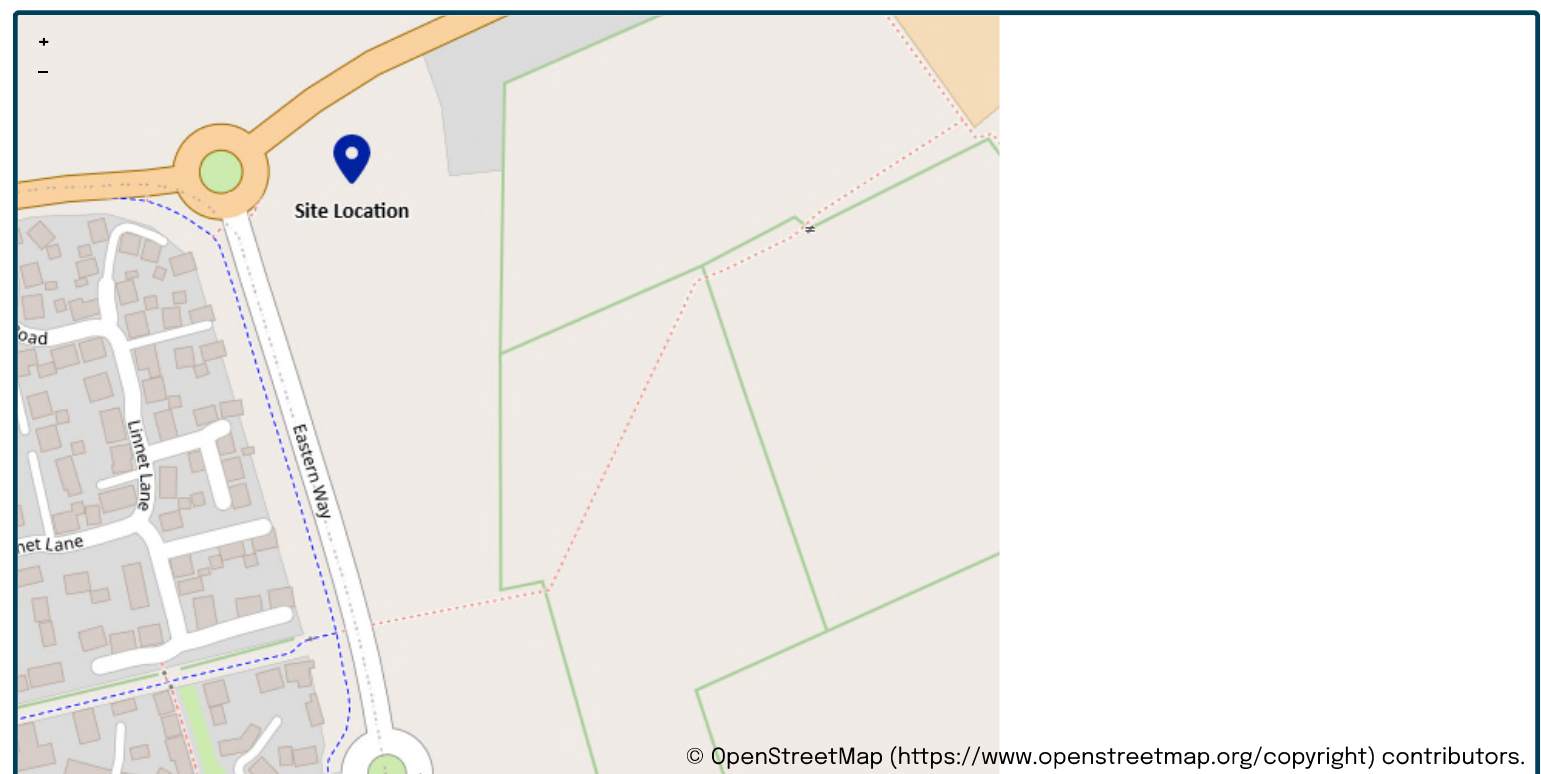
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). 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	22/12/2025
Calculated by	
Reference	
Model version	2.2.2

Location

Site name	Lidl Melksham
Site location	Melksham



Site easting (British National Grid)	392205
Site northing (British National Grid)	164277

Site details

Total site area (ha)	0.8	ha
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Greenfield runoff

Method

Method	FEH statistical (2025)
--------	------------------------

FEH statistical (2025)

	My value	Map value
SAAR9120 (mm)	766	mm
BFIHOST19scaled	0.233	
QMed-QBar conversion	1.075	1.075
QMed (l/s)	5.3	l/s
QBar (FEH statistical 2025) (l/s)	5.7	l/s

Growth curve factors

	My value	Map value
Hydrological region	8	8
1 year growth factor	0.78	
2 year growth factor	0.93	
10 year growth factor	1.49	
30 year growth factor	1.95	
100 year growth factor	2.43	
200 year growth factor	2.78	

Results

Method	FEH statistical (2025)	
Flow rate 1 year (l/s)	4.4	l/s
Flow rate 2 year (l/s)	5.3	l/s
Flow rate 10 years (l/s)	8.5	l/s
Flow rate 30 years (l/s)	11.1	l/s
Flow rate 100 years (l/s)	13.8	l/s
Flow rate 200 years (l/s)	15.8	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 (2.2.2) 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.

APPENDIX J: Causeway Flow Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
1	0.079	5.00	43.520	1200	392230.396	164315.459	1.130	42.390
2	0.073	5.00	43.500	1200	392208.028	164308.612	1.270	42.230
3	0.044	5.00	43.500	1200	392198.157	164291.455	1.400	42.100
4	0.029	10.00	42.840	1200	392260.452	164213.128	0.430	42.410
5	0.043	5.00	43.700	1200	392223.944	164202.400	1.540	42.160
6	0.263	30.00	43.440	1200	392207.822	164198.232	1.390	42.050
7			43.520	1200	392189.458	164258.539	1.890	41.630
8	0.007	5.00	43.600	1200	392194.616	164260.044	2.010	41.590
9	0.049	10.00	43.980	1200	392270.739	164224.092	0.900	43.080
Dum 1	0.049	5.00	44.120	1200	392265.850	164240.217	1.208	42.912
Dum 2	0.049	5.00	44.120	1200	392260.931	164256.311	1.376	42.744
Dum 3	0.049	5.00	44.120	1200	392256.011	164272.405	1.544	42.576
10	0.049	5.00	43.960	1200	392251.092	164288.498	1.550	42.410
11			43.720	1200	392202.307	164275.933	1.820	41.900
12	0.017	5.00	43.780	1200	392213.298	164256.997	1.050	42.730
13		5.00	43.680	1200	392212.245	164202.004	2.140	41.540
14			43.520	1200	392197.167	164251.699	2.229	41.291
15			43.500	1200	392195.131	164251.133	1.980	41.520
ExHW			44.210		392157.967	164265.153	2.950	41.260

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	1	2	23.392	0.600	42.390	42.230	0.160	146.2	300	5.30	50.0
1.001	2	3	19.794	0.600	42.230	42.100	0.130	152.3	300	5.56	50.0
1.002	3	8	31.611	0.600	42.100	41.590	0.510	62.0	300	5.82	50.0
2.000	4	5	38.076	0.600	42.410	42.160	0.250	152.3	150	10.78	50.0
2.001	5	6	16.652	0.600	42.160	42.050	0.110	151.4	225	11.04	50.0
2.002	6	7	63.041	0.600	42.050	41.630	0.420	150.1	300	30.00	50.0
2.003	7	8	5.373	0.600	41.630	41.590	0.040	134.3	300	30.00	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	1.298	91.7	14.3	0.830	0.970	0.079	0.0
1.001	1.272	89.9	27.5	0.970	1.100	0.152	0.0
1.002	2.000	141.4	35.4	1.100	1.710	0.196	0.0
2.000	0.812	14.3	5.2	0.280	1.390	0.029	0.0
2.001	1.060	42.1	13.0	1.315	1.165	0.072	0.0
2.002	1.281	90.5	60.5	1.090	1.590	0.335	0.0
2.003	1.355	95.7	60.5	1.590	1.710	0.335	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.003	8	14	8.726	0.600	41.590	41.530	0.060	145.4	300	30.00	50.0
3.000	9	Dum 1	16.849	0.600	43.080	42.912	0.168	100.0	300	10.18	50.0
3.001	Dum 1	Dum 2	16.829	0.600	42.912	42.744	0.168	100.0	300	10.36	50.0
3.002	Dum 2	Dum 3	16.829	0.600	42.744	42.576	0.168	100.0	300	10.54	50.0
3.003	Dum 3	10	16.829	0.600	42.576	42.410	0.166	101.4	300	10.72	50.0
3.004	10	11	50.377	0.600	42.410	41.900	0.510	98.8	300	11.25	50.0
3.005	11	14	24.773	0.600	41.900	41.530	0.370	67.0	300	11.46	50.0
4.000	12	14	16.979	0.600	42.730	41.291	1.439	11.8	150	5.10	50.0
5.000	13	14	51.932	0.600	41.540	41.530	0.010	5193.2	300	9.14	50.0
1.004	14	15	2.113	0.600	41.530	41.520	0.010	211.3	300	30.00	50.0
1.005	15	ExHW	39.720	0.600	41.520	41.260	0.260	152.8	150	30.00	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.003	1.301	92.0	97.2	1.710	1.690	0.538	0.0
3.000	1.572	111.1	8.9	0.600	0.908	0.049	0.0
3.001	1.572	111.1	17.7	0.908	1.076	0.098	0.0
3.002	1.572	111.1	26.6	1.076	1.244	0.147	0.0
3.003	1.561	110.3	35.4	1.244	1.250	0.196	0.0
3.004	1.582	111.8	44.3	1.250	1.520	0.245	0.0
3.005	1.924	136.0	44.3	1.520	1.690	0.245	0.0
4.000	2.949	52.1	3.1	0.900	2.079	0.017	0.0
5.000	0.209	14.8	0.0	1.840	1.690	0.000	0.0
1.004	1.077	76.2	144.6	1.690	1.680	0.800	0.0
1.005	0.810	14.3	144.6	1.830	2.800	0.800	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	23.392	146.2	300	1 STANDARD	43.520	42.390	0.830	43.500	42.230	0.970
1.001	19.794	152.3	300	1 STANDARD	43.500	42.230	0.970	43.500	42.100	1.100
1.002	31.611	62.0	300	1 STANDARD	43.500	42.100	1.100	43.600	41.590	1.710
2.000	38.076	152.3	150	1 STANDARD	42.840	42.410	0.280	43.700	42.160	1.390
2.001	16.652	151.4	225	1 STANDARD	43.700	42.160	1.315	43.440	42.050	1.165
2.002	63.041	150.1	300	1 STANDARD	43.440	42.050	1.090	43.520	41.630	1.590
2.003	5.373	134.3	300	1 STANDARD	43.520	41.630	1.590	43.600	41.590	1.710
1.003	8.726	145.4	300	1 STANDARD	43.600	41.590	1.710	43.520	41.530	1.690
3.000	16.849	100.0	300	1 STANDARD	43.980	43.080	0.600	44.120	42.912	0.908

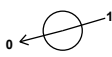
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	1	1200	Manhole	1 STANDARD	2	1200	Manhole	1 STANDARD
1.001	2	1200	Manhole	1 STANDARD	3	1200	Manhole	1 STANDARD
1.002	3	1200	Manhole	1 STANDARD	8	1200	Manhole	1 STANDARD
2.000	4	1200	Sealed Manhole	1 STANDARD	5	1200	Manhole	1 STANDARD
2.001	5	1200	Manhole	1 STANDARD	6	1200	Manhole	1 STANDARD
2.002	6	1200	Manhole	1 STANDARD	7	1200	Manhole	1 STANDARD
2.003	7	1200	Manhole	1 STANDARD	8	1200	Manhole	1 STANDARD
1.003	8	1200	Manhole	1 STANDARD	14	1200	Manhole	1 STANDARD
3.000	9	1200	Manhole	1 STANDARD	Dum 1	1200	Manhole	1 STANDARD

Pipeline Schedule

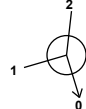
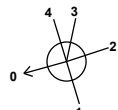
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
3.001	16.829	100.0	300	1 STANDARD	44.120	42.912	0.908	44.120	42.744	1.076
3.002	16.829	100.0	300	1 STANDARD	44.120	42.744	1.076	44.120	42.576	1.244
3.003	16.829	101.4	300	1 STANDARD	44.120	42.576	1.244	43.960	42.410	1.250
3.004	50.377	98.8	300	1 STANDARD	43.960	42.410	1.250	43.720	41.900	1.520
3.005	24.773	67.0	300	1 STANDARD	43.720	41.900	1.520	43.520	41.530	1.690
4.000	16.979	11.8	150	1 STANDARD	43.780	42.730	0.900	43.520	41.291	2.079
5.000	51.932	5193.2	300	1 STANDARD	43.680	41.540	1.840	43.520	41.530	1.690
1.004	2.113	211.3	300	1 STANDARD	43.520	41.530	1.690	43.500	41.520	1.680
1.005	39.720	152.8	150	1 STANDARD	43.500	41.520	1.830	44.210	41.260	2.800

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
3.001	Dum 1	1200	Manhole	1 STANDARD	Dum 2	1200	Manhole	1 STANDARD
3.002	Dum 2	1200	Manhole	1 STANDARD	Dum 3	1200	Manhole	1 STANDARD
3.003	Dum 3	1200	Manhole	1 STANDARD	10	1200	Manhole	1 STANDARD
3.004	10	1200	Manhole	1 STANDARD	11	1200	Manhole	1 STANDARD
3.005	11	1200	Manhole	1 STANDARD	14	1200	Manhole	1 STANDARD
4.000	12	1200	Manhole	1 STANDARD	14	1200	Manhole	1 STANDARD
5.000	13	1200	Manhole	1 STANDARD	14	1200	Manhole	1 STANDARD
1.004	14	1200	Manhole	1 STANDARD	15	1200	Manhole	1 STANDARD
1.005	15	1200	Manhole	1 STANDARD	ExHW		Manhole	1 STANDARD

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
1	392230.396	164315.459	43.520	1.130	1200				
						0	1.000	42.390	300
2	392208.028	164308.612	43.500	1.270	1200		1	1.000	42.230
						0	1.001	42.230	300
3	392198.157	164291.455	43.500	1.400	1200		1	1.001	42.100
						0	1.002	42.100	300
4	392260.452	164213.128	42.840	0.430	1200				
						0	2.000	42.410	150
5	392223.944	164202.400	43.700	1.540	1200		1	2.000	42.160
						0	2.001	42.160	225
6	392207.822	164198.232	43.440	1.390	1200		1	2.001	42.050
						0	2.002	42.050	300

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
7	392189.458	164258.539	43.520	1.890	1200		1	2.002	41.630	300
8	392194.616	164260.044	43.600	2.010	1200		0	2.003	41.630	300
							1	2.003	41.590	300
							2	1.002	41.590	300
							0	1.003	41.590	300
9	392270.739	164224.092	43.980	0.900	1200					
							0	3.000	43.080	300
Dum 1	392265.850	164240.217	44.120	1.208	1200		1	3.000	42.912	300
							0	3.001	42.912	300
Dum 2	392260.931	164256.311	44.120	1.376	1200		1	3.001	42.744	300
							0	3.002	42.744	300
Dum 3	392256.011	164272.405	44.120	1.544	1200		1	3.002	42.576	300
							0	3.003	42.576	300
10	392251.092	164288.498	43.960	1.550	1200		1	3.003	42.410	300
							0	3.004	42.410	300
11	392202.307	164275.933	43.720	1.820	1200		1	3.004	41.900	300
							0	3.005	41.900	300
12	392213.298	164256.997	43.780	1.050	1200					
							0	4.000	42.730	150
13	392212.245	164202.004	43.680	2.140	1200					
							0	5.000	41.540	300
14	392197.167	164251.699	43.520	2.229	1200		1	5.000	41.530	300
							2	4.000	41.291	150
							3	3.005	41.530	300
							4	1.003	41.530	300
							0	1.004	41.530	300
15	392195.131	164251.133	43.500	1.980	1200		1	1.004	41.520	300
					0		1.005	41.520	150	
ExHW	392157.967	164265.153	44.210	2.950			1	1.005	41.260	150

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	20.0		

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	45	0	0

Node 15 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	41.520	Product Number	CTL-SHE-0101-5300-1500-5300
Design Depth (m)	1.500	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	5.3	Min Node Diameter (mm)	1200

Node 14 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	41.530
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	550.0	0.0	1.500	550.0	0.0	1.501	0.0	0.0

Results for 1 year Critical Storm Duration. Lowest mass balance: 89.09%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	42.449	0.059	8.1	0.1495	0.0000	OK
15 minute summer	2	10	42.317	0.087	15.4	0.1975	0.0000	OK
15 minute summer	3	11	42.175	0.075	19.5	0.1319	0.0000	OK
15 minute summer	4	14	42.447	0.037	1.9	0.0911	0.0000	OK
15 minute summer	5	11	42.218	0.058	6.0	0.0978	0.0000	OK
120 minute summer	6	70	42.124	0.074	12.5	0.3660	0.0000	OK
720 minute summer	7	480	41.733	0.103	6.8	0.1162	0.0000	OK
720 minute summer	8	480	41.733	0.143	10.8	0.1714	0.0000	OK
15 minute winter	9	14	43.115	0.035	3.2	0.0774	0.0000	OK
15 minute summer	Dum 1	11	42.966	0.054	8.0	0.1055	0.0000	OK
15 minute summer	Dum 2	11	42.814	0.070	12.8	0.1296	0.0000	OK
15 minute summer	Dum 3	11	42.660	0.084	17.7	0.1489	0.0000	OK
15 minute summer	10	11	42.504	0.094	22.5	0.1655	0.0000	OK
15 minute summer	11	11	41.985	0.085	22.6	0.0956	0.0000	OK
15 minute summer	12	11	42.749	0.019	1.7	0.0271	0.0000	OK
720 minute summer	13	480	41.733	0.193	0.2	0.2179	0.0000	OK
720 minute summer	14	480	41.733	0.442	15.9	106.6672	0.0000	OK
720 minute summer	15	480	41.733	0.212	4.4	0.2403	0.0000	SURCHARGED
720 minute summer	ExHW	480	41.317	0.057	4.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	7.9	0.602	0.086	0.3113	
15 minute summer	2	1.001	3	15.2	0.998	0.169	0.3023	
15 minute summer	3	1.002	8	19.6	1.043	0.139	0.6698	
15 minute summer	4	2.000	5	1.9	0.520	0.132	0.1796	
15 minute summer	5	2.001	6	6.0	0.642	0.142	0.1551	
120 minute summer	6	2.002	7	12.5	0.820	0.138	0.9612	
720 minute summer	7	2.003	8	6.7	0.561	0.070	0.1460	
720 minute summer	8	1.003	14	10.6	0.522	0.116	0.3651	
15 minute winter	9	3.000	Dum 1	3.2	0.597	0.029	0.1080	
15 minute summer	Dum 1	3.001	Dum 2	8.0	0.753	0.072	0.1785	
15 minute summer	Dum 2	3.002	Dum 3	12.8	0.895	0.116	0.2420	
15 minute summer	Dum 3	3.003	10	17.7	1.013	0.161	0.2947	
15 minute summer	10	3.004	11	22.6	1.290	0.202	0.8834	
15 minute summer	11	3.005	14	22.2	1.404	0.163	0.3921	
15 minute summer	12	4.000	14	1.7	0.786	0.033	0.1601	
720 minute summer	13	5.000	14	-0.2	-0.017	-0.014	2.5566	
720 minute summer	14	1.004	15	4.4	0.118	0.058	0.1099	
720 minute summer	15	1.005	ExHW	4.4	0.714	0.309	0.2464	138.7

Results for 30 year Critical Storm Duration. Lowest mass balance: 95.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	42.517	0.127	34.9	0.3214	0.0000	OK
15 minute summer	2	10	42.433	0.203	66.8	0.4633	0.0000	OK
15 minute summer	3	11	42.275	0.175	85.4	0.3088	0.0000	OK
30 minute summer	4	21	42.491	0.081	8.3	0.2011	0.0000	OK
15 minute summer	5	11	42.300	0.140	26.3	0.2357	0.0000	OK
30 minute summer	6	20	42.212	0.162	53.3	0.7977	0.0000	OK
600 minute winter	7	570	42.156	0.526	13.7	0.5947	0.0000	SURCHARGED
600 minute winter	8	570	42.156	0.566	21.5	0.6795	0.0000	SURCHARGED
30 minute summer	9	21	43.153	0.073	14.0	0.1625	0.0000	OK
15 minute summer	Dum 1	11	43.035	0.123	34.6	0.2398	0.0000	OK
15 minute summer	Dum 2	10	42.913	0.169	55.7	0.3112	0.0000	OK
15 minute summer	Dum 3	11	42.789	0.213	76.7	0.3760	0.0000	OK
15 minute summer	10	11	42.640	0.230	97.4	0.4052	0.0000	OK
600 minute winter	11	570	42.156	0.256	10.0	0.2892	0.0000	OK
15 minute summer	12	10	42.768	0.038	7.5	0.0559	0.0000	OK
600 minute winter	13	555	42.155	0.615	0.3	0.6959	0.0000	SURCHARGED
600 minute winter	14	570	42.156	0.865	32.1	328.1331	0.0000	SURCHARGED
720 minute summer	15	615	42.157	0.637	11.1	0.7205	0.0000	SURCHARGED
480 minute winter	ExHW	688	41.323	0.063	5.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	34.5	0.869	0.376	0.9258	
15 minute summer	2	1.001	3	66.0	1.451	0.734	0.9230	
15 minute summer	3	1.002	8	83.8	1.368	0.593	1.7893	
30 minute summer	4	2.000	5	8.2	0.773	0.574	0.4898	
15 minute summer	5	2.001	6	26.1	0.952	0.620	0.4623	
30 minute summer	6	2.002	7	52.8	1.007	0.583	3.4454	
600 minute winter	7	2.003	8	13.2	0.561	0.138	0.3784	
600 minute winter	8	1.003	14	21.4	0.637	0.232	0.6145	
30 minute summer	9	3.000	Dum 1	13.9	0.870	0.125	0.3231	
15 minute summer	Dum 1	3.001	Dum 2	34.4	1.015	0.309	0.5733	
15 minute summer	Dum 2	3.002	Dum 3	55.5	1.173	0.499	0.7933	
15 minute summer	Dum 3	3.003	10	76.7	1.377	0.695	0.9373	
15 minute summer	10	3.004	11	98.2	1.791	0.879	2.7598	
600 minute winter	11	3.005	14	10.0	0.687	0.074	1.6645	
15 minute summer	12	4.000	14	7.5	1.094	0.143	0.1796	
600 minute winter	13	5.000	14	-0.3	-0.040	-0.021	3.6570	
600 minute winter	14	1.004	15	10.0	0.142	0.131	0.1488	
720 minute summer	15	1.005	ExHW	5.3	0.747	0.368	0.2799	225.8

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 97.56%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	12	43.331	0.941	65.0	2.3805	0.0000	FLOOD RISK
15 minute summer	2	12	43.255	1.025	113.3	2.3382	0.0000	FLOOD RISK
15 minute summer	3	12	43.008	0.908	142.4	1.5973	0.0000	SURCHARGED
15 minute summer	4	11	42.840	0.430	15.1	1.9046	0.0000	FLOOD RISK
30 minute summer	5	21	42.986	0.826	39.8	1.3950	0.0000	SURCHARGED
960 minute winter	6	930	42.954	0.904	18.4	4.4409	0.0000	SURCHARGED
960 minute winter	7	945	42.953	1.323	17.8	1.4962	0.0000	SURCHARGED
960 minute winter	8	930	42.955	1.365	27.9	1.6393	0.0000	SURCHARGED
15 minute summer	9	12	43.837	0.757	25.6	1.6799	0.0000	FLOOD RISK
15 minute summer	Dum 1	12	43.823	0.911	59.9	1.7695	0.0000	FLOOD RISK
15 minute summer	Dum 2	12	43.765	1.021	85.2	1.8820	0.0000	SURCHARGED
15 minute summer	Dum 3	12	43.627	1.051	116.4	1.8556	0.0000	SURCHARGED
15 minute summer	10	12	43.370	0.960	147.8	1.6926	0.0000	SURCHARGED
960 minute winter	11	930	42.953	1.053	13.5	1.1907	0.0000	SURCHARGED
960 minute winter	12	930	42.953	0.223	0.9	0.3241	0.0000	SURCHARGED
960 minute winter	13	930	42.953	1.413	0.2	1.5976	0.0000	SURCHARGED
960 minute winter	14	930	42.953	1.662	41.9	745.5170	0.0000	SURCHARGED
960 minute winter	15	930	42.953	1.433	6.7	1.6213	0.0000	SURCHARGED
30 minute summer	ExHW	28	41.323	0.063	5.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	55.9	0.902	0.609	1.6472	
15 minute summer	2	1.001	3	107.8	1.531	1.199	1.3939	
15 minute summer	3	1.002	8	138.7	1.970	0.981	2.2260	
15 minute summer	4	2.000	5	17.2	0.977	1.199	0.6703	
30 minute summer	5	2.001	6	36.2	0.952	0.859	0.6623	
960 minute winter	6	2.002	7	17.8	0.659	0.197	4.4393	
960 minute winter	7	2.003	8	17.7	0.509	0.185	0.3784	
960 minute winter	8	1.003	14	27.8	0.684	0.303	0.6145	
15 minute summer	9	3.000	Dum 1	38.4	1.060	0.346	1.1865	
15 minute summer	Dum 1	3.001	Dum 2	70.1	1.125	0.631	1.1851	
15 minute summer	Dum 2	3.002	Dum 3	88.0	1.249	0.792	1.1851	
15 minute summer	Dum 3	3.003	10	114.8	1.631	1.041	1.1851	
15 minute summer	10	3.004	11	146.1	2.075	1.307	3.5475	
960 minute winter	11	3.005	14	13.2	0.692	0.097	1.7445	
960 minute winter	12	4.000	14	0.9	0.082	0.017	0.2989	
960 minute winter	13	5.000	14	-0.2	-0.044	-0.015	3.6570	
960 minute winter	14	1.004	15	6.7	0.138	0.088	0.1488	
960 minute winter	15	1.005	ExHW	5.3	0.747	0.368	0.2799	298.2

APPENDIX K: Class 1 Bypass Separator ESR Range

☎ 01743 457977(tel:+4401743457977) ✉ sales@spelproducts.co.uk(mailto:sales@spelproducts.co.uk)



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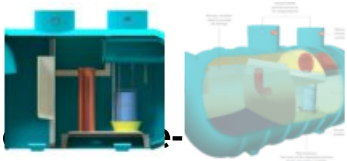
SPEL ESR Bypass Treatment System

The SPEL ESR Bypass Treatment System treats flows up to and including the 1 in 1 year return events (27mm/h) in line with guidance from the CIRIA SuDS Manual (C753). The SPEL ESR Bypass System is fully certified to meet the CIRIA SuDS Mitigation Index. It has been tested by WRc to the British Water Code of Practice for Manufactured Treatment Devices. This unit is also certified to the British and European Standard BS EN 858 by HR Wallingford. SPEL's ESR range is a total treatment system removing Hydrocarbons, Total Suspended Solids (TSS) and Metals. It's a highly efficient, single unit, water quality SuDS component.



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Downloads
(<https://spelproducts.co.uk/spel-data-portal/>)



- Product
Detail
- Testing &
Certification
- Specification
Chart
- Components and
Accessories
- Case
Studies

Bypass Stormwater Treatment System

The SPEL ESR Bypass is fully certified to meet the CIRIA SuDS Mitigation Index. It has been tested by WRc to the British Water Code of Practice for Manufactured Treatment Devices. This unit is also certified to the British and European Standard BS EN 858.

SPEL’s ESR range is a total treatment system removing Hydrocarbons, Total Suspended Solids (TSS) and Metals. It’s a highly efficient, single unit, water quality SuDS component.

The coalescer inserts are easy to clean and simple to replace but rarely require replacing. The unique ‘insert’ format ensures that this unit can be extracted complete

SPEL ESR Bypass

Certified Mitigation Index

TSS	0.8
Metals	0.6
Hydrocarbons	0.9*

**HR Wallingford test results to BS EN 858*

every time, compared to other systems where ‘wrap around’ style units allow the foam to slip off, requiring confined space entry to retrieve.

Product Range

200 Series

(1.2m internal diameter):

Treated Flow Rate: 10-15 l/s

Catchment Area: 1,333m² – 2,000m²

300 Series

(1.8m internal diameter):

Treated Flow Rate: 20-50 l/s

Catchment Area: 2,665m² – 6,665m²

400 Series

(2.6m internal diameter):

Treated Flow Rate: 60-160 l/s

Catchment Area: 8,000m² – 21,333m²

500 Series

Applications

The ESR Bypass will treat up to the 1 in 1 year storm event for surface water run-off to a Pollution Hazard Index of ‘Medium’. This covers surfaces such as:

- Roofs Private and public car parks
- Residential roads and drives
- Low and medium use roads
- Commercial yards and delivery areas

The ESR Bypass can be used as part of a treatment train to achieve a ‘High’ Mitigation Index. (See other SPEL SuDS treatment systems).

Shell Design

Designed with reference to BS EN 13121. All tank shells carry the SPEL 25 Year Warranty and life expectancy in excess of 50 years.

Shell Specifications

Different tank shell specifications are available dependent upon tank invert levels, ground conditions and ground water levels. (See Section 8)

Inlet/Outlet Connections

160/225/300mm diameter PVCU socket/ spigot. 450, 600, 750, 900 and 1200mm diameter GRP spigot available, for connecting to site

(3.5m internal diameter):

Treated Flow Rate: 180-250 l/s

Catchment Area: 24,000m² –
33,333m²

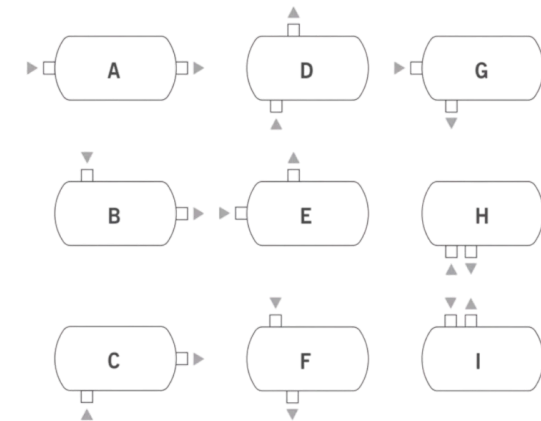
600 Series

(4m internal diameter):

Treated Flow Rate: 300-700 l/s

Catchment Area: 40,000m² –
93,333m²

pipework via FlexSeal/Band-Seal or similar flexible couplings. The nine inlet/outlet options below are available to assist with design and installation.



APPENDIX L: Geolight Proprietary Attenuation Tank

SDS

Water
Infrastructure
Systems

INNOVATORS IN
WATER TECHNOLOGY

SDS GEOLight®

Stormwater Management System



SDS GEOLight® is an ultra lightweight honeycombed modular structure, made from recycled PVC, that provides an underground storage facility for the application of stormwater attenuation or infiltration.

SDS
Water
Infrastructure
Systems

Stormwater Management

The Environment Agency is keen to promote the wider use of sustainable drainage systems, which reduce the impact of surface water runoff. There are two main ways of storing surface water for stormwater management:

- Stormwater attenuation tanks
- Soakaway infiltration systems

Stormwater Attenuation Systems

This consists of underground water storage facilities that hold excess water during periods of peak rainfall.

The stored water is gradually released in a controlled manner into the surface water drainage system or directly into watercourses, reducing the risk of upstream and downstream flooding.

Soakaway Infiltration Systems

Soakaways are designed to store surface water runoff until it can be gradually absorbed by the surrounding ground.

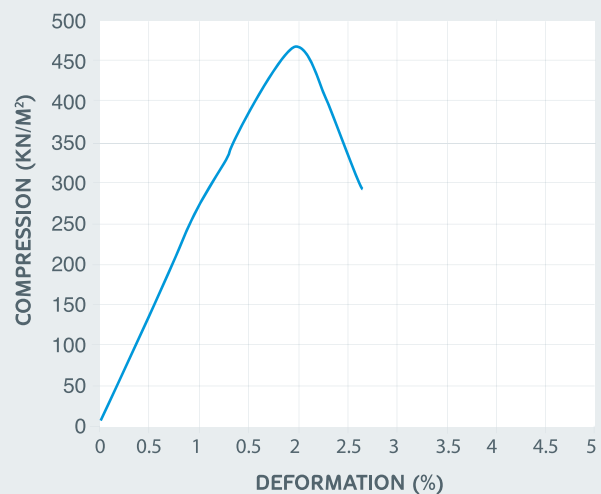
SDS GEOLight® – an efficient and economic solution for stormwater management.

SDS GEOLight® Attenuation

SDS GEOLight® has been specifically designed to form underground water storage reservoirs in stormwater management schemes. Its honeycombed structure gives it certain unique characteristics that make it ideal for this purpose:

- The high void rate (95%) of GEOLight® means that the maximum volume of water is stored in the minimum volume of storage unit.
- High compressive strength. GEOLight® is available in two strengths as standard: 200 and 400kN/m². Note: Higher compressive strengths available from 600 to 1000 kN/m². The graph on the right shows the results of a compression test, where samples of GEOLight® 400 were compressed at the rate of 1mm per minute. The deformation at 400kN/m² is about 1.6%.

RESULTS OF COMPRESSION TEST ON SDS GEOLIGHT® 400



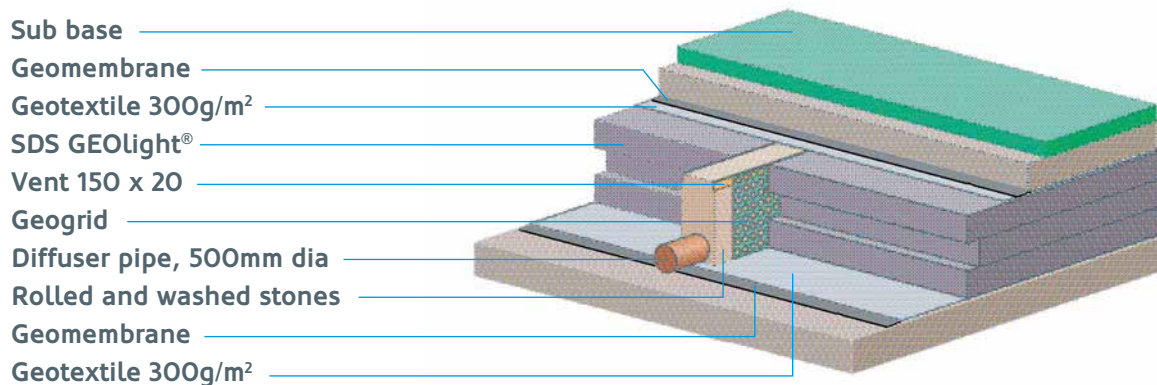
The GEOLight® Stormwater Attenuation System consists of two manholes (inspection chambers) connected by a length of perforated distribution pipe which feeds the stormwater storage reservoirs on either side formed from GEOLight®.

The distribution pipe is normally from 225mm up to 500mm diameter, generally covered in a trench that is filled with draining material such as 15/25 clean graded stone, free from fines.

The reservoirs and distribution pipe are wrapped in a waterproof membrane, such as butyl, to prevent seepage of water into the surrounding ground. The top of each GEOLight® reservoir has a vent which is connected back to the upstream manhole.

A geotextile or 10mm mesh geogrid is laid between the distribution pipe and GEOLight® to prevent the GEOLight® units being clogged by the draining materials.

SDS GEOLight® Attenuation



How does it work?

- 1. In normal conditions, water enters a back drop manhole. This is the upstream manhole and any silt or sediment will collect in the bottom of the chamber. The water then flows along the distribution pipe into the downstream manhole. The upstream pipework is sized to cope with normal flow conditions. The distribution pipe and attenuation tank are sized to cope with storm conditions. The outflow pipe is sized to cope with the permissible discharge.
- 2. In storm conditions the flow restrictor (vortex flow control or orifice plate) in the downstream manhole limits the amount of water flowing out of the manhole. This causes the water level in the distribution pipe to rise and water to spill into the GEOLight® reservoirs on either side. As the water level rises in the reservoirs, air is forced out of the high level vents into the upstream manhole.

- 3. Once the storm has passed, the water level in the GEOLight® reservoirs gradually falls as water passes through the flow restrictor in the downstream manhole. The vents now allow air to return into the GEOLight® reservoirs. Gradually the reservoirs empty. The flow restrictor prevents excess surges of flood water to pass downstream and uses the storage reservoirs to store the water for the period of the storm.

Calculating the storage capacity

The storage capacity of the GEOLight® reservoirs is determined by the maximum outflow permitted, (set by the water company or Environment Agency), the impermeable area of the site and the rainfall return period – normally 1 in 30 years, but again can be dictated by the water company. A full design service, including calculations, can be supplied via a third party consultant.

Please contact SDS for details.

Other uses

The water storage ability of SDS GEOLight® lends itself to a number of other uses:

- Water recycling combines with irrigation systems – this is increasingly popular: GEOLight® is used to retain stormwater which is then pumped as required to a network of standpipes for irrigation.
- Drainage channels – the natural permeability of GEOLight® lends itself for use as an underground drainage channel that collects and drains away groundwater.
- Pollution control – improved water runoff quality. When used in combination with oil / petrol separators, GEOLight® can replenish groundwater without the risk of contamination from oil, chemicals or suspended solids.
- To form lightweight embankments (slope stabilisation) – GEOLight® can be used to quickly form the base of embankments that only weigh a fraction of earth embankments.

Stormwater Attenuation System

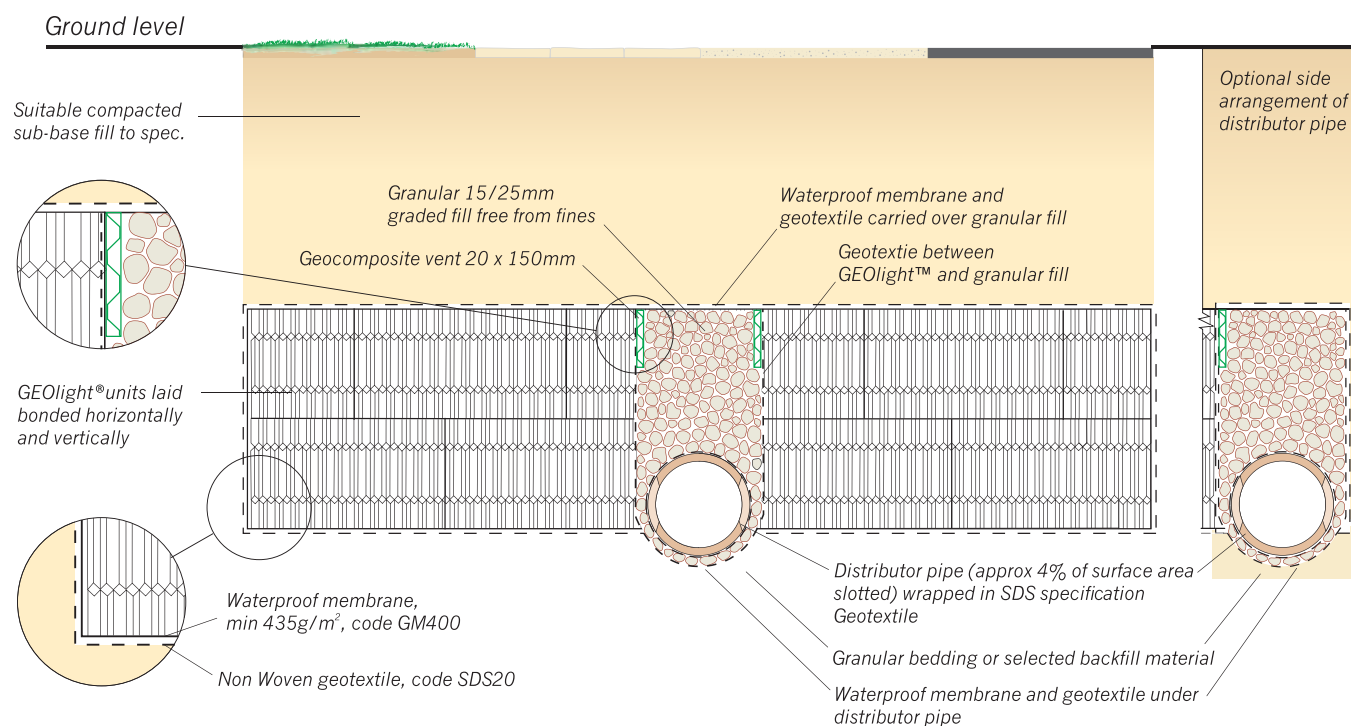
Design Details

The details on these two pages illustrate the construction of a typical SDS GEOLight® Stormwater Attenuation System. The length and height of the GEOLight® reservoirs is determined by the quantity of water to be stored.

The layout of each scheme is specifically designed to suit the characteristics and limitation of the site. Typically the distributor pipe would be arranged in the centre of the reservoir, but can alternatively be placed at the side where topographical constraints dictate.

The high performance waterproof membrane should be sealed continuously to encapsulate the GEOLight® reservoirs, distributor pipe and granular fill. It is protected by a heavyweight needle punched, non woven geotextile. To help with maintenance a high flow geotextile is placed between the granular fill and GEOLight® attenuation units to prevent silt and particles being washed into the reservoir. GEOLight® can be used under a range of surfaces e.g. grass, porous paving, standard paving block, tarmac and concrete.

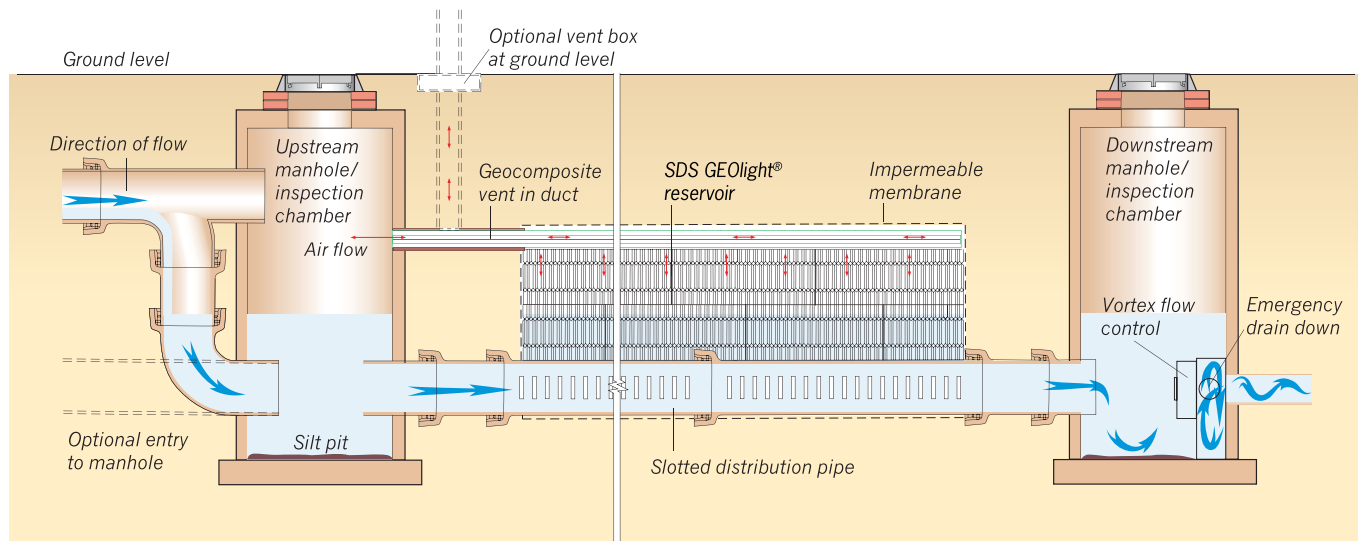
Cross Section



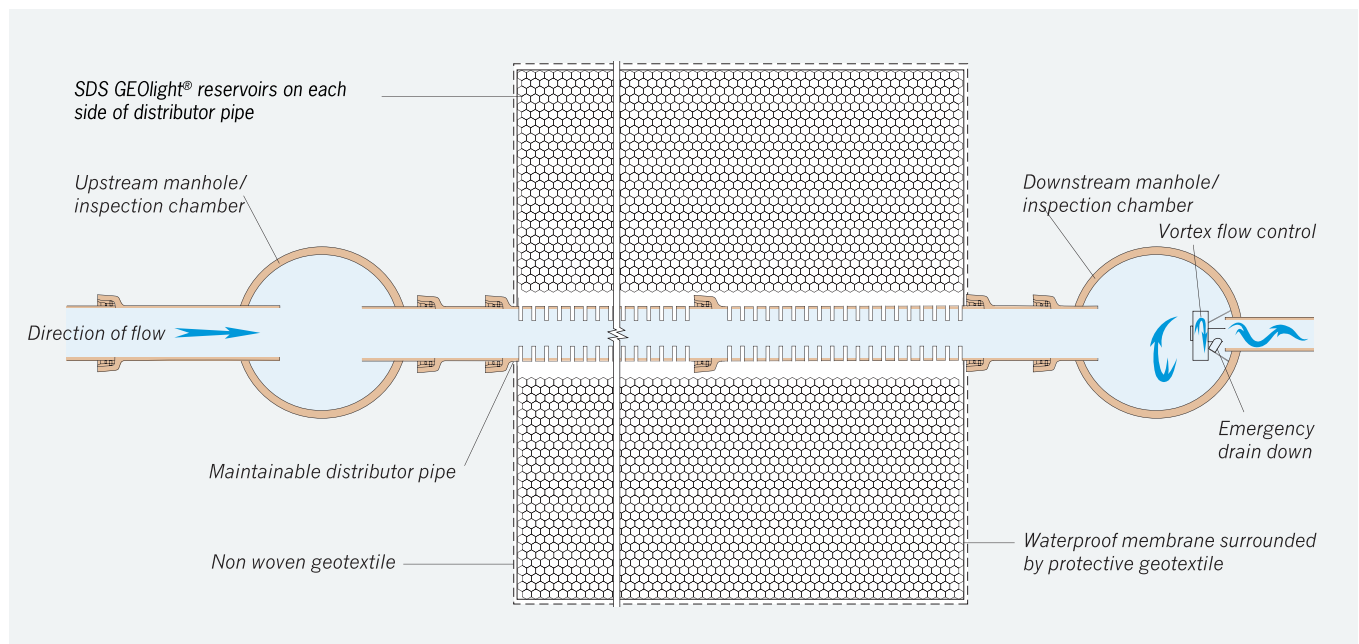
Stormwater Attenuation System

Design Details

Long Section



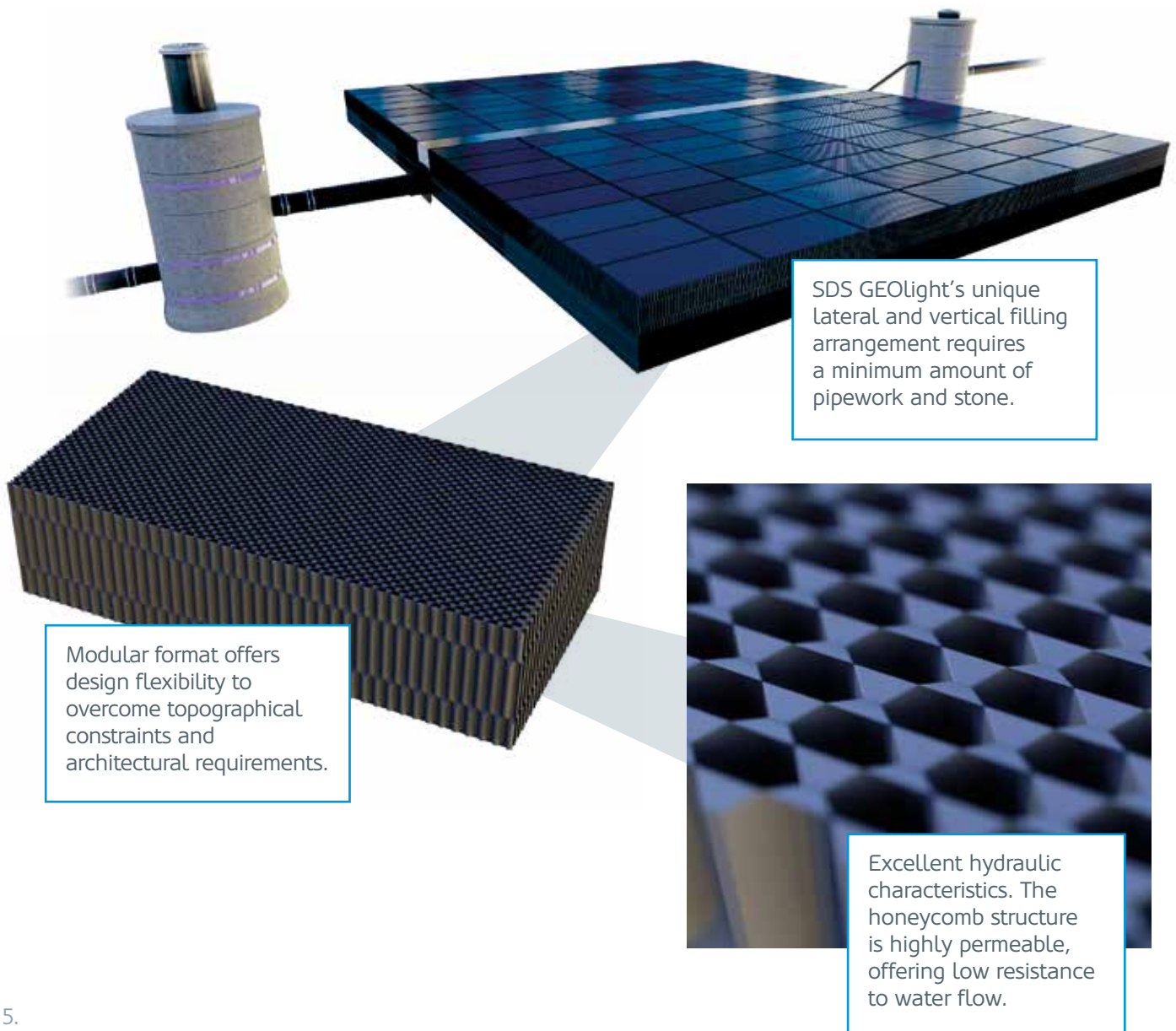
Plan



Benefits

- High compressive strength – can be located under all roads, car parks and amenity area surfaces.
- Reduced excavation costs – the very high void rate (95%) minimises the required volume of earthworks.
- Speed of installation – 1000m³ reservoir, completed in one week.
- Light and easy to handle.
- Depth of tank invert reduced by using patented lateral supply.
- Simplified distribution pipe network, easy maintenance – dispensing with costly and complicated pipework configurations.
- Greatly reduces the risk of flooding when used as stormwater storage.
- Can also be used for water recycling and combining with irrigation systems.
- Can virtually eliminate pollution when used in combination with specialist petrol / oil separators.
- Design service available, including calculations.

GEOLight® block



COSHH and Handling Information

1. COMPOSITION/INFORMATION ON INGREDIENTS:

Hazardous ingredients:

None as finished goods or products.

Types of materials:

Polyvinyl chloride (PVC)
MEK

2. HAZARDS IDENTIFICATION

Nature of hazard:

There are no health risks from the products during normal use. The products may contain various pigment colours and stabilisers that may be toxic. The chemicals are, however, bound within the product material and not easily extracted.

3. FIRST-AID MEASURES

Eye contact:

Plastic materials may cause physical irritation in the eyes. Wash out with large amounts of water. If irritation persists, seek medical advice.

Skin contact:

Not applicable.

Inhalation:

Not applicable.

Ingestion:

Not expected to have any toxic effects.

4. FIRE-FIGHTING MEASURES

Extinguishing media:

On small fires use any hand-held extinguisher type.
On large fires use water.

Fire and explosion hazards:

Melting plastics may flow and spread in a large fire.
Products of fire will be thick black toxic smoke.

Material characteristics:

PVC products will burn in the presence of a flame but are classed as self-extinguishing.

Protective equipment:

Wear self-contained breathing apparatus and protective clothing.

5. HANDLING AND STORAGE

Handling:

There are no hazards associated with the finished products. However, when cutting SDS GEOLight®, we recommend that the correct tools are used e.g. Handsaw or Alligator saw. When cutting, dust may be created; avoid inhaling these dusts. Take care of heat build-up within materials during cutting etc. The pallets of SDS GEOLight® units should be placed on level ground and should not be stacked on site. The maximum weight of the pallet of SDS GEOLight® units as delivered to site is 650kg (700kg on one copy), including packaging. Machines used to lift the pallet should be able to lift this weight safely. Loose individual units should not be stored more than three units high. SDS GEOLight® units are lightweight ranging from 23kg to 55kg and can be easily handled – one or two person lift.

Storage:

SDS GEOLight® units will resist the effects of UV light for up to six months; however, prolonged storage in direct sunlight should be avoided. SDS GEOLight® units should not be stored near to any fuel storage areas or any other solvents. SDS GEOLight® units are very robust and resistant to damage during normal handling; however, they should be secured in areas where impacts from vehicles or construction plant will be avoided.

Material characteristics:

PVC products will burn in the presence of a flame but are classed as self-extinguishing.

Protective equipment:

Wear self-contained breathing apparatus and protective clothing.

6. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory protection:

Not required under normal conditions of use. Where cutting etc. creates dust, wear a disposable half-mask to the standard FFP2S.

Hand protection:

Wear impervious strong gloves to prevent cuts to the hands while handling, cutting etc.

Eye protection:

Wear safety glasses when cutting etc.

Skin protection:

Wear overalls.

7. SITE HAZARDS

Other hazards for consideration:

Working in excavations and trenches – SDS GEOLight® may be designed with a shallow invert for infiltration (soakaway) or attenuation (storage) system. This negates the need for deep excavations or trenches, excavation near services e.g. gas, electricity or contaminated soil areas. N.B. All risk assessments should be undertaken by the main contractor for forklift, access to and working in excavations and trench support.

8. STABILITY AND REACTIVITY

Decomposition products:

Major thermal decomposition products are oxides of carbon. Relevant differences are (in addition): PVC may produce amounts of Hydrogen Chloride.

Stability:

These materials are stable at temperatures up to normal operating limits (moulding parameters).

9. ECOLOGICAL INFORMATION

Biodegradability:

Plastic products are not readily biodegradable but are not detrimental to terrestrial wildlife.

Aquatic toxicity:

Non-toxic to marine life.

10. DISPOSAL CONSIDERATIONS

Method:

The preferred method of disposal is collection and recycling. Plastics can safely be placed with regular industrial or household wastes where recycling is not available.

11. OTHER INFORMATION

As the handling, storage, use and disposal of the product are beyond our control SDS disclaims all liability for loss, damage, injury or expense in any way connected with such activities and further makes no warranties, expressed or implied, as to the suitability of the product for any particular use.

The preferred method of disposal is collection and recycling. Plastics can safely be placed with regular industrial or household wastes where recycling is not available.

SDS

Water
Infrastructure
Systems

INNOVATORS IN WATER TECHNOLOGY



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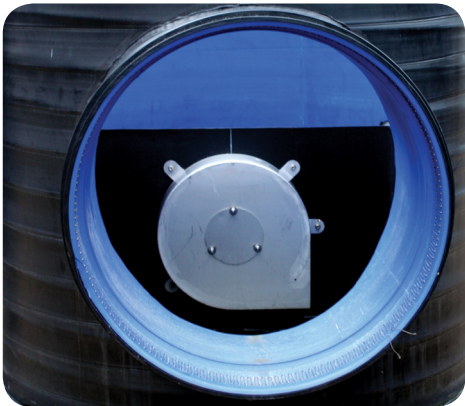
APPENDIX M: Vortex Flow Control Chamber

RIDGISTORMCheck Vortex Flow Control Chambers

Data Sheet

Where flows within a drainage system are required to be limited (i.e. prior to discharge from site), with improved hydraulic performance and reduced maintenance, we are able to offer our RIDGISTORMCheck Vortex Flow Control Chamber.

Pre-fabricated under factory controlled conditions, the RIDGISTORMCheck Chamber is available in a range of diameters from 1050-3000mm and incorporates a vortex flow control unit, fitted onto a preformed headwall. Each vortex flow control unit is manufactured to suit the unique hydraulic characteristics of the site's drainage system design. RIDGISTORMCheck Vortex Flow Control Chambers are typically supplied as a single unit, allowing simple installation and eliminating a number of construction risks associated with in-situ construction. When installed in conjunction with our range of pipe systems, they offer a fully integrated drainage system.



Applications

Site specific RIDGISTORMCheck Vortex Flow Control Chambers are engineered to suit a range of stormwater systems, providing a hydraulically efficient means of flow regulation that does not use moving parts or require power to operate.

Key Features and Benefits

- Self-activating vortex flow controller which controls forward flow of water
- No moving parts - virtually maintenance free
- Manufactured with an integral sump for silt catchment/removal
- Can be manufactured to adoptable standards
- Multiple inlet and outlet options, allowing quick and seamless connection to pipelines
- Depths can be tailored to suit project requirements
- Optional integral benching
- Optional step rungs to BS EN 13101 and ladders to BS EN 14396
- Optional riser section and riser location ring
- Integral lifting points available on request to improve Health and Safety during handling and installation
- Stub connections and rocker pipes are available
- Manufactured in a factory controlled environment for improved quality of finish
- Eliminates wastage associated with in-situ construction

Other fabrications in our RIDGISTORMCheck range:

- Orifice Plate Flow Control Chambers

Performance

RIDGISTORMCheck Vortex Flow Control Chambers are fabricated from Ridgistorm-XL pipework, which is manufactured to meet the material requirements of BS EN 13476.

RIDGISTORMCHECK VORTEX FLOW CONTROL CHAMBER	
PHYSICAL PROPERTIES	
Diameter	1050-3000mm
Depth	To suit requirements
Material	HDPE
Colour	Black with Blue Interior
Flow control units	Grade 304 Stainless Steel
Chemical resistance	HDPE is naturally resistant to most chemicals associated with stormwater drainage systems
Inlets/outlets	100-3000mm
Hydraulic performance	Unit manufactured to suit site specific conditions

Our Ridgistorm-XL Fabrications range

All of our Ridgistorm-XL fabrications are tailor-made, fully-welded, watertight structured wall chambers to suit project-specific requirements. Health and Safety benefits become apparent during handling and installation, due to our fabrications' strong but light in weight nature. In addition, off-site construction ensures uncompromised, high quality products being delivered to site ready-to-install, reducing installation time and costs.



RIDGISTORMCheck Vortex Flow Control Chambers

Data Sheet

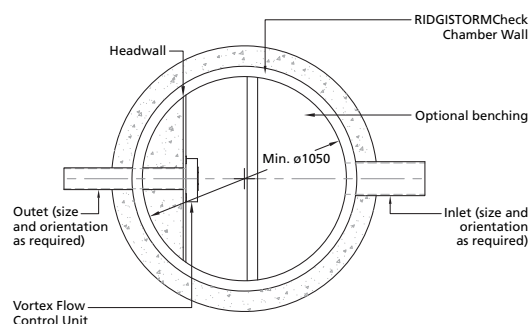
PRODUCT INFORMATION

P2

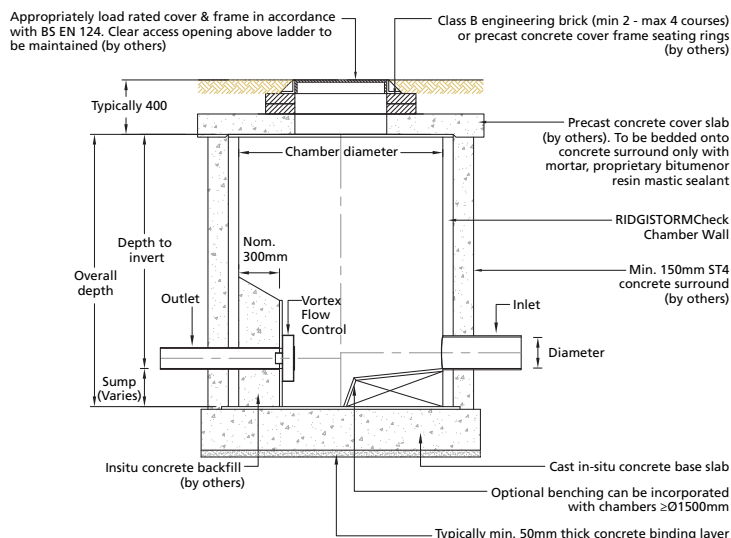
ISSUE 2 - MAR 2019

Non-Bypass Chamber

For sites where discharge rates must be guaranteed to not exceed a prescribed limit(s).

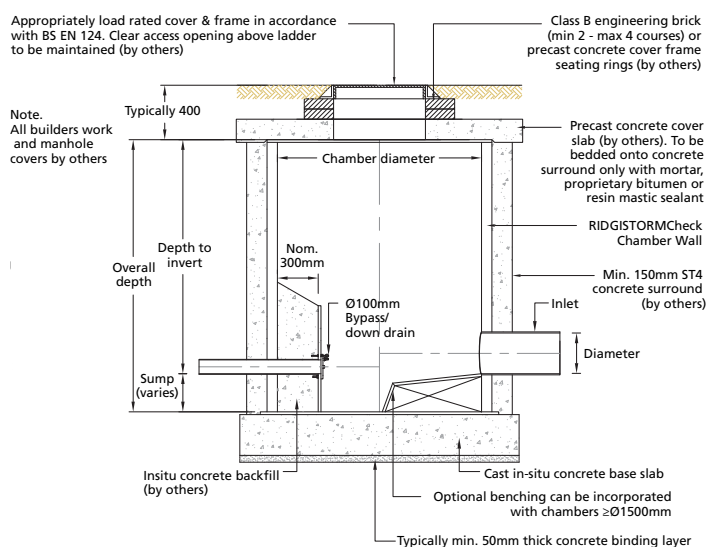
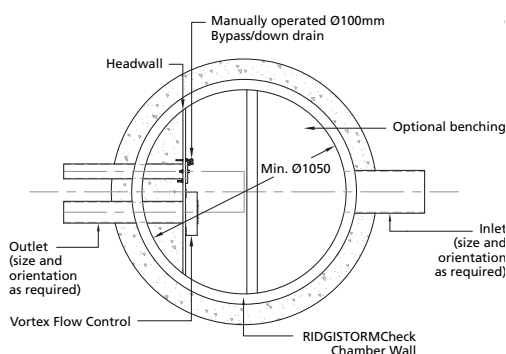


Note:
All builders work and
manhole covers by others



Manual Bypass Design

The manual bypass design offers a bypass the ability to flow control device to facilitate maintenance. Manually operated from the surface, the activation of the bypass system opens a door in the head wall allowing water in the chamber to drain down via the bypass pipe.



For further information please contact our Technical Team on +44 (0) 1509 615100 or download our CAD Standard Details from our website www.polypipe.com/civils-technical-hub

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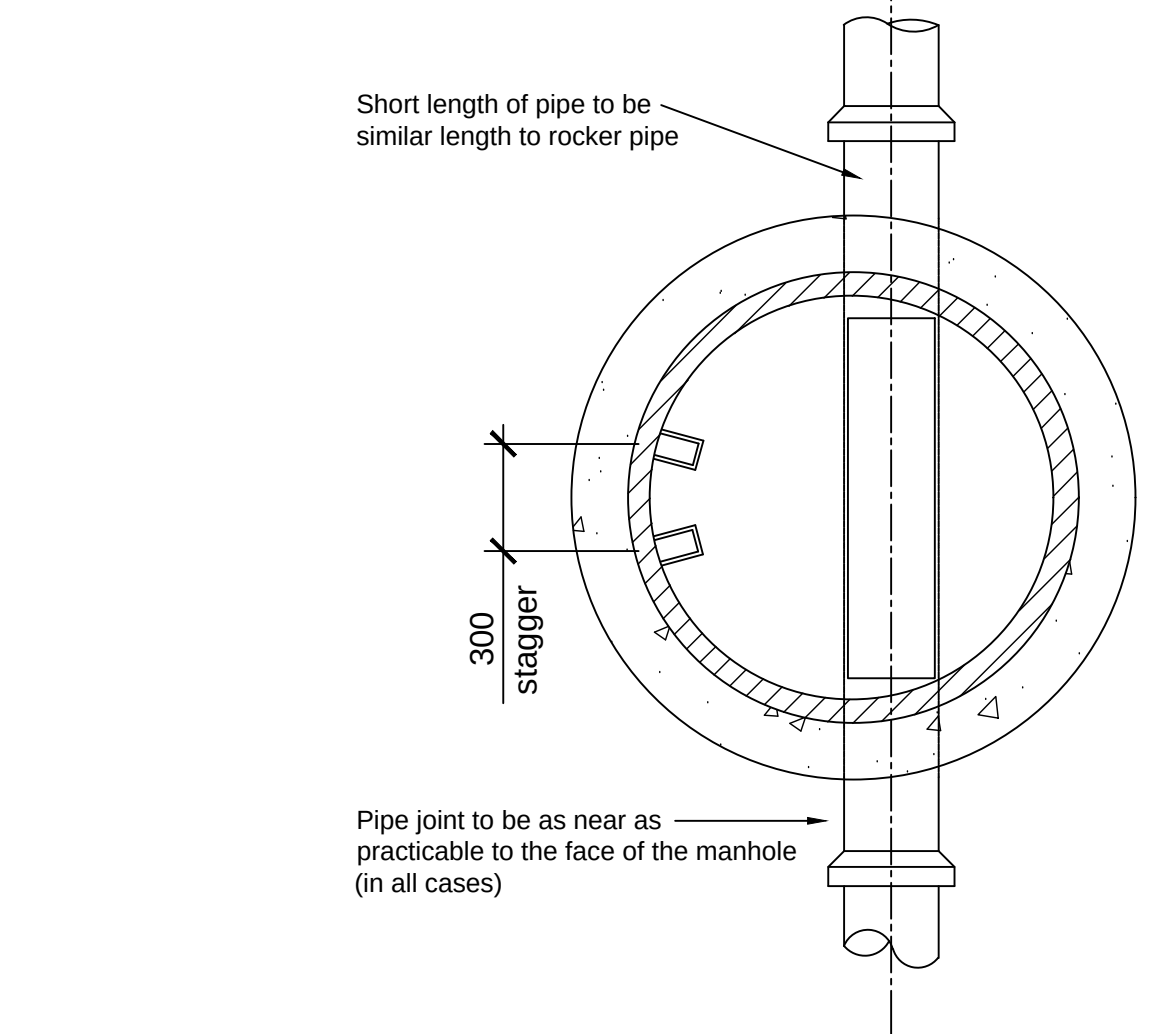
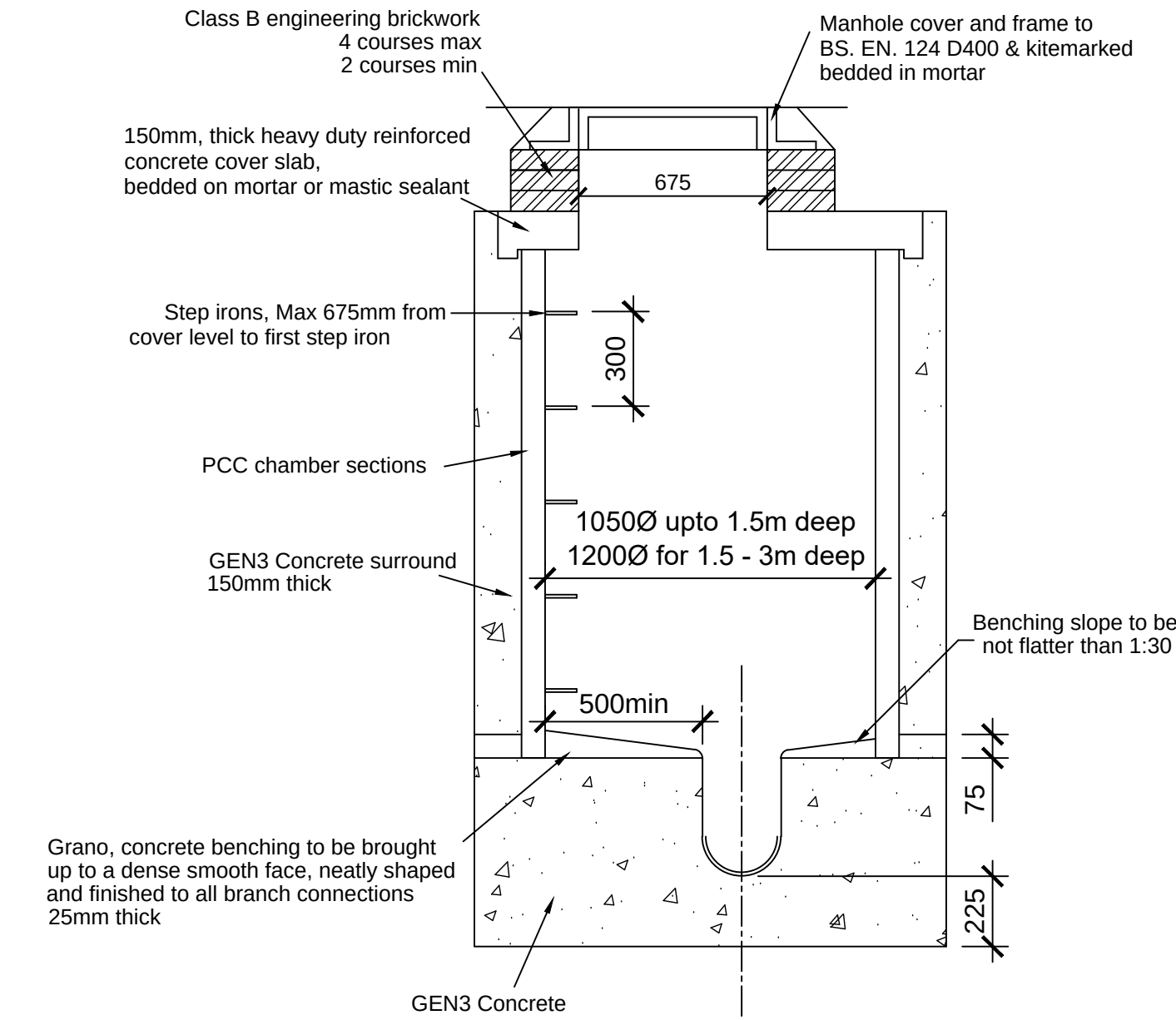
www.polypipe.com/civils



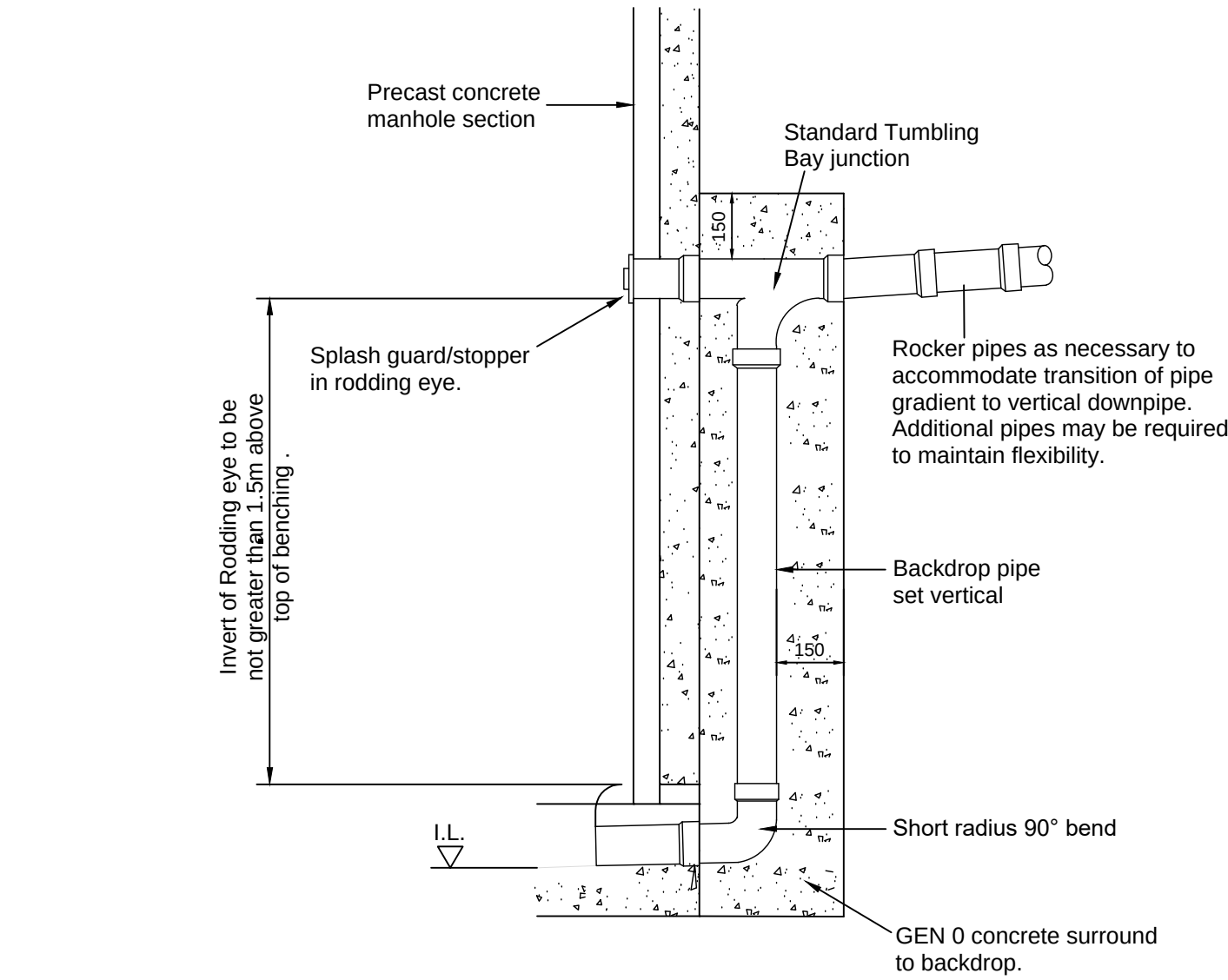
APPENDIX N: Lidl Typical Site Drainage Details

Architectural drawings show design intent in accordance with Lidl International Specification. Site Specific Design Teams should use these drawings for guidance only. Full design responsibility will remain with the Site Specific Team and thus they should ensure their Proposals fully comply with all relevant statutory authority requirements relevant to the individual project.

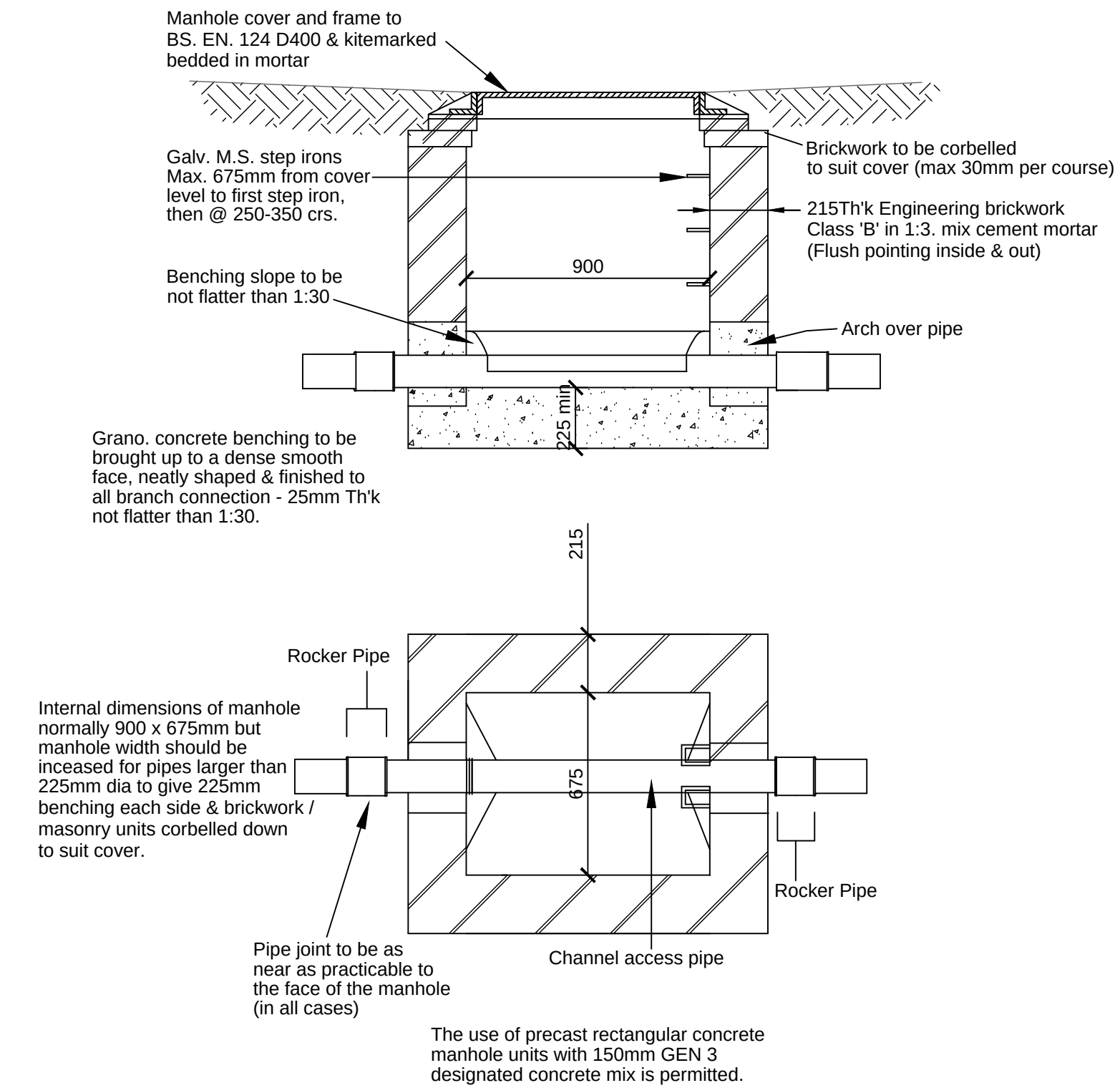
All deviations from the design intent should be approved by Lidl.



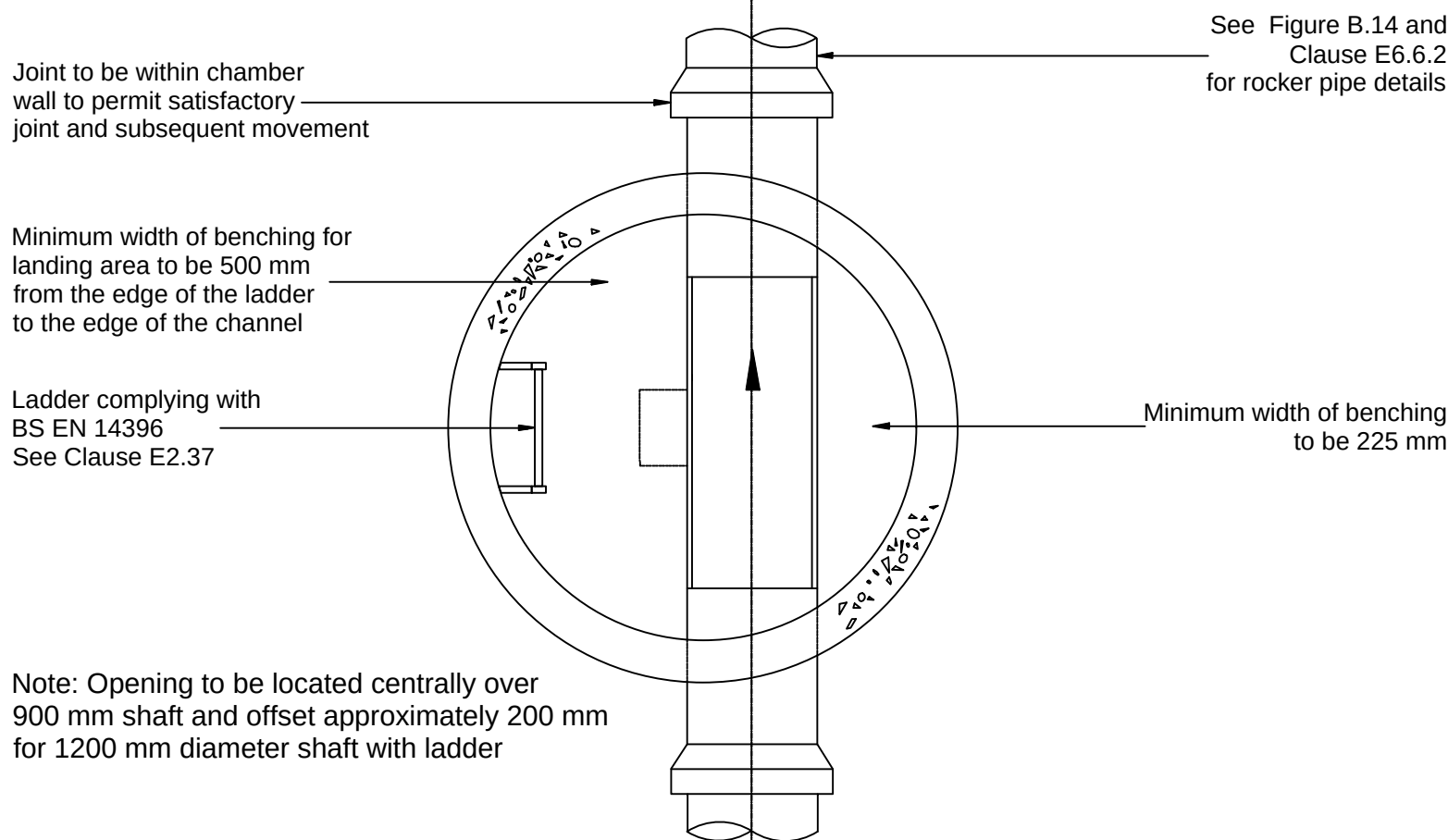
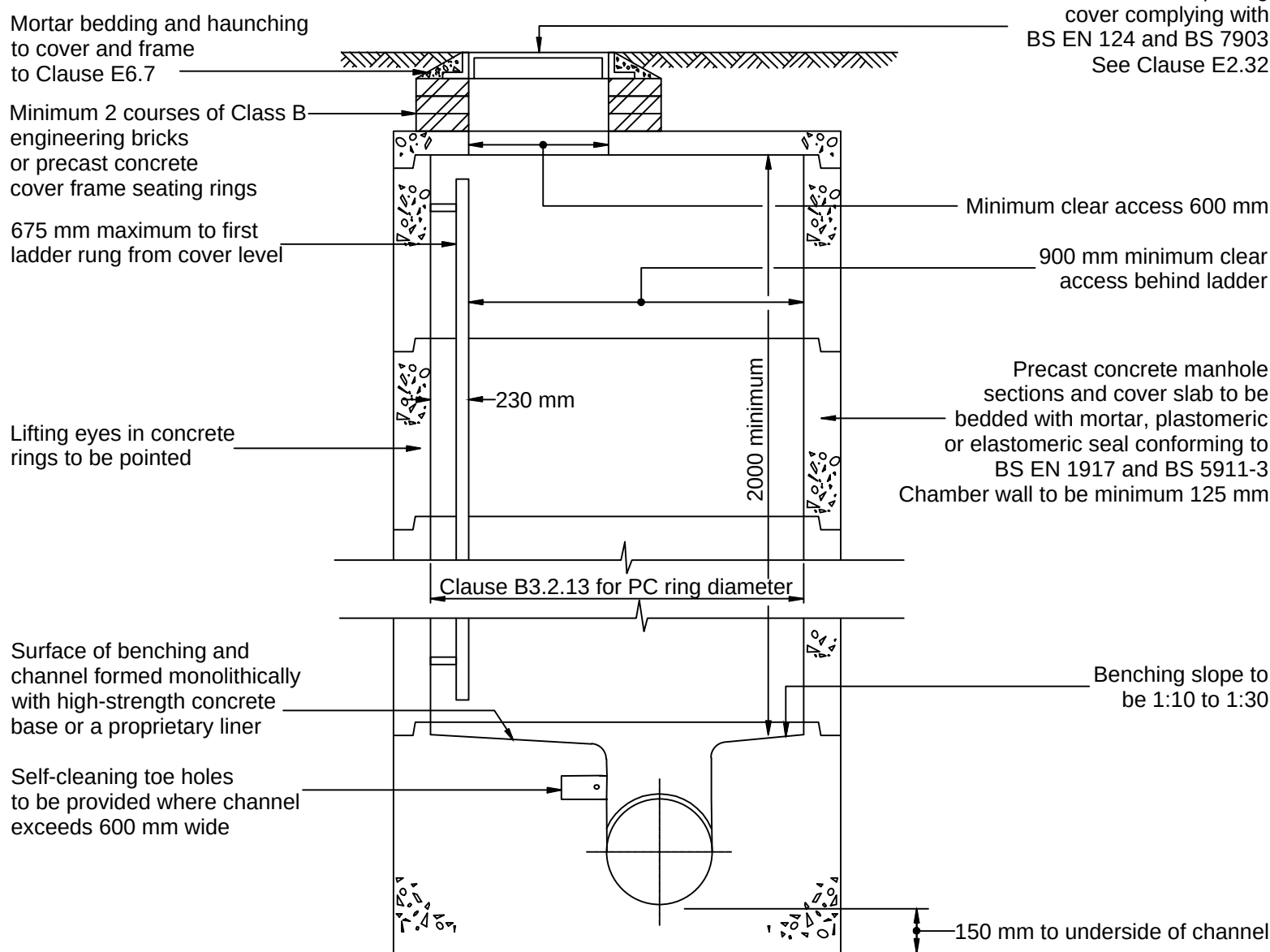
Adoptable Manhole Detail Type 2
Depth from cover level to pipe
soffit 3m max
Scale 1:20



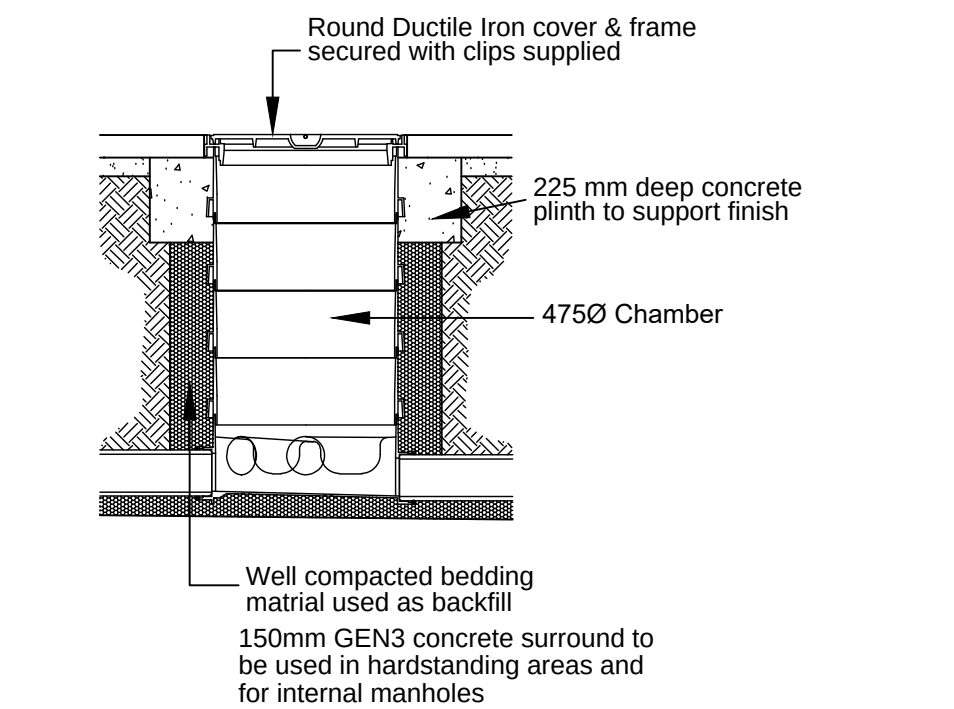
External Backdrop



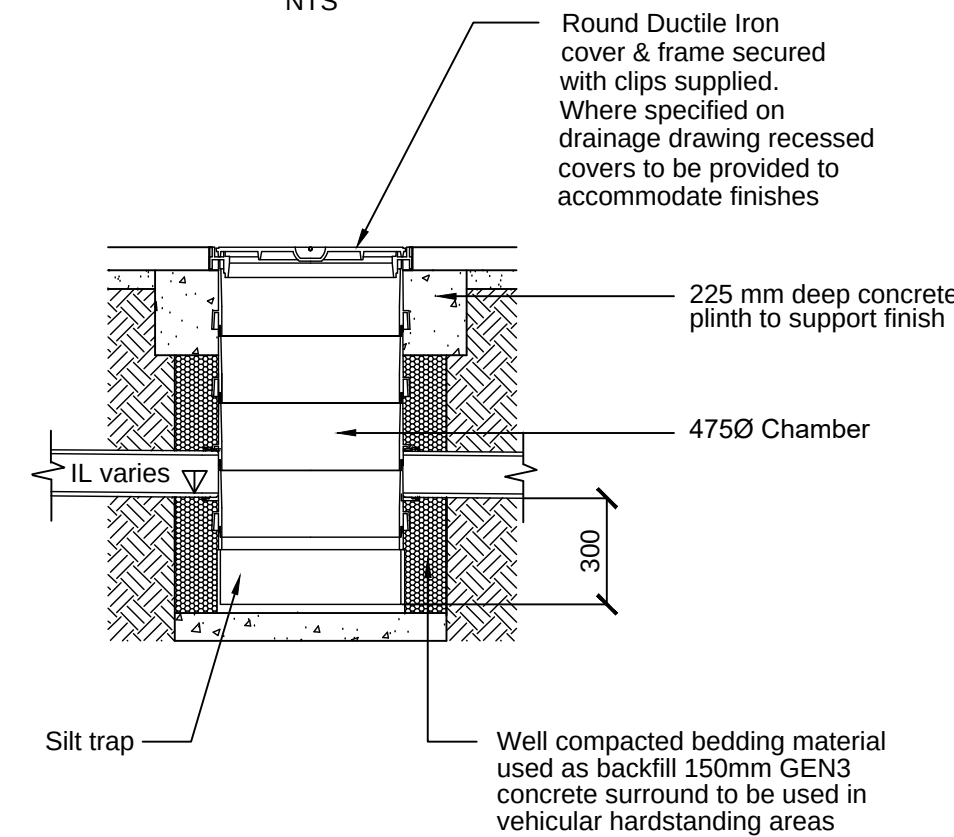
Type 4
Adoptable Brickwork Manhole Detail for
Depth to soffit less than 1.0m
Scale 1:20



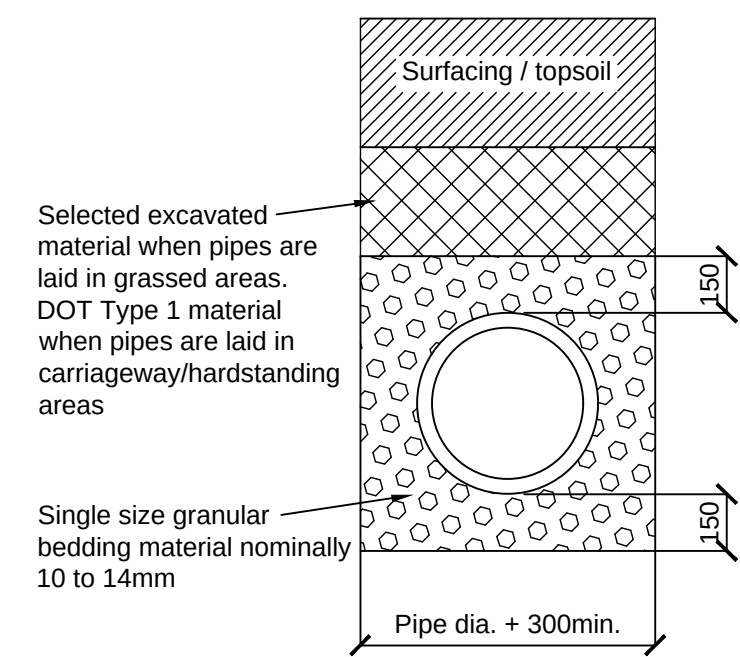
TYPICAL MANHOLE DETAIL - TYPE 1B
Depth from cover level to soffit of pipe 3 m to 6 m
Not to scale



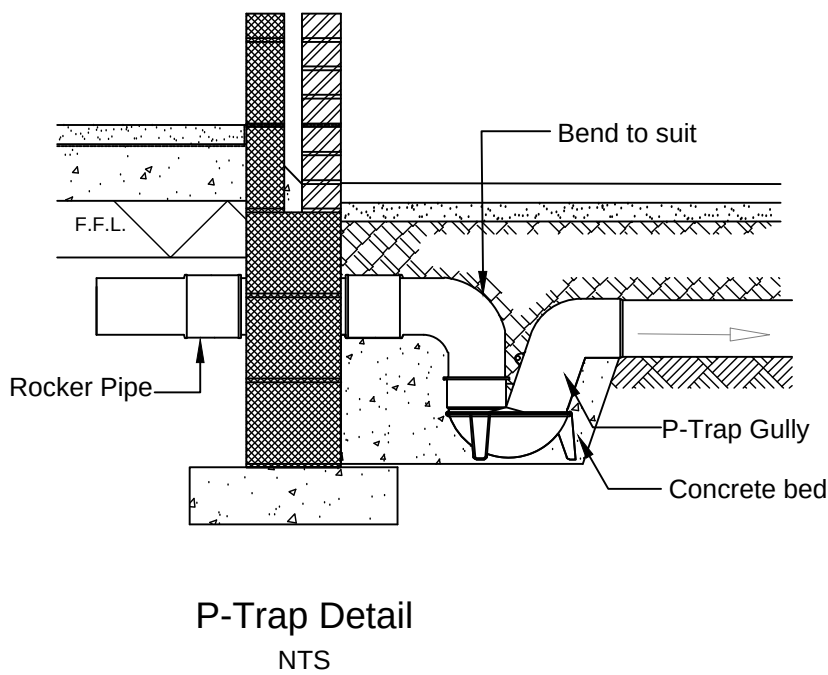
Details of 'UPVC' Manholes Type 3
(Hepworth PPIC inspection chamber)
(Max depth 1.2m)
NTS



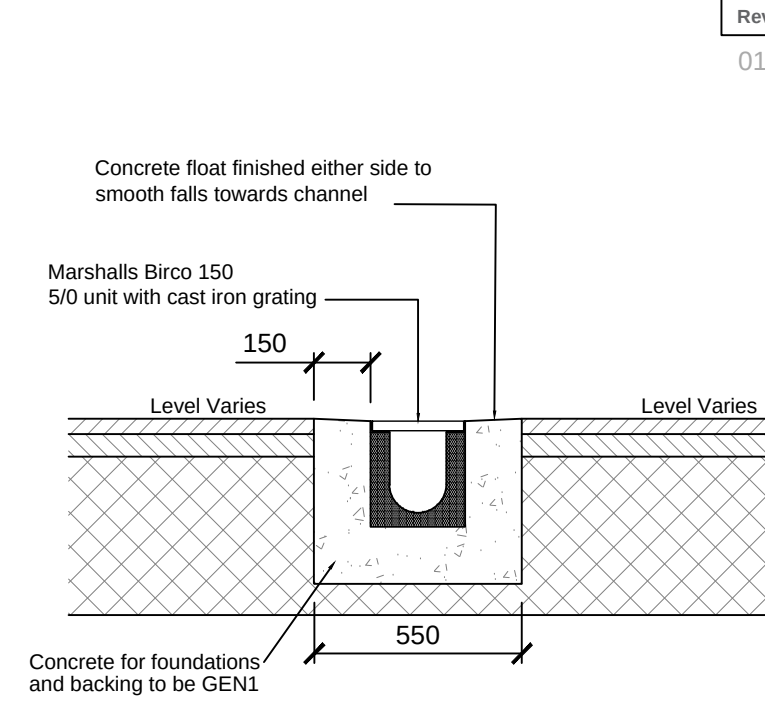
Typical Silt Trap Arrangement
NTS



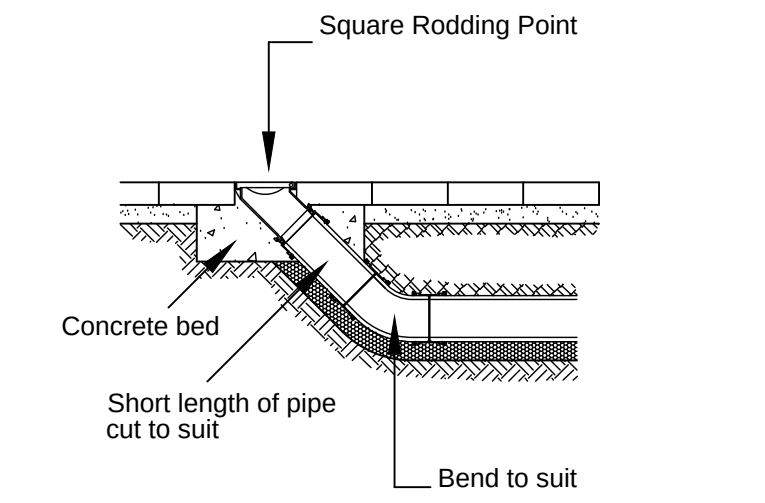
Class "S" Pipe Bedding Detail
(Typical unless noted otherwise)
Scale 1:20



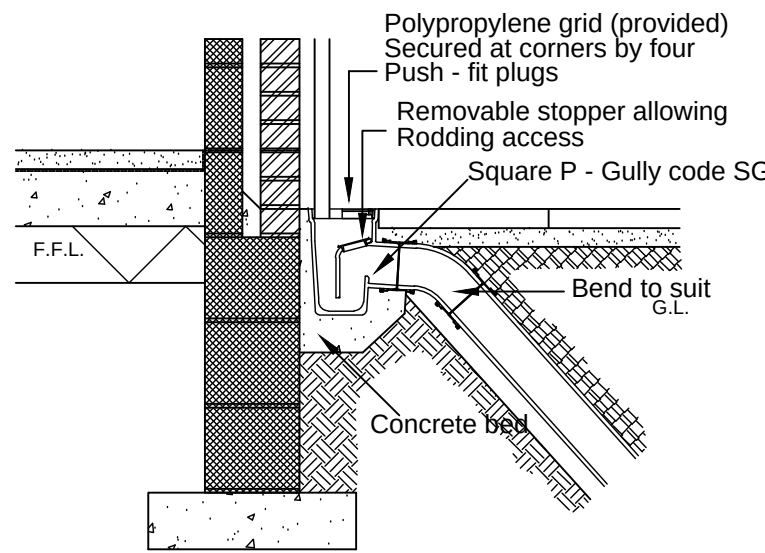
P-Trap Detail
NTS



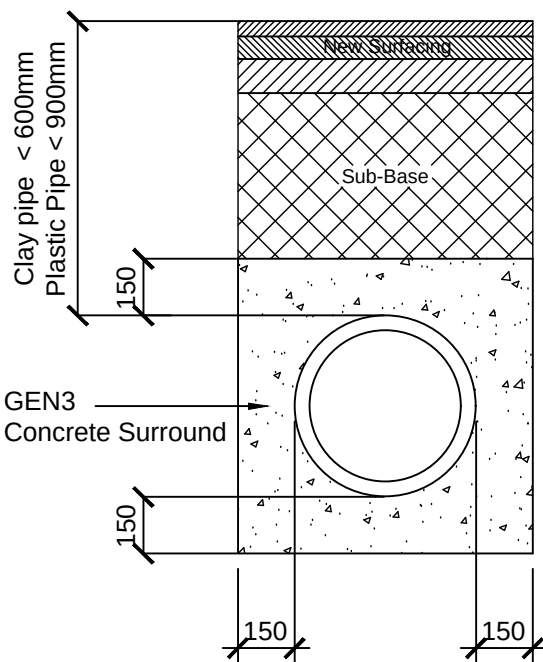
Typical Birco 150 Channel Detail



Rodding Point Detail
NTS



Back Inlet Gully Detail
NTS



Concrete Surround Detail
(Hardstanding areas)
("Flexcell" compressible board to be used at all pipe joint locations)
Scale 1:20

Notes

The developer should take all necessary precautions to avoid causing any damage to, or interference with flow in existing sewers and shall ensure that debris, silt, mud etc. do not enter

Where works are to be carried out on sewers, the contractor must carry out their works in accordance with "The classification and management of confined spaces" published by Water UK. they must also comply with all other relevant health and safety legislation/ documentation.

All materials are to be stored in such a manner as to preserve their quality as to the standard specified in the specification. contaminants. All concrete to be produced on site must be mixed with only potable water, to ensure that it is clean from dirt and

Aggregates for concretes shall comply with the relevant provisions of BS EN 12620 and PD 6682-1.

Sands for mortar and grouts shall be washed sand, complying with BS EN 13139 and PD 6682-3. All other sands are to comply with BS EN 12620 and PD 6682-1 or BS EN 13139 and PD 6682-3.

Pulverised-fuel ash (PFA) for use as a component material in cementitious grout our non structural concrete shall comply with BS 3892-2 & 3.

Vitrified clay pipes and fittings for sewers shall have flexible mechanical joints. Pipes for foul sewers and surface water sewers shall comply with the relevant requirements of BS EN295 and BS65 (Surface water pipes only)

Pre-cast concrete manhole units of circular cross section for manholes, chambers and wet wells shall comply with the relevant provisions of BS EN 1917 and BS 5911-3.

Ladders for manholes in a vertical plane are to be mild steel and comply with BS4211, Class A and PD 970.

GRP ladders shall be manufactured in accordance with BS EN 131, and from glass-reinforced polyester using an appropriate resin for the ladder location. Unidirection reinforcement shall be provided in the GRP matrix to maximise strength.

All Manhole covers and frames shall comply with the relevant provisions of BS EN 124, BS 7903 and Highways Agency guidance document HA 104/02. They shall be of a non-rocking design which do not rely on the use of cushion inserts. D400 Covers to be used in all carpark areas.

Clay bricks to be used within manholes are to be solid, Class B Engineering bricks complying to BS 3921. All bricks shall be frost resistant category F.

Standard concrete mixes should be in accordance with BS EN 206-1 and BS 8500 and shall be used with a 20mm nominal maximum size of aggregate and a slump class of S2 for a target of 70mm.

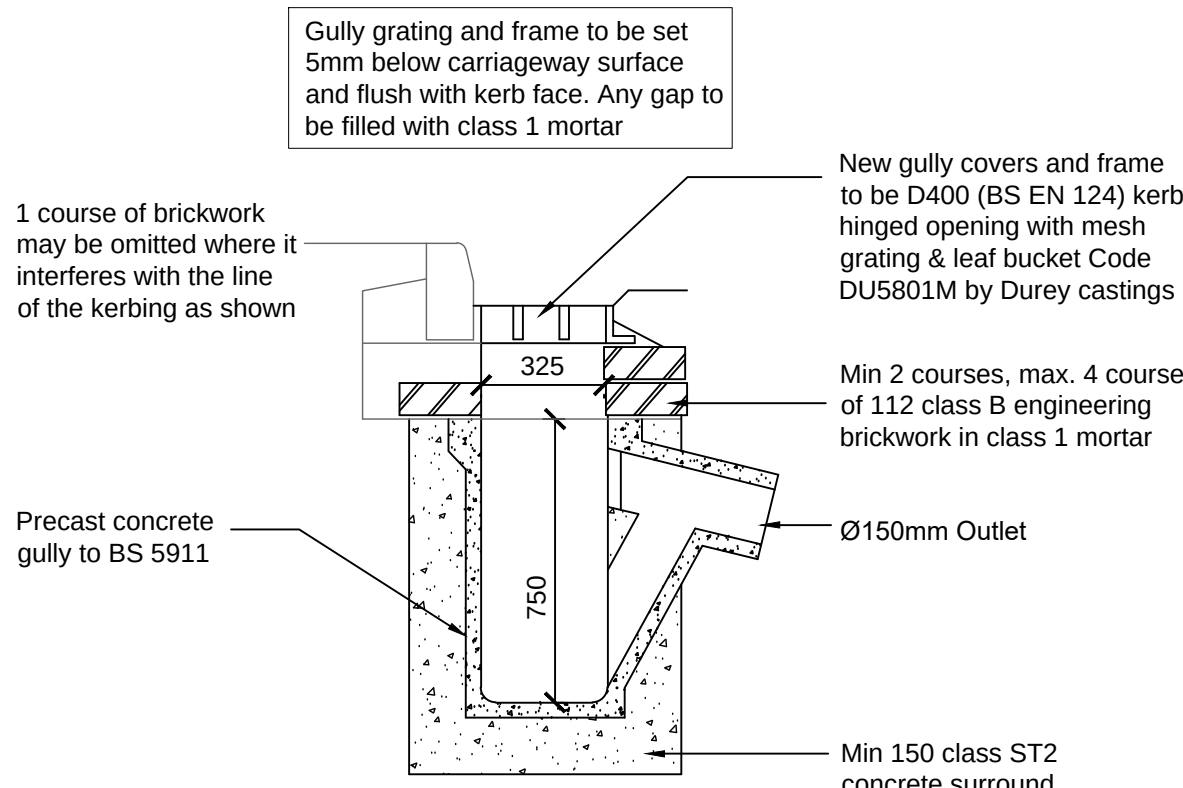
GEN1 concrete to be used for; fillings, blindings, soft spots and drainage slumps. GEN3 concrete to be used for; all other applications. U.N.O.

Admixtures (including calcium chloride and pigments) shall not be used in the production of concrete.

High strength concrete topping shall be produced, laid and finished in accordance with the relevant provisions of BS 8204: part 2 and the following approximate mix proportions shall be used: 1 part cement, 1 part natural sand and 2 parts single-sized coarse aggregate.

All mortar mixes shall be in accordance with BS 5628-1:2005.

All pipes to be either extra strength VC to BS 65 or PVC to BS 4660 or BS 5481 "UPONOR ULTRARIB"



Typical Precast Concrete Road Gully
Scale 1:20



Project BBS 2020.1 Lidl Corporate Specification				
Drawing Title Typical Drainage Details				
Project No. LD (14)	Drawing No. SP - 06	Suitability SO	Revision 01	Scale at A1 AS INDICATED

This drawing is Copyright - Check all dimensions on site - Inform originator of any discrepancies - Work to figured dimensions only - Do not scale

