

LAND TO THE NORTH OF ARUNDEL ROAD, FONTWELL

Flood Risk Assessment and Drainage Strategy

33186/CS

March 2026



Inspiring. Planning. Delivering

With 40 years of knowledge and sector experience, DHA, the South East's largest independent planning and highways consultancy delivers solutions built for success.

The DHA team share the same values, vision and approach to our work and clients, and we benefit from the knowledge of our multiple business units, providing integrated solutions to reach the optimum outcome. We believe that is what keeps us unique is our ability to provide exceptional quality customer care and adaptability to the projects we take on.

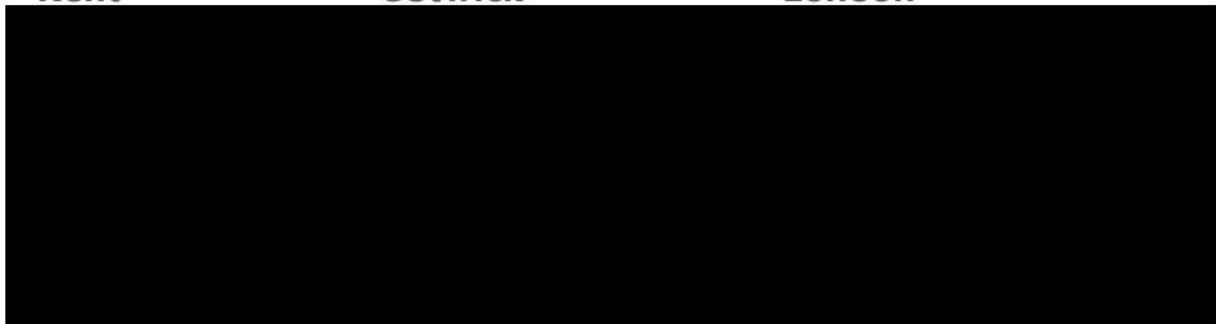
Planning
Transport and Infrastructure
Masterplanning and Design
Environmental Impact Assessment
Flood Risk and Drainage
Land & Viability
GIS

Our Offices:

Kent

Gatwick

London



06.03.26	0.1	Final
----------	-----	-------

Disclaimer

It should be noted that any discrepancies in calculations are a result of rounding and therefore the individual figures may not directly add up to the total.

The findings, recommendations and conclusions of this report are based on information obtained from a variety of external sources which are understood to be reputable. DHA Environment cannot guarantee the reliability of any data from third parties and no liability can be accepted for any erroneous information or the conclusions drawn from it.

CONTENTS

1	EXECUTIVE SUMMARY	4
1.1	OVERVIEW.....	4
2	INTRODUCTION.....	5
2.1	GENERAL.....	5
2.2	SCOPE AND OBJECTIVES	5
3	EXISTING CONDITIONS	6
3.1	SITE LOCATION.....	6
3.2	EXISTING SITE	6
3.3	EXISTING DRAINAGE REGIME AND SURFACE WATER RUN-OFF	6
3.4	EXISTING PUBLIC SEWERS	7
3.5	GEOLOGY AND HYDROGEOLOGY	7
4	SITE SPECIFIC FLOOD RISK ASSESSMENT	9
4.1	PROPOSED DEVELOPMENT	9
4.2	FLOOD RISK ZONES	9
4.3	OTHER SOURCES OF FLOODING.....	9
4.4	VULNERABILITY CLASSIFICATION.....	10
4.5	SEQUENTIAL TEST	10
5	MANAGEMENT OF SURFACE AND FOUL WATER ON THE DEVELOPMENT	11
5.1	PROPOSED DEVELOPMENT	11
5.2	AIMS	11
5.3	PROPOSED SURFACE WATER DRAINAGE STRATEGY	11
6	FOUL WATER DRAINAGE.....	17
6.1	PROPOSED FOUL WATER DRAINAGE	17
7	CONCLUSIONS AND RECOMMENDATIONS	18

Appendix

A	- TOPOGRAPHICAL SURVEY
B	- GREENFIELD RUNOFF CALCULATIONS
C	- SOUTHERN WATER/WSCC DRAINAGE RECORDS
D	- SITE INVESTIGATION
E	- PROPOSED MASTERPLAN
F	- ENVIRONMENT AGENCY FLOOD MAPPING
G	- PROPOSED DRAINAGE STRATEGY AND CALCULATIONS
H	- MAINTENACE PLAN

1 EXECUTIVE SUMMARY

1.1 OVERVIEW

- 1.1.1 The detailed planning proposals comprise of residential development of 64 units on a greenfield site with an overall area of 2.74 hectares on Land to the North of Arundel Road, Fontwell, West Sussex BN18 0SF. The site has been allocated in the Walberton Neighbourhood Plan for up to 40 units.
- 1.1.2 This application follows a previous Outline Planning Application (WA/74/24/OUT) for 56 residential dwellings and a stand-alone community building. That application was recommended for approval by Officers and received a unanimous resolution to grant permission at the January 2025 Planning Committee. However, agreement could not be reached with Walberton Parish Council in relation to the Section 106 provisions concerning the transfer of land for the community building, and the application was therefore withdrawn at the end of 2025. Notwithstanding this, the principle of residential development and the key technical matters including drainage were accepted by the LPA and all statutory consultees.
- 1.1.3 The site-specific flood risk assessment determined that the area of the site to be developed is located entirely in Flood Zone 1; low risk of flooding from rivers or sea.
- 1.1.4 NPPF Annex 3, "Flood Risk Vulnerability Classification", states that buildings used for residential use can be classified as "more vulnerable". Planning Practice Guidance Table 2, "Flood risk vulnerability and flood zone 'incompatibility'", determines all classes of land development are appropriate in Flood Zone 1 and an Exception Test is not required.
- 1.1.5 The site-specific flood risk assessment determines that the site is not at risk from flooding from any other source.
- 1.1.6 The site is underlain by superficial deposits (Gravel, sand, and silt) over bedrock geology comprising of the Lambeth Group (Clay silt and sand). Initial investigation carried out during April 2024 after a particularly wet winter the groundwater was found to be located at a depth of between 0.34 and 1.5m below ground level. Further testing was carried out between October 2024 and March 2025 which found that the area in which the infiltration basin is to be located to be dry.
- 1.1.7 A Sustainable Urban Drainage System (SuDS) has been provided as part of the surface water drainage layout to deal with the surface water generated from the development to ensure that flood risk is not increased elsewhere.
- 1.1.8 It is proposed that the areas of hardstanding will be constructed as a lined porous pavement with any roof areas draining directly into them. Flows from each porous pavement will be connected to the adjacent porous pavement which discharges into a 1.2m deep infiltration basin located in the southeast corner of the site.
- 1.1.9 The foul water from the development will be collected in a system of gravity sewers discharging into the existing foul water sewer located in Arundel Road.

2 INTRODUCTION

2.1 GENERAL

- 2.1.1 DHA has been commissioned by Harlequin Developments to prepare a Flood Risk Assessment and Drainage Strategy for a 64-unit residential development on Land to the North of Arundel Road, Fontwell, West Sussex BN18 OSF.

2.2 SCOPE AND OBJECTIVES

- 2.2.1 Reference to the Environment Agency flood maps show that the site is located within Flood Zone 1. This FRA has been carried out in accordance with the National Planning Policy Framework (NPPF). The NPPF requires an FRA to be prepared for all developments located in Flood Zone 1 with a site area greater than one hectare.
- 2.2.2 The proposals are classed as major development and as such this report has been prepared to outline the surface water drainage for the site to support the planning application and demonstrate compliance with both the Arun Local Plan and the Walberton Neighbourhood Plan.
- 2.2.3 This report provides the following information.
- (1) An assessment of the flood risk to the site based upon flood data and the flood maps provided by the Environment Agency and Strategic Flood Risk Assessment;
 - (2) An assessment of the impact of the new development in terms of surface water runoff;
 - (3) Proposals for measures to mitigate the generation of surface water runoff from the proposed development in the form of a surface water drainage strategy incorporating SuDS;
 - (4) Details of the disposal of foul water from the development.
 - (5) Proposals to mitigate any residual flood risks to the development; and
 - (6) Proposals to mitigate any contamination to groundwater.
- 2.2.4 The findings, recommendations and conclusions of this report are based on information obtained from a variety of external sources which are understood to be reputable. DHA cannot guarantee the reliability of any data from third parties and no liability can be accepted for any erroneous information or the conclusions drawn from it.

3 EXISTING CONDITIONS

3.1 SITE LOCATION

- 3.1.1 The site is located on Land to the North of Arundel Road, Fontwell, West Sussex BN18 0SF and is centred on approximate grid reference 495761,106982. The site occupies a total area of 2.74 hectares and currently consists of greenfield.

3.2 EXISTING SITE

- 3.2.1 A topographical survey of the site is shown on drawing 33186-TS-01 contained within Appendix A. The site is irregular in shape and falls from a high point of 33.85m AOD on the northern boundary to a low point of 30.14m AOD on the southern boundary adjacent to Arundel Road. The levels continue to fall away to the southwest down West Walberton Lane. The site has the following boundary conditions:

- North - A27 Arundel Road.
- West - Residential properties.
- East - A27 Arundel Road.
- South - Arundel Road with residential properties beyond.

3.3 EXISTING DRAINAGE REGIME AND SURFACE WATER RUN-OFF

- 3.3.1 There is no positive surface water outfall from the site so any rainfall will infiltrate to ground with any residual surface water flowing overland from the North to the South following the existing topography on to Arundel Road to the South.
- 3.3.2 The existing green field (pre-development) peak discharge rates have been calculated by using the Flood Studies Report ICP (SuDS) method based on the total developable area of 2.74 hectares. The calculations can be seen in **Appendix B** and have been summarised in Table 1 below:

Catchment Reference	Area	Qbar (l/s)	1 in 1 year	1 in 30 years	1 in 100 years
Catchment A	2.74	9.9	8.4	22.3	31.4

TABLE 1 – PPG GUIDANCE SUMMARY OF PRE-DEVELOPMENT GREENFIELD RUNOFF RATE

3.4 EXISTING PUBLIC SEWERS

- 3.4.1 Reference has been made to Southern Water asset plans found at **Appendix C** which indicate the location of public sewers in the area. These records do not indicate any private drainage that may be present.
- 3.4.2 In October 2011 the ownership of any private sewer serving more than one property was automatically transferred to the Water Authority although many of these sewers are yet to be recorded on the asset plans.

Foul Sewers

- 3.4.3 The Southern Water asset plans show there to be 150mm diameter foul water sewer draining from West to East along Arundel Road before heading South down West Walberton Lane.

Surface Water

- 3.4.4 The Southern Water asset plans show there to be no surface water sewers within the vicinity of the proposed development.

Combined Water

- 3.4.5 The Southern Water asset plans show there to be no combined water sewers within the vicinity of the proposed development.

Highway Drainage

- 3.4.6 Reference has been made to Arun District Council asset plans found at **Appendix C** which indicate the location of highway drainage assets in the area.
- 3.4.7 A survey of these assets was carried out by SDS during December 2024 a copy of which is also contained in **Appendix C**. This shows the gullies in Arundel Road draining into a 150mm highway drain. This upsizes to a 225mm/300mm highway drain which drains down West Walberton Lane before increasing to 450mm in diameter adjacent to Chilterns where it connects into an existing watercourse.

3.5 GEOLOGY AND HYDROGEOLOGY

- 3.5.1 The online British Geological Survey maps indicate that the site is underlain by superficial deposits (Gravel, sand, and silt) over bedrock geology comprising of the Lambeth Group (Clay silt and sand).
- 3.5.2 Reference has been made to the Geo-Environmental Report prepared by Technics dated May 2024. Initial investigation work was carried out on the 26th and 27th February 2024 this work comprised of 11 bore holes and five trial pits across the site. This investigation confirmed the geology to comprise of sand and gravel over clay. Ground water was encountered at a depth of between 1.1 and 1.3 in WS03 and WS07 and was dry in WS 06 which is in the southeast corner of the site.
- 3.5.3 Infiltration testing was planned to be carried out in five locations at a depth of 1.8m below ground level but could not be completed due to the seepage of groundwater into the pits.

- 3.5.4 A further round of groundwater testing was carried out on the 4th of April 2024. This showed to be depths of between 0.34m and 1.5m below ground across the site. The ground water was at its deepest point in the southeast corner of the site.
- 3.5.5 Further infiltration testing was carried out on the 30th of April 2024. This comprised of three infiltration tests in accordance with BRE 365 located in the unsaturated zone above the ground water level. Infiltration rates of between $1.15 \times 10^{-5} \text{m/s}$ (0.04m/hr) and $2.22 \times 10^{-5} \text{m/s}$ (0.08m/hr) were achieved in these tests.
- 3.5.6 A further groundwater monitoring was carried out on the 15th of May 2024 and showed the groundwater levels to be falling from the previous month
- 3.5.7 As requested by Arun District Council as part of the previous outline planning application, the groundwater was monitored across the site between the 24th October 2024 and 18th March 2025. A summary of all the groundwater is shown in table 2.

Reference	WS03	WS06	WS07	WS11
Date	Depth (m)			
01/03/2024	1.1	Dry	1.3	-
04/04/2024	0.34	1.5	0.72	-
15/05/2024	1.2	1.4	1.6	-
24/10/2024	-	Dry	Dry	Dry
26/11/2024	-	Dry	Dry	Dry
20/12/2024	-	Dry	0.74	Dry
17/01/2025	-	Dry	Dry	Dry
21/02/2025	-	Dry	Dry	Dry
18/03/2025	-	Dry	Dry	Dry

TABLE 2 - SUMMARY OF GROUNDWATER LEVELS

- 3.5.8 Extracts from the Geo-Environmental Assessment are contained in **Appendix D**.

4 SITE SPECIFIC FLOOD RISK ASSESSMENT

4.1 PROPOSED DEVELOPMENT

- 4.1.1 The proposals comprise the development of 64 residential units on Land to the North of Arundel Road, Fontwell, West Sussex BN18 OSF. The proposed Masterplan is shown in **Appendix E**.

4.2 FLOOD RISK ZONES

- 4.2.1 The National Planning Policy Framework provides guidance on assessing flood risk and seeks to guide development away from areas at risk of flooding from all sources. Planning Practice Guidance defines several Flood Zones based on the probability of flooding and provides guidance on the most appropriate form of development within each zone. The flood risk zones can be summarised in table 3 as follows:

Zone	Annual probability in any year	
	River Flooding	Sea Flooding
Zone 1 : Low probability	Less than 1:1000 (<0.1%)	Less than 1:1000 (<0.1%)
Zone 2: Medium probability	Between 1:1000 and 1 in 100 (0.1% -1%)	Between 1:1000 and 1 in 200 (0.1% - 0.5%)
Zone 3a : High probability	Greater than 1:100 (>1%)	Greater than 1:200 (>0.5%)
Zone 3b: Functional floodplain	Greater than 1 in 20 (>5%)	N/A

TABLE 3 – PPG GUIDANCE ON FLOOD ZONES

- 4.2.2 Reference has been made to the Environment Agency flood risk maps, a copy of which is contained within **Appendix F**. This shows the site to be located entirely within Flood Zone 1; low probability of fluvial flooding.

4.3 OTHER SOURCES OF FLOODING

- 4.3.1 Reference has been made The Environment Agency flood risk maps which provide references on the risk of flooding from all sources including fluvial, surface water, groundwater, and artificial sources.

Surface water flooding

- 4.3.2 Environment Agency online mapping shows that there is a very low risk of surface water flooding on the site.

Groundwater

- 4.3.3 Groundwater flooding occurs as excess water emerges at the ground surface. The Environment Agency online mapping indicates that flooding from groundwater is unlikely in this area.

Flooding from artificial sources

- 4.3.4 Flooding from reservoirs is extremely unlikely. An area is considered at risk if peoples' lives could be threatened in the event of a dam or reservoir failure. Reference has been made to the Environment Agency online mapping which indicate that flooding from reservoirs is considered unlikely.

4.4 VULNERABILITY CLASSIFICATION

- 4.4.1 NPPF Annex 3: "Flood Risk Vulnerability Classification", states that sites used for residential use can be classified as "more vulnerable".

4.5 SEQUENTIAL TEST

- 4.5.1 The Sequential Test should be used in areas known to be at risk now or in the future from any form of flooding, except in situations where a site-specific flood risk assessment demonstrates that no built development within the site boundary, including access or escape routes, land raising or other potentially vulnerable elements, would be located on an area that would be at risk of flooding from any source, now and in the future (having regard to potential changes in flood risk).
- 4.5.2 Given the site is located within Flood Zone 1 and is not at risk from any other source of flooding the site is considered to have passed the Sequential Test.
- 4.5.3 Residential development is appropriate in Flood Zone 1, and an Exception Test is not required.

5 MANAGEMENT OF SURFACE AND FOUL WATER ON THE DEVELOPMENT

5.1 PROPOSED DEVELOPMENT

- 5.1.1 The proposals comprise the development of 64 residential units on Land to the North of Arundel Road, Fontwell, West Sussex BN18 OSF.

5.2 AIMS

- 5.2.1 Sustainable urban Drainage Systems (SuDS) techniques will be used to deal with the surface water generated by the development. This will replicate the existing drainage regime by dealing with the surface water at source, to prevent increasing the risk of downstream flooding.

5.3 PROPOSED SURFACE WATER DRAINAGE STRATEGY

- 5.3.1 The proposed drainage scheme is shown on drawing 33186-D-01 contained in **Appendix G**. As set out in section 3.5, based on the site investigation carried out between February and May 2024 it is considered that the use of shallow infiltration is to be a satisfactory method for the disposal of surface water on the site.
- 5.3.2 It is proposed that the areas of hardstanding will be constructed as a lined porous pavement with any roof areas draining directly into them. Flows from each porous pavement will be connected to the adjacent porous pavement which discharges into a 1.2m deep infiltration basin located in the southeast corner of the site.
- 5.3.3 Groundwater monitoring carried out between February and May 2024 showed the groundwater to be located a minimum of 1.4m below ground level in the southeast corner of the site (WSO6) which is below the base of the infiltration basin. Site specific infiltration testing has been carried out in the location of the proposed infiltration basin and has been used in the proposed design.
- 5.3.4 The surface water drainage strategy for the site has been based on the seven-core standards and 11 underpinning principles set out in the National standards for Sustainable Drainage Systems (SuDS) dated July 2025.
- 5.3.5 Compliance to the seven standards can be summarised as follows.

STANDARD 1 : RUNOFF DESTINATIONS

- 5.3.6 These standard states, that runoff from the development should be discharged to the following final destinations, to the maximum extent practicable, in accordance with the following hierarchy:
- Priority 1: collected for non-potable use.
 - Priority 2: infiltrated to ground.

- Priority 3: discharged to an above ground surface water body.
- Priority 4: discharged to a surface water sewer, or another piped surface water drainage system.
- Priority 5: discharged to a combined sewer.

Priority 1

- 5.3.7 Water butts will be provided to store rainfall to be used for private irrigation. This has not been considered as part of the surface water calculations.
- 5.3.8 Based on the site topography and the high-water table, porous paving has been used to convey surface water to the point of discharge in the southeast corner of the site as a traditional piped system would drive levels too deep.
- 5.3.9 Due to the shallow drainage system, it is not possible to provide full rainwater harvesting on the site.

Priority 2

- 5.3.10 As set out in section 3.5, extensive site investigation has been carried out including infiltration testing and groundwater monitoring over a full winter. This demonstrated the infiltration would be a feasible method for the disposal of surface water on the site.

Priority 3

- 5.3.11 There are no watercourses in site vicinity, so this is not an option for the disposal of surface water on the site.

Priority 4

- 5.3.12 As stated in 3.6, there are no surface water public sewers in the vicinity of the site however there is a highway drainage system that drain Arundel Road which discharge into a watercourse off West Walberton Lane.
- 5.3.13 WSCC have confirmed that if for some reason infiltration is not considered an option that they would accept a limited discharge into their highway drainage at an attenuated rate. Correspondence with WSCC is contained in **Appendix G**.
- 5.3.14 Based on the above, a mixture of priority 1 and 2 measures will be used to dispose of the surface water on the site and as such it is considered that this standard has been met.
- 5.3.15 Based on above it can be seen that hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations and the SUDS manual produced by CIRIA has been followed in line with policy DM3 of the Arun Local Plan.

STANDARD 2: MANAGEMENT OF EVERYDAY RAINFALL (INTERCEPTION)

- 5.3.16 Standard 2 states that a 'SuDS approach' should be implement so that at least the first 5mm of rainfall for most rainfall events does not result in runoff from the site to surface waters or piped drainage systems.

- 5.3.17 Given the entire site will drain via infiltration and no surface water will leave the site it has been demonstrated that the first 5mm of rainfall has been dealt with onsite, so this standard has been met in full.

STANDARD 3: MANAGEMENT OF EXTREME RAINFALL AND FLOODING

- 5.3.18 Standard 3 states that a 'SuDS approach' shall be adopted to address the management of development runoff during extreme rainfall, including allowances for climate change and urban creep to:

- Protect people and property on the development from flooding of the surface water drainage system
- Mitigate any increased flood risk to people and property adjacent to or downstream of the development
- Protect the receiving water body from morphological damage or minimise the impact on sewer capacity

- 5.3.19 The following standards will be adopted in the design of the surface water drainage to ensure compliance with the above.

- The proposed impermeable areas are shown on drawing 33186-D-01 contained in **Appendix G**. This shows that of the total site area of 2.74 hectares; the total impermeable area is 0.98 hectares. This area makes an 10% allowance for urban creep to the area of the impermeable area within the property curtilages (private areas).
- No flooding for the 1 in 30-year event.
- Flooding managed for events between 1 in 30 and the 1 in 100-year event + climate change. Reference has been made to the Environment Agency's online mapping guidance for peak rainfall allowance for climate change and shows the site to be located within the Arun and Western Streams Management Catchment. Given the proposed development is to have a design life beyond 2100, a 45% allowance for climate change needs to be considered in the design of the surface water drainage system. This is based on the upper end allowance for the 2070's epoch.
- Factor of safety of safety 1.5 has been applied to the design for the infiltration components.
- A CV value of 1 has been applied to the drainage calculations.
- FEH 2022 rainfall parameters have been used in the design of the surface water drainage system

- 5.3.20 Based on the above, the drainage system has been modelled using Windes to accommodate all return periods up to and including the 1 in 100 year + 45% climate change. Calculations are shown in **Appendix G**. Features have been designed based on the infiltration rate found in TP05 and half drains within 24 hours. This is a betterment to the requirements set out in policy DM3 of the Arun which requires the 1 in 100 year + 30% allowance for climate change.

- 5.3.21 Based on the above it has been demonstrated that this standard has been met in full.

STANDARD 4 : WATER QUALITY

- 5.3.22 Reference has been made to the SuDS manual (Cira document 753) to ensure water quality has been considered and suitable water management train provided for within the development that will control water quality to the required standard.
- 5.3.23 Table 26.2 from the SuDS shows residential roofs to have a very low pollution risk and residential roads and driveways to have a low risk and sets out pollution hazard indices for various pollution sources. An extract on the table has been shown in Figure 1 below.

TABLE 26.2 Pollution hazard indices for different land use classifications

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

Notes

FIGURE 1 – POLLUTION HAZARD INDICES

- 5.3.24 Table 26.3 from the SuDS manual show the mitigation that is provided from each pollution source by various drainage components.

TABLE 26.3 Indicative SuDS mitigation indices for discharges to surface waters			
Type of SuDS component	Mitigation indices ¹		
	TSS	Metals	Hydrocarbons
Filter strip	0.4	0.4	0.5
Filter drain	0.4 ²	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond ⁴	0.7 ³	0.7	0.5
Wetland	0.8 ³	0.8	0.8
Proprietary treatment systems ^{3,5}	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.		

Notes

FIGURE 2 – MITIGATION INDICES

- 5.3.25 From the above the provision of permeable pavement for the drainage of the roofs and areas of hardstanding will adequately mitigate the pollution risks generated.

STANDARD 5: AMENITY

- 5.3.26 The standard sets out that a 'SuDS approach' shall be adopted that maximises benefits for amenity through the creation of multi-functional places and landscapes.
- 5.3.27 The design of the surface water drainage system has been integrated into the landscape and masterplan and contributes to placemaking and environmental enhancement by keeping surface water runoff at or close to the ground surface.
- 5.3.28 The adopted SuDS approach maximises benefits for amenity by incorporating into the masterplan via a network of footpath to create multi-functional places and landscapes.
- 5.3.29 Based on the above it has been demonstrated that this standard has been met in full.

STANDARD 6 : BIODIVERSITY

- 5.3.30 The scheme will be designed to comply with the BNG requirements. An unlined attenuation basin has been provided to comply with Standard 2 which with add to Biodiversity, however not possible to provide a permanently wet basin.

STANDARD 7: DESIGN OF DRAINAGE FOR CONSTRUCTION, OPERATION, MAINTENANCE, DECOMMISSIONING AND STRUCTURAL INTEGRITY

- 5.3.31 The SuDS proposed on this scheme comprise of porous pavement and a shallow infiltration basin.
- 5.3.32 These are considered standard features which can be easily and safely be constructed, operated and maintained. The works will be constructed as a single phase with the detention basin being constructed early in the programme to ensure runoff is controlled during construction.

- 5.3.33 A maintenance plan is included in **Appendix H** which shows the tasks and responsibilities for the various drainage components.
- 5.3.34 The proposed foul water drainage will be designed and constructed in accordance with Sewers for Adoption 7th Edition and will be offered to Southern Water who will maintain them in perpetuity.

6 FOUL WATER DRAINAGE

6.1 PROPOSED FOUL WATER DRAINAGE

- 6.1.1 A peak foul water flow of 0.58 l/s has been calculated for a development of 64 residential units. This is based on the daily flow rate of 125 litres per person day and an occupancy of 2.4 persons/dwelling.
- 6.1.2 The development will be collected in a system of gravity sewers discharging into the existing foul sewer located in Arundel Road.
- 6.1.3 Policy HP18 of Walberton Neighbourhood Plan sets out a requirement that sewerage reinforcement facilities be adequately upgraded prior to the completion and occupation of the development or phased to align with the delivery of the sewerage infrastructure.
- 6.1.4 Any reinforcement of the existing network will be covered by the Infrastructure Charge required for the connection of each property.
- 6.1.5 Southern Water aim to provide this within 24 months following the date that planning has been granted for developments not identified as strategic sites in our current business plan. Strategic sites are larger developments and will often take longer than 24 months for a full solution to be provided.
- 6.1.6 Any requirements for timing of any upgrade works can be secured by a suitably worded condition can be attached to any future decision notice.
- 6.1.7 The proposals are outside the Lidsey Wastewater Treatment Works Catchment Area and as such a full drainage impact assessment is not required for the site.

7 CONCLUSIONS AND RECOMMENDATIONS

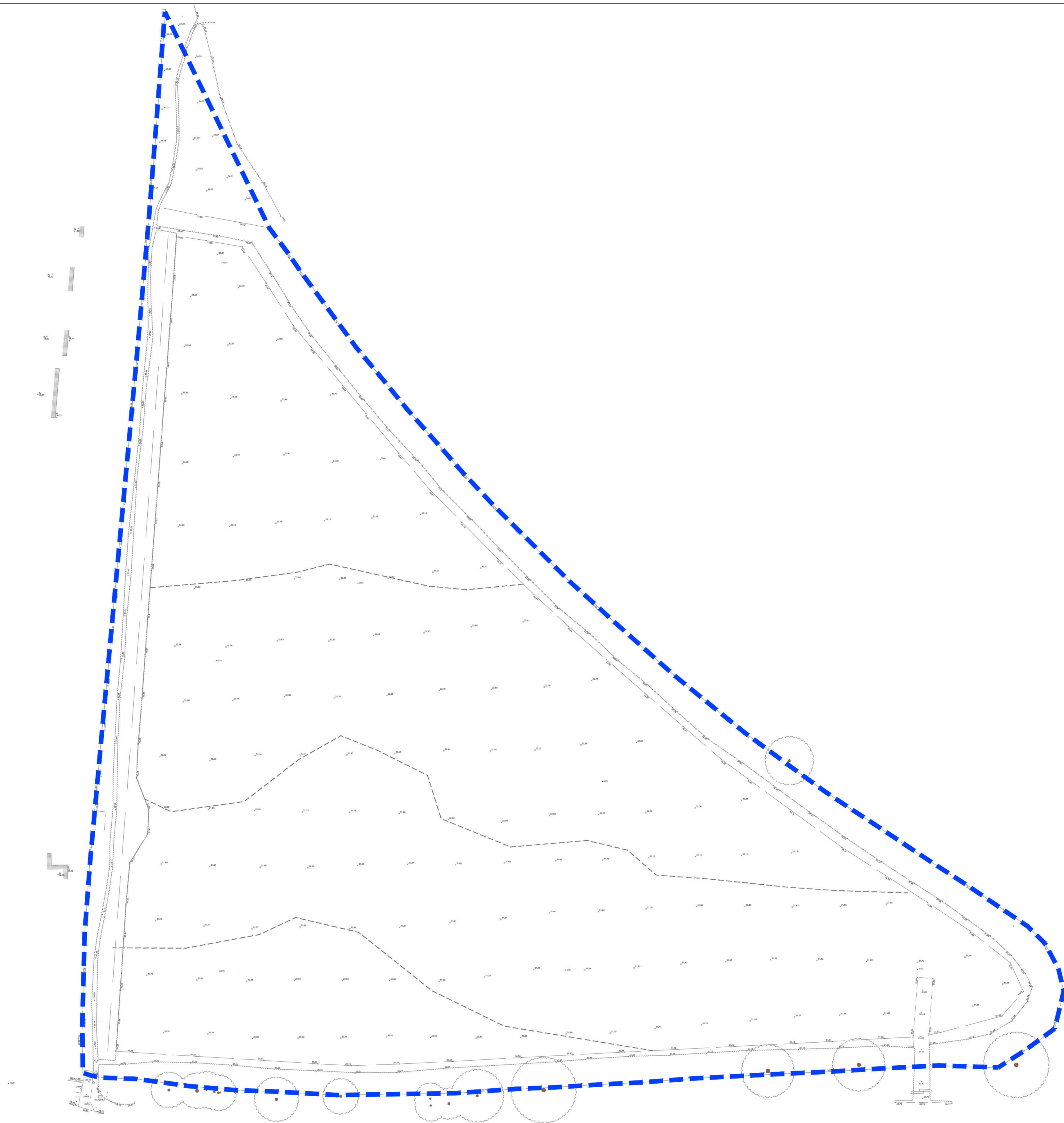
- 7.1.1 The proposals comprise the development of 64 residential units on Land to the North of Arundel Road, Fontwell, West Sussex BN18 OSF.
- 7.1.2 The site-specific flood risk assessment determines that the development site is located within Flood Zone 1 and not at risk of flooding from any other sources.
- 7.1.3 This application follows a previous Outline Planning Application (WA/74/24/OUT) for 56 residential dwellings and a stand-alone community building. That application was recommended for approval by Officers and received a unanimous resolution to grant permission at the January 2025 Planning Committee. However, agreement could not be reached with Walberton Parish Council in relation to the Section 106 provisions concerning the transfer of land for the community building, and the application was therefore withdrawn at the end of 2025. Notwithstanding this, the principle of residential development and the key technical matters including drainage were accepted by the LPA and all statutory consultees.
- 7.1.4 The site-specific flood risk assessment determines that the site is not at risk from flooding from any other source.
- 7.1.5 A Sustainable Urban Drainage System (SuDS) has been provided as part of the surface water drainage layout to deal with the surface water generated from the development to ensure that flood risk is not increased elsewhere.
- 7.1.6 It is proposed that the areas of hardstanding will be constructed as a lined porous pavement with any roof areas draining directly into them. Flows from each porous pavement will be connected to the adjacent porous pavement which discharges into a 1.2m deep infiltration basin located in the southeast corner of the site.
- 7.1.7 The foul water from the development will be collected in a system of gravity sewers discharging into the existing foul water sewer located in Arundel Road.
- 7.1.8 This report demonstrates that the development proposals can be suitably drained and will not increase the risk of flooding either on or off site. As such the proposals accord with the requirements of the NPPF and PPG in respect of securing a suitable and sustainable drainage strategy for the development.

APPENDIX

A



Topographical survey



5 0 5 10 15 20 25
Metres (1:500)

P1	First issue	28.05.24	CS
REV	AMENDMENTS	DATE	CHK

Client
HARLEQUIN DEVELOPMENTS

Project
LAND NORTH OF ARUNDEL ROAD
FONTWELL

Title
TOPOGRAPHICAL SURVEY

Dwg 33186-TS-01	Rev P1	Scale 1:500	Date 28.05.24
--------------------	-----------	----------------	------------------



Eclipse House, Eclipse Park, Sittingbourne Road
Maidstone, Kent. ME14 3EN
t: 01622 776226 f: 01622 776227
e: info@dhaplanning.co.uk w: www.dhaplanning.co.uk

CAD Reference: A1

APPENDIX B



Greenfield Runoff Calculations

DHA Transport Ltd		Page 1
Eclipse House Sittingbourne Road Maidstone ME14 3EN		
Date 28/05/2024 12:17 File	Designed by Chris Checked by	
Causeway	Source Control 2019.1	
<div>ICP SUDS Mean Annual Flood</div> <div>Input</div> <div>Return Period (years) 100 Soil 0.400 Area (ha) 2.740 Urban 0.000 SAAR (mm) 734 Region Number Region 6</div> <div>Results l/s</div> <div>QBAR Rural 9.9 QBAR Urban 9.9</div> <div>Q100 years 31.4</div> <div>Q1 year 8.4 Q30 years 22.3 Q100 years 31.4</div>		
©1982-2019 Innovyze		

APPENDIX

C



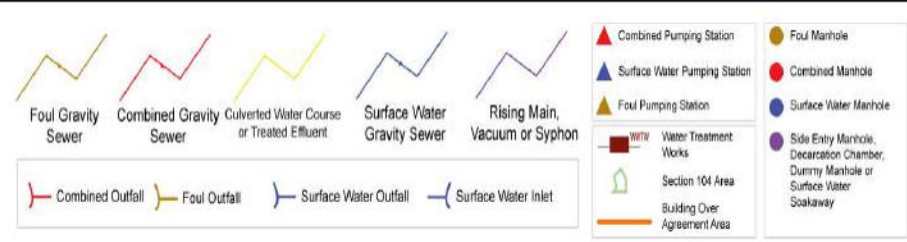
Southern Water Sewer Records



(c) Crown copyright and database rights 2024 Ordnance Survey 100031673 Date: 14/03/24 Scale: 1:1250 Map Centre: 495747,106975 Data updated: 12/01/24 Our Ref: 1421358 - 1 Wastewater Plan A2

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2024 Ordnance Survey 100031673. This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

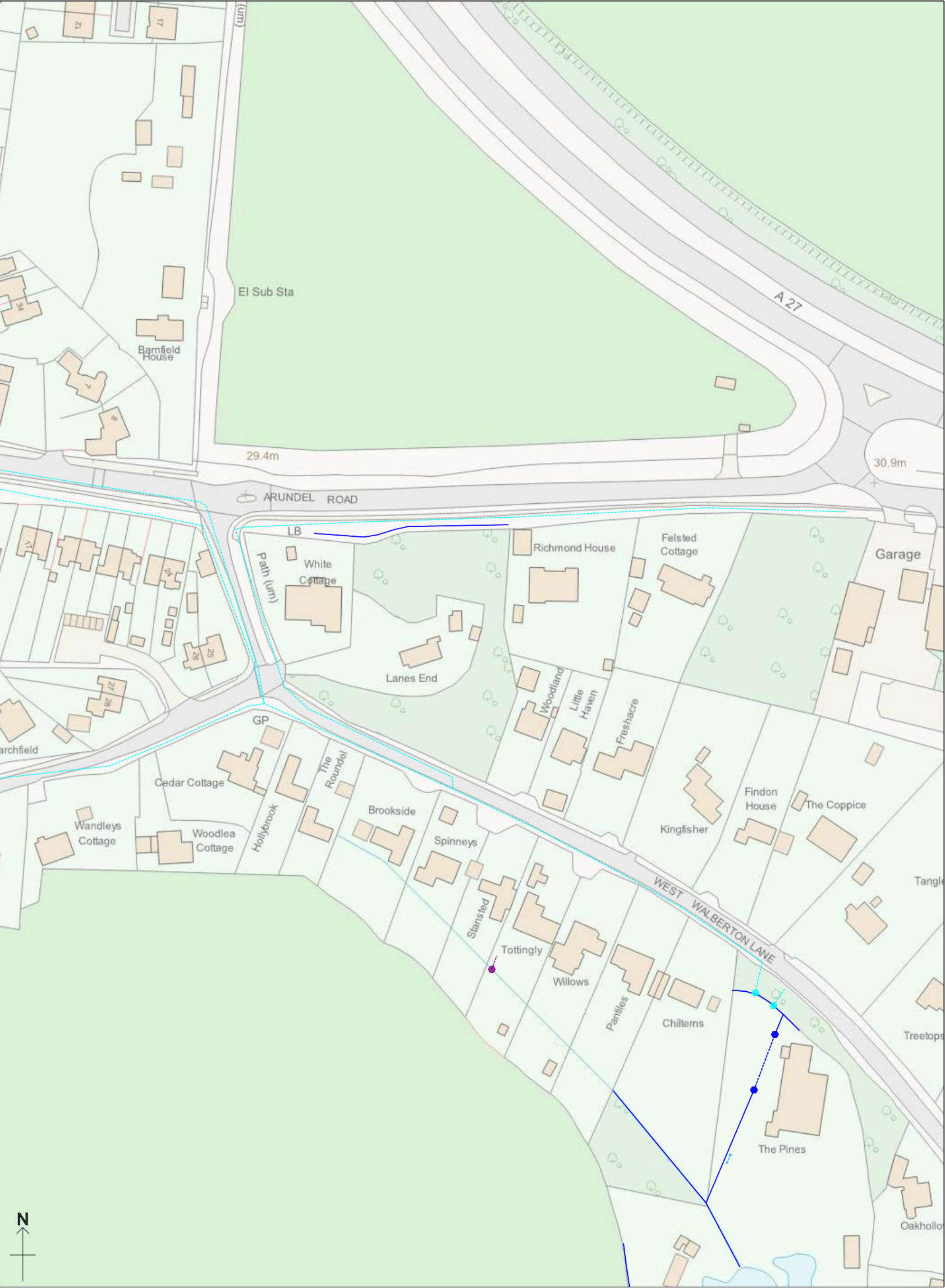
WARNING: BAC pipes are constructed of Bonded Asbestos Cement.
WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.

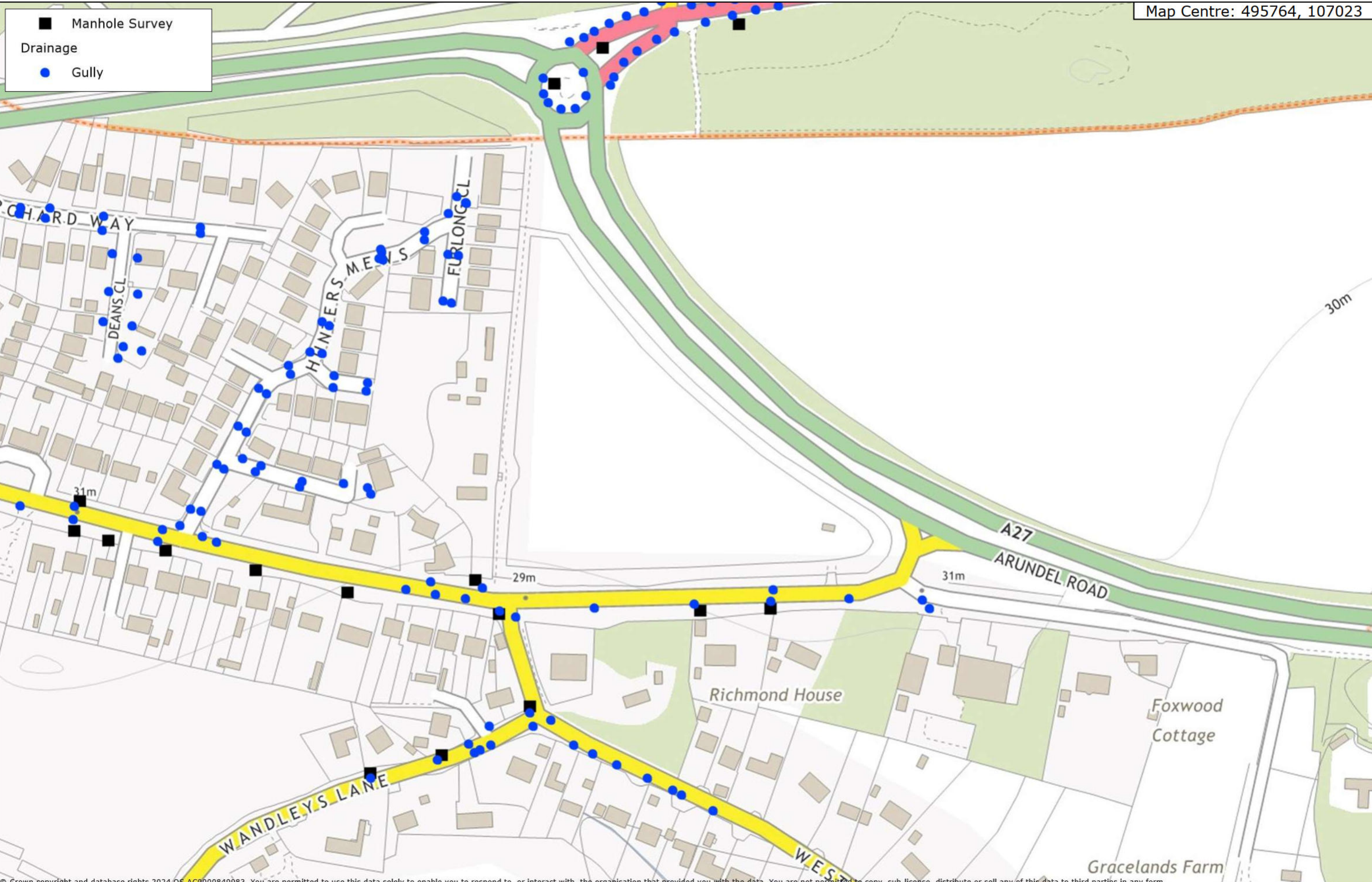


chris.smoker@dhatransport.co.uk	
1	



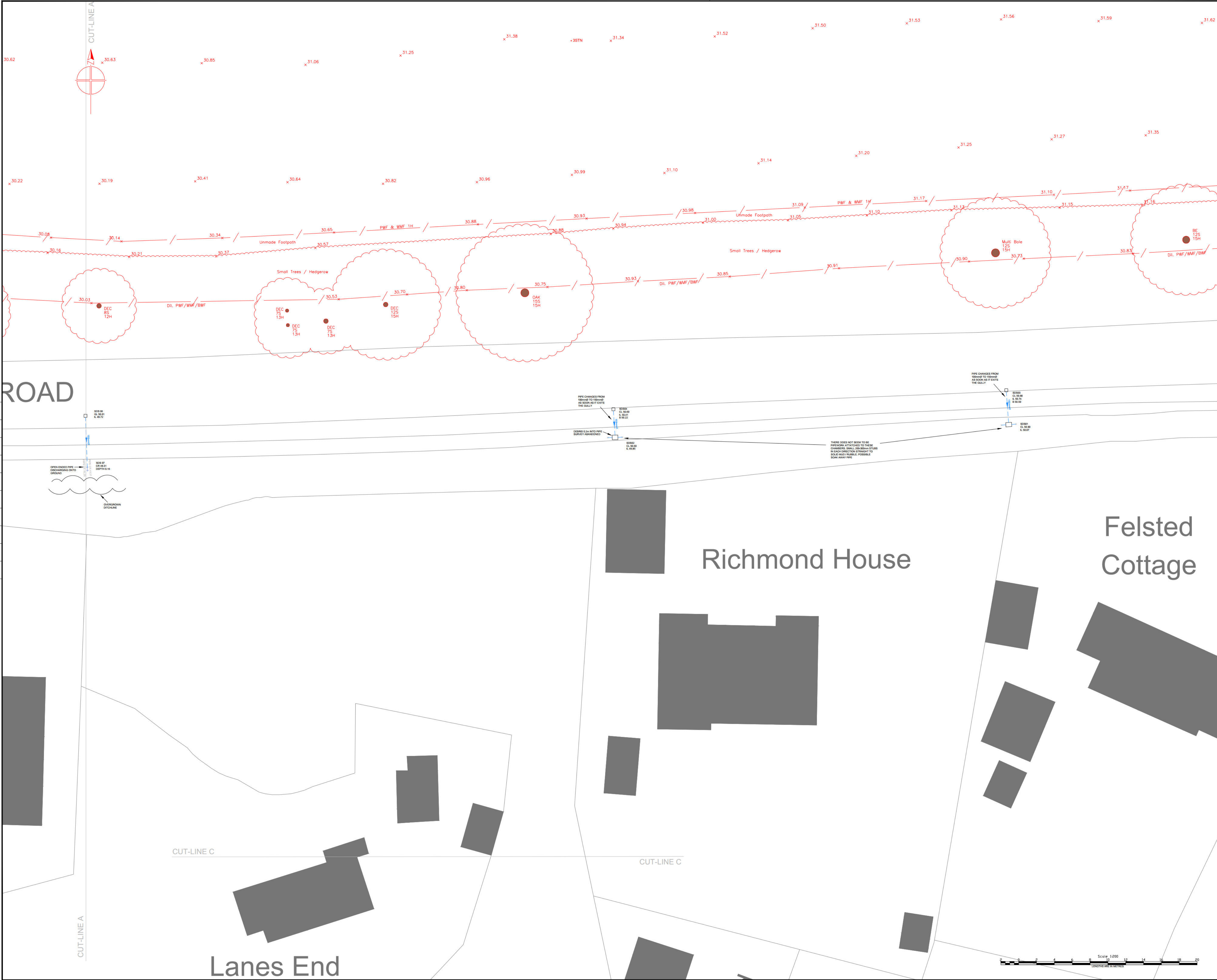
Arun District Council Maps





© Crown copyright and database rights 2024 OS AC0000849983. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-license, distribute or sell any of this data to third parties in any form.





UTILITY SURVEY LEGEND

LINE TYPES

FOUL WATER DRAIN	SLUDGE RETURN P MAIN	RESURFCE P/W P MAIN
COMBINED WATER DRAIN	FERRIC DRAINING	FERRIC DRAINING
SURFACE WATER DRAIN	PIPEWORK	PIPEWORK
WATER	PIPEWORK OVERHEAD	ON PIPE
GAS	PIPE	STORM WATER
OIL	OIL	STORM WATER OVERFLOW
ELECTRICITY	ELEC	STORM RETURN P MAIN
ELECTRICITY OVERHEAD	ELEC O/H	MAIN FLOW
TELEPHONE	TEL	WASH WATER
TELEPHONE OVERHEAD	TEL O/H	R MAIN
COMMS	COMMS	RECIRCULATION LINE
CATV	CATV	WORKS RETURN
FIBRE OPTIC	Fibre	UNDERGROUND CHAMBER
TRAFFIC SIGNAL	TSG	GROUND PENETRATING
DUCT	DUCT	RAOAR DEPTH
UNKNOWN LINEAR FEATURE	CPR	ADVICE & WARNING SIGNS WITH TEXT EXPLANATION
UNKNOWN SERVICE DETECTED BY EML	UNK (EML)	ANOMALY LINEAR FEATURE DETECTED BY GPR
UNKNOWN SERVICE DETECTED BY GPR	UNK (GPR)	ANOMALY FEATURE HEIGHTS HIGH LOWEST DEPTH LEVEL
DISBURSE P MAIN	DISBURSE P MAIN	ANOMALY FEATURE AREA WITH TEXT EXPLANATION
SLUDGE	SLUDGE	

SERVICE ABBREVIATIONS

AC	ASSUMED CONNECTION	IL	INVERT LEVEL
AR	ASSUMED ROUTE	KIG	KERB INLET GULLY
BD	BACK DROP	MH	MANHOLE
CC	CONFIRMED CONNECTION	OHL	OVER HEAD LINE
CD	CHAMBER DEPTH	PI	PETROL INTERCEPTOR
COW	CABLE ON WALL	RC	FROM RECORD DRAWINGS
CL	COVER LEVEL	RE	RODDING EYE
CP	CATCH PIT	SK	SOAKAWAY
CT	CABLE RISER	TPT	TRACED POINT
DTB	DEPTH TO BASE	UNK	UNKNOWN SERVICE
DTL	DEPTH	UTL	UNABLE TO LOCATE
(de)	DISBURSE	UTR	UNABLE TO RAISE
EOT	END OF TRACE	UTT	UNABLE TO TRACE
GU	GULLY	UTS	UNABLE TO SURVEY

GENERAL ABBREVIATIONS

AV	AIR VALVE	MK	MARKER POST
BB	BOLISHA BEACON	MS	MILE STONE
Bdy	BOUNDARY	NB	NOTICE BOARD
BH	BORERHOLE	NP	NAME PLATE
BL	BED LEVEL	OSBM	ORDNANCE SURVEY BENCH MARK
BO	BOLLARD	OH	OVERHEAD
CC	CATTLE GRID	PE	PENSTOCK
CH	CHANNEL LEVEL	PO	POST
Conc	CONCRETE	RS	ROAD SIGN
Corr	CORRUGATED	RTW	RETAINING WALL
CO	COPING LEVEL	RWP	RAIN WATER PIPE
CPS	CONC. PAVING SLABS	SAP	SAPLING
CR	CROWN LEVEL	SC	STOP COCK
CUL	CULVERT	SP	SOIL VENT PIPE
DK	DROP KERB	SV	STOP VALVE
DP	DOWN PIPE	STN	SURVEY STATION
EB	ELECTRICITY BOX	SV	STOP VALVE
EMH	ELECTRICITY MANHOLE	TBM	TEMPORARY BENCH MARK
EP	ELECTRICITY POLE	TL	TRAFFIC LIGHT
EPY	ELECTRICITY PYLON	TLM	TELEPHONE MANHOLE
ER	EARTHING ROD	TOW	TOP OF WALL
FH	FIRE HYDRANT	TP	TELEGRAPH POLE
FLR	FLOOR LEVEL	TS	TREE STUMP
FM	FLOW METER	VA	VALVE
GL	GROUND LEVEL	VP	VENT PIPE
GP	GATE POST	WV	WATER VALVE
GV	GAS VALVE	WM	WATER METER
IC	INSPECTION COVER	WO	WASH OUT
JB	JUNCTION BOX	WV	WATER VALVE
LP	LAMP POST		

CAUTIONARY NOTES

ELECTRO-DETECTION TECHNIQUES HAVE BEEN USED IN THE LOCATION OF UNDERGROUND SERVICES. THE RESULTS ARE NOT INFALLIBLE AND TRIAL EXCAVATIONS MUST BE CARRIED OUT TO CONFIRM SERVICE IDENTIFICATION. POSITIONS AND PARTICULARLY DEPTHS. ALTHOUGH ALL REASONABLE EFFORT HAS BEEN MADE IN SEARCHING AVAILABLE RECORD DRAWINGS, THE COMPLETENESS OF THE UNDERGROUND SERVICE INFORMATION CANNOT BE GUARANTEED. INFORMATION OBTAINED BY GPR IS INDICATIVE OF BURIED INFRASTRUCTURE THAT MAY NOT BE DETECTABLE BY OTHER MEANS.

UTILITY DEPTHS

SERVICES ARE DRAWN IN 3D WITH THE LEVEL CORRESPONDING TO THE CENTER OF THE UTILITY. EXCEPTIONS TO THIS ARE SERVICES AND FEATURES DETECTED BY GPR WHERE THE LEVEL IS THAT OF THE TOP OF THE UTILITY AND SONDE TRACKING DEPTHS WHERE THE DEPTH IS RELEVANT TO THE POSITION OF THE TRACKING SONDE SITTING WITHIN THE PIPE. THESE ARE DENOTED BY SPECIFIC LAYERS OR LINE TYPES SHOWN IN THE LEGEND OR BY SPECIFIC LABELLING OF THE DRAWING.

CONFIDENCE RATING

CONFIDENCE RATINGS FOR UTILITIES TRACED ARE IDENTIFIED AS LAD OUT IN SECTION 5 OF THE PAS 128:2020 SPECIFICATION FOR UNDERGROUND UTILITY DETECTION. VERIFICATION AND LOCATION THEY ARE SHOWN WITHIN THE LINE TYPE AS A SUFFIX (SEE EXAMPLE BELOW)

xxxxxx BP

UTILITY DEPTH MEASUREMENT GUIDE

ELECTRO-MAGNETIC DETECTION (EMD)	GRAVITY DRAIN (VISUAL INSPECTION)	GROUND PENETRATING RADAR (GPR)

DRAINAGE NOTES

PIPES ON THE REPORT ARE REFERENCED CLOCKWISE FROM THE OUTGOING PIPE WITH THE MH NUMBER AS THE PREFIX I.E. MH01A. END POINT LOCATIONS WITHIN BUILDINGS ARE INDICATIVE UNLESS STATED.

Note: Pipe sizes in mm

TECHNICAL NOTES

ALL LEVELS ARE BASED ON ORDNANCE SURVEY DATUM OBTAINED FROM ACTIVE GPS NETWORK: "OSGB3615".

GPR IS BASED ON OS DATUM, OBTAINED FROM ACTIVE GPS NETWORK "OSGB3615".

ALL KERB LEVELS ARE TAKEN IN CHANNEL.

A SCALE FACTOR OF 1.000000 HAS BEEN APPLIED TO THIS DRAWING

Rev.	Date	Description	By

Drawn by	F.G.	Surveyed by	LK	Checked by	PD
----------	------	-------------	----	------------	----

Project title

ARUNDEL ROAD
BN18 0QP

Drawing title

CCTV & DRAINAGE
INVESTIGATIONS

Client

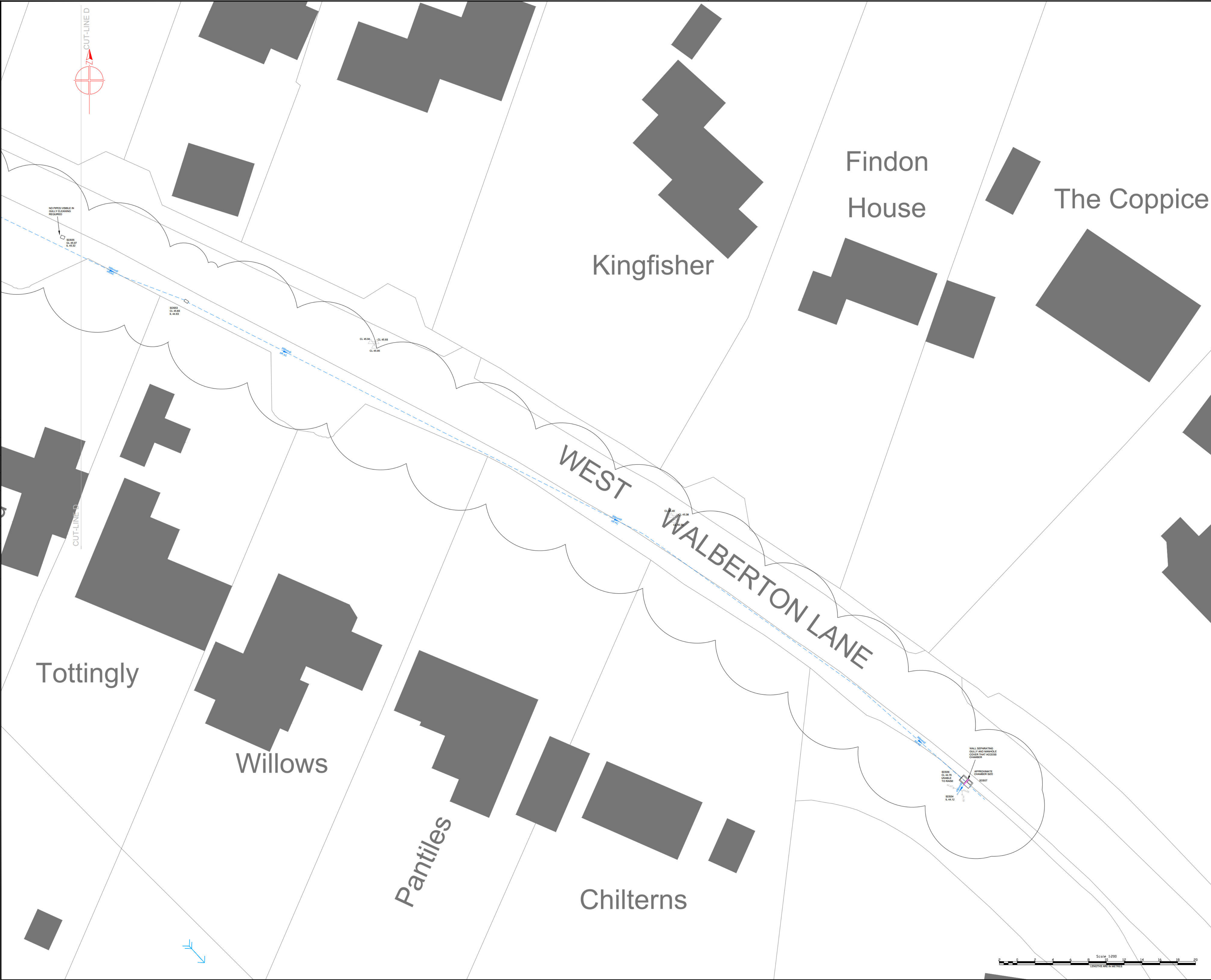
DHA Planning

Drawing No.	SDS209526.02	Revision	----
-------------	--------------	----------	------

SCALE	1:200	Date	DEC 2024	Sheet size	A1
-------	-------	------	----------	------------	----

SURVEY DESIGN SERVICES and ASSOC. LTD. UNITS 13 & 14, FOUNDRY BUSINESS PARK, SEAGER ROAD, FAVERSHAM, KENT. ME13 7FD TEL. 01795 594110 www.surveysignservices.co.uk





UTILITY SURVEY LEGEND

LINE TYPES

FOUL WATER DRAIN	COMBINED WATER DRAIN	SURFACE WATER DRAIN	WATER	GAS	OIL	ELECTRICITY	ELECTRICITY OVERHEAD	TELEPHONE	TELEPHONE OVERHEAD	COMMS	CATV	FIBRE OPTIC	TRAFFIC SIGNAL	DUCT	UNKNOWN LINEAR FEATURE DETECTED BY GPR	UNKNOWN SERVICE DETECTED BY GPR	UNKNOWN SERVICE DETECTED BY GPR	DESLUDGE P MAIN	SLUDGE
SLUDGE RETURN P MAIN	FERRIC DOWING	PIPEWORK	PIPEWORK OVERHEAD	STORM WATER	STORM WATER OVERFLOW	STORM RETURN P MAIN	MAIN FLOW	WASH WATER	RISING MAIN	RECIRCULATION LINE	WORKS RETURN	UNDERGROUND CHAMBER	GROUND PENETRATING RADAR (GPR)	ADVICE & WARNING SIGNS WITH TEXT EXPLANATION	ANOMALY LINEAR FEATURE DETECTED BY GPR	ANOMALY FEATURE HEIGHTS	ANOMALY FEATURE AREA WITH TEXT EXPLANATION		

SERVICE ABBREVIATIONS

AC	ASSUMED CONNECTION	IL	INVERT LEVEL
AR	ASSUMED ROUTE	KIG	KERB INLET GULLY
BD	BACK DROP	MH	MANHOLE
CC	CONFIRMED CONNECTION	OHL	OVER HEAD LINE
CD	CHAMBER DEPTH	PI	PETROL INTERCEPTOR
CW	CABLE ON WALL	PR	FROM RECORD DRAWINGS
CL	COVER LEVEL	RE	RODDING EYE
CP	CATCH PIT	SK	SOAKAWAY
CB	CABLE RISER	TTT	TRACED POINT
DTB	DEPTH TO BASE	UNK	UNKNOWN SERVICE
D	DEPTH	UTL	UNABLE TO LOCATE
(dis)	DISUSED	UTR	UNABLE TO RAISE
EOT	END OF TRACE	UTT	UNABLE TO TRACE
GU	GULLY	UTS	UNABLE TO SURVEY

GENERAL ABBREVIATIONS

AV	AIR VALVE	MK	MARKER POST
BB	BOLISHA BEACON	MS	MILE STONE
Bdy	BOUNDARY	NB	NOTICE BOARD
BH	BOREHOLE	NP	NAME PLATE
BL	BED LEVEL	OSBM	ORDNANCE SURVEY BENCH MARK
BO	BOLLARD	OH	OVERHEAD
CG	CATTLE GRID	PE	PENSTOCK
CH	CHANNEL LEVEL	PO	POST
Conc	CONCRETE	RS	ROAD SIGN
Corr	CORRUGATED	RTW	RETAINING WALL
CO	COPING LEVEL	RWP	RAIN WATER PIPE
CPS	CONC. PAVING SLABS	SAP	SAPLING
CR	CROWN LEVEL	SC	STOP COCK
CUL	CULVERT	SVP	SOIL VENT PIPE
DK	DROP KERB	SP	SIGN POST
DP	DOWN PIPE	STN	SURVEY STATION
EB	ELECTRICITY BOX	SV	STOP VALVE
EMH	ELECTRICITY MANHOLE	TBM	TEMPORARY BENCH MARK
EP	ELECTRICITY POLE	TL	TRAFFIC LIGHT
EPY	ELECTRICITY PYLON	TMH	TELEPHONE MANHOLE
ER	EARTHING ROD	TOW	TOP OF WALL
FLR	FLOOR LEVEL	TP	TELEGRAPH POLE
FM	FLOW METER	TS	TREE STUMP
GL	GROUND LEVEL	VA	VALVE
GP	GATE POST	VP	VENT PIPE
GV	GAS VALVE	WL	WATER LEVEL
IC	INSPECTION COVER	WM	WATER METER
JB	JUNCTION BOX	WO	WASH OUT
LP	LAMP POST	WV	WATER VALVE

CAUTIONARY NOTES

ELECTRO-DETECTION TECHNIQUES HAVE BEEN USED IN THE LOCATION OF UNDERGROUND SERVICES. THE RESULTS ARE NOT INFALLIBLE AND TRIAL EXCAVATIONS MUST BE CARRIED OUT TO CONFIRM SERVICE IDENTIFICATION. POSITIONS AND PARTICULARLY DEPTHS. ALTHOUGH ALL REASONABLE EFFORT HAS BEEN MADE IN SEARCHING AVAILABLE RECORD DRAWINGS, THE COMPLETENESS OF THE UNDERGROUND SERVICE INFORMATION CANNOT BE GUARANTEED. INFORMATION OBTAINED BY GPR IS INDICATIVE OF BURIED INFRASTRUCTURE THAT MAY NOT BE DETECTABLE BY OTHER MEANS.

UTILITY DEPTHS

SERVICES ARE DRAWN IN 3D WITH THE LEVEL CORRESPONDING TO THE CENTER OF THE UTILITY. EXCEPTIONS TO THIS ARE SERVICES AND FEATURES DETECTED BY GPR WHERE THE LEVEL IS THAT OF THE TOP OF THE UTILITY AND SONDE TRACKING DEPTHS WHERE THE DEPTH IS RELEVANT TO THE POSITION OF THE TRACING SONDE SITTING WITHIN THE PIPE. THESE ARE DENOTED BY SPECIFIC LAYERS OR LINE TYPES SHOWN IN THE LEGEND OR BY SPECIFIC LABELLING OF THE DRAWING.

CONFIDENCE RATING

CONFIDENCE RATINGS FOR UTILITIES TRACED ARE IDENTIFIED AS LAD OUT IN SECTION 5 OF THE PAS 128:2022 SPECIFICATION FOR UNDERGROUND UTILITY DETECTION. VERIFICATION AND LOCATION. THEY ARE SHOWN WITHIN THE LINE TYPE AS A SUFFIX (SEE EXAMPLE BELOW)

xxxxxxx BP

UTILITY DEPTH MEASUREMENT GUIDE

ELECTRO-MAGNETIC DETECTION (EMD) GRAVITY DRAIN (VISUAL INSPECTION) GROUND PENETRATING RADAR (GPR)

DRAINAGE NOTES

PIPES ON THE REPORT ARE REFERENCED CLOCKWISE FROM THE OUTGOING PIPE WITH THE MH NUMBER AS THE PREFIX I.E. MH01A. END POINT LOCATIONS WITHIN BUILDINGS ARE INDICATIVE UNLESS STATED.

Note: Pipe sizes in mm

TECHNICAL NOTES

ALL LEVELS ARE BASED ON ORDNANCE SURVEY DATUM OBTAINED FROM ACTIVE GPS NETWORK "OSGB36/15".

OSGB IS BASED ON OS DATUM. OBTAINED FROM ACTIVE GPS NETWORK "OSGB36/15".

ALL KERB LEVELS ARE TAKEN IN CHANNEL.

A SCALE FACTOR OF 1.000000 HAS BEEN APPLIED TO THIS DRAWING

Rev.	Date	Description	By

Drawn by	F.G.	Surveyed by	LX	Checked by	PD
----------	------	-------------	----	------------	----

Project title

ARUNDEL ROAD
BN18 0QP

Drawing title

CCTV & DRAINAGE
INVESTIGATIONS

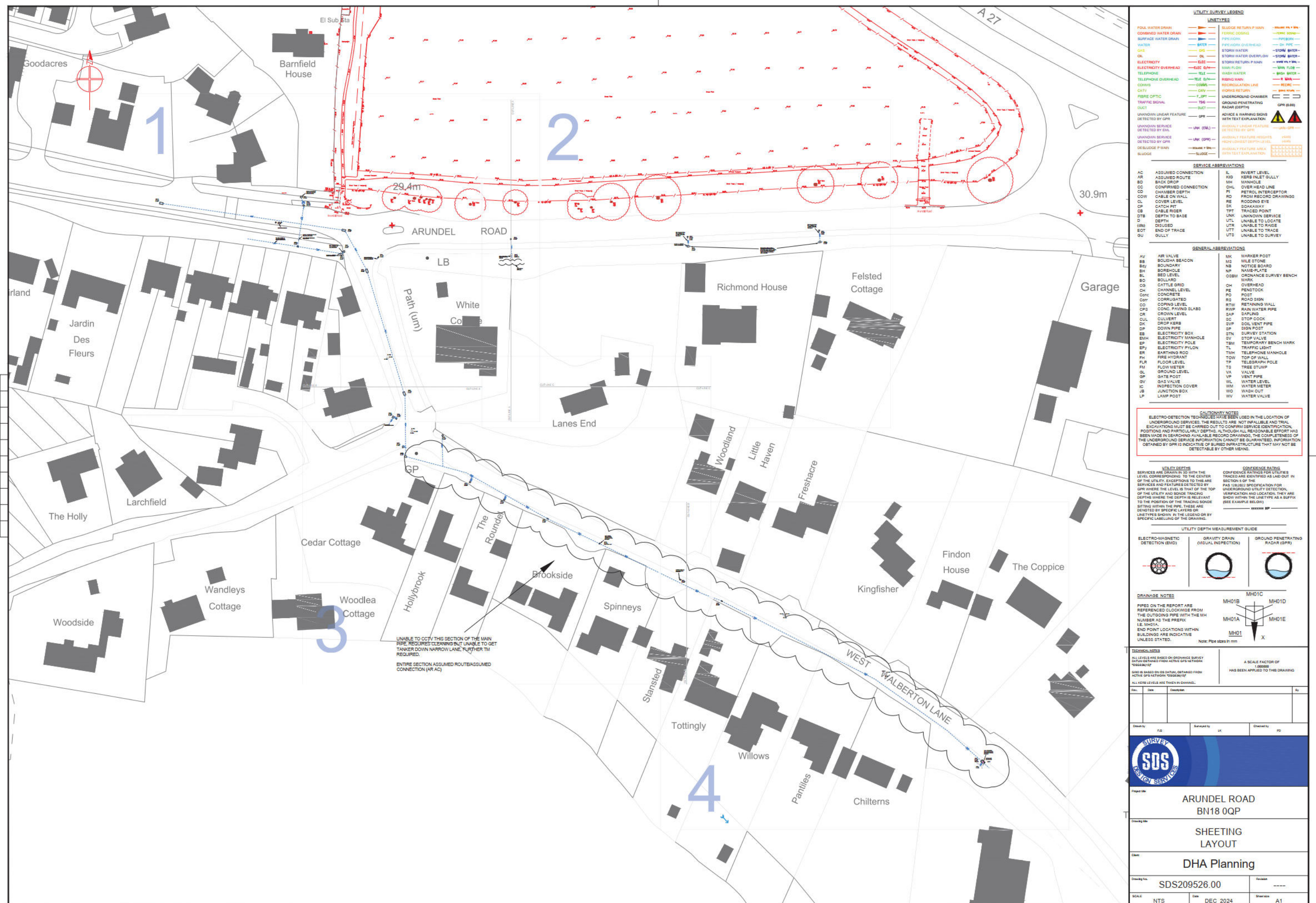
Client

DHA Planning

Drawing No.	SDS209526.04	Revision	----
-------------	--------------	----------	------

SCALE	1:200	Date	DEC 2024	Sheet size	A1
-------	-------	------	----------	------------	----

SURVEY DESIGN SERVICES and ASSOC. LTD. UNITS 13 & 14, FOUNDRY BUSINESS PARK, SEAGER ROAD, FAVERSHAM, KENT. ME13 7FD TEL. 01795 594110 www.surveymdesignservices.co.uk



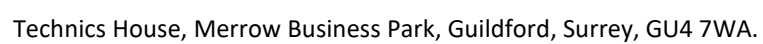
APPENDIX D



Extracts from Geo-Environmental Assessment



SP232036 – Fontwell
Ground Investigation Report

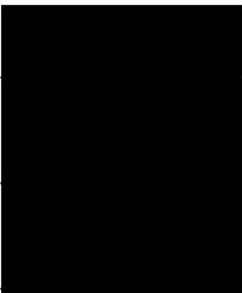


0



This document has been prepared in accordance with Technics Group's standard operating procedures. It remains confidential and copyright of Technics Group. Any unauthorised reproduction or usage by any other person other than the addressee is strictly prohibited.

Client	Fontwell Field (West Sussex) Ltd
---------------	----------------------------------

Written by	Kobee Fawkes <i>BSc</i> Graduate Geotechnical Engineer	
Checked by	Michail Kamperis <i>MSc FGS</i> Senior Geotechnical Engineer	
Authorised by	John MacIntyre Managing Director <i>FCInstCES</i>	
Project Reference	SP232036	
Report Reference	SP232036-1.0	

Version	Issue Date	Status	Summary of Changes
1.0	May 2024	Draft	First Issue

On behalf of Fontwell Field (West Sussex) Ltd, Technics Group was commissioned to undertake Ground Investigation works at Fontwell, West Sussex.





Executive Summary

Technics Group Ltd was instructed by Fontwell Field (West Sussex) Ltd (the Client) to undertake ground investigation works at Fontwell, West Sussex, BN18 0SE.

The investigation works were required to provide geotechnical and geoenvironmental data through Site-specific ground investigation to aid Fontwell Field (West Sussex) Ltd with its designs for the proposed range of 1-4 bed houses, flats and maisonettes with communal parking and decorative soft landscaping.

The scope of work was specified by Fontwell Field (West Sussex) Ltd via email communication on 2nd January 2024.

Instructed works comprised of the following:

- Seven (7No.) windowless sample boreholes (WS01-WS07). All boreholes were to be advanced to 7.00mbgl or practical refusal. Standard Penetration Tests (SPTs) were to be undertaken every metre from the base of the 1.20mbgl inspection pit. Dynamic Probing follow-on was to be undertaken from the bottom of the Window Sampling boreholes to maximum depth of 10.00mbgl or practical refusal. Three (3No.) windowless sample boreholes were to be installed with 50mm standpipes for future groundwater monitoring.
- Six (6No.) TRL DCP tests (DCP01-DCP06) were to be undertaken in areas of future pavements and roads.
- Three (3No.) soakaway testing in accordance with methodology described in BRE Digest.

The revisions below were made to the scope:

- Eleven (11No.) windowless sample boreholes (WS). All boreholes were advanced with dynamic sampling to a maximum depth of 2.44 due to refusal. Dynamic probing follow-on was terminated at a maximum depth of 3.10mbgl due to refusal. Six (6No.) windowless sample boreholes (WS03, WS06, WS07, WS09, WS10, WS11) were installed with 50mm standpipes.
- Six (6No.) TRL DCP tests (DCP01-DCP06) were to be undertaken in areas of future pavements and roads.
- Seven (7No.) soakaway testing by methodology described in BRE Digest, were undertaken to a maximum depth of 1.80mbgl. All infiltration tests were unsuccessful due to groundwater seepage.

The ground investigation works were carried out during four (4No.) midweek day shifts between the 26th and 29th February 2024, two (2No.) midweek days between the 3rd and 4th of April, and one (1No.) midweek day shift on the 30th of April 2024.



Groundwater was encountered at WS01 at 0.60mbgl, WS02 at 1.20mbgl, WS03 at 0.70mbgl, WS04 at 1.20mbgl, WS05 at 1.30mbgl, WS07 at 1.10mbgl, TP01 at 0.50mbgl, TP02 at 0.70mbgl, TP03 at 1.40mbgl, TP04 at 0.20mbgl.

No visual or olfactory contamination was identified as part of this ground investigation.

No obstruction, voids, and services were identified as part of this investigation.

This report aims to present the factual data obtained during the ground investigation and subsequent laboratory testing to assist Fontwell Field (West Sussex) Ltd with its designs for the proposed range of 1-4 bed houses, flats and maisonettes with communal parking and decorative soft landscaping.



Contents

1	Introduction	3
1.1	Instruction	3
1.2	Scope of works	3
1.3	Limitations	4
2	The Site	5
2.1	Site Location	5
2.2	Site Description	5
2.3	Geology	5
2.4	Setting out	6
3	Ground Investigation	7
3.1	General	7
3.2	Windowless Sampling (WLS)	10
3.3	Sampling	11
3.4	Soil sampling	11
3.5	Water Sampling	11
3.6	Results	12
3.7	Groundwater	12
3.8	Obstructions, Voids & Services	12
3.9	Laboratory Testing	12
3.9.1	Geotechnical	12
3.9.2	Environmental	13
3.10	Gas and Groundwater Monitoring	13
3.11	Groundwater Monitoring	13
3.12	Gas Monitoring	13
3.13	TRL DCP Testing	13
3.14	Contamination Observations	13
4	Engineering Properties	14
4.1	Geotechnical Test Results	14
4.2	Design Parameters	15
4.2.1	Coarse Soil (0.00mbgl to 2.50mbgl)	15
4.2.2	Dynamic Probe	16
5	Geotechnical Assessment	19
5.1	Foundations	19
5.2	Chemical Attack on Buried Concrete	20



6	Conclusions And Recommendations	21
6.1	Ground conditions	21
6.2	Site Personnel	21
6.3	Additional	21
7	References	23



1 Introduction

1.1 Instruction

Technics Group Ltd was instructed by Fontwell Field (West Sussex) Ltd (the Client) to undertake ground investigation works at Fontwell, West Sussex.

1.2 Scope of works

The scope of work was specified by Fontwell Field (West Sussex) Ltd via email communication on 2nd January 2024.

Instructed works comprised of the following:

- Seven (7No.) windowless sample boreholes (WS01-WS07). All boreholes were to be advanced to 7.00mbgl or practical refusal. Standard Penetration Tests (SPTs) were to be undertaken every metre from the base of the 1.20mbgl inspection pit. Dynamic Probing follow-on was to be undertaken from the bottom of the Window Sampling boreholes to maximum depth of 10.00mbgl of practical refusal. Three (3No.) windowless sample boreholes were to be installed with 50mm standpipes for future groundwater monitoring.
- Six (6No.) TRL DCP tests (DCP01-DCP06) were to be undertaken in areas of future pavements and roads.
- Three (3No.) soakaway testing in accordance with methodology described in BRE Digest.

The revisions below were made to the scope:

- Eleven (11No.) windowless sample boreholes (WS). All boreholes were advanced with dynamic sampling to a maximum depth of 2.44 due to refusal. Dynamic probing follow-on was terminated at a maximum depth of 3.10mbgl due to refusal. Six (6No.) windowless sample boreholes (WS03, WS06, WS07, WS09, WS10, WS11) were installed with 50mm standpipes.
- Six (6No.) TRL DCP tests (DCP01-DCP06) were to be undertaken in areas of future pavements and roads.
- Seven (7No.) soakaway testing by methodology described in BRE Digest, were undertaken to a maximum depth of 1.80mbgl. All infiltration tests were unsuccessful due to groundwater seepage.

Before drilling, all locations were scanned with approved Cat and Genny equipment and Ground Penetration Radar. Inspection pits were excavated to 1.20mbgl with insulated hand tools.

The ground investigation works were carried out during four (4No.) midweek day shifts between the 26th and 29th February 2024, two (2No.) midweek days between the 3rd and 4th of April, and one (1No.) midweek day shift on the 30th of April 2024.



Groundwater was encountered at WS01 at 0.60mbgl, WS02 at 1.20mbgl, WS03 at 0.70mbgl, WS04 at 1.20mbgl, WS05 at 1.30mbgl, WS07 at 1.10mbgl, TP01 at 0.50mbgl, TP02 at 0.70mbgl, TP03 at 1.40mbgl, TP04 at 0.20mbgl.

The scope of works achieved as part of this assessment is set out in the following sections of this report.

This report aims to present the factual data obtained during the ground investigation and subsequent laboratory testing to assist Fontwell Field (West Sussex) Ltd with its designs for the culvert repair and replacement.

1.3 Limitations

This report presents a description of the Site at the time of the fieldwork, results of the fieldwork and in-situ testing undertaken, strata encountered and geotechnical laboratory test data.

All the comments and opinions contained within this report, including any conclusions, are based on the information obtained by Technics during its investigations.

There may be other conditions prevailing at the Site which have not been disclosed by this investigation and which have not been considered by this report. Responsibility cannot be accepted for conditions not revealed by the investigation and confirmation of intermediate ground conditions should be considered if deemed necessary.

Except as otherwise requested by the Employer, Technics is not obliged and disclaims any obligation to update the report for events taking place after:

- a) The date on which this investigation was undertaken; and
- b) The date on which the final Report is delivered.

This report has been prepared for the sole use of APS Techs. No other third parties may rely upon or reproduce the contents of this report without the written permission of Technics. If any unauthorised third party comes into possession of this report, they rely on it at their own risk and the authors do not owe them any Duty of Care or Skill.

2 The Site

2.1 Site Location

The Site is a large vacant grass field with surrounding perimeter fencing located within the East side of Fontwell prior to the A27, BN18 0SE. Access is gained via Arundel Road located to the south.

The site location is shown in Figure 1.

Figure 1: Site Location Plan



2.2 Site Description

The site encompasses a large vacant grass field with surrounding perimeter fencing completed to a padlocked gated entrance accessible from Arundel Road to the south.

A pedestrian pathway runs along the western boundary of the site separated by a dense treeline, to the north and east runs the A27. Similar low scale residential developments are present to the south.

The general layout of the Site and exploratory hole location plan are presented in **Appendix A**.

2.3 Geology

Geological map data published by the British Geological Survey (BGS) online via GeoIndex Digital Map (1:50,000 scale) indicates superficial deposits of 'HEAD', often poorly sorted



and poorly stratified, angular rock debris and/or clayey colluvium and soil creep. Formed within the last 2.8 million years during the Quaternary Period.

The bedrock deposits of the Lambeth Group are additionally reported, formed between 48.1 and 59.2 million years ago over the Thanetian and Ypresian Ages.

Due to the current infrastructure present at the Site, varying thicknesses of made ground were observed during the ground investigation works.

2.4 Setting out

Where possible the exploratory holes were located as close as possible to the proposed locations unless site constraints dictated otherwise i.e. access issues, 3rd party land and buried services etc.

Coordinates were recorded using VRS Leica surveying equipment.

Following completion, the exploratory hole locations were plotted on the exploratory hole location plan presented in **Appendix A**.



3 Ground Investigation

3.1 General

The ground investigation works were carried out during four (4No.) midweek day shifts between the 26th and 29th February 2024, and one (1No.) midweek day shift on the 30th April 2024.

The ground investigation comprised the following:

Table 1: Ground Investigation Methods Adopted

Hole No.	Hand Dug Excavated Pit	Windowless Sample Boreholes ¹	Dynamic Probing follow-on ² (DPSH-B)	Machine Excavated Pits	Soakaway BRE365	Comments
WS01	✓ (1.20mbgl)	✓ (1.43mbgl)	✓ (2.20mbgl)	✗	✗	Terminated due to refusal
WS02	✓ (1.20mbgl)	✓ (2.36mbgl)	✓ (2.80mbgl)	✗	✗	Terminated due to refusal
WS03	✓ (1.20mbgl)	✓ (2.07mbgl)	✓ (2.60mbgl)	✗	✗	Terminated due to refusal
WS04	✓ (1.20mbgl)	✓ (1.40mbgl)	✓ (2.00mbgl)	✗	✗	Terminated due to refusal
WS05	✓ (1.20mbgl)	✓ (2.36mbgl)	✓ (2.60mbgl)	✗	✗	Terminated due to refusal
WS06	✓ (1.20mbgl)	✓ (2.08mbgl)	✓ (2.30mbgl)	✗	✗	Terminated due to refusal
WS07	✓ (1.20mbgl)	✓ (2.44mbgl)	✓ (3.10mbgl)	✗	✗	Terminated due to refusal
WS08	✓ (1.20mbgl)	✓ (2.45mbgl)	✗	✗	✗	Complete on target depth
WS09	✓ (1.20mbgl)	✓ (2.45mbgl)	✗	✗	✗	Complete on target depth
WS10	✓ (1.20mbgl)	✓ (2.45mbgl)	✗	✗	✗	Complete on target depth



Hole No.	Hand Dug Excavated Pit	Windowless Sample Boreholes ¹	Dynamic Probing follow-on ² (DPSH-B)	Machine Excavated Pits	Soakaway BRE365	Comments
WS11	✓ (1.20mbgl)	✓ (2.45mbgl)	✗	✗	✗	Complete on target depth
TP01	✗	✗	✗	✓ (1.80mbgl)	✓	BRE365 Unsuccessful
TP02	✗	✗	✗	✓ (1.80mbgl)	✓	BRE365 Unsuccessful
TP03	✗	✗	✗	✓ (1.80mbgl)	✓	BRE365 Unsuccessful
TP04	✗	✗	✗	✓ (1.80mbgl)	✓	BRE365 Unsuccessful
TP05	✗	✗	✗	✓ (1.15mbgl)	✓	BRE365 Successful
TP06	✗	✗	✗	✓ (1.20mbgl)	✓	BRE365 Successful
TP07	✗	✗	✗	✓ (1.10mbgl)	✓	BRE365 Unsuccessful
¹ SPT = 63.5kg over 760mm ² DPSH-B = 63.5kg weight falling 760mm						

The corresponding SPT calibration certificates for each borehole are presented in Table 2.

Table 2: Corresponding SPT Calibration Certificate

Windowless Sampling SPT Calibration			
WS Hole ID	Rig	SPT ID	Energy Ratio (%)
WS01	Geotool	116	73
WS02			
WS03			



Windowless Sampling SPT Calibration			
WS04			
WS05			
WS06			
WS07			
WS08			
WS09			
WS10			
WS11			

The Calibration Certificates are presented in **Appendix I**.

Tables 3, 4 and 5 Indicate the Window Sampling, Trial Pit and CBR coordinates.

Table 3: Window Sampling coordinates

Hole No.	Northing	Easting
WS01	106,964	495,699
WS02	107,039	495,705
WS03	107,089	495,682
WS04	107,059	495,728
WS05	107,016	495,756
WS06	106,979	495,821
WS07	106,966	495,737
WS08	106,990	495,699
WS09	107,034	495,683
WS10	107,036	495,745
WS11	109,965	495,787

Table 4: Trial Pit coordinates



Hole No.	Northing	Easting
TP01	495,691	107,107
TP02	495,722	107,052
TP03	495,755	106,966
TP04	495,686	106,963
TP05	495,828	106,967
TP06	495,788	107,005
TP07	495,706	107,049

Table 5: CBR coordinates

Hole No.	Northing	Easting
CBR01	495,673	106,965
CBR02	495,683	106,993
CBR03	465,728	106,993
CBR04	495,699	107,082
CBR05	495,778	107,011
CBR06	495,822	106,985

The locations of all intrusive exploratory holes are shown in the Exploratory Hole Location Plan presented in **Appendix A**.

Fieldwork was carried out in accordance with Eurocode 7 (2007), BS5930 'Code of Practice for Site Investigations – (2015 + A1 2020); BS10175 'Investigation of Potentially Contaminated Sites – Code of Practice (2011 +A2 2017); Association of Geotechnical and Geo-Environmental Specialist Guidelines for Good Practice in Site Investigations (August 1998) and logged in accordance with BS EN ISO 14688-1:2004 and BS EN ISO 14688-2 (2004). All fieldwork was supervised by a suitably experienced Engineer.

3.2 Windowless Sampling (WLS)

Before breaking ground, all locations were scanned using an approved Cable Avoidance Tool (CAT) and Signal Generator ("Genny"); a visual inspection was undertaken for



surface markers; and the location was cross-referenced with buried services plans. A Permit to Dig was completed and the findings were briefed to the workgroup.

Prior to drilling works, a services inspection pit was hand dug to the depth shown in Table 1 to ensure that no buried utilities/services were disturbed or damaged during the drilling works.

During the first phase of ground investigation undertaken between 26th and 29th February 2024, seven (7No.) windowless sample boreholes (WS) were completed. All boreholes were advanced with dynamic sampling to a maximum depth of 2.44 due to refusal. Dynamic probing follow-on was terminated at a maximum depth of 3.10mbgl due to refusal. Three (3No.) windowless sample boreholes (WS03, WS06, WS07) were installed with 50mm standpipes.

During the second phase of ground investigation undertaken between the 3rd and 4th of April 2024, four (4No.) windowless sample boreholes (WS) were completed. All boreholes were completed on SPT's at 2.45mbgl. All four (4No.) additional windowless sample boreholes (WS08, WS09, WS10, WS11) were installed with 50mm standpipes.

A copy of the window sample borehole logs is presented in **Appendix B**.

3.3 Trial Pits (TP) with Soakaway BRE 365

Prior to breaking ground, all locations were scanned using an approved Cable Avoidance Tool (CAT) and Signal Generator ("Genny"); a visual inspection was undertaken for surface markers; and the location cross referenced with buried services plans. A Permit to Dig was completed and the findings briefed to the workgroup.

A total of seven (7No.) machine excavated trial pits (designated TP01-TP04) were undertaken to investigate the ground below the indicated locations. Seven (7No.) Soakaway BRE 365 test at locations TP01 and TP07, were undertaken to confirm the suitability of a soakaway drainage as a new drainage system. The pits were excavated to a maximum depth of 1.80mbgl.

A copy of the Soakaway results is presented in **Appendix D**.

3.4 Sampling

3.5 Soil sampling

Soil sampling was undertaken in accordance with the UK Specification for Ground Investigation, 2nd edition.

Soil samples were returned to Technics for storage and subsequent laboratory testing.

The types of samples and the depth at which they were taken are shown on the borehole logs presented in the appendices.

3.6 Water Sampling

No Water Sampling was undertaken as part of this ground investigation.



3.7 Results

A summary of the in-situ test results and the strata encountered during the investigation are shown in Table 6 below.

Table 6: Ground Investigation Summary

Stratum	Typical composition	Maximum thickness (m)	SPT N Value
TOPSOIL	Soft greyish brown slightly sandy gravelly CLAY.	0.30	N/A
Superficial Geology	Orange and grey SAND and GRAVEL [Head Deposits].	Not proven	9-50

3.8 Groundwater

Groundwater was encountered at WS01 at 0.60mbgl, WS02 at 1.20mbgl, WS03 at 0.70mbgl, WS04 at 1.20mbgl, WS05 at 1.30mbgl, WS07 at 1.10mbgl, TP01 at 0.50mbgl, TP02 at 0.70mbgl, TP03 at 1.40mbgl, TP04 at 0.20mbgl.

3.9 Obstructions, Voids & Services

No obstruction, voids, and services were identified as part of this investigation.

3.10 Laboratory Testing

All testing was undertaken at UKAS and MCERTS (as available) accredited laboratories.

3.10.1 Geotechnical

Selected samples were scheduled for the following laboratory tests:

Table 7: Geotechnical Laboratory Testing

Test	No. Scheduled
Moisture Content	6
Atterberg Limit	6
Sieve Wet/Dry	4
Water Soluble Sulphate	7



pH	7
BRE SD1 – Full Suite	4

The results of geotechnical laboratory testing are presented in **Appendix E**.

3.10.2 Environmental

No environmental testing was undertaken as part of this investigation.

3.11 Gas and Groundwater Monitoring

3.12 Groundwater Monitoring

Three (3No.) rounds of groundwater monitoring and Falling Head Tests have been specified on all installed locations. These were undertaken after the completion of the ground investigation works by a Technics qualified Engineer.

The water monitoring results are presented in **Appendix G**.

The Falling Head Test results are presented in **Appendix J**.

3.13 Gas Monitoring

No gas monitoring has been specified as part of these works.

3.14 TRL DCP Testing

Technics completed six (6No.) TRL DCP tests at the assessment site. The tests were completed predominantly within the areas of proposed new roads/footpaths. Each test was carried out by dropping an 8kg weight over a distance of 575mm to drive a 20mm diameter 60-degree cone into the subsoil. The blow counts were recorded against penetration achieved and the results were plotted graphically. The CBR value of the various layers was then determined by reading from the graph showing the DCP-CBR relationship by Kleyn and Van Heerd (1983).

A summary of the TRL DCP testing results is provided in **Appendix H**.

3.15 Contamination Observations

No visual or olfactory contamination was identified as part of this ground investigation.



4 Engineering Properties

The following section discusses the engineering properties of the Superficial Deposits. The assessment is based on the results of in-situ and laboratory testing obtained during this investigation.

4.1 Geotechnical Test Results

Results of the laboratory geotechnical testing are summarised in Table 8.

Table 8: Summary of Geotechnical Classification Test Results

Hole No.	Depth	Stratum	Particle Size Distribution	Moisture Content	Liquid Limit	Plastic Limit	Plasticity Index
WS01	0.70	Sand and Gravel	48% Gravel 5% Sand 47% Silt/Clay	31	20	11	50
WS02	1.00	Sand and Gravel	N/A	42	25	17	28
WS05	0.40	Sand and Gravel	71% Gravel 6% Sand 23% Silt/Clay	48	25	23	25
WS06	1.00	Sand and Gravel	N/A	35	16	19	44
WS07	0.70	Sand and Gravel	61% Gravel 6% Sand 33% Silt/Clay	57	26	31	35
	1.40	Sand and Gravel	62% Gravel 7% Sand 31% Silt/Clay	57	25	32	34

The results of geotechnical laboratory testing are presented in **Appendix E**.

The results of the chemical testing are summarised in Table 9.

Table 9: Summary of Chemical Test Results



Hole No.	Depth (m)	Stratum	pH Value	Water Soluble Sulphate (mg/l)
WS01	0.10	SAND	6.7	<10
WS02	0.20	SAND	6.6	<10
	1.00	SAND and GRAVEL	5.1	<10
	1.40	SAND and GRAVEL	5.2	<10
WS03	1.20	SAND and GRAVEL	6.4	<10
WS04	0.20	SAND	5.8	709
WS05	1.30	SAND and GRAVEL	7.2	<10
WS06	0.20	SAND	6.5	15
	0.80	SAND and GRAVEL	6.8	<10
	1.40	SAND and GRAVEL	6.7	<10
WS07	1.40	SAND and GRAVEL	6.9	<10

The results of geotechnical laboratory testing are presented in **Appendix F**.

4.2 Design Parameters

The following section discusses the design parameters of one main strata encountered during the ground investigation works. These are:

- Head Deposits, comprised predominantly of SAND and GRAVEL with secondary constituents of clay and silt. For the design parameters, this layer will be treated as non-cohesive material identified from Ground Level to 2.50mbgl.

4.2.1 Coarse Soil (0.00mbgl to 2.50mbgl)

The findings from 12 in-situ Standard Penetration Test (SPT) assessments revealed a spectrum of SPT N60 values spanning from 9 to 50. These outcomes indicate that the surface soil tends to be predominantly loose, transitioning to dense layers at greater depths. Despite encountering SPT values as high as 50 in shallow depths, the lower values will be prioritized for foundation design considerations.



Laboratory Particle Size Distribution (PSD) tests undertaken on two samples suggest the materials tested are predominantly GRAVEL with a secondary constituent of sand, silt, and clay.

A summary of the values is presented in Table 10.

Table 10: Summary of Derived Design Values

Depth (m)	N ₆₀ Values	Angle of Shearing Resistance
1.00	7	30°
2.00	50	40°
*Based on SPT-N value and friction angle and Relative density (Meyerhoff 1956)		

4.2.2 Dynamic Probe

Dynamic probing (DPSH) was undertaken at borehole locations WS01 - WS07 and WS05 to a maximum depth of 3.10m below the existing ground level. Dynamic probing was undertaken to get a greater understanding of the strength of soils from the ground level.

The results of the Dynamic Probing exercise have been converted to equivalent SPT N-values which indicate soil material present beneath the assessment site is generally very dense to 3.00mbgl.

Table 11: SPT N values calculated by the Dynamic Probing results

Depth (m)	WS01			WS02			WS03		
	DPN ₁₀₀	DPN ₃₀₀	SPT N	DPN ₁₀₀	DPN ₃₀₀	SPT N	DPN ₁₀₀	DPN ₃₀₀	SPT N
1.40	19	57	57	-	-	-	-	-	-
1.50	20	60	60	-	-	-	-	-	-
1.60	20	60	60	-	-	-	-	-	-
1.70	22	66	66	-	-	-	-	-	-
1.80	22	66	66	-	-	-	-	-	-
1.90	24	72	72	-	-	-	-	-	-



Depth (m)	WS01			WS02			WS03		
	DPN ₁₀₀	DPN ₃₀₀	SPT N	DPN ₁₀₀	DPN ₃₀₀	SPT N	DPN ₁₀₀	DPN ₃₀₀	SPT N
2.00	25	75	75	-	-	-	16	48	48
2.10	25	75	75	-	-	-	20	60	60
2.20	-	-	-	-	-	-	22	66	66
2.30	-	-	-	22	66	66	22	66	66
2.40	-	-	-	23	69	69	25	75	75
2.50	-	-	-	23	69	69	25	75	75
2.60	-	-	-	24	72	72	-	-	-
2.70	-	-	-	25	75	75	-	-	-
2.80	-	-	-	-	-	-	-	-	-
2.90	-	-	-	-	-	-	-	-	-

DPN₁₀₀= Dynamic penetration resistance for 100mm penetration.

DPN₃₀₀= Dynamic penetration resistance for 300mm penetration (ie: sum of 3 consecutive DPN₁₀₀ values), starting at the depth given.

For the dynamic probe "heavy" test (DPH), equivalent SPT N-values were estimated using the theoretical relationship $DPN_{300} = 1.5 \text{ SPT-N}$. [see Card,G.B., Roche,D.P. & Herbert,S.M., in Geol. Soc. Special Publication No 6, Field Testing in Engineering Geology (1990)]. SPT values are estimated and are for general guidance only.

Depth (m)	WS04			WS05			WS06			WS07		
	DPN ₁₀₀	DPN ₃₀₀	SPT N	DPN ₁₀₀	DPN ₃₀₀	SPT N	DPN ₁₀₀	DPN ₃₀₀	SPT N	DPN ₁₀₀	DPN ₃₀₀	SPT N
1.40	20	60	60	-	-	-	-	-	-	-	-	-
1.50	21	63	63	-	-	-	-	-	-	-	-	-
1.60	21	63	63	-	-	-	-	-	-	-	-	-
1.70	24	72	72	-	-	-	-	-	-	-	-	-
1.80	25	75	75	-	-	-	-	-	-	-	-	-
1.90	-	-	-	-	-	-	-	-	-	-	-	-



Depth (m)	WS04			WS05			WS06			WS07		
	DPN ₁₀ 0	DPN ₃₀ 0	SPT N	DPN ₁₀ 0	DPN ₃₀ 0	SPT N	DPN ₁₀ 0	DPN ₃₀ 0	SPT N	DPN ₁₀ 0	DPN ₃₀ 0	SPT N
2.00	-	-	-	-	-	-	25	75	75	-	-	-
2.10	-	-	-	-	-	-	25	75	75	-	-	-
2.20	-	-	-	-	-	-	25	75	75	-	-	-
2.30	-	-	-	24	72	72	-	-	-	-	-	-
2.40	-	-	-	24	72	72	-	-	-	18	54	54
2.50	-	-	-	25	75	75	-	-	-	19	57	57
2.60	-	-	-	-	-	-	-	-	-	19	57	57
2.70	-	-	-	-	-	-	-	-	-	21	63	63
2.80	-	-	-	-	-	-	-	-	-	22	66	66
2.90	-	-	-	-	-	-	-	-	-	22	66	66
3.00	-	-	-	-	-	-	-	-	-	25	75	75
<p>DPN₁₀₀= Dynamic penetration resistance for 100mm penetration.</p> <p>DPN₃₀₀= Dynamic penetration resistance for 300mm penetration (ie: sum of 3 consecutive DPN₁₀₀ values), starting at the depth given.</p> <p>For the dynamic probe "heavy" test (DPH), equivalent SPT N-values were estimated using the theoretical relationship $DPN_{300} = 1.5 \text{ SPT-N}$. [see Card, G.B., Roche, D.P. & Herbert, S.M., in Geol. Soc. Special Publication No 6, Field Testing in Engineering Geology (1990)]. SPT values are estimated and are for general guidance only.</p>												

Dynamic Probing logs are presented in **Appendix C**.



5 Geotechnical Assessment

This section will provide information on the Allowable Bearing Pressure of the soil in the depths of each SPT test for all locations and considers the ground conditions identified within Section 3 alongside the design values generated from in-situ and laboratory analysis, to be used in the foundation design.

Conventional strip and pad foundations should be suitable for the proposed battery storage units. However, this will also depend on the predicted loadings and tolerance of the structure to settlement (not provided at the time of this assessment).

5.1 Foundations

Three different scenarios have been used to indicate potential allowable bearing pressures and predicted settlements. The scenarios used are:

- Shallow strip foundation of 0.60m by 1.00m.
- Shallow pad foundation of 0.75m by 0.75m.
- Shallow pad foundation of 1.50m by 1.50m.

It will be important to make sure foundations are placed in materials of similar bearing and consolidation characteristics to avoid differential settlement. Groundwater appears to be shallow, and hence dewatering should be required.

The following table summarises anticipated allowable bearing pressures for strip and pad foundations placed at depths between 1.00mbgl and 2.00mbgl. The bearing capacities are calculated based on Hansen's (1978) method, design values discussed in Section 3 and assuming a factor of safety against bearing capacity failure of 3. Groundwater is assumed to be 1.00 meters below ground level.

Table 12: Summary of Allowable Bearing Pressures

Foundation Depth (m)	Foundation Strata	Design Value (Section 3)	Foundation Type	Foundation Dimensions (m ²)	Allowable Bearing Pressure (kN/m ²)
1.00	SAND	$\Phi=30^\circ$	Strip	0.60	160
				1.00	288
			Pad	0.75 x 0.75	230
				1.50 x 1.50	270
2.00	SAND	$\Phi=40^\circ$	Strip	0.60	720
				1.00	1000
			Pad	0.75 x 0.75	1050



Foundation Depth (m)	Foundation Strata	Design Value (Section 3)	Foundation Type	Foundation Dimensions (m ²)	Allowable Bearing Pressure (kN/m ²)
				1.50 x 1.50	1010

The results from table 12 shall be used for the foundation design of the new housing development at Fontwell, West Sussex.

All foundation excavations should be inspected by a qualified engineer to prove that the founding strata are suitable and uniform along the length of the foundation, and capable of taking the anticipated structural loadings.

5.2 Chemical Attack on Buried Concrete

Chemical tests on Superficial Deposits show low levels of water-soluble sulphates, with values ranging from 10mg/l to 709mg/l and near neutral ground conditions with pH values ranging from 5.1- 7.2. Based on these conditions, it is recommended that the Design Sulphate Class, as defined in BRE Special Digest 1 (2005), be taken as DS-1, and the Aggressive Chemical Environment for Concrete (ACEC) site classification be taken as AC-1^d.

The recommendations of BRE Special Digest 1 should be followed for concrete foundations and ground bearing floor slabs.



6 Conclusions And Recommendations

Technics Group Ltd was instructed by Fontwell Field (West Sussex) Ltd (the Client) to undertake ground investigation works at Fontwell, West Sussex and help inform on parameters used in foundation design.

The investigation works were required to provide geotechnical and geo-environmental data through Site-specific ground investigation to aid Fontwell Field (West Sussex) Ltd with its designs for the construction of the new housing development. The following section provides a summary of the conclusions and recommendations based on the findings of the investigation works undertaken and laboratory testing results.

6.1 Ground conditions

In general, the ground conditions encountered can be summarised as

- Superficial Deposits is comprised predominantly of SAND and GRAVEL. For the design parameters, this layer has been treated as non-cohesive material identified from ground Level to 2.00mbgl.

During the site investigation works, groundwater was encountered at WS01 at 0.60mbgl, WS02 at 1.20mbgl, WS03 at 0.70mbgl, WS04 at 1.20mbgl, WS05 at 1.30mbgl, WS07 at 1.10mbgl, TP01 at 0.50mbgl, TP02 at 0.70mbgl, TP03 at 1.40mbgl, TP04 at 0.20mbgl.

Assessment of the ground conditions in terms of the soil bearing capacities has been undertaken and predicted values provided for a range of foundations.

Chemical tests on Superficial Deposits show low levels of water-soluble sulphates, with values ranging from 10mg/l to 709mg/l and near neutral ground conditions with pH values ranging from 5.1- 7.2. Based on these conditions, it is recommended that the Design Sulphate Class, as defined in BRE Special Digest 1 (2005), be taken as DS-1, and the Aggressive Chemical Environment for Concrete (ACEC) site classification be taken as AC-1^d.

6.2 Site Personnel

As with all construction sites, personnel working on the site during the construction period should be encouraged to maintain a high standard of personal hygiene and on-site washing facilities should be available.

6.3 Additional

Due to shallow refusal, the initial scope lacked completeness, leading to insufficient data regarding deeper strata. Should the necessity for deeper foundation analysis arise, it is advised to undertake further ground investigations utilising cable percussive or rotary coring techniques.



Due diligence is required during the construction period, and should any evidence of contamination be found, appropriate investigation and assessment should be taken. The significance of any contamination not discovered by this investigation is outside the scope of this report.



7 References

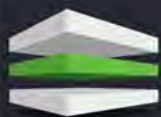
BSI (2018) BS 1377-3:2018+A1:2021 - Methods of test for Soils for Civil Engineering Purposes – Chemical and electro-chemical testing - British Standard Institution

BSI (2015) BS 5930:2015+A1:2020 - Code of Practice for Ground Investigation – British Standard Institution

BSI (2017) BS 10175:2011+A2:2017 - Investigation of Potentially Contaminated Sites- Code of Practice – British Standard Institution

BSI (2007) BS EN1997-2:2007 - Geotechnical Design: Part 2 Ground Investigation and Testing – British Standard Institution

www.openstreetmap.org



Appendix A

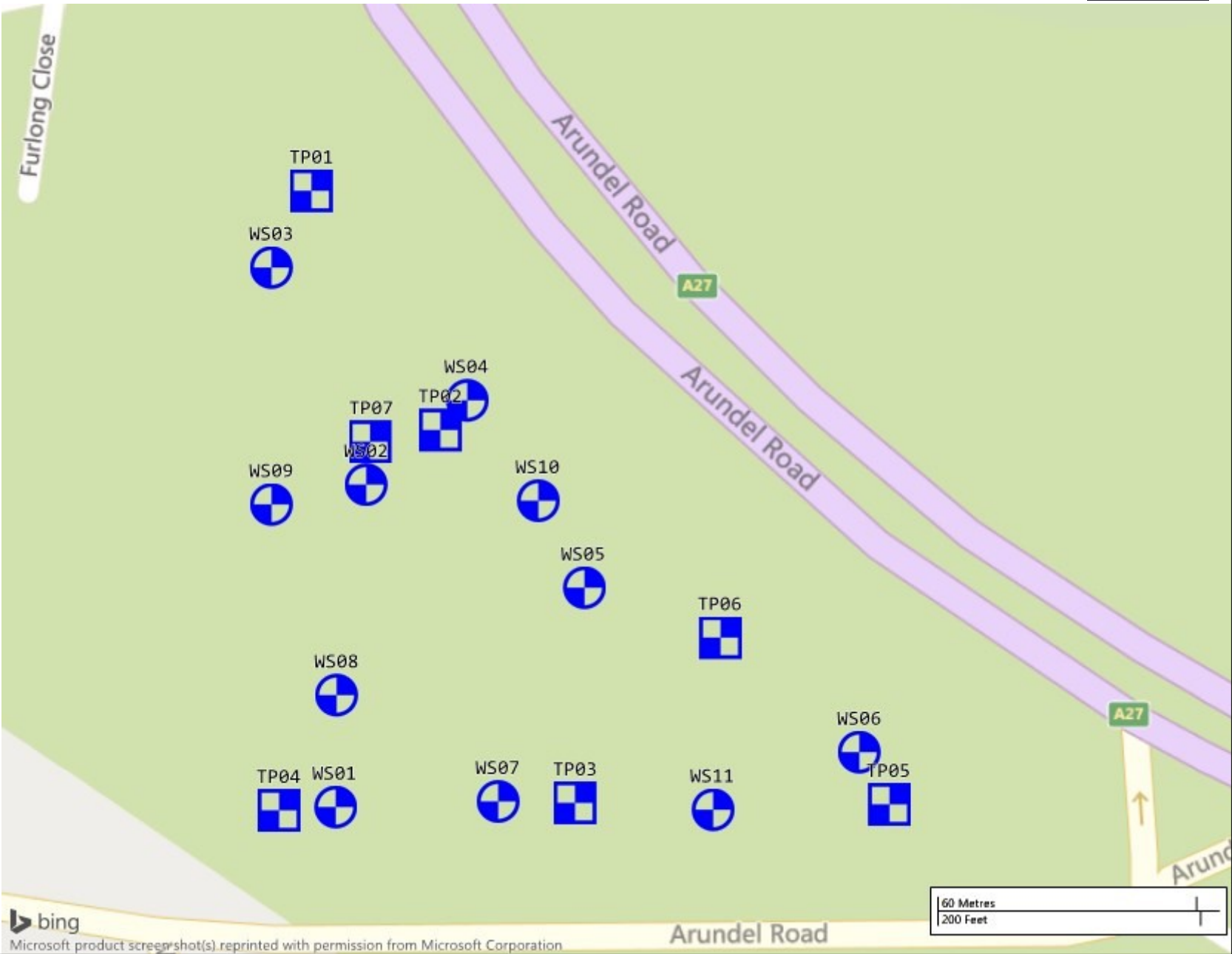
Hole Location Plans

Project Id: SP232036
Project Title: Fontwell, West Sussex, BN18 0SE
Location: Fontwell, West Sussex, BN18 0SE
Client: Fontwell Field (West Sussex) Ltd

Title: Site Plan
Scale: 1:1300
Engineer: Technics Group Ltd



- Legend Key
- Locations By Type - Empty
 - Locations By Type - CP
 - Locations By Type - TP



Project Id: SP232036

Title: Site Plan

Project Title: Fontwell, West Sussex, BN18 0SE

Scale: 1:1300

Location: Fontwell, West Sussex, BN18 0SE

Engineer: Technics Group Ltd

Client: Fontwell Field (West Sussex) Ltd

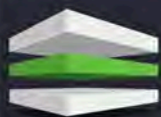


Legend Key

- Locations By Type - Empty
- Locations By Type - CP
- Locations By Type - TP







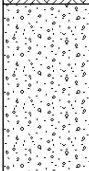
Appendix B

Window Sampling Logs



Percussion Drilling Log

Project Name: Fontwell, West Sussex, BN18 0SE		Client: Fontwell Field (West Sussex) Ltd		Date: 29/02/2024	
Location: Fontwell, West Sussex, BN18 0SE		Contractor: Technics Group Ltd		Co-ords: E495699.00 N106964.00	
Project No. : SP232036		Crew Name: Simon Rush		Drilling Equipment: GTR FSX	
Borehole Number WS01	Hole Type CP	Level 30.10m AoD	Logged By	Scale 1:50	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	N=55 (5,8/55 for 280mm)	0.30	29.80		TOPSOIL. Soft greyish brown slightly sandy gravelly CLAY. Sand is medium. Gravel is subangular to subrounded fine to coarse of flint. Orange and grey SAND and GRAVEL. Sand is medium. Gravel is subangular to rounded fine to coarse flint [Head Deposits].	1
		0.70	D						
		1.00	SPT						
		1.00	SPT						
					1.43	28.67		End of Borehole at 1.43m	2
									3
									4
									5
									6
									7
									8
									9
									10

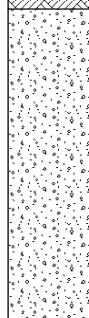
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
1.00	87										

Remarks

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 1.43mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 2.20mbgl due to refusal.





Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES	N=13 (2,3/3,3,3,4)	0.30	33.10		TOPSOIL. Soft greyish brown slightly sandy gravelly CLAY. Sand is medium. Gravel is subangular to subrounded fine to coarse of flint. Orange and grey SAND and GRAVEL. Sand is medium. Gravel is subangular to rounded fine to coarse flint [Head Deposits].	1
		0.80	ES						
		1.00	SPT						
		1.00	SPT						
		1.40	ES						
		2.00	SPT	N=50 (25 for 140mm/50 for 215mm)	2.36	31.04		End of Borehole at 2.36m	2
		2.00	SPT						
								3	
								4	
								5	
								6	
								7	
								8	
								9	
								10	

[illegible]

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 2.36mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 2.80mbgl due to refusal.





Date: 29/02/2024

Co-ords: E495682.00 N107089.00

Drilling Equipment: GTR FSX

Page Number
Sheet 1 of 1

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
1.00	87										
1.70	77										

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 2.07mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 2.60mbgl due to refusal.





Percussion Drilling Log

Project Name: Fontwell, West Sussex, BN18 0SE		Client: Fontwell Field (West Sussex) Ltd		Date: 29/02/2024	
Location: Fontwell, West Sussex, BN18 0SE		Contractor: Technics Group Ltd		Co-ords: E495728.00 N107059.00	
Project No. : SP232036		Crew Name: Simon Rush		Drilling Equipment: GTR FSX	
Borehole Number WS04	Hole Type CP	Level 32.90m AoD	Logged By	Scale 1:50	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							
		0.20	ES	N=50 (8,10/50 for 245mm)	0.25	32.65		TOPSOIL. Soft greyish brown slightly sandy gravelly CLAY. Sand is medium. Gravel is subangular to subrounded fine to coarse of flint. Orange and grey SAND and GRAVEL. Sand is medium. Gravel is subangular to rounded fine to coarse flint [Head Deposits].	1		
		0.80	ES			1.40	31.50			End of Borehole at 1.40m	2
		1.00	SPT								3
		1.00	SPT								4
									5		
									6		
									7		
									8		
									9		
									10		

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
1.00	87										

Remarks

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 1.40mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 2.00mbgl due to refusal.





Date: 29/02/2024

Co-ords: E495756.00 N107016.00

Drilling Equipment: GTR FSX

Page Number
Sheet 1 of 1[illegible]

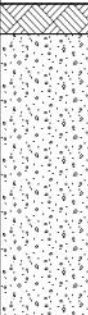
1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 2.36mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 2.60mbgl due to refusal.





Percussion Drilling Log

Project Name: Fontwell, West Sussex, BN18 0SE		Client: Fontwell Field (West Sussex) Ltd		Date: 01/03/2024	
Location: Fontwell, West Sussex, BN18 0SE		Contractor: Technics Group Ltd		Co-ords: E495821.00 N106979.00	
Project No. : SP232036		Crew Name: Simon Rush		Drilling Equipment: GTR FSX	
Borehole Number WS06	Hole Type CP	Level 32.30m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 1

Well	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
	Depth (m)	Type	Results								
	0.20	ES	N=9 (1,2/2,2,2,3)	0.20	32.10		TOPSOIL. Soft greyish brown slightly sandy gravelly CLAY. Sand is medium. Gravel is subangular to subrounded fine to coarse of flint. Orange and grey SAND and GRAVEL. Sand is medium. Gravel is subangular to rounded fine to coarse flint [Head Deposits].	1			
	0.80	ES									
	1.00	SPT									
	1.00	SPT									
	1.40	ES									
	1.80	D	N=50 (25 for 115mm/50 for 160mm)	2.08	30.22				2		
	1.80	SPT									
						End of Borehole at 2.08m					
								3			
								4			
								5			
								6			
								7			
								8			
								9			
								10			

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
1.00	87										
1.80	77										

Remarks

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 2.08mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 2.30mbgl due to refusal.





Date: 29/02/2024

Co-ords: E495737.00 N106966.00

Drilling Equipment: GTR FSX

Page Number
Sheet 1 of 1

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
1.00	87										
2.00	77										

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 2.44mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 4.00mbgl due to refusal.





Date: 04/04/2024

Co-ords: E495699.00 N106990.00

Drilling Equipment: Geotool FSX

Page Number
Sheet 1 of 1[illegible]

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Borehole complete at target depth at 2.45mbgl.





Well	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.30	ES	N=12 (2,3/3,3,3,3)	0.30	31.70		TOPSOIL. Soft greyish brown slightly sandy gravelly CLAY. Sand is medium. Gravel is subangular to subrounded, fine to coarse of flint.	1
	0.60	ES					Orange mottled grey SAND and GRAVEL. Sand is medium. Gravel consists of sub-angular to rounded, fine to coarse flint.	
	0.90	D						
	1.00	SPT						
	1.50	D						
2.00	SPT	N=25 (3,5/5,6,7,7)	2.45	29.55	End of Borehole at 2.45m	2		
								3
								4
								5
								6
								7
								8
								9
								10

Remarks	
1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Borehole complete at target depth at 2.45mbgl.	



Well	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.40	ES	N=8 (1,2/2,2,2,2)	0.40	31.00		TOPSOIL. Soft greyish brown slightly sandy gravelly CLAY. Sand is medium. Gravel is subangular to subrounded, fine to coarse of flint.	1
	0.80	ES		1.40	30.00		Orange mottled grey SAND and GRAVEL. Sand is medium. Gravel consists of sub-angular to rounded, fine to coarse flint.	
	0.90	D						
	1.00	SPT						
	1.50	D	1.80	29.60		Firm orange mottled grey sandy slightly gravelly CLAY. Sand is medium. Gravel is subangular to rounded fine to coarse flint.	2	
	2.00	SPT	N=23 (5,5/5,6,6,6)	2.45	28.95			Orange and grey SAND and GRAVEL. Sand is medium. Gravel is angular to subrounded fine to coarse of flint.
End of Borehole at 2.45m							3	
							4	
							5	
							6	
							7	
							8	
							9	
							10	

Remarks	
1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Borehole complete at target depth at 2.45mbgl.	



Date: 04/04/2024

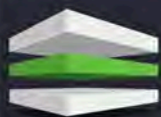
Co-ords: E495787.00 N106965.00

Drilling Equipment: Geotool FSX

Page Number
Sheet 1 of 1[illegible]

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Borehole complete at target depth at 2.45mbgl.





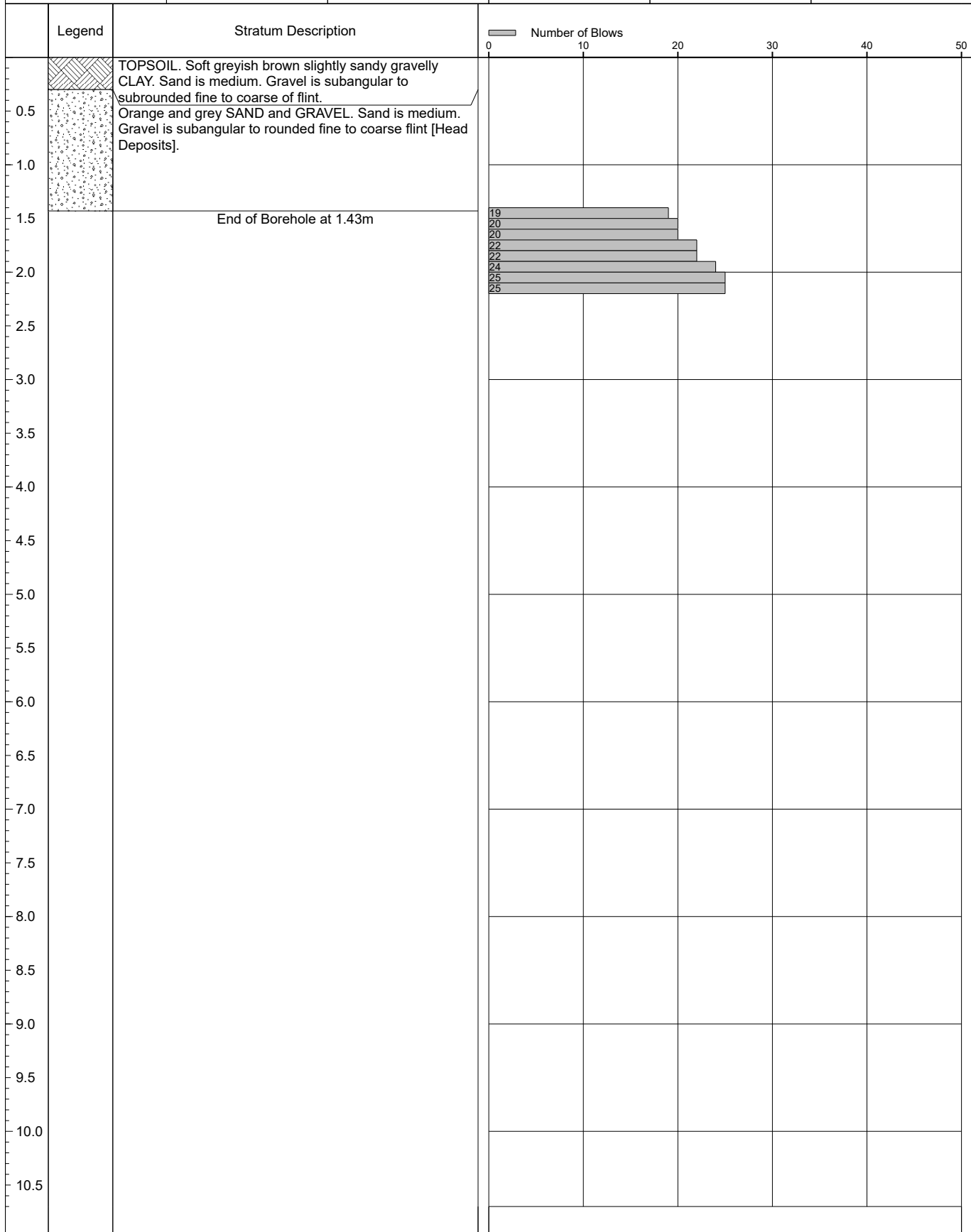
Appendix C

Window Sampling Logs



Probe Test Log

Project Name: Fontwell, West Sussex, BN18 0SE		Client: Fontwell Field (West Sussex) Ltd		Date: 29/02/2024	
Location: Fontwell, West Sussex, BN18 0SE		Contractor: Technics Group Ltd		Co-ords: E495699.00 N106964.00	
Project No. : SP232036		Crew Name: Simon Rush		Drilling Equipment: GTR FSX	
Borehole Number WS01	Hole Type CP	Level 30.10m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 1



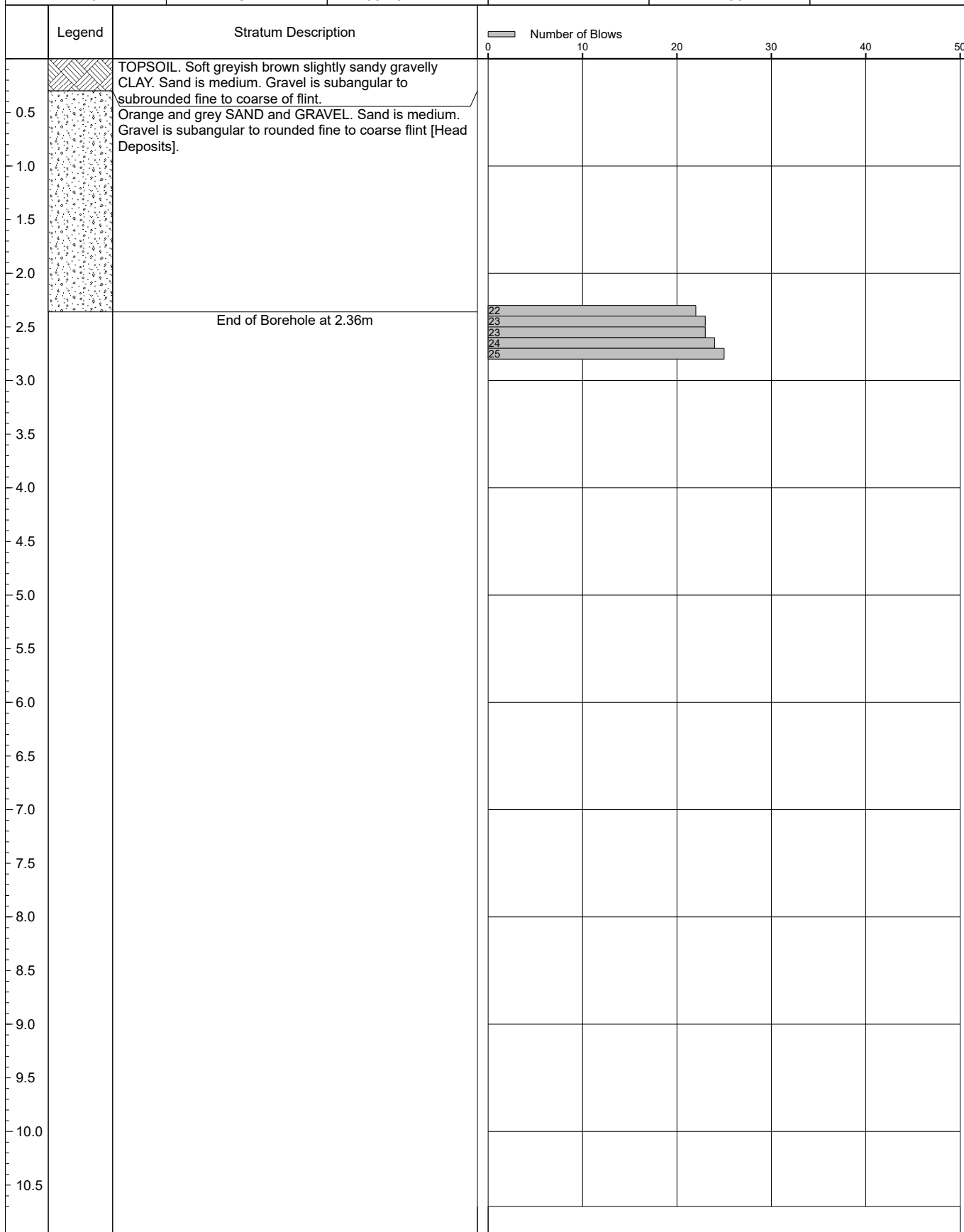
Remarks

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 1.43mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 2.20mbgl due to refusal.



Probe Test Log

Project Name: Fontwell, West Sussex, BN18 0SE		Client: Fontwell Field (West Sussex) Ltd		Date: 29/02/2024	
Location: Fontwell, West Sussex, BN18 0SE		Contractor: Technics Group Ltd		Co-ords: E495705.00 N107039.00	
Project No. : SP232036		Crew Name: Simon Rush		Drilling Equipment: GTR FSX	
Borehole Number WS02	Hole Type CP	Level 33.40m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 1



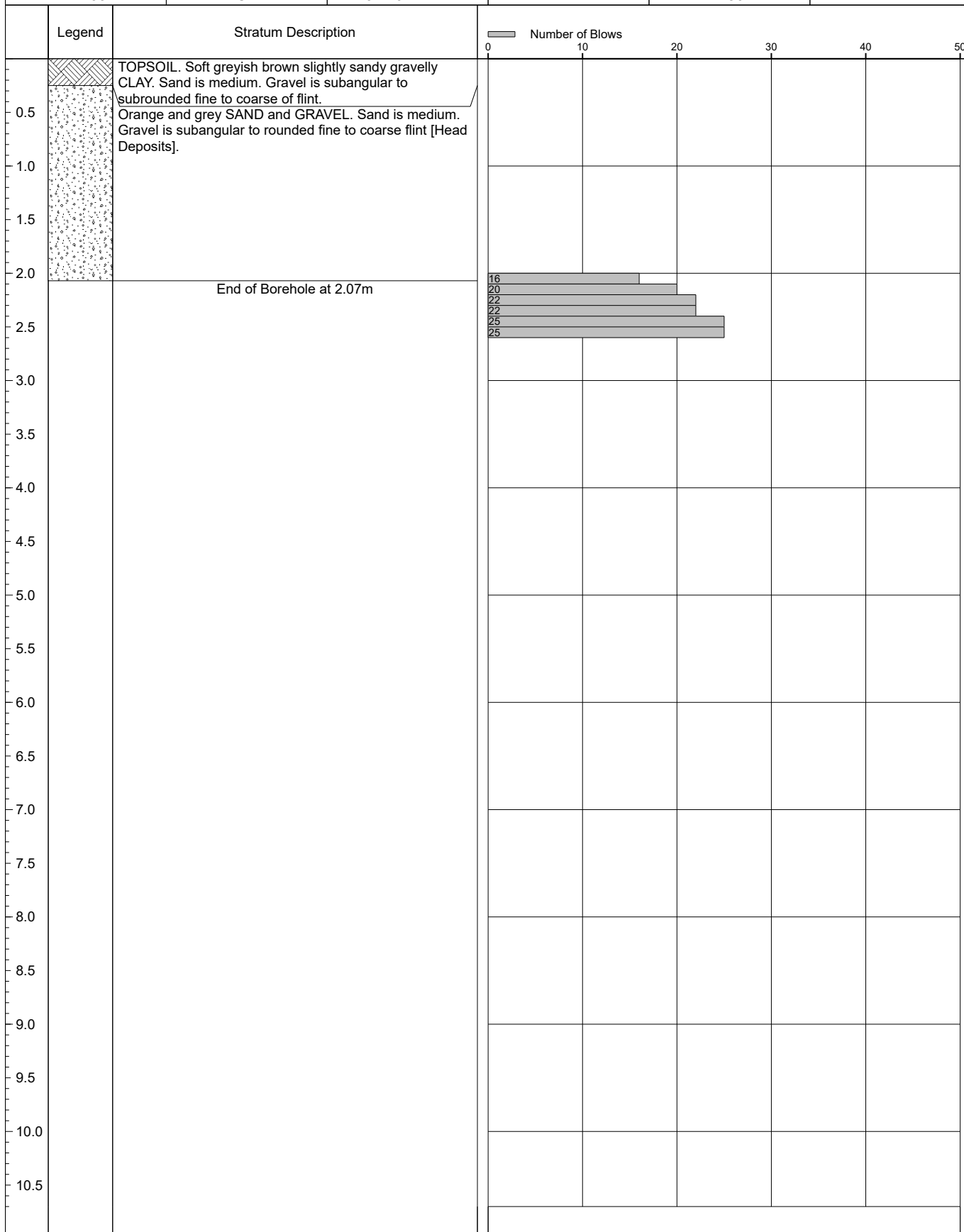
Remarks

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 2.36mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 2.80mbgl due to refusal.



Probe Test Log

Project Name: Fontwell, West Sussex, BN18 0SE		Client: Fontwell Field (West Sussex) Ltd		Date: 29/02/2024	
Location: Fontwell, West Sussex, BN18 0SE		Contractor: Technics Group Ltd		Co-ords: E495682.00 N107089.00	
Project No. : SP232036		Crew Name: Simon Rush		Drilling Equipment: GTR FSX	
Borehole Number WS03	Hole Type CP	Level 34.10m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 1



Remarks

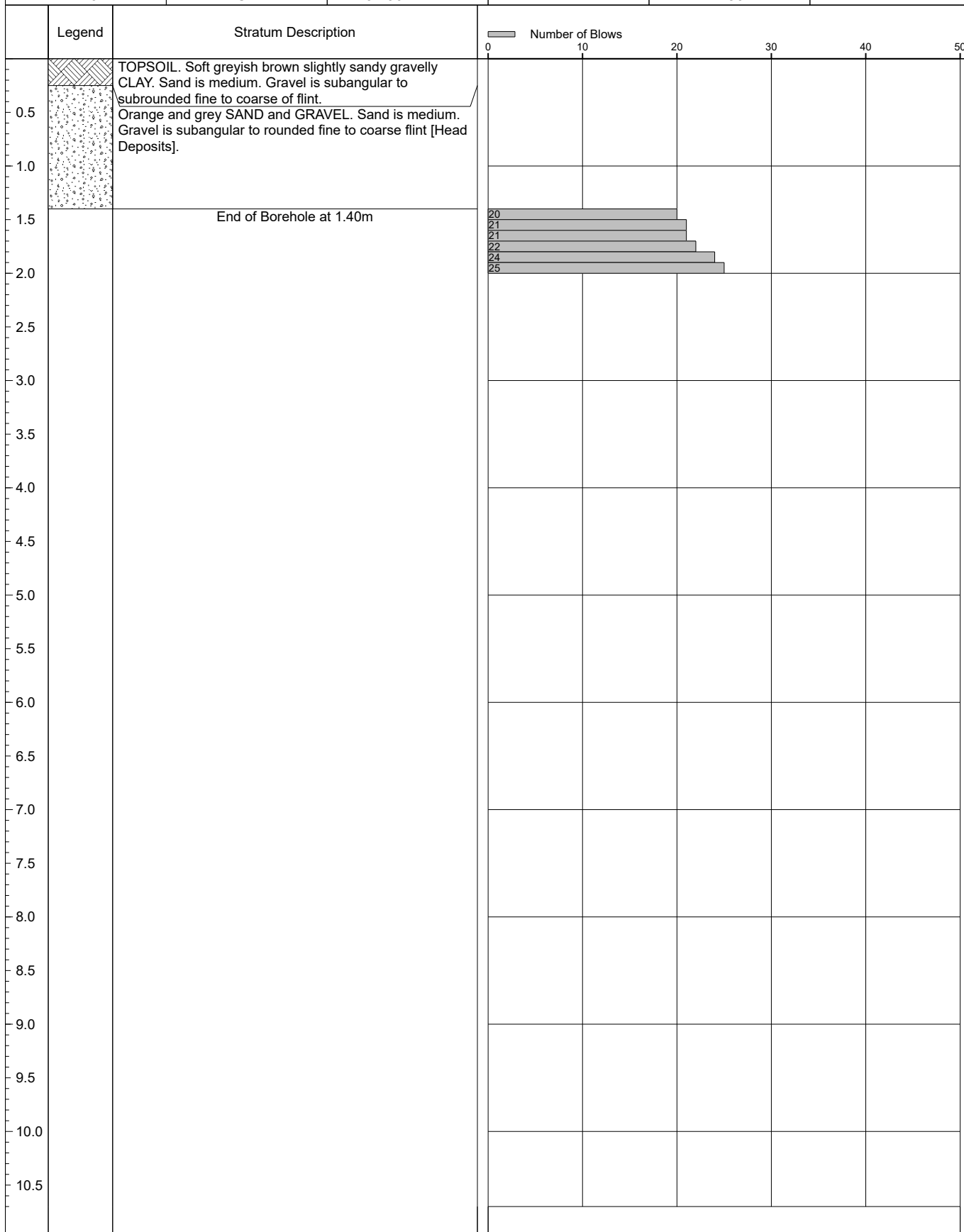
1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 2.07mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 2.60mbgl due to refusal.





Probe Test Log

Project Name: Fontwell, West Sussex, BN18 0SE		Client: Fontwell Field (West Sussex) Ltd		Date: 29/02/2024	
Location: Fontwell, West Sussex, BN18 0SE		Contractor: Technics Group Ltd		Co-ords: E495728.00 N107059.00	
Project No. : SP232036		Crew Name: Simon Rush		Drilling Equipment: GTR FSX	
Borehole Number WS04	Hole Type CP	Level 32.90m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 1



Remarks

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 1.40mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 2.00mbgl due to refusal.



Depth (m)	Legend	Stratum Description	Number of Blows					
			0	10	20	30	40	50
0.0 - 0.5		TOPSOIL. Soft greyish brown slightly sandy gravelly CLAY. Sand is medium. Gravel is subangular to subrounded fine to coarse of flint.						
0.5 - 2.36		Orange and grey SAND and GRAVEL. Sand is medium. Gravel is subangular to rounded fine to coarse flint [Head Deposits].						
2.36		End of Borehole at 2.36m	24					
			24					
			25					
3.0								
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								
10.0								
10.5								

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 2.36mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 2.60mbgl due to refusal.





Probe Test Log

Project Name: Fontwell, West Sussex, BN18 0SE		Client: Fontwell Field (West Sussex) Ltd		Date: 01/03/2024	
Location: Fontwell, West Sussex, BN18 0SE		Contractor: Technics Group Ltd		Co-ords: E495821.00 N106979.00	
Project No. : SP232036		Crew Name: Simon Rush		Drilling Equipment: GTR FSX	
Borehole Number WS06	Hole Type CP	Level 32.30m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 1

	Legend	Stratum Description	Number of Blows					
			0	10	20	30	40	50
0.5		TOPSOIL. Soft greyish brown slightly sandy gravelly CLAY. Sand is medium. Gravel is subangular to subrounded fine to coarse of flint. Orange and grey SAND and GRAVEL. Sand is medium. Gravel is subangular to rounded fine to coarse flint [Head Deposits].						
1.0								
1.5								
2.0								
2.5		End of Borehole at 2.08m	25					
3.0			25					
3.5			25					
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								
10.0								
10.5								

Remarks

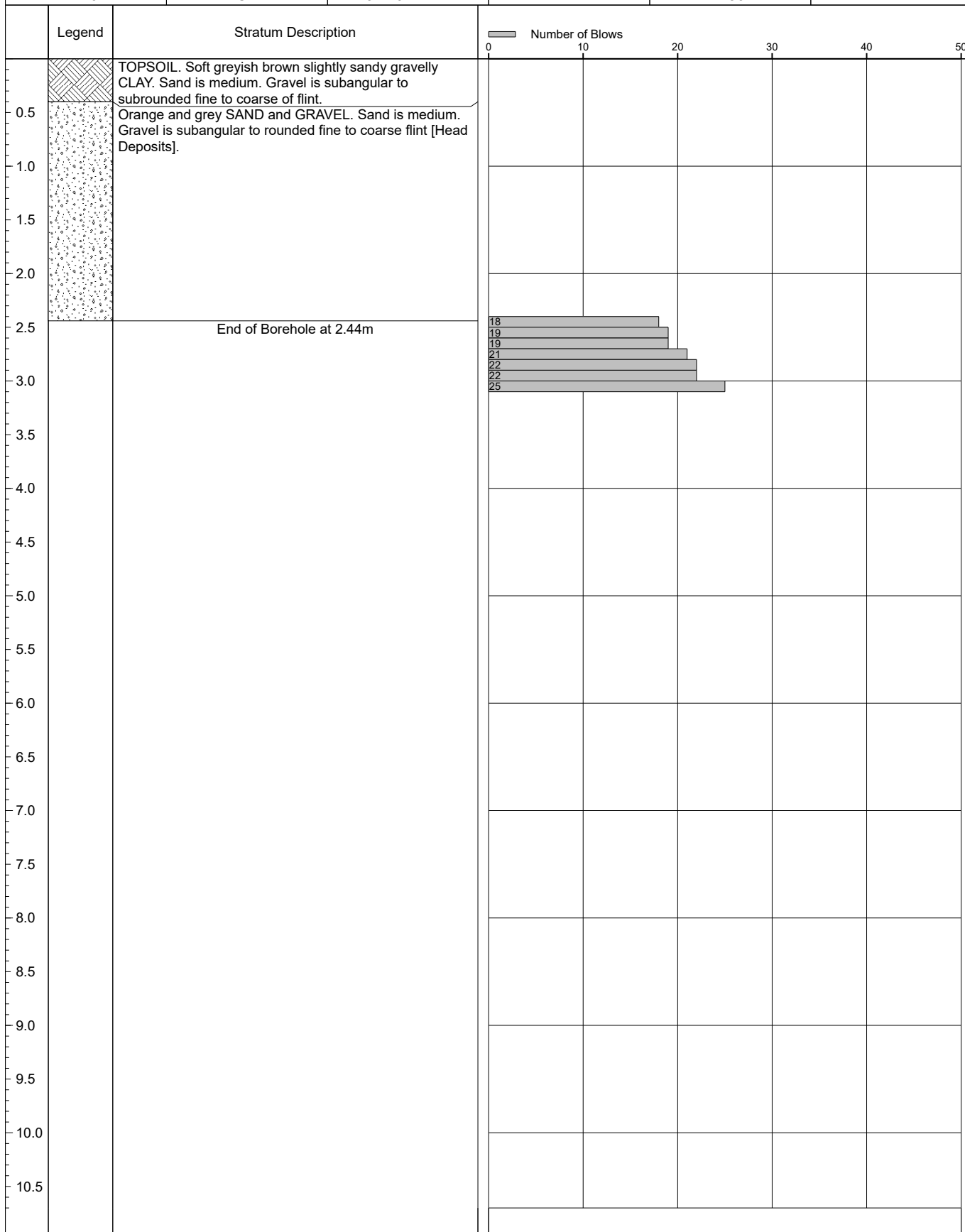
1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 2.08mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 2.30mbgl due to refusal.





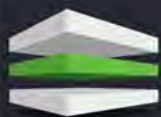
Probe Test Log

Project Name: Fontwell, West Sussex, BN18 0SE		Client: Fontwell Field (West Sussex) Ltd		Date: 29/02/2024	
Location: Fontwell, West Sussex, BN18 0SE		Contractor: Technics Group Ltd		Co-ords: E495737.00 N106966.00	
Project No. : SP232036		Crew Name: Simon Rush		Drilling Equipment: GTR FSX	
Borehole Number WS07	Hole Type CP	Level 32.70m AoD	Logged By	Scale 1:50	Page Number Sheet 1 of 1



Remarks

1. Position scanned with cat and genny prior to excavation. 2. Inspection pit undertaken to 1.20mbgl with insulated hand tools. 3. Dynamic sampling terminated at 2.44mbgl due to refusal. 4. Dynamic Probe follow-on terminated at 4.00mbgl due to refusal.



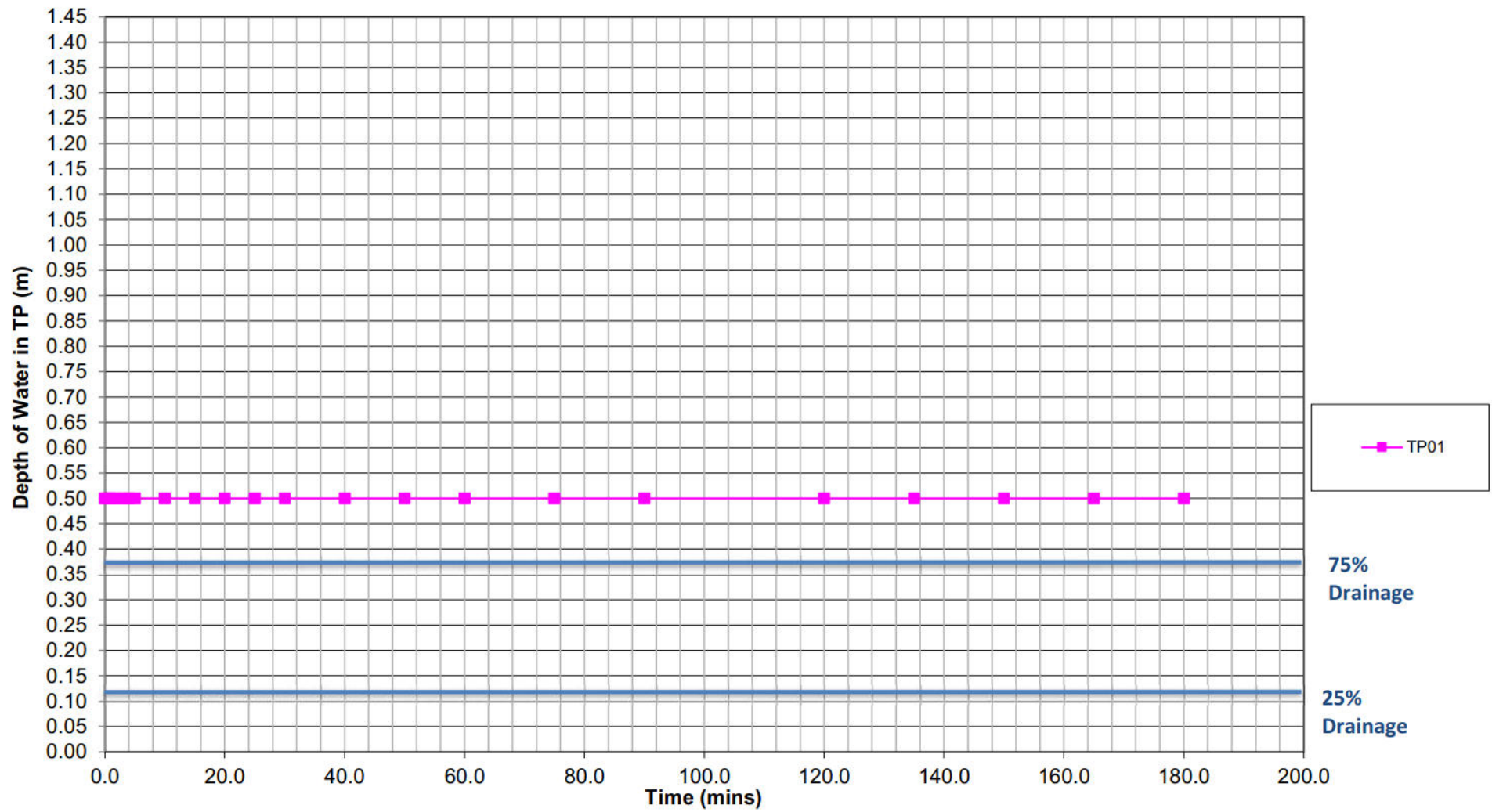
Appendix D

BRE 365 Soakage Testing Results

[illegible]

Soil Infiltration Rate f =	1	2	3	
	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	
Soil Infiltration Rate f =	#REF!	#DIV/0!	#DIV/0!	m/s

TP01 Soakaway Test



OPERATOR:	JAR
-----------	-----

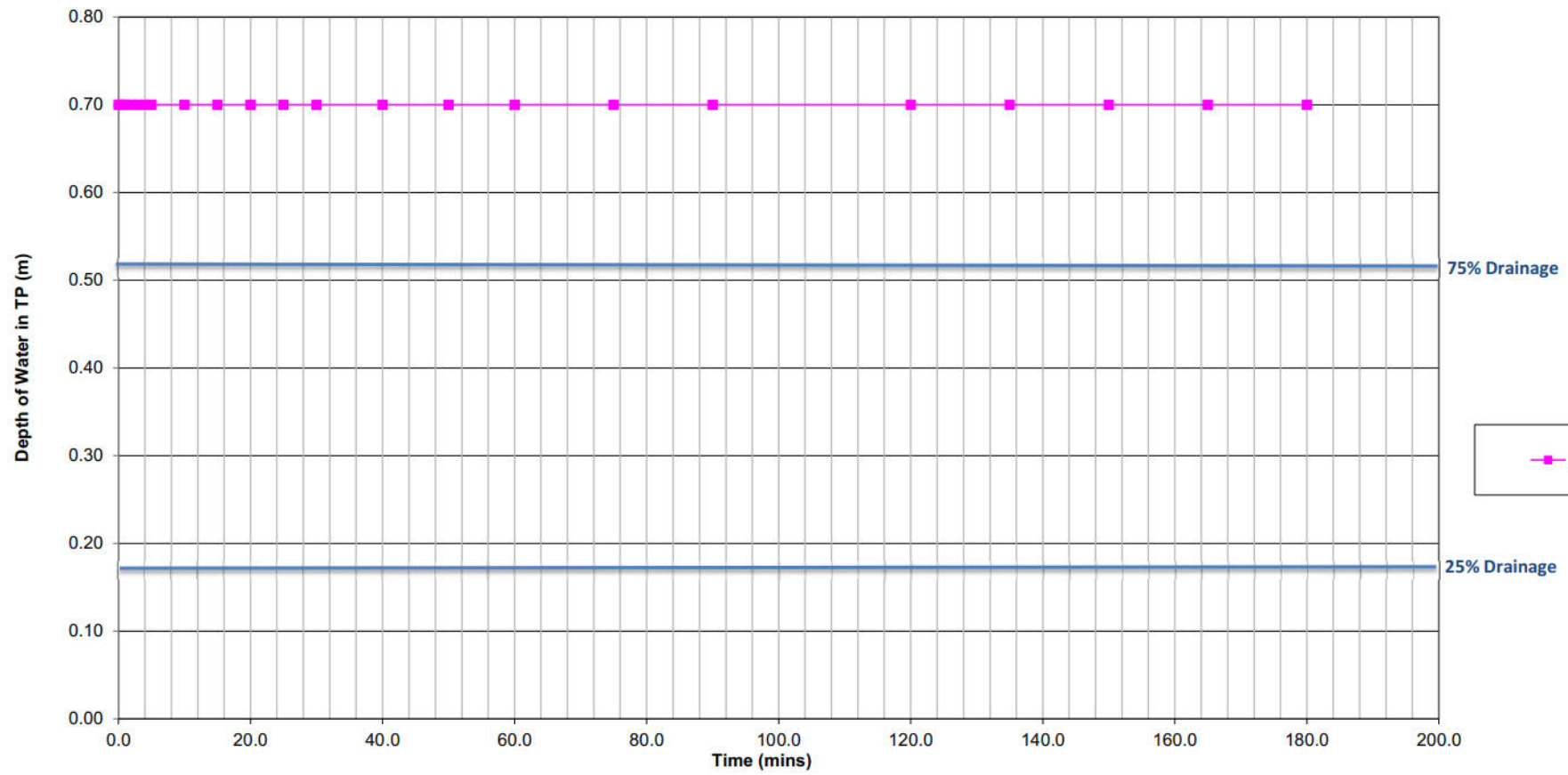
DATE:	27/02/2024	TEST LOCATION:	Fontwell	TP02
--------------	------------	-----------------------	----------	------

MATERIAL:

[illegible]

Soil Infiltration Rate f =	1	2	3	
	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	
Soil Infiltration Rate f =	#REF!	#DIV/0!	#DIV/0!	m/s

TP02 Soakaway Test



OPERATOR:	JAR
-----------	-----

TEST LOCATION:	Fontwell	TP03
----------------	----------	------

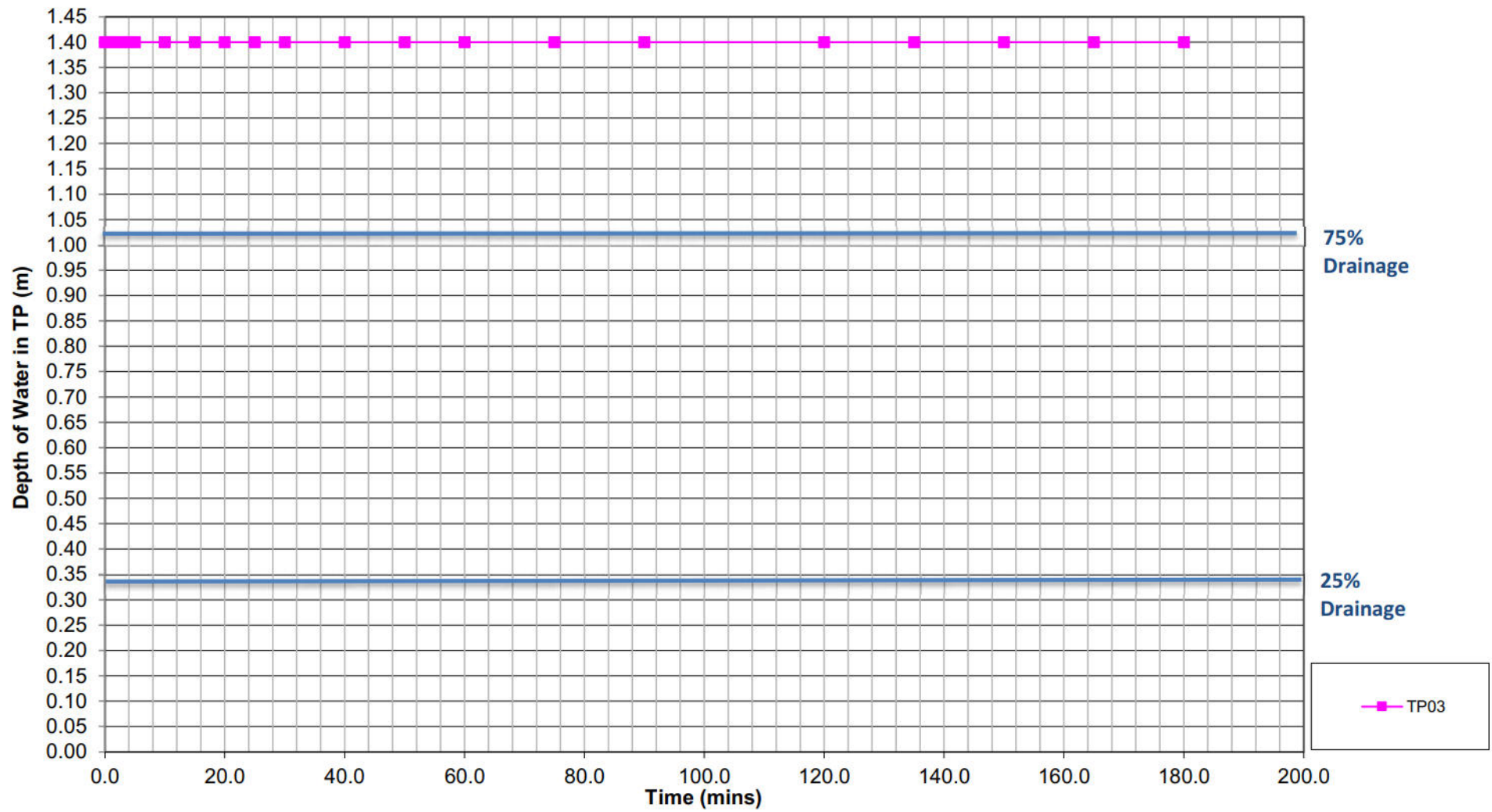
	Reading 1	Reading 2	Reading 3
Depth (m)	1.80		
Length (m)	2.40		
Width (m)	1.80		

MATERIAL:

[illegible]

Soil Infiltration Rate f =	1	2	3	
	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	
Soil Infiltration Rate f =	#REF!	#DIV/0!	#DIV/0!	m/s

TP03 Soakaway Test



OPERATOR:	JAR
-----------	-----

TEST LOCATION:	Fontwell	TP04
-----------------------	----------	------

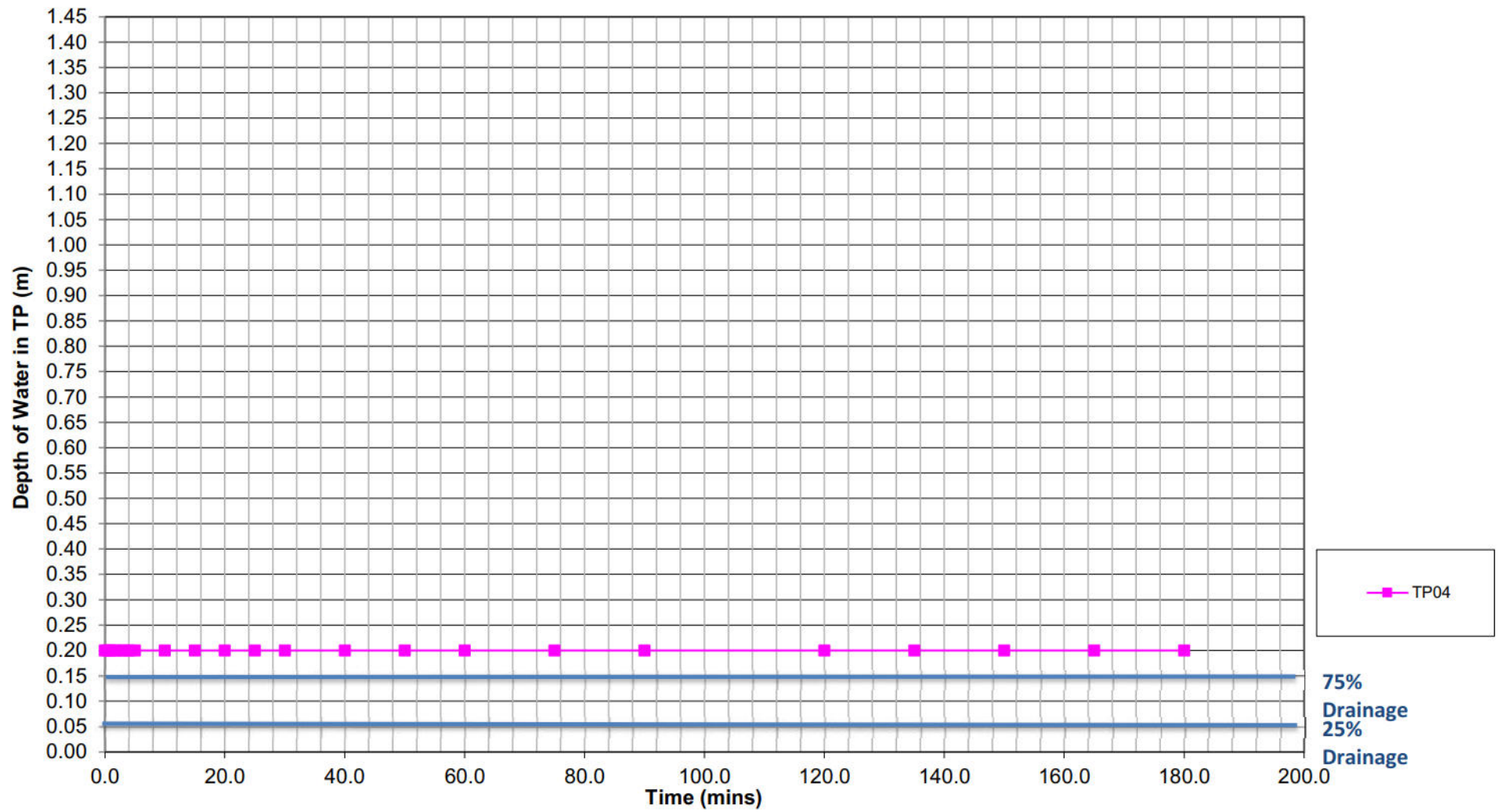
	Reading 1	Reading 2	Reading 3
Depth (m)	1.80		
Length (m)	2.20		
Width (m)	0.60		

MATERIAL:

[illegible]

Soil Infiltration Rate f =	1	2	3	
	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	
Soil Infiltration Rate f =	#REF!	#DIV/0!	#DIV/0!	m/s

TP04 Soakaway Test



OPERATOR:	KF
-----------	----

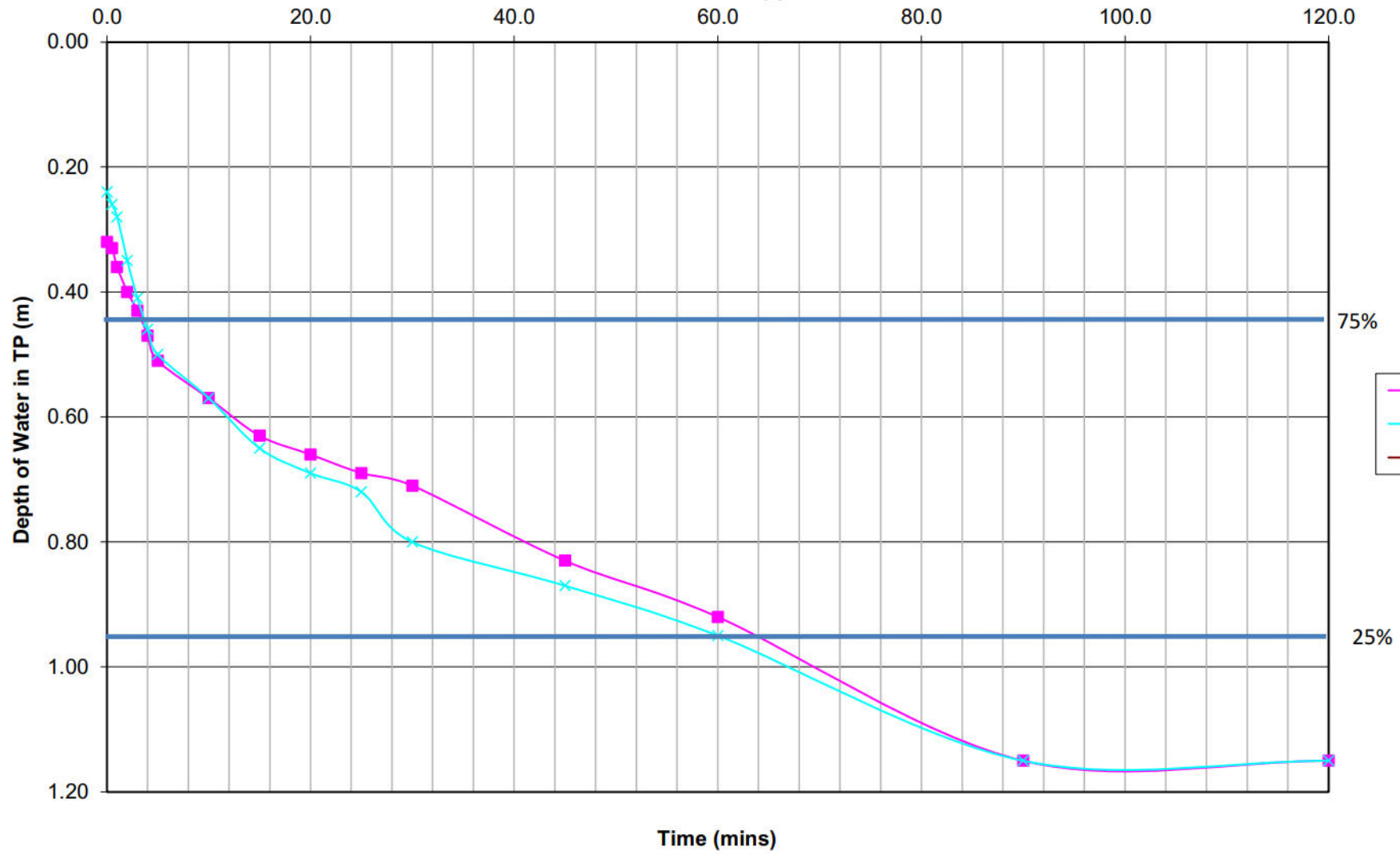
TEST LOCATION: TP05

0.60

SAND

Soil Infiltration Rate f =	1	2	3	
	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	
Soil Infiltration Rate f =	2.56E-05	1.15E-05	#DIV/0!	m/s

Soakaway Test TP05



OPERATOR:	KF
-----------	----

TEST LOCATION: TP06

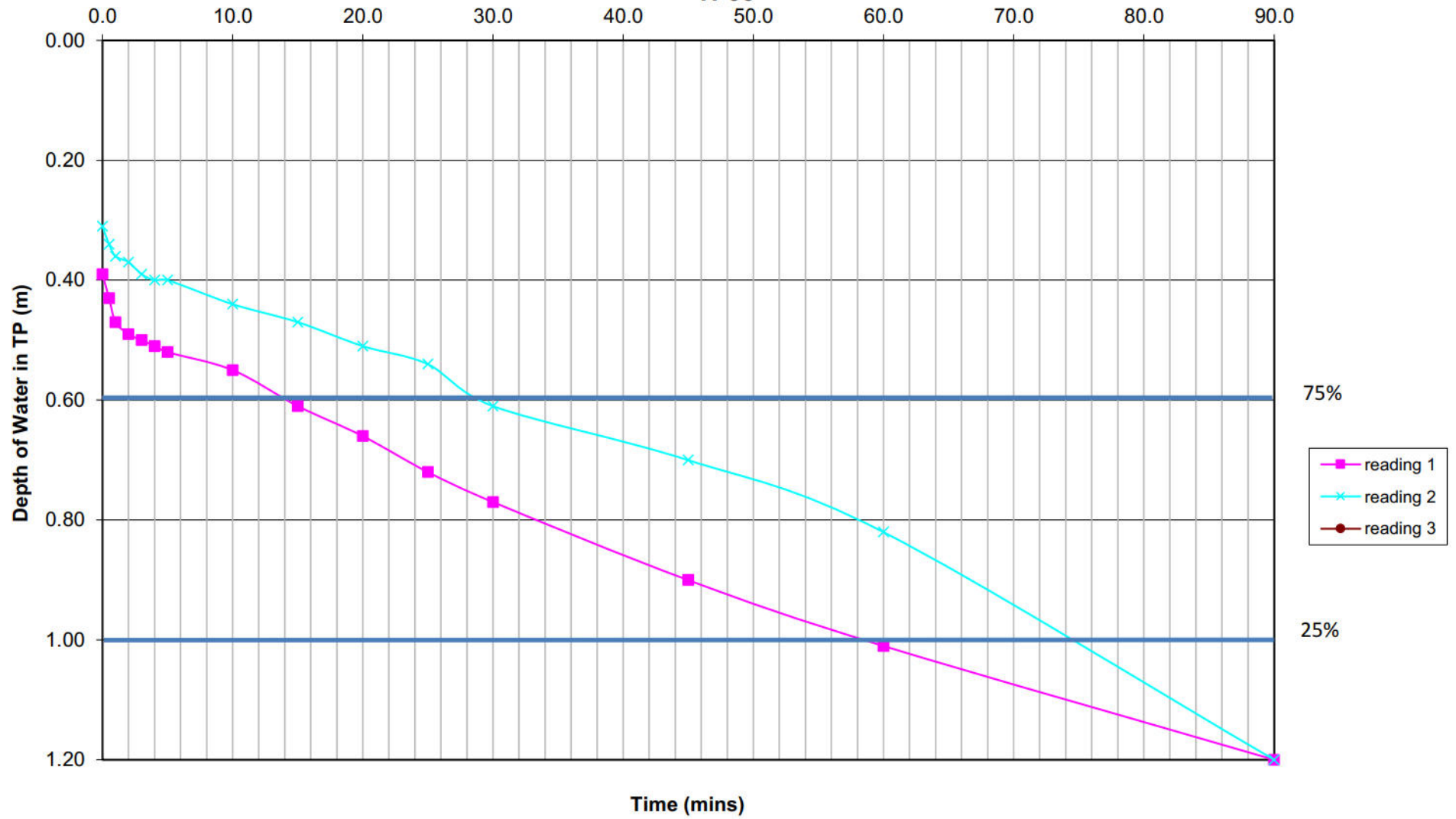
	Reading 1	Reading 2	Reading 3
Depth (m)	1.20	1.20	
Length (m)	2.40	2.40	
Width (m)	0.60	0.60	

SAND

[illegible]

Soil Infiltration Rate f =	1	2	3	
	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	
Soil Infiltration Rate f =	2.89E-05	1.36E-05	#DIV/0!	m/s

Soakaway Test TP06



OPERATOR:	KF
-----------	----

CONSULTANT:

TEST LOCATION: TP07

(in height x length x width)

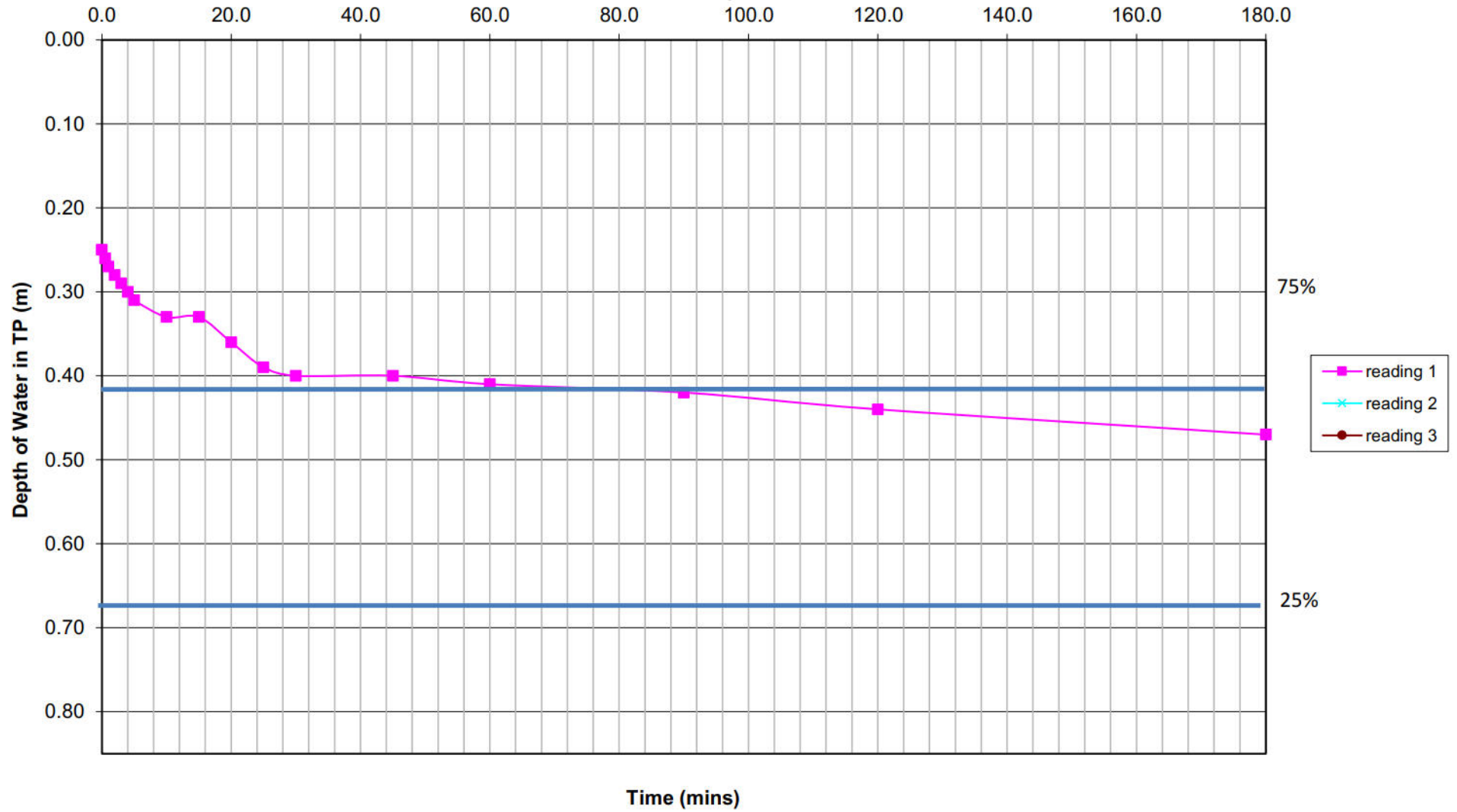
Reading 3

CLAY

[illegible]

Soil Infiltration Rate f =	1	2	3	
	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	$\frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$	
Soil Infiltration Rate f =	2.22E-05	0.00E+00	#DIV/0!	m/s

Soakaway Test TP07



JOB DETAILS: GWM

Client: Fontwell Field (West Sussex) Ltd

Site: Frontwell

Date: 24/10/24

Job No: SP232036

Visit No: 1 of 5

Operator: JAR

Project Manager: MK



				GAS CONCENTRATIONS														FLOW DATA				WELL AND WATER DATA		
Monitoring Point	Date	Time	Pressure (mbar)	PID Compensation Factor		Hexane (Vapour Equivalent) %		Methane (%v/v)		LEL (CH4 in air) %		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)
				Value	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady	Peak	Steady					
WS03	24/10/2024	-																						Well not Located
WS06	24/10/2024	10:00																						DRY
WS07	24/10/2024	10:30																						DRY
WS08	24/10/2024	-																						Well not Located
WS09	24/10/2024	-																						Well not Located
WS10	24/10/2024	-																						Well not Located
WS11	24/10/2024	11:00																						DRY

METEOROLOGICAL AND SITE INFORMATION:

State of ground:

Wind:

Cloud cover:

Precipitation:

Barometric pressure (mbar):

Pressure trend:

☐	Dry	☒	Moist	☐	Wet	☐	Snow	☐	Frozen
☐	Calm	☒	Light	☐	Moderate	☐	Strong		
☒	None	☐	Slight	☐	Cloudy	☐	Overcast		
☒	None	☐	Slight	☐	Moderate	☐	Heavy		
		NA	Before	☐		☐	After		
		NA	Falling	☐	NA	Steady	NA	Rising	

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter:

Gas concentration:

Gas Range:

Gas Flow range:

Differential Pressure:

Date of last calibration:

Date of next calibration:

CH ₄	NA	CO ₂	NA	O ₂	NA
CH ₄	NA	CO ₂	NA	O ₂	NA
+100/-50 l/hour					
(+/-) 1000 Pa					
NA					
NA					

PID meter:

Gas concentration:

Cylinder reference:

Sensor reading:

Accuracy limits:

Date of last calibration:

Date of next calibration:

C ₄ H ₈	NA		
10475/4314			
Initial	NA	Final	NA
+/-10%			
	NA		
	NA		

JOB DETAILS: GWM

Client: Fontwell Field (West Sussex) Ltd

Site: Frontwell

Date: 26/11/24

Job No: SP232036

Visit No: 2 of 5

Operator: JAR

Project Manager: MK



				GAS CONCENTRATIONS														FLOW DATA				WELL AND WATER DATA		
Monitoring Point	Date	Time	Pressure (mbar)	PID Compensation Factor		Hexane (Vapour Equivalent) %		Methane (%v/v)		LEL (CH4 in air) %		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)
				Value	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady	Peak	Steady					
WS03	26/11/2024	-																						Well not Located
WS06	26/11/2024	11:00																						DRY
WS07	26/11/2024	11:30																						DRY
WS08	26/11/2024	-																						Well not Located
WS09	26/11/2024	-																						Well not Located
WS10	26/11/2024	-																						Well not Located
WS11	26/11/2024	11:45																						DRY

METEOROLOGICAL AND SITE INFORMATION:

State of ground:

Wind:

Cloud cover:

Precipitation:

Barometric pressure (mbar):

Pressure trend:

	Dry
	Calm
X	None
X	None

X	Moist
X	Light
	Slight
	Slight
NA	Before
NA	Falling

	Wet
	Moderate
	Cloudy
	Moderate
NA	Steady

	Snow
	Strong
	Overcast
	Heavy
	After
NA	Rising

	Frozen
--	--------

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter:

Gas concentration:

Gas Range:

Gas Flow range:

Differential Pressure:

Date of last calibration:

Date of next calibration:

CH ₄	NA	CO ₂	NA	O ₂	NA
CH ₄	NA	CO ₂	NA	O ₂	NA
+100/-50 l/hour					
(±) 1000 Pa					
NA					
NA					

PID meter:

Gas concentration:

Cylinder reference:

Sensor reading:

Accuracy limits:

Date of last calibration:

Date of next calibration:

C ₄ H ₈	NA		
10475/4314			
Initial	NA	Final	NA
+/-10%			
NA			
NA			

JOB DETAILS: GWM

Client: Fontwell Field (West Sussex) Ltd

Site: Frontwell

Date: 20/12/24

Job No: SP232036

Visit No: 3 of 5

Operator: JAR

Project Manager: MK



				GAS CONCENTRATIONS												FLOW DATA				WELL AND WATER DATA				
Monitoring Point	Date	Time	Pressure (mbar)	PID Compensation Factor		Hexane (Vapour Equivalent) %		Methane (%v/v)		LEL (CH4 in air) %		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)
				Value	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady	Peak	Steady					
WS03	20/12/2024	-																						Well not Located
WS06	20/12/2024	11:30																						DRY
WS07	20/12/2024	12:00																						0.74
WS08	20/12/2024	-																						Well not Located
WS09	20/12/2024	-																						Well not Located
WS10	20/12/2024	-																						Well not Located
WS11	20/12/2024	12:15																						DRY

METEOROLOGICAL AND SITE INFORMATION:

State of ground:

Wind:

Cloud cover:

Precipitation:

Barometric pressure (mbar):

Pressure trend:

☐	Dry	☐	Moist	☒	Wet	☐	Snow	☐	Frozen
☐	Calm	☐	Light	☒	Moderate	☐	Strong	☐	
☐	None	☒	Slight	☐	Cloudy	☐	Overcast	☐	
☐	None	☒	Slight	☐	Moderate	☐	Heavy	☐	
		NA	Before				After		
		NA	Falling	☐	Steady	☐	Rising		

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter:

Gas concentration:

Gas Range:

Gas Flow range:

Differential Pressure:

Date of last calibration:

Date of next calibration:

CH ₄	NA	CO ₂	NA	O ₂	NA
CH ₄	NA	CO ₂	NA	O ₂	NA
+100/-50 l/hour					
(+/-) 1000 Pa					
NA					
NA					

PID meter:

Gas concentration:

Cylinder reference:

Sensor reading:

Accuracy limits:

Date of last calibration:

Date of next calibration:

C ₄ H ₈	NA
10475/4314	
Initial	NA
Final	NA
+/-10%	
NA	
NA	

JOB DETAILS: GWM**Client:** Fontwell Field (West Sussex) Ltd**Site:** Frontwell**Date:** 17/01/25**Job No:** SP232036**Visit No:** 4 of 5**Operator:** JAR**Project Manager:** MK

				GAS CONCENTRATIONS														FLOW DATA				WELL AND WATER DATA		
Monitoring Point	Date	Time	Pressure (mbar)	PID Compensation Factor		Hexane (Vapour Equivalent) %		Methane (%v/v)		LEL (CH4 in air) %		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mgl)
				Value	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady	Peak	Steady					
WS03	17/01/2025	-																						Well not Located
WS06	17/01/2025	11:15																						DRY
WS07	17/01/2025	11:30																						DRY
WS08	17/01/2025	-																						Well not Located
WS09	17/01/2025	-																						Well not Located
WS10	17/01/2025	-																						Well not Located
WS11	17/01/2025	11:45																						DRY

METEOROLOGICAL AND SITE INFORMATION:

State of ground:

Wind:

Cloud cover:

Precipitation:

Barometric pressure (mbar):

Pressure trend:

☐ Dry
☐ Calm
☐ None
☐ None

☒ Moist
☒ Light
☐ Slight
☒ Slight
☐ Before
☐ Falling

☐ Wet
☐ Moderate
☒ Cloudy
☐ Moderate
☐ Steady

☐ Snow
☐ Strong
☐ Overcast
☐ Heavy
☐ After
☐ Rising

☐ Frozen
INSTRUMENTATION TECHNICAL SPECIFICATIONS:**Ground gas meter:**

Gas concentration:

Gas Range:

Gas Flow range:

Differential Pressure:

Date of last calibration:**Date of next calibration:**

CH₄ NA

CH₄ NA

+100/-50 l/hour

(+/-) 1000 Pa

NA

NA

CO₂ NA

CO₂ NA

O₂ NA

O₂ NA

PID meter:

Gas concentration:

Cylinder reference:

Sensor reading:

Accuracy limits:

Date of last calibration:**Date of next calibration:**C₄H₈ NA

10475/4314

Initial NA

+/-10%

NA

NA

Final NA

JOB DETAILS: GWM**Client:** Fontwell Field (West Sussex) Ltd**Site:** Frontwell**Date:** 21/02/25**Job No:** SP232036**Visit No:** 5 of 5**Operator:** JAR**Project Manager:** MK

				GAS CONCENTRATIONS														FLOW DATA				WELL AND WATER DATA		
Monitoring Point	Date	Time	Pressure (mbar)	PID Compensation Factor		Hexane (Vapour Equivalent) %		Methane (%v/v)		LEL (CH4 in air) %		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mgl)
				Value	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady	Peak	Steady					
WS03	21/02/2025	12:00																						DRY
WS06	21/02/2025	11:15																						DRY
WS07	21/02/2025	11:30																						DRY
WS08	21/02/2025	-																						Well not Located
WS09	21/02/2025	-																						Well not Located
WS10	21/02/2025	-																						Well not Located
WS11	21/02/2025	11:45																						DRY

METEOROLOGICAL AND SITE INFORMATION:

State of ground:

Wind:

Cloud cover:

Precipitation:

Barometric pressure (mbar):

Pressure trend:

☐ Dry
☐ Calm
☐ None
☐ None

☒ Moist
☒ Light
☐ Slight
☒ Slight
☐ Before
☐ Falling

☐ Wet
☐ Moderate
☒ Cloudy
☐ Moderate
☐ Steady

☐ Snow
☐ Strong
☐ Overcast
☐ Heavy
☐ After
☐ Rising

☐ Frozen
INSTRUMENTATION TECHNICAL SPECIFICATIONS:**Ground gas meter:**

Gas concentration:

Gas Range:

Gas Flow range:

Differential Pressure:

Date of last calibration:**Date of next calibration:**

CH₄ NA

CH₄ NA

+100/-50 l/hour

(+/-) 1000 Pa

NA

NA

CO₂ NA

CO₂ NA

O₂ NA

O₂ NA**PID meter:**

Gas concentration:

Cylinder reference:

Sensor reading:

Accuracy limits:

Date of last calibration:**Date of next calibration:**

C₄H₈ NA

10475/4314

Initial NA Final NA

+/-10%

NA

NA

JOB DETAILS: GWM**Client:** Fontwell Field (West Sussex) Ltd**Site:** Frontwell**Date:** 18/03/25**Job No:** SP232036**Visit No:** 6 of 6**Operator:** JAR**Project Manager:** MK

				GAS CONCENTRATIONS														FLOW DATA				WELL AND WATER DATA		
Monitoring Point	Date	Time	Pressure (mbar)	PID Compensation Factor		Hexane (Vapour Equivalent) %		Methane (%v/v)		LEL (CH4 in air) %		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)
				Value	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min	Steady	Peak	Steady					
WS03	18/03/2025	11:00																						DRY
WS06	18/03/2025	10:15																						DRY
WS07	18/03/2025	10:30																						DRY
WS08	18/03/2025	-																						Well not Located
WS09	18/03/2025	-																						Well not Located
WS10	18/03/2025	-																						Well not Located
WS11	18/03/2025	10:45																						DRY

METEOROLOGICAL AND SITE INFORMATION:

State of ground:

Wind:

Cloud cover:

Precipitation:

Barometric pressure (mbar):

Pressure trend:

☐	Dry
☐	Calm
☐	None
☐	None

☒	Moist
☒	Light
☐	Slight
☒	Slight
NA	Before
NA	Falling

☐	Wet
☐	Moderate
☒	Cloudy
☐	Moderate
☐	Steady

☐	Snow
☐	Strong
☐	Overcast
☐	Heavy
☐	After
NA	Rising

☐	Frozen
--------------------------	--------

INSTRUMENTATION TECHNICAL SPECIFICATIONS:**Ground gas meter:**

Gas concentration:

Gas Range:

Gas Flow range:

Differential Pressure:

Date of last calibration:**Date of next calibration:**

CH ₄	NA	CO ₂	NA	O ₂	NA
CH ₄	NA	CO ₂	NA	O ₂	NA
+100/-50 l/hour					
(±) 1000 Pa					
NA					
NA					

PID meter:

Gas concentration:

Cylinder reference:

Sensor reading:

Accuracy limits:

Date of last calibration:**Date of next calibration:**

C ₄ H ₈	NA
10475/4314	
Initial	NA
Final	NA
±10%	
NA	
NA	

APPENDIX E



Proposed Masterplan



Residential Accommodation		
8no.	1-bed flats	Block 50sqm
10no.	1-bed maisonettes	Semi / Detached 50sqm
15no.	2-bed houses	Semi-Detached 80sqm
9no.	3-bed houses	Semi-Detached 93sqm
14no.	3-bed townhouses	Semi-Detached 102sqm
2no.	4-bed houses	Detached 110sqm
6no.	4-bed townhouses	Semi-Detached 120sqm
64 Dwellings Total		
Car Parking:		
1.5 space per 1 bed flat		
2 spaces per 2 & 3 bed dwellings		
3 spaces per 4 bed dwellings		
20no. Visitors car spaces		

--- Application Site Boundary

C	04.03.26	Site Layout amended	CV	KE
B	06.02.26	Site Layout amended	KP	AK
A	02.02.26	Roofs amended	KP	KE
Rev	Date	Revision Details	Dr	Ch



E: hello@eceaarchitecture.com Creativity. Quality. Commerciality.
W: eceaarchitecture.com Rethinking what's possible.

Client's Name
Harlequin Developments

Job Title
Land North of Arundel Road, Fontwell

Drawing Title
Site Layout

Scale
1:500 @ A0 / 1:1000 @ A2

metres 10 20 30 40 50

Drawn KE Checked AK Date 12.12.25

Job No 7428A Drawing No PL-02 Rev C

Status
PRELIMINARY

CAD Plot date: 4/12/2025 14:25:53 7428-001.dwg

APPENDIX F



EA Flood Risk Map

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
495771/107072

Created
23 May 2024 16:23

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)

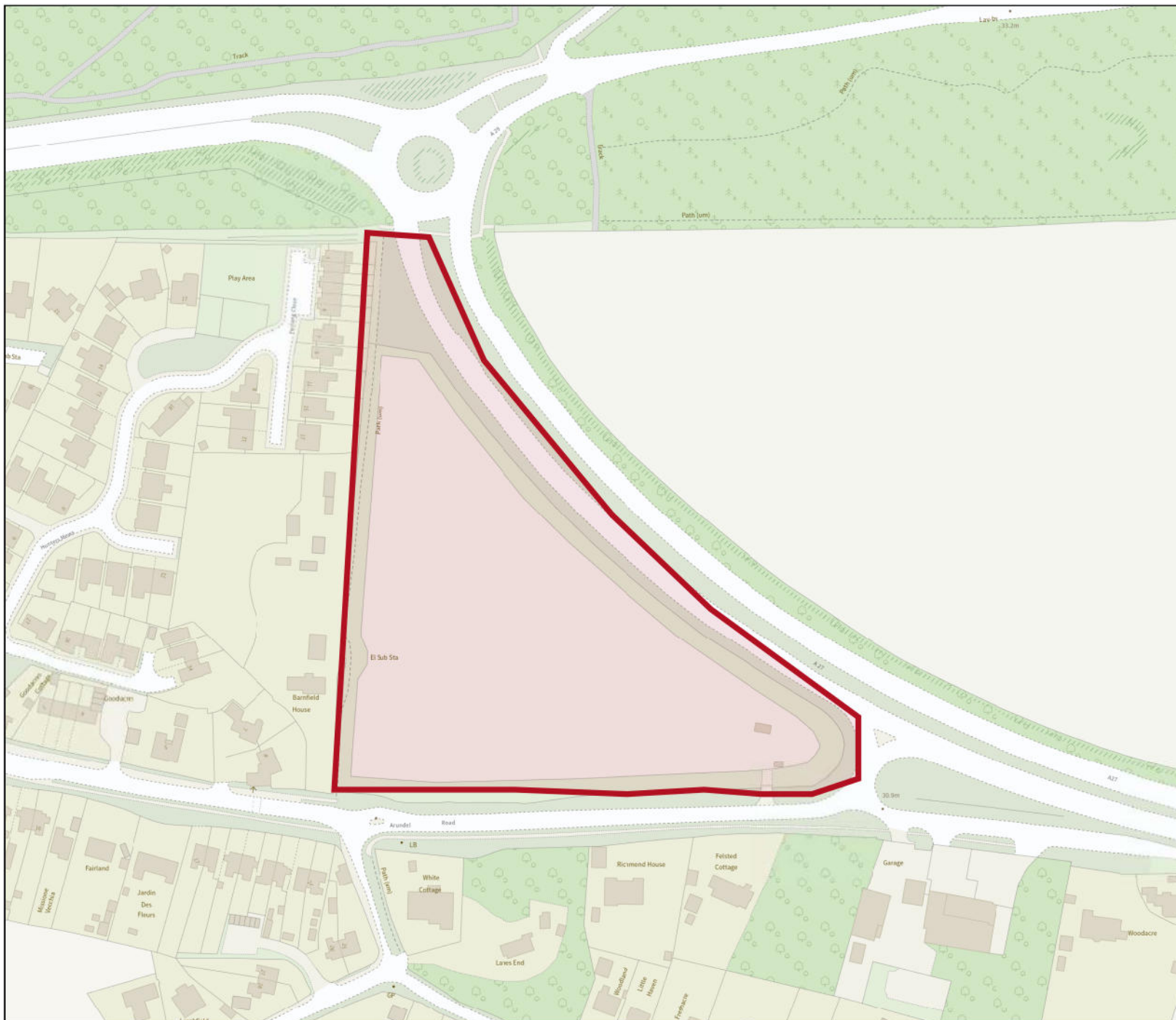
Notes

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 2022 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
495771/107072

Scale
1:2500

Created
23 May 2024 16:23

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

0 20 40 60m

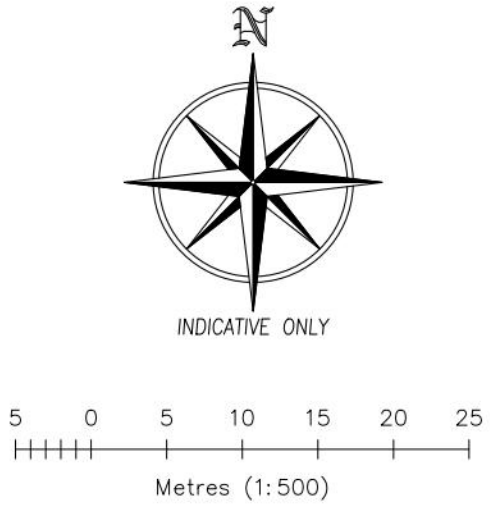
APPENDIX G



Drainage Plans and Calculations



Ref	Length	Width	Area	Contributing areas			CL	BL	Gradient
				Roof	paved	Urban creep			
PP 1	105.0	8.8	923	432	49	43	1447	32.75	31.95
PP 2	73.0	7.5	548	394	362	39	1343	31.50	30.70
PP 2A	23.0	14.5	334	0	0	0	334	32.00	31.50
PP 3	48.0	12.9	621	409	88	41	1159	32.00	31.20
PP 4A	44.0	5.2	228	97	82	10	417	32.00	31.20
PP 4	83.0	6.1	504	546	690	55	1795	31.50	30.70
PP 5	50.0	9.1	454	179	0	18	651	31.50	30.70
PP 6	120.0	8.0	959	671	606	67	2303	31.50	30.70
B1				344	0	34	378		
			4571	3072	1877	307	9827		



P3	Amended layout	05.03.26	CS
P2	Amended to suit LLFA comments	27.09.24	CS
P1	First issue	28.05.24	CS
REV	AMENDMENTS	DATE	CHK
Client			
HARLEQUIN DEVELOPMENTS			
Project			
LAND NORTH OF ARUNDEL ROAD FONTWELL			
Title			
DRAINAGE STRATEGY PLAN			
Dwg	Rev	Scale	Date
33186-D-02	P3	1:500	28.05.24
Eclipse House, Eclipse Park, Sittingbourne Road Maidstone, Kent, ME14 3EN			
t: 01622 776226		f: 01622 776227	
e: info@dhaplanning.co.uk		w: www.dhaplanning.co.uk	
CAD Reference:			A1





INDICATIVE ONLY

5 0 5 10 15 20 25
Metres (1:500)

Proposed site area

-

2.74Ha

Proposed Porous pavement

-

4,571m²

Proposed roofs

-

3,072m²

Proposed hardstanding

-

1,877m²

Proposed impermeable area

-

9,520m²

10% allowance for urban creep

-

307m²

Total contributing area

-

9,827m²

P2	Layout amended	05.03.26	CS
P1	First issue	28.05.24	CS
REV	AMENDMENTS	DATE	CHK
Client			
HARLEQUIN DEVELOPMENTS			
Project			
LAND NORTH OF ARUNDEL ROAD FONTWELL			
Title			
CONTRIBUTING AREAS PLAN			
Dwg	Rev	Scale	Date
33186-D-01	P2	1:500	28.05.24
			
Eclipse House, Eclipse Park, Sittingbourne Road Maidstone, Kent, ME14 3EN			
t: 01622 776226		f: 01622 776227	
e: info@dhaplanning.co.uk		w: www.dhaplanning.co.uk	
CAD Reference:			A1

DHA Transport Ltd		Page 1																																																																																																																																																																																																																																											
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN		Porous pavement 1																																																																																																																																																																																																																																											
Date 06/03/2026 11:01 File cas.CASX		Designed by Chris Checked by																																																																																																																																																																																																																																											
Causeway		Source Control 2019.1																																																																																																																																																																																																																																											
<p style="text-align: center;"><u>Cascade Summary of Results for pp1.SRCX</u></p> <p style="text-align: center;">Upstream Outflow To Overflow To Structures</p> <p style="text-align: center;">(None) pp2.SRCX (None)</p> <p style="text-align: center;">Half Drain Time : 198 minutes.</p> <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Control (l/s)</th><th>Max Σ Outflow (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>32.477</td><td>0.527</td><td>0.0</td><td>3.7</td><td>3.7</td><td>51.3</td><td>Flood Risk</td></tr><tr><td>30 min Summer</td><td>32.531</td><td>0.581</td><td>0.0</td><td>3.9</td><td>3.9</td><td>62.3</td><td>Flood Risk</td></tr><tr><td>60 min Summer</td><td>32.582</td><td>0.632</td><td>0.0</td><td>4.1</td><td>4.1</td><td>73.7</td><td>Flood Risk</td></tr><tr><td>120 min Summer</td><td>32.621</td><td>0.671</td><td>0.0</td><td>4.2</td><td>4.2</td><td>83.2</td><td>Flood Risk</td></tr><tr><td>180 min Summer</td><td>32.634</td><td>0.684</td><td>0.0</td><td>4.2</td><td>4.2</td><td>86.4</td><td>Flood Risk</td></tr><tr><td>240 min Summer</td><td>32.640</td><td>0.690</td><td>0.0</td><td>4.3</td><td>4.3</td><td>88.1</td><td>Flood Risk</td></tr><tr><td>360 min Summer</td><td>32.645</td><td>0.695</td><td>0.0</td><td>4.3</td><td>4.3</td><td>89.2</td><td>Flood Risk</td></tr><tr><td>480 min Summer</td><td>32.643</td><td>0.693</td><td>0.0</td><td>4.3</td><td>4.3</td><td>88.7</td><td>Flood Risk</td></tr><tr><td>600 min Summer</td><td>32.637</td><td>0.687</td><td>0.0</td><td>4.2</td><td>4.2</td><td>87.3</td><td>Flood Risk</td></tr><tr><td>720 min Summer</td><td>32.630</td><td>0.680</td><td>0.0</td><td>4.2</td><td>4.2</td><td>85.5</td><td>Flood Risk</td></tr><tr><td>960 min Summer</td><td>32.592</td><td>0.642</td><td>0.0</td><td>4.1</td><td>4.1</td><td>76.1</td><td>Flood Risk</td></tr><tr><td>1440 min Summer</td><td>32.525</td><td>0.575</td><td>0.0</td><td>3.9</td><td>3.9</td><td>61.1</td><td>Flood Risk</td></tr><tr><td>2160 min Summer</td><td>32.441</td><td>0.491</td><td>0.0</td><td>3.6</td><td>3.6</td><td>44.5</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>32.372</td><td>0.422</td><td>0.0</td><td>3.3</td><td>3.3</td><td>32.9</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>32.287</td><td>0.337</td><td>0.0</td><td>2.9</td><td>2.9</td><td>21.0</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>32.225</td><td>0.275</td><td>0.0</td><td>2.6</td><td>2.6</td><td>14.0</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>32.178</td><td>0.228</td><td>0.0</td><td>2.3</td><td>2.3</td><td>9.6</td><td>O K</td></tr></tbody></table> <table><thead><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Discharge Volume (m³)</th><th>Time-Peak (mins)</th></tr></thead><tbody><tr><td>15 min Summer</td><td>167.069</td><td>0.0</td><td>53.8</td><td>18</td></tr><tr><td>30 min Summer</td><td>102.772</td><td>0.0</td><td>67.3</td><td>33</td></tr><tr><td>60 min Summer</td><td>63.219</td><td>0.0</td><td>83.8</td><td>62</td></tr><tr><td>120 min Summer</td><td>38.889</td><td>0.0</td><td>104.0</td><td>120</td></tr><tr><td>180 min Summer</td><td>29.268</td><td>0.0</td><td>118.0</td><td>162</td></tr><tr><td>240 min Summer</td><td>23.922</td><td>0.0</td><td>128.9</td><td>194</td></tr><tr><td>360 min Summer</td><td>18.004</td><td>0.0</td><td>145.9</td><td>258</td></tr><tr><td>480 min Summer</td><td>14.716</td><td>0.0</td><td>159.3</td><td>328</td></tr><tr><td>600 min Summer</td><td>12.585</td><td>0.0</td><td>170.4</td><td>398</td></tr><tr><td>720 min Summer</td><td>11.075</td><td>0.0</td><td>180.1</td><td>468</td></tr><tr><td>960 min Summer</td><td>8.655</td><td>0.0</td><td>187.4</td><td>604</td></tr><tr><td>1440 min Summer</td><td>6.114</td><td>0.0</td><td>198.1</td><td>866</td></tr><tr><td>2160 min Summer</td><td>4.320</td><td>0.0</td><td>208.9</td><td>1236</td></tr><tr><td>2880 min Summer</td><td>3.376</td><td>0.0</td><td>216.7</td><td>1588</td></tr><tr><td>4320 min Summer</td><td>2.505</td><td>0.0</td><td>239.6</td><td>2296</td></tr><tr><td>5760 min Summer</td><td>2.027</td><td>0.0</td><td>256.7</td><td>3000</td></tr><tr><td>7200 min Summer</td><td>1.720</td><td>0.0</td><td>270.5</td><td>3744</td></tr></tbody></table>				Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status	15 min Summer	32.477	0.527	0.0	3.7	3.7	51.3	Flood Risk	30 min Summer	32.531	0.581	0.0	3.9	3.9	62.3	Flood Risk	60 min Summer	32.582	0.632	0.0	4.1	4.1	73.7	Flood Risk	120 min Summer	32.621	0.671	0.0	4.2	4.2	83.2	Flood Risk	180 min Summer	32.634	0.684	0.0	4.2	4.2	86.4	Flood Risk	240 min Summer	32.640	0.690	0.0	4.3	4.3	88.1	Flood Risk	360 min Summer	32.645	0.695	0.0	4.3	4.3	89.2	Flood Risk	480 min Summer	32.643	0.693	0.0	4.3	4.3	88.7	Flood Risk	600 min Summer	32.637	0.687	0.0	4.2	4.2	87.3	Flood Risk	720 min Summer	32.630	0.680	0.0	4.2	4.2	85.5	Flood Risk	960 min Summer	32.592	0.642	0.0	4.1	4.1	76.1	Flood Risk	1440 min Summer	32.525	0.575	0.0	3.9	3.9	61.1	Flood Risk	2160 min Summer	32.441	0.491	0.0	3.6	3.6	44.5	O K	2880 min Summer	32.372	0.422	0.0	3.3	3.3	32.9	O K	4320 min Summer	32.287	0.337	0.0	2.9	2.9	21.0	O K	5760 min Summer	32.225	0.275	0.0	2.6	2.6	14.0	O K	7200 min Summer	32.178	0.228	0.0	2.3	2.3	9.6	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	15 min Summer	167.069	0.0	53.8	18	30 min Summer	102.772	0.0	67.3	33	60 min Summer	63.219	0.0	83.8	62	120 min Summer	38.889	0.0	104.0	120	180 min Summer	29.268	0.0	118.0	162	240 min Summer	23.922	0.0	128.9	194	360 min Summer	18.004	0.0	145.9	258	480 min Summer	14.716	0.0	159.3	328	600 min Summer	12.585	0.0	170.4	398	720 min Summer	11.075	0.0	180.1	468	960 min Summer	8.655	0.0	187.4	604	1440 min Summer	6.114	0.0	198.1	866	2160 min Summer	4.320	0.0	208.9	1236	2880 min Summer	3.376	0.0	216.7	1588	4320 min Summer	2.505	0.0	239.6	2296	5760 min Summer	2.027	0.0	256.7	3000	7200 min Summer	1.720	0.0	270.5	3744
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																																						
15 min Summer	32.477	0.527	0.0	3.7	3.7	51.3	Flood Risk																																																																																																																																																																																																																																						
30 min Summer	32.531	0.581	0.0	3.9	3.9	62.3	Flood Risk																																																																																																																																																																																																																																						
60 min Summer	32.582	0.632	0.0	4.1	4.1	73.7	Flood Risk																																																																																																																																																																																																																																						
120 min Summer	32.621	0.671	0.0	4.2	4.2	83.2	Flood Risk																																																																																																																																																																																																																																						
180 min Summer	32.634	0.684	0.0	4.2	4.2	86.4	Flood Risk																																																																																																																																																																																																																																						
240 min Summer	32.640	0.690	0.0	4.3	4.3	88.1	Flood Risk																																																																																																																																																																																																																																						
360 min Summer	32.645	0.695	0.0	4.3	4.3	89.2	Flood Risk																																																																																																																																																																																																																																						
480 min Summer	32.643	0.693	0.0	4.3	4.3	88.7	Flood Risk																																																																																																																																																																																																																																						
600 min Summer	32.637	0.687	0.0	4.2	4.2	87.3	Flood Risk																																																																																																																																																																																																																																						
720 min Summer	32.630	0.680	0.0	4.2	4.2	85.5	Flood Risk																																																																																																																																																																																																																																						
960 min Summer	32.592	0.642	0.0	4.1	4.1	76.1	Flood Risk																																																																																																																																																																																																																																						
1440 min Summer	32.525	0.575	0.0	3.9	3.9	61.1	Flood Risk																																																																																																																																																																																																																																						
2160 min Summer	32.441	0.491	0.0	3.6	3.6	44.5	O K																																																																																																																																																																																																																																						
2880 min Summer	32.372	0.422	0.0	3.3	3.3	32.9	O K																																																																																																																																																																																																																																						
4320 min Summer	32.287	0.337	0.0	2.9	2.9	21.0	O K																																																																																																																																																																																																																																						
5760 min Summer	32.225	0.275	0.0	2.6	2.6	14.0	O K																																																																																																																																																																																																																																						
7200 min Summer	32.178	0.228	0.0	2.3	2.3	9.6	O K																																																																																																																																																																																																																																						
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)																																																																																																																																																																																																																																									
15 min Summer	167.069	0.0	53.8	18																																																																																																																																																																																																																																									
30 min Summer	102.772	0.0	67.3	33																																																																																																																																																																																																																																									
60 min Summer	63.219	0.0	83.8	62																																																																																																																																																																																																																																									
120 min Summer	38.889	0.0	104.0	120																																																																																																																																																																																																																																									
180 min Summer	29.268	0.0	118.0	162																																																																																																																																																																																																																																									
240 min Summer	23.922	0.0	128.9	194																																																																																																																																																																																																																																									
360 min Summer	18.004	0.0	145.9	258																																																																																																																																																																																																																																									
480 min Summer	14.716	0.0	159.3	328																																																																																																																																																																																																																																									
600 min Summer	12.585	0.0	170.4	398																																																																																																																																																																																																																																									
720 min Summer	11.075	0.0	180.1	468																																																																																																																																																																																																																																									
960 min Summer	8.655	0.0	187.4	604																																																																																																																																																																																																																																									
1440 min Summer	6.114	0.0	198.1	866																																																																																																																																																																																																																																									
2160 min Summer	4.320	0.0	208.9	1236																																																																																																																																																																																																																																									
2880 min Summer	3.376	0.0	216.7	1588																																																																																																																																																																																																																																									
4320 min Summer	2.505	0.0	239.6	2296																																																																																																																																																																																																																																									
5760 min Summer	2.027	0.0	256.7	3000																																																																																																																																																																																																																																									
7200 min Summer	1.720	0.0	270.5	3744																																																																																																																																																																																																																																									
©1982-2019 Innovyze																																																																																																																																																																																																																																													

DHA Transport Ltd						Page 2	
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN				Porous pavement 1			
Date 06/03/2026 11:01				Designed by Chris			
File cas.CASX				Checked by			
Causeway				Source Control 2019.1			
<p align="center"><u>Cascade Summary of Results for pp1.SRCX</u></p>							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
8640 min Summer	32.143	0.193	0.0	2.1	2.1	6.9	O K
10080 min Summer	32.116	0.166	0.0	2.0	2.0	5.1	O K
15 min Winter	32.477	0.527	0.0	3.7	3.7	51.3	Flood Risk
30 min Winter	32.531	0.581	0.0	3.9	3.9	62.4	Flood Risk
60 min Winter	32.582	0.632	0.0	4.1	4.1	73.8	Flood Risk
120 min Winter	32.623	0.673	0.0	4.2	4.2	83.6	Flood Risk
180 min Winter	32.636	0.686	0.0	4.2	4.2	87.0	Flood Risk
240 min Winter	32.640	0.690	0.0	4.3	4.3	88.0	Flood Risk
360 min Winter	32.641	0.691	0.0	4.3	4.3	88.3	Flood Risk
480 min Winter	32.634	0.684	0.0	4.2	4.2	86.5	Flood Risk
600 min Winter	32.623	0.673	0.0	4.2	4.2	83.7	Flood Risk
720 min Winter	32.610	0.660	0.0	4.2	4.2	80.5	Flood Risk
960 min Winter	32.558	0.608	0.0	4.0	4.0	68.4	Flood Risk
1440 min Winter	32.467	0.517	0.0	3.7	3.7	49.4	Flood Risk
2160 min Winter	32.355	0.405	0.0	3.2	3.2	30.3	O K
2880 min Winter	32.269	0.319	0.0	2.8	2.8	18.8	O K
4320 min Winter	32.170	0.220	0.0	2.3	2.3	8.9	O K
5760 min Winter	32.111	0.161	0.0	1.9	1.9	4.8	O K
7200 min Winter	32.075	0.125	0.0	1.6	1.6	2.9	O K
8640 min Winter	32.052	0.102	0.0	1.4	1.4	1.9	O K
10080 min Winter	32.036	0.086	0.0	1.3	1.3	1.4	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
8640 min Summer	1.504	0.0	281.9	4416			
10080 min Summer	1.343	0.0	291.8	5144			
15 min Winter	167.069	0.0	53.8	18			
30 min Winter	102.772	0.0	67.3	32			
60 min Winter	63.219	0.0	83.8	60			
120 min Winter	38.889	0.0	104.0	118			
180 min Winter	29.268	0.0	118.0	172			
240 min Winter	23.922	0.0	128.9	198			
360 min Winter	18.004	0.0	145.9	274			
480 min Winter	14.716	0.0	159.3	350			
600 min Winter	12.585	0.0	170.4	426			
720 min Winter	11.075	0.0	180.1	500			
960 min Winter	8.655	0.0	187.4	642			
1440 min Winter	6.114	0.0	198.1	908			
2160 min Winter	4.320	0.0	208.9	1276			
2880 min Winter	3.376	0.0	216.7	1616			
4320 min Winter	2.505	0.0	239.6	2292			
5760 min Winter	2.027	0.0	256.8	3000			
7200 min Winter	1.720	0.0	270.6	3672			
8640 min Winter	1.504	0.0	282.1	4400			
10080 min Winter	1.343	0.0	291.9	5136			
©1982-2019 Innovzye							

DHA Transport Ltd		Page 3																																										
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN	Porous pavement 1																																											
Date 06/03/2026 11:01	Designed by Chris																																											
File cas.CASX	Checked by																																											
Causeway		Source Control 2019.1																																										
<p style="text-align: center;"><u>Cascade Rainfall Details for ppl.SRCX</u></p> <table> <tr> <td>Rainfall Model</td> <td>FEH</td> <td>D2 (1km)</td> <td>0.258</td> <td>Cv (Summer)</td> <td>1.000</td> </tr> <tr> <td>Return Period (years)</td> <td>100</td> <td>D3 (1km)</td> <td>0.379</td> <td>Cv (Winter)</td> <td>1.000</td> </tr> <tr> <td>FEH Rainfall Version</td> <td>1999</td> <td>E (1km)</td> <td>0.310</td> <td>Shortest Storm (mins)</td> <td>15</td> </tr> <tr> <td>Site Location</td> <td></td> <td>F (1km)</td> <td>2.349</td> <td>Longest Storm (mins)</td> <td>10080</td> </tr> <tr> <td>C (1km)</td> <td>-0.025</td> <td>Summer Storms</td> <td>Yes</td> <td>Climate Change %</td> <td>+45</td> </tr> <tr> <td>D1 (1km)</td> <td>0.414</td> <td>Winter Storms</td> <td>Yes</td> <td></td> <td></td> </tr> </table> <p style="text-align: center;"><u>Time Area Diagram</u></p> <p style="text-align: center;">Total Area (ha) 0.140</p> <table> <tr> <td>Time (mins)</td> <td>Area</td> </tr> <tr> <td>From:</td> <td>To: (ha)</td> </tr> <tr> <td>0</td> <td>4 0.140</td> </tr> </table>			Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000	Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000	FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15	Site Location		F (1km)	2.349	Longest Storm (mins)	10080	C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45	D1 (1km)	0.414	Winter Storms	Yes			Time (mins)	Area	From:	To: (ha)	0	4 0.140
Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000																																							
Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000																																							
FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15																																							
Site Location		F (1km)	2.349	Longest Storm (mins)	10080																																							
C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45																																							
D1 (1km)	0.414	Winter Storms	Yes																																									
Time (mins)	Area																																											
From:	To: (ha)																																											
0	4 0.140																																											
©1982-2019 Innovyze																																												

DHA Transport Ltd		Page 4																								
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 1																									
Date 06/03/2026 11:01	Designed by Chris																									
File cas.CASX	Checked by																									
Causeway		Source Control 2019.1																								
<p align="center"><u>Cascade Model Details for ppl.SRCX</u></p> <p align="center">Storage is Online Cover Level (m) 32.750</p> <p align="center"><u>Porous Car Park Structure</u></p> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00000</td> <td>Width (m)</td> <td>8.8</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>105.0</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>256.7</td> <td>Slope (1:X)</td> <td>140.0</td> </tr> <tr> <td>Safety Factor</td> <td>1.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>31.950</td> <td>Membrane Depth (m)</td> <td>0</td> </tr> </table> <p align="center"><u>Orifice Outflow Control</u></p> <p align="center">Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 31.950</p>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	8.8	Membrane Percolation (mm/hr)	1000	Length (m)	105.0	Max Percolation (l/s)	256.7	Slope (1:X)	140.0	Safety Factor	1.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	31.950	Membrane Depth (m)	0
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	8.8																							
Membrane Percolation (mm/hr)	1000	Length (m)	105.0																							
Max Percolation (l/s)	256.7	Slope (1:X)	140.0																							
Safety Factor	1.0	Depression Storage (mm)	5																							
Porosity	0.30	Evaporation (mm/day)	3																							
Invert Level (m)	31.950	Membrane Depth (m)	0																							
©1982-2019 Innovyze																										

DHA Transport Ltd							Page 1
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN			Porous pavement 2				
Date 06/03/2026 11:16 File cas.CASX			Designed by Chris Checked by				
Causeway			Source Control 2019.1				
Cascade Summary of Results for pp2.SRCX							
Upstream Outflow To Overflow To Structures							
pp2a.SRCX basin.SRCX (None) pp1.SRCX							
Half Drain Time : 32 minutes.							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	31.426	0.726	0.0	17.2	17.2	44.5	Flood Risk
30 min Summer	31.466	0.766	0.0	17.7	17.7	49.5	Flood Risk
60 min Summer	31.483	0.783	0.0	17.9	17.9	51.8	Flood Risk
120 min Summer	31.479	0.779	0.0	17.8	17.8	51.2	Flood Risk
180 min Summer	31.461	0.761	0.0	17.6	17.6	48.9	Flood Risk
240 min Summer	31.439	0.739	0.0	17.3	17.3	46.1	Flood Risk
360 min Summer	31.394	0.694	0.0	16.8	16.8	40.7	Flood Risk
480 min Summer	31.351	0.651	0.0	16.2	16.2	35.8	Flood Risk
600 min Summer	31.311	0.611	0.0	15.6	15.6	31.5	Flood Risk
720 min Summer	31.275	0.575	0.0	15.1	15.1	27.9	Flood Risk
960 min Summer	31.190	0.490	0.0	13.8	13.8	20.3	O K
1440 min Summer	31.073	0.373	0.0	11.9	11.9	11.7	O K
2160 min Summer	30.972	0.272	0.0	9.8	9.8	6.2	O K
2880 min Summer	30.915	0.215	0.0	8.5	8.5	3.9	O K
4320 min Summer	30.862	0.162	0.0	7.0	7.0	2.2	O K
5760 min Summer	30.837	0.137	0.0	6.0	6.0	1.6	O K
7200 min Summer	30.826	0.126	0.0	5.3	5.3	1.3	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
15 min Summer	167.069	0.0	119.0	17			
30 min Summer	102.772	0.0	148.6	30			
60 min Summer	63.219	0.0	185.2	46			
120 min Summer	38.889	0.0	229.8	80			
180 min Summer	29.268	0.0	260.5	116			
240 min Summer	23.922	0.0	284.5	150			
360 min Summer	18.004	0.0	322.0	216			
480 min Summer	14.716	0.0	351.5	278			
600 min Summer	12.585	0.0	376.0	342			
720 min Summer	11.075	0.0	397.2	404			
960 min Summer	8.655	0.0	413.5	520			
1440 min Summer	6.114	0.0	437.1	754			
2160 min Summer	4.320	0.0	461.7	1108			
2880 min Summer	3.376	0.0	479.0	1468			
4320 min Summer	2.505	0.0	529.9	2204			
5760 min Summer	2.027	0.0	568.5	2936			
7200 min Summer	1.720	0.0	599.5	3672			
©1982-2019 Innovyze							

DHA Transport Ltd							Page 2
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN			Porous pavement 2				
Date 06/03/2026 11:16			Designed by Chris				
File cas.CASX			Checked by				
Causeway			Source Control 2019.1				
Cascade Summary of Results for pp2.SRCX							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
8640 min Summer	30.817	0.117	0.0	4.8	4.8	1.1	O K
10080 min Summer	30.809	0.109	0.0	4.3	4.3	1.0	O K
15 min Winter	31.427	0.727	0.0	17.2	17.2	44.6	Flood Risk
30 min Winter	31.468	0.768	0.0	17.7	17.7	49.8	Flood Risk
60 min Winter	31.480	0.780	0.0	17.8	17.8	51.4	Flood Risk
120 min Winter	31.462	0.762	0.0	17.6	17.6	49.0	Flood Risk
180 min Winter	31.428	0.728	0.0	17.2	17.2	44.7	Flood Risk
240 min Winter	31.391	0.691	0.0	16.7	16.7	40.3	Flood Risk
360 min Winter	31.322	0.622	0.0	15.8	15.8	32.6	Flood Risk
480 min Winter	31.260	0.560	0.0	14.9	14.9	26.5	Flood Risk
600 min Winter	31.207	0.507	0.0	14.1	14.1	21.7	Flood Risk
720 min Winter	31.162	0.462	0.0	13.4	13.4	18.0	O K
960 min Winter	31.070	0.370	0.0	11.8	11.8	11.6	O K
1440 min Winter	30.962	0.262	0.0	9.6	9.6	5.8	O K
2160 min Winter	30.884	0.184	0.0	7.6	7.6	2.9	O K
2880 min Winter	30.844	0.144	0.0	6.4	6.4	1.8	O K
4320 min Winter	30.822	0.122	0.0	5.1	5.1	1.3	O K
5760 min Winter	30.808	0.108	0.0	4.2	4.2	1.0	O K
7200 min Winter	30.798	0.098	0.0	3.6	3.6	0.8	O K
8640 min Winter	30.791	0.091	0.0	3.2	3.2	0.7	O K
10080 min Winter	30.785	0.085	0.0	2.9	2.9	0.6	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
8640 min Summer	1.504	0.0	625.3	4400			
10080 min Summer	1.343	0.0	647.5	5120			
15 min Winter	167.069	0.0	119.0	17			
30 min Winter	102.772	0.0	148.6	30			
60 min Winter	63.219	0.0	185.2	48			
120 min Winter	38.889	0.0	229.8	86			
180 min Winter	29.268	0.0	260.5	124			
240 min Winter	23.922	0.0	284.5	158			
360 min Winter	18.004	0.0	322.0	226			
480 min Winter	14.716	0.0	351.5	290			
600 min Winter	12.585	0.0	376.0	354			
720 min Winter	11.075	0.0	397.2	414			
960 min Winter	8.655	0.0	413.5	532			
1440 min Winter	6.114	0.0	437.1	766			
2160 min Winter	4.320	0.0	461.7	1144			
2880 min Winter	3.376	0.0	479.1	1500			
4320 min Winter	2.505	0.0	529.9	2204			
5760 min Winter	2.027	0.0	568.6	2928			
7200 min Winter	1.720	0.0	599.6	3680			
8640 min Winter	1.504	0.0	625.5	4376			
10080 min Winter	1.343	0.0	647.8	5040			
©1982-2019 Innovzye							

DHA Transport Ltd		Page 3																																										
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 2																																											
Date 06/03/2026 11:16	Designed by Chris																																											
File cas.CASX	Checked by																																											
Causeway		Source Control 2019.1																																										
<p style="text-align: center;"><u>Cascade Rainfall Details for pp2.SRCX</u></p> <table> <tr> <td>Rainfall Model</td> <td>FEH</td> <td>D2 (1km)</td> <td>0.258</td> <td>Cv (Summer)</td> <td>1.000</td> </tr> <tr> <td>Return Period (years)</td> <td>100</td> <td>D3 (1km)</td> <td>0.379</td> <td>Cv (Winter)</td> <td>1.000</td> </tr> <tr> <td>FEH Rainfall Version</td> <td>1999</td> <td>E (1km)</td> <td>0.310</td> <td>Shortest Storm (mins)</td> <td>15</td> </tr> <tr> <td>Site Location</td> <td></td> <td>F (1km)</td> <td>2.349</td> <td>Longest Storm (mins)</td> <td>10080</td> </tr> <tr> <td>C (1km)</td> <td>-0.025</td> <td>Summer Storms</td> <td>Yes</td> <td>Climate Change %</td> <td>+45</td> </tr> <tr> <td>D1 (1km)</td> <td>0.414</td> <td>Winter Storms</td> <td>Yes</td> <td></td> <td></td> </tr> </table> <p style="text-align: center;"><u>Time Area Diagram</u></p> <p style="text-align: center;">Total Area (ha) 0.134</p> <table> <tr> <td>Time (mins)</td> <td>Area</td> </tr> <tr> <td>From:</td> <td>To: (ha)</td> </tr> <tr> <td>0</td> <td>4 0.134</td> </tr> </table>			Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000	Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000	FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15	Site Location		F (1km)	2.349	Longest Storm (mins)	10080	C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45	D1 (1km)	0.414	Winter Storms	Yes			Time (mins)	Area	From:	To: (ha)	0	4 0.134
Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000																																							
Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000																																							
FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15																																							
Site Location		F (1km)	2.349	Longest Storm (mins)	10080																																							
C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45																																							
D1 (1km)	0.414	Winter Storms	Yes																																									
Time (mins)	Area																																											
From:	To: (ha)																																											
0	4 0.134																																											
©1982-2019 Innovyze																																												

DHA Transport Ltd		Page 4																								
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 2																									
Date 06/03/2026 11:16 File cas.CASX	Designed by Chris Checked by																									
Causeway Source Control 2019.1																										
<p align="center"><u>Cascade Model Details for pp2.SRCX</u></p> <p align="center">Storage is Online Cover Level (m) 31.500</p> <p align="center"><u>Porous Car Park Structure</u></p> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00000</td> <td>Width (m)</td> <td>7.5</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>73.0</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>152.1</td> <td>Slope (1:X)</td> <td>75.0</td> </tr> <tr> <td>Safety Factor</td> <td>1.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>30.700</td> <td>Membrane Depth (m)</td> <td>0</td> </tr> </table> <p align="center"><u>Orifice Outflow Control</u></p> <p align="center">Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 30.700</p>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	7.5	Membrane Percolation (mm/hr)	1000	Length (m)	73.0	Max Percolation (l/s)	152.1	Slope (1:X)	75.0	Safety Factor	1.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	30.700	Membrane Depth (m)	0
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	7.5																							
Membrane Percolation (mm/hr)	1000	Length (m)	73.0																							
Max Percolation (l/s)	152.1	Slope (1:X)	75.0																							
Safety Factor	1.0	Depression Storage (mm)	5																							
Porosity	0.30	Evaporation (mm/day)	3																							
Invert Level (m)	30.700	Membrane Depth (m)	0																							
©1982-2019 Innovyze																										

DHA Transport Ltd							Page 1																																																																																																																																																																																																																																										
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN			Porous pavement 2A																																																																																																																																																																																																																																														
Date 06/03/2026 11:03			Designed by Chris																																																																																																																																																																																																																																														
File cas.CASX			Checked by																																																																																																																																																																																																																																														
Causeway			Source Control 2019.1																																																																																																																																																																																																																																														
<p style="text-align: center;"><u>Cascade Summary of Results for pp2a.SRCX</u></p> <p style="text-align: center;">Upstream Outflow To Overflow To Structures</p> <p style="text-align: center;">(None) pp2.SRCX (None)</p> <p style="text-align: center;">Half Drain Time : 282 minutes.</p> <table><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (1/s)</th><th>Max Control (1/s)</th><th>Max Σ Outflow (1/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>15 min Summer</td><td>31.622</td><td>0.122</td><td>0.0</td><td>0.6</td><td>0.6</td><td>12.2</td><td>O K</td></tr><tr><td>30 min Summer</td><td>31.651</td><td>0.151</td><td>0.0</td><td>0.7</td><td>0.7</td><td>15.1</td><td>O K</td></tr><tr><td>60 min Summer</td><td>31.683</td><td>0.183</td><td>0.0</td><td>0.8</td><td>0.8</td><td>18.3</td><td>O K</td></tr><tr><td>120 min Summer</td><td>31.713</td><td>0.213</td><td>0.0</td><td>0.8</td><td>0.8</td><td>21.4</td><td>Flood Risk</td></tr><tr><td>180 min Summer</td><td>31.728</td><td>0.228</td><td>0.0</td><td>0.9</td><td>0.9</td><td>22.8</td><td>Flood Risk</td></tr><tr><td>240 min Summer</td><td>31.736</td><td>0.236</td><td>0.0</td><td>0.9</td><td>0.9</td><td>23.6</td><td>Flood Risk</td></tr><tr><td>360 min Summer</td><td>31.746</td><td>0.246</td><td>0.0</td><td>0.9</td><td>0.9</td><td>24.6</td><td>Flood Risk</td></tr><tr><td>480 min Summer</td><td>31.752</td><td>0.252</td><td>0.0</td><td>0.9</td><td>0.9</td><td>25.2</td><td>Flood Risk</td></tr><tr><td>600 min Summer</td><td>31.755</td><td>0.255</td><td>0.0</td><td>0.9</td><td>0.9</td><td>25.5</td><td>Flood Risk</td></tr><tr><td>720 min Summer</td><td>31.755</td><td>0.255</td><td>0.0</td><td>0.9</td><td>0.9</td><td>25.5</td><td>Flood Risk</td></tr><tr><td>960 min Summer</td><td>31.740</td><td>0.240</td><td>0.0</td><td>0.9</td><td>0.9</td><td>24.0</td><td>Flood Risk</td></tr><tr><td>1440 min Summer</td><td>31.711</td><td>0.211</td><td>0.0</td><td>0.8</td><td>0.8</td><td>21.1</td><td>Flood Risk</td></tr><tr><td>2160 min Summer</td><td>31.676</td><td>0.176</td><td>0.0</td><td>0.8</td><td>0.8</td><td>17.6</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>31.650</td><td>0.150</td><td>0.0</td><td>0.7</td><td>0.7</td><td>15.0</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>31.621</td><td>0.121</td><td>0.0</td><td>0.6</td><td>0.6</td><td>12.1</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>31.601</td><td>0.101</td><td>0.0</td><td>0.6</td><td>0.6</td><td>10.1</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>31.586</td><td>0.086</td><td>0.0</td><td>0.5</td><td>0.5</td><td>8.6</td><td>O K</td></tr></table> <table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Discharge Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>15 min Summer</td><td>167.069</td><td>0.0</td><td>12.0</td><td>19</td></tr><tr><td>30 min Summer</td><td>102.772</td><td>0.0</td><td>15.2</td><td>33</td></tr><tr><td>60 min Summer</td><td>63.219</td><td>0.0</td><td>19.5</td><td>62</td></tr><tr><td>120 min Summer</td><td>38.889</td><td>0.0</td><td>24.4</td><td>122</td></tr><tr><td>180 min Summer</td><td>29.268</td><td>0.0</td><td>27.8</td><td>180</td></tr><tr><td>240 min Summer</td><td>23.922</td><td>0.0</td><td>30.4</td><td>208</td></tr><tr><td>360 min Summer</td><td>18.004</td><td>0.0</td><td>34.5</td><td>270</td></tr><tr><td>480 min Summer</td><td>14.716</td><td>0.0</td><td>37.7</td><td>338</td></tr><tr><td>600 min Summer</td><td>12.585</td><td>0.0</td><td>40.4</td><td>406</td></tr><tr><td>720 min Summer</td><td>11.075</td><td>0.0</td><td>42.7</td><td>476</td></tr><tr><td>960 min Summer</td><td>8.655</td><td>0.0</td><td>44.4</td><td>610</td></tr><tr><td>1440 min Summer</td><td>6.114</td><td>0.0</td><td>46.8</td><td>880</td></tr><tr><td>2160 min Summer</td><td>4.320</td><td>0.0</td><td>49.5</td><td>1272</td></tr><tr><td>2880 min Summer</td><td>3.376</td><td>0.0</td><td>51.2</td><td>1644</td></tr><tr><td>4320 min Summer</td><td>2.505</td><td>0.0</td><td>56.3</td><td>2376</td></tr><tr><td>5760 min Summer</td><td>2.027</td><td>0.0</td><td>60.4</td><td>3112</td></tr><tr><td>7200 min Summer</td><td>1.720</td><td>0.0</td><td>63.4</td><td>3816</td></tr></table>								Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ Outflow (1/s)	Max Volume (m³)	Status	15 min Summer	31.622	0.122	0.0	0.6	0.6	12.2	O K	30 min Summer	31.651	0.151	0.0	0.7	0.7	15.1	O K	60 min Summer	31.683	0.183	0.0	0.8	0.8	18.3	O K	120 min Summer	31.713	0.213	0.0	0.8	0.8	21.4	Flood Risk	180 min Summer	31.728	0.228	0.0	0.9	0.9	22.8	Flood Risk	240 min Summer	31.736	0.236	0.0	0.9	0.9	23.6	Flood Risk	360 min Summer	31.746	0.246	0.0	0.9	0.9	24.6	Flood Risk	480 min Summer	31.752	0.252	0.0	0.9	0.9	25.2	Flood Risk	600 min Summer	31.755	0.255	0.0	0.9	0.9	25.5	Flood Risk	720 min Summer	31.755	0.255	0.0	0.9	0.9	25.5	Flood Risk	960 min Summer	31.740	0.240	0.0	0.9	0.9	24.0	Flood Risk	1440 min Summer	31.711	0.211	0.0	0.8	0.8	21.1	Flood Risk	2160 min Summer	31.676	0.176	0.0	0.8	0.8	17.6	O K	2880 min Summer	31.650	0.150	0.0	0.7	0.7	15.0	O K	4320 min Summer	31.621	0.121	0.0	0.6	0.6	12.1	O K	5760 min Summer	31.601	0.101	0.0	0.6	0.6	10.1	O K	7200 min Summer	31.586	0.086	0.0	0.5	0.5	8.6	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	15 min Summer	167.069	0.0	12.0	19	30 min Summer	102.772	0.0	15.2	33	60 min Summer	63.219	0.0	19.5	62	120 min Summer	38.889	0.0	24.4	122	180 min Summer	29.268	0.0	27.8	180	240 min Summer	23.922	0.0	30.4	208	360 min Summer	18.004	0.0	34.5	270	480 min Summer	14.716	0.0	37.7	338	600 min Summer	12.585	0.0	40.4	406	720 min Summer	11.075	0.0	42.7	476	960 min Summer	8.655	0.0	44.4	610	1440 min Summer	6.114	0.0	46.8	880	2160 min Summer	4.320	0.0	49.5	1272	2880 min Summer	3.376	0.0	51.2	1644	4320 min Summer	2.505	0.0	56.3	2376	5760 min Summer	2.027	0.0	60.4	3112	7200 min Summer	1.720	0.0	63.4	3816
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ Outflow (1/s)	Max Volume (m³)	Status																																																																																																																																																																																																																																										
15 min Summer	31.622	0.122	0.0	0.6	0.6	12.2	O K																																																																																																																																																																																																																																										
30 min Summer	31.651	0.151	0.0	0.7	0.7	15.1	O K																																																																																																																																																																																																																																										
60 min Summer	31.683	0.183	0.0	0.8	0.8	18.3	O K																																																																																																																																																																																																																																										
120 min Summer	31.713	0.213	0.0	0.8	0.8	21.4	Flood Risk																																																																																																																																																																																																																																										
180 min Summer	31.728	0.228	0.0	0.9	0.9	22.8	Flood Risk																																																																																																																																																																																																																																										
240 min Summer	31.736	0.236	0.0	0.9	0.9	23.6	Flood Risk																																																																																																																																																																																																																																										
360 min Summer	31.746	0.246	0.0	0.9	0.9	24.6	Flood Risk																																																																																																																																																																																																																																										
480 min Summer	31.752	0.252	0.0	0.9	0.9	25.2	Flood Risk																																																																																																																																																																																																																																										
600 min Summer	31.755	0.255	0.0	0.9	0.9	25.5	Flood Risk																																																																																																																																																																																																																																										
720 min Summer	31.755	0.255	0.0	0.9	0.9	25.5	Flood Risk																																																																																																																																																																																																																																										
960 min Summer	31.740	0.240	0.0	0.9	0.9	24.0	Flood Risk																																																																																																																																																																																																																																										
1440 min Summer	31.711	0.211	0.0	0.8	0.8	21.1	Flood Risk																																																																																																																																																																																																																																										
2160 min Summer	31.676	0.176	0.0	0.8	0.8	17.6	O K																																																																																																																																																																																																																																										
2880 min Summer	31.650	0.150	0.0	0.7	0.7	15.0	O K																																																																																																																																																																																																																																										
4320 min Summer	31.621	0.121	0.0	0.6	0.6	12.1	O K																																																																																																																																																																																																																																										
5760 min Summer	31.601	0.101	0.0	0.6	0.6	10.1	O K																																																																																																																																																																																																																																										
7200 min Summer	31.586	0.086	0.0	0.5	0.5	8.6	O K																																																																																																																																																																																																																																										
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)																																																																																																																																																																																																																																													
15 min Summer	167.069	0.0	12.0	19																																																																																																																																																																																																																																													
30 min Summer	102.772	0.0	15.2	33																																																																																																																																																																																																																																													
60 min Summer	63.219	0.0	19.5	62																																																																																																																																																																																																																																													
120 min Summer	38.889	0.0	24.4	122																																																																																																																																																																																																																																													
180 min Summer	29.268	0.0	27.8	180																																																																																																																																																																																																																																													
240 min Summer	23.922	0.0	30.4	208																																																																																																																																																																																																																																													
360 min Summer	18.004	0.0	34.5	270																																																																																																																																																																																																																																													
480 min Summer	14.716	0.0	37.7	338																																																																																																																																																																																																																																													
600 min Summer	12.585	0.0	40.4	406																																																																																																																																																																																																																																													
720 min Summer	11.075	0.0	42.7	476																																																																																																																																																																																																																																													
960 min Summer	8.655	0.0	44.4	610																																																																																																																																																																																																																																													
1440 min Summer	6.114	0.0	46.8	880																																																																																																																																																																																																																																													
2160 min Summer	4.320	0.0	49.5	1272																																																																																																																																																																																																																																													
2880 min Summer	3.376	0.0	51.2	1644																																																																																																																																																																																																																																													
4320 min Summer	2.505	0.0	56.3	2376																																																																																																																																																																																																																																													
5760 min Summer	2.027	0.0	60.4	3112																																																																																																																																																																																																																																													
7200 min Summer	1.720	0.0	63.4	3816																																																																																																																																																																																																																																													
©1982-2019 Innovyze																																																																																																																																																																																																																																																	

DHA Transport Ltd							Page 2																																																																																																																																																																																																																																																																																														
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN				Porous pavement 2A																																																																																																																																																																																																																																																																																																	
Date 06/03/2026 11:03				Designed by Chris																																																																																																																																																																																																																																																																																																	
File cas.CASX				Checked by																																																																																																																																																																																																																																																																																																	
Causeway				Source Control 2019.1																																																																																																																																																																																																																																																																																																	
<p style="text-align: center;"><u>Cascade Summary of Results for pp2a.SRCX</u></p> <table><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Control (l/s)</th><th>Max E Outflow (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>8640 min Summer</td><td>31.574</td><td>0.074</td><td>0.0</td><td>0.5</td><td>0.5</td><td>7.4</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>31.566</td><td>0.066</td><td>0.0</td><td>0.4</td><td>0.4</td><td>6.6</td><td>O K</td></tr><tr><td>15 min Winter</td><td>31.622</td><td>0.122</td><td>0.0</td><td>0.6</td><td>0.6</td><td>12.2</td><td>O K</td></tr><tr><td>30 min Winter</td><td>31.651</td><td>0.151</td><td>0.0</td><td>0.7</td><td>0.7</td><td>15.1</td><td>O K</td></tr><tr><td>60 min Winter</td><td>31.683</td><td>0.183</td><td>0.0</td><td>0.8</td><td>0.8</td><td>18.3</td><td>O K</td></tr><tr><td>120 min Winter</td><td>31.714</td><td>0.214</td><td>0.0</td><td>0.8</td><td>0.8</td><td>21.4</td><td>Flood Risk</td></tr><tr><td>180 min Winter</td><td>31.729</td><td>0.229</td><td>0.0</td><td>0.9</td><td>0.9</td><td>22.9</td><td>Flood Risk</td></tr><tr><td>240 min Winter</td><td>31.737</td><td>0.237</td><td>0.0</td><td>0.9</td><td>0.9</td><td>23.7</td><td>Flood Risk</td></tr><tr><td>360 min Winter</td><td>31.745</td><td>0.245</td><td>0.0</td><td>0.9</td><td>0.9</td><td>24.5</td><td>Flood Risk</td></tr><tr><td>480 min Winter</td><td>31.748</td><td>0.248</td><td>0.0</td><td>0.9</td><td>0.9</td><td>24.9</td><td>Flood Risk</td></tr><tr><td>600 min Winter</td><td>31.748</td><td>0.248</td><td>0.0</td><td>0.9</td><td>0.9</td><td>24.8</td><td>Flood Risk</td></tr><tr><td>720 min Winter</td><td>31.746</td><td>0.246</td><td>0.0</td><td>0.9</td><td>0.9</td><td>24.6</td><td>Flood Risk</td></tr><tr><td>960 min Winter</td><td>31.726</td><td>0.226</td><td>0.0</td><td>0.9</td><td>0.9</td><td>22.6</td><td>Flood Risk</td></tr><tr><td>1440 min Winter</td><td>31.689</td><td>0.189</td><td>0.0</td><td>0.8</td><td>0.8</td><td>18.9</td><td>O K</td></tr><tr><td>2160 min Winter</td><td>31.648</td><td>0.148</td><td>0.0</td><td>0.7</td><td>0.7</td><td>14.8</td><td>O K</td></tr><tr><td>2880 min Winter</td><td>31.618</td><td>0.118</td><td>0.0</td><td>0.6</td><td>0.6</td><td>11.8</td><td>O K</td></tr><tr><td>4320 min Winter</td><td>31.587</td><td>0.087</td><td>0.0</td><td>0.5</td><td>0.5</td><td>8.7</td><td>O K</td></tr><tr><td>5760 min Winter</td><td>31.568</td><td>0.068</td><td>0.0</td><td>0.4</td><td>0.4</td><td>6.8</td><td>O K</td></tr><tr><td>7200 min Winter</td><td>31.555</td><td>0.055</td><td>0.0</td><td>0.4</td><td>0.4</td><td>5.5</td><td>O K</td></tr><tr><td>8640 min Winter</td><td>31.547</td><td>0.047</td><td>0.0</td><td>0.3</td><td>0.3</td><td>4.7</td><td>O K</td></tr><tr><td>10080 min Winter</td><td>31.542</td><td>0.042</td><td>0.0</td><td>0.3</td><td>0.3</td><td>4.2</td><td>O K</td></tr></table> <table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Discharge Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>8640 min Summer</td><td>1.504</td><td>0.0</td><td>65.8</td><td>4504</td></tr><tr><td>10080 min Summer</td><td>1.343</td><td>0.0</td><td>67.7</td><td>5248</td></tr><tr><td>15 min Winter</td><td>167.069</td><td>0.0</td><td>12.0</td><td>18</td></tr><tr><td>30 min Winter</td><td>102.772</td><td>0.0</td><td>15.2</td><td>33</td></tr><tr><td>60 min Winter</td><td>63.219</td><td>0.0</td><td>19.5</td><td>62</td></tr><tr><td>120 min Winter</td><td>38.889</td><td>0.0</td><td>24.4</td><td>118</td></tr><tr><td>180 min Winter</td><td>29.268</td><td>0.0</td><td>27.8</td><td>174</td></tr><tr><td>240 min Winter</td><td>23.922</td><td>0.0</td><td>30.4</td><td>226</td></tr><tr><td>360 min Winter</td><td>18.004</td><td>0.0</td><td>34.5</td><td>280</td></tr><tr><td>480 min Winter</td><td>14.716</td><td>0.0</td><td>37.7</td><td>358</td></tr><tr><td>600 min Winter</td><td>12.585</td><td>0.0</td><td>40.4</td><td>434</td></tr><tr><td>720 min Winter</td><td>11.075</td><td>0.0</td><td>42.7</td><td>510</td></tr><tr><td>960 min Winter</td><td>8.655</td><td>0.0</td><td>44.4</td><td>654</td></tr><tr><td>1440 min Winter</td><td>6.114</td><td>0.0</td><td>46.8</td><td>936</td></tr><tr><td>2160 min Winter</td><td>4.320</td><td>0.0</td><td>49.6</td><td>1320</td></tr><tr><td>2880 min Winter</td><td>3.376</td><td>0.0</td><td>51.2</td><td>1700</td></tr><tr><td>4320 min Winter</td><td>2.505</td><td>0.0</td><td>56.3</td><td>2424</td></tr><tr><td>5760 min Winter</td><td>2.027</td><td>0.0</td><td>60.4</td><td>3168</td></tr><tr><td>7200 min Winter</td><td>1.720</td><td>0.0</td><td>63.4</td><td>3824</td></tr><tr><td>8640 min Winter</td><td>1.504</td><td>0.0</td><td>65.9</td><td>4504</td></tr><tr><td>10080 min Winter</td><td>1.343</td><td>0.0</td><td>67.8</td><td>5224</td></tr></table>								Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status	8640 min Summer	31.574	0.074	0.0	0.5	0.5	7.4	O K	10080 min Summer	31.566	0.066	0.0	0.4	0.4	6.6	O K	15 min Winter	31.622	0.122	0.0	0.6	0.6	12.2	O K	30 min Winter	31.651	0.151	0.0	0.7	0.7	15.1	O K	60 min Winter	31.683	0.183	0.0	0.8	0.8	18.3	O K	120 min Winter	31.714	0.214	0.0	0.8	0.8	21.4	Flood Risk	180 min Winter	31.729	0.229	0.0	0.9	0.9	22.9	Flood Risk	240 min Winter	31.737	0.237	0.0	0.9	0.9	23.7	Flood Risk	360 min Winter	31.745	0.245	0.0	0.9	0.9	24.5	Flood Risk	480 min Winter	31.748	0.248	0.0	0.9	0.9	24.9	Flood Risk	600 min Winter	31.748	0.248	0.0	0.9	0.9	24.8	Flood Risk	720 min Winter	31.746	0.246	0.0	0.9	0.9	24.6	Flood Risk	960 min Winter	31.726	0.226	0.0	0.9	0.9	22.6	Flood Risk	1440 min Winter	31.689	0.189	0.0	0.8	0.8	18.9	O K	2160 min Winter	31.648	0.148	0.0	0.7	0.7	14.8	O K	2880 min Winter	31.618	0.118	0.0	0.6	0.6	11.8	O K	4320 min Winter	31.587	0.087	0.0	0.5	0.5	8.7	O K	5760 min Winter	31.568	0.068	0.0	0.4	0.4	6.8	O K	7200 min Winter	31.555	0.055	0.0	0.4	0.4	5.5	O K	8640 min Winter	31.547	0.047	0.0	0.3	0.3	4.7	O K	10080 min Winter	31.542	0.042	0.0	0.3	0.3	4.2	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	8640 min Summer	1.504	0.0	65.8	4504	10080 min Summer	1.343	0.0	67.7	5248	15 min Winter	167.069	0.0	12.0	18	30 min Winter	102.772	0.0	15.2	33	60 min Winter	63.219	0.0	19.5	62	120 min Winter	38.889	0.0	24.4	118	180 min Winter	29.268	0.0	27.8	174	240 min Winter	23.922	0.0	30.4	226	360 min Winter	18.004	0.0	34.5	280	480 min Winter	14.716	0.0	37.7	358	600 min Winter	12.585	0.0	40.4	434	720 min Winter	11.075	0.0	42.7	510	960 min Winter	8.655	0.0	44.4	654	1440 min Winter	6.114	0.0	46.8	936	2160 min Winter	4.320	0.0	49.6	1320	2880 min Winter	3.376	0.0	51.2	1700	4320 min Winter	2.505	0.0	56.3	2424	5760 min Winter	2.027	0.0	60.4	3168	7200 min Winter	1.720	0.0	63.4	3824	8640 min Winter	1.504	0.0	65.9	4504	10080 min Winter	1.343	0.0	67.8	5224
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																																																																																														
8640 min Summer	31.574	0.074	0.0	0.5	0.5	7.4	O K																																																																																																																																																																																																																																																																																														
10080 min Summer	31.566	0.066	0.0	0.4	0.4	6.6	O K																																																																																																																																																																																																																																																																																														
15 min Winter	31.622	0.122	0.0	0.6	0.6	12.2	O K																																																																																																																																																																																																																																																																																														
30 min Winter	31.651	0.151	0.0	0.7	0.7	15.1	O K																																																																																																																																																																																																																																																																																														
60 min Winter	31.683	0.183	0.0	0.8	0.8	18.3	O K																																																																																																																																																																																																																																																																																														
120 min Winter	31.714	0.214	0.0	0.8	0.8	21.4	Flood Risk																																																																																																																																																																																																																																																																																														
180 min Winter	31.729	0.229	0.0	0.9	0.9	22.9	Flood Risk																																																																																																																																																																																																																																																																																														
240 min Winter	31.737	0.237	0.0	0.9	0.9	23.7	Flood Risk																																																																																																																																																																																																																																																																																														
360 min Winter	31.745	0.245	0.0	0.9	0.9	24.5	Flood Risk																																																																																																																																																																																																																																																																																														
480 min Winter	31.748	0.248	0.0	0.9	0.9	24.9	Flood Risk																																																																																																																																																																																																																																																																																														
600 min Winter	31.748	0.248	0.0	0.9	0.9	24.8	Flood Risk																																																																																																																																																																																																																																																																																														
720 min Winter	31.746	0.246	0.0	0.9	0.9	24.6	Flood Risk																																																																																																																																																																																																																																																																																														
960 min Winter	31.726	0.226	0.0	0.9	0.9	22.6	Flood Risk																																																																																																																																																																																																																																																																																														
1440 min Winter	31.689	0.189	0.0	0.8	0.8	18.9	O K																																																																																																																																																																																																																																																																																														
2160 min Winter	31.648	0.148	0.0	0.7	0.7	14.8	O K																																																																																																																																																																																																																																																																																														
2880 min Winter	31.618	0.118	0.0	0.6	0.6	11.8	O K																																																																																																																																																																																																																																																																																														
4320 min Winter	31.587	0.087	0.0	0.5	0.5	8.7	O K																																																																																																																																																																																																																																																																																														
5760 min Winter	31.568	0.068	0.0	0.4	0.4	6.8	O K																																																																																																																																																																																																																																																																																														
7200 min Winter	31.555	0.055	0.0	0.4	0.4	5.5	O K																																																																																																																																																																																																																																																																																														
8640 min Winter	31.547	0.047	0.0	0.3	0.3	4.7	O K																																																																																																																																																																																																																																																																																														
10080 min Winter	31.542	0.042	0.0	0.3	0.3	4.2	O K																																																																																																																																																																																																																																																																																														
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)																																																																																																																																																																																																																																																																																																	
8640 min Summer	1.504	0.0	65.8	4504																																																																																																																																																																																																																																																																																																	
10080 min Summer	1.343	0.0	67.7	5248																																																																																																																																																																																																																																																																																																	
15 min Winter	167.069	0.0	12.0	18																																																																																																																																																																																																																																																																																																	
30 min Winter	102.772	0.0	15.2	33																																																																																																																																																																																																																																																																																																	
60 min Winter	63.219	0.0	19.5	62																																																																																																																																																																																																																																																																																																	
120 min Winter	38.889	0.0	24.4	118																																																																																																																																																																																																																																																																																																	
180 min Winter	29.268	0.0	27.8	174																																																																																																																																																																																																																																																																																																	
240 min Winter	23.922	0.0	30.4	226																																																																																																																																																																																																																																																																																																	
360 min Winter	18.004	0.0	34.5	280																																																																																																																																																																																																																																																																																																	
480 min Winter	14.716	0.0	37.7	358																																																																																																																																																																																																																																																																																																	
600 min Winter	12.585	0.0	40.4	434																																																																																																																																																																																																																																																																																																	
720 min Winter	11.075	0.0	42.7	510																																																																																																																																																																																																																																																																																																	
960 min Winter	8.655	0.0	44.4	654																																																																																																																																																																																																																																																																																																	
1440 min Winter	6.114	0.0	46.8	936																																																																																																																																																																																																																																																																																																	
2160 min Winter	4.320	0.0	49.6	1320																																																																																																																																																																																																																																																																																																	
2880 min Winter	3.376	0.0	51.2	1700																																																																																																																																																																																																																																																																																																	
4320 min Winter	2.505	0.0	56.3	2424																																																																																																																																																																																																																																																																																																	
5760 min Winter	2.027	0.0	60.4	3168																																																																																																																																																																																																																																																																																																	
7200 min Winter	1.720	0.0	63.4	3824																																																																																																																																																																																																																																																																																																	
8640 min Winter	1.504	0.0	65.9	4504																																																																																																																																																																																																																																																																																																	
10080 min Winter	1.343	0.0	67.8	5224																																																																																																																																																																																																																																																																																																	
©1982-2019 Innovyze																																																																																																																																																																																																																																																																																																					

DHA Transport Ltd		Page 3																																										
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 2A																																											
Date 06/03/2026 11:03	Designed by Chris																																											
File cas.CASX	Checked by																																											
Causeway		Source Control 2019.1																																										
<p align="center"><u>Cascade Rainfall Details for pp2a.SRCX</u></p> <table> <tr> <td>Rainfall Model</td> <td>FEH</td> <td>D2 (1km)</td> <td>0.258</td> <td>Cv (Summer)</td> <td>1.000</td> </tr> <tr> <td>Return Period (years)</td> <td>100</td> <td>D3 (1km)</td> <td>0.379</td> <td>Cv (Winter)</td> <td>1.000</td> </tr> <tr> <td>FEH Rainfall Version</td> <td>1999</td> <td>E (1km)</td> <td>0.310</td> <td>Shortest Storm (mins)</td> <td>15</td> </tr> <tr> <td>Site Location</td> <td></td> <td>F (1km)</td> <td>2.349</td> <td>Longest Storm (mins)</td> <td>10080</td> </tr> <tr> <td>C (1km)</td> <td>-0.025</td> <td>Summer Storms</td> <td>Yes</td> <td>Climate Change %</td> <td>+45</td> </tr> <tr> <td>D1 (1km)</td> <td>0.414</td> <td>Winter Storms</td> <td>Yes</td> <td></td> <td></td> </tr> </table> <p align="center"><u>Time Area Diagram</u></p> <p align="center">Total Area (ha) 0.034</p> <table> <tr> <td>Time (mins)</td> <td>Area</td> </tr> <tr> <td>From:</td> <td>To: (ha)</td> </tr> <tr> <td>0</td> <td>4 0.034</td> </tr> </table>			Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000	Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000	FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15	Site Location		F (1km)	2.349	Longest Storm (mins)	10080	C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45	D1 (1km)	0.414	Winter Storms	Yes			Time (mins)	Area	From:	To: (ha)	0	4 0.034
Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000																																							
Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000																																							
FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15																																							
Site Location		F (1km)	2.349	Longest Storm (mins)	10080																																							
C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45																																							
D1 (1km)	0.414	Winter Storms	Yes																																									
Time (mins)	Area																																											
From:	To: (ha)																																											
0	4 0.034																																											
©1982-2019 Innovyze																																												

DHA Transport Ltd		Page 4																								
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 2A																									
Date 06/03/2026 11:03 File cas.CASX	Designed by Chris Checked by																									
Causeway Source Control 2019.1																										
<p style="text-align: center;"><u>Cascade Model Details for pp2a.SRCX</u></p> <p style="text-align: center;">Storage is Online Cover Level (m) 32.000</p> <p style="text-align: center;"><u>Porous Car Park Structure</u></p> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00000</td> <td>Width (m)</td> <td>14.5</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>23.0</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>92.6</td> <td>Slope (1:X)</td> <td>0.0</td> </tr> <tr> <td>Safety Factor</td> <td>1.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>31.500</td> <td>Membrane Depth (m)</td> <td>0</td> </tr> </table> <p style="text-align: center;"><u>Orifice Outflow Control</u></p> <p style="text-align: center;">Diameter (m) 0.030 Discharge Coefficient 0.600 Invert Level (m) 31.500</p>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	14.5	Membrane Percolation (mm/hr)	1000	Length (m)	23.0	Max Percolation (l/s)	92.6	Slope (1:X)	0.0	Safety Factor	1.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	31.500	Membrane Depth (m)	0
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	14.5																							
Membrane Percolation (mm/hr)	1000	Length (m)	23.0																							
Max Percolation (l/s)	92.6	Slope (1:X)	0.0																							
Safety Factor	1.0	Depression Storage (mm)	5																							
Porosity	0.30	Evaporation (mm/day)	3																							
Invert Level (m)	31.500	Membrane Depth (m)	0																							
©1982-2019 Innovyze																										

DHA Transport Ltd							Page 1
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN				Porous pavement 3			
Date 06/03/2026 11:03				Designed by Chris			
File cas.CASX				Checked by			
Causeway				Source Control 2019.1			
Cascade Summary of Results for pp3.SRCX							
Upstream Outflow To Overflow To Structures							
(None) pp4 a.SRCX (None)							
Half Drain Time : 89 minutes.							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	31.853	0.653	0.0	5.9	5.9	41.3	Flood Risk
30 min Summer	31.909	0.709	0.0	6.2	6.2	48.6	Flood Risk
60 min Summer	31.949	0.749	0.0	6.4	6.4	54.3	Flood Risk
120 min Summer	31.967	0.767	0.0	6.5	6.5	57.0	Flood Risk
180 min Summer	31.969	0.769	0.0	6.5	6.5	57.2	Flood Risk
240 min Summer	31.964	0.764	0.0	6.4	6.4	56.4	Flood Risk
360 min Summer	31.944	0.744	0.0	6.4	6.4	53.6	Flood Risk
480 min Summer	31.922	0.722	0.0	6.2	6.2	50.4	Flood Risk
600 min Summer	31.898	0.698	0.0	6.1	6.1	47.2	Flood Risk
720 min Summer	31.875	0.675	0.0	6.0	6.0	44.1	Flood Risk
960 min Summer	31.804	0.604	0.0	5.7	5.7	35.3	Flood Risk
1440 min Summer	31.690	0.490	0.0	5.1	5.1	23.2	O K
2160 min Summer	31.566	0.366	0.0	4.4	4.4	12.9	O K
2880 min Summer	31.481	0.281	0.0	3.8	3.8	7.6	O K
4320 min Summer	31.394	0.194	0.0	3.0	3.0	3.6	O K
5760 min Summer	31.343	0.143	0.0	2.5	2.5	2.0	O K
7200 min Summer	31.312	0.112	0.0	2.1	2.1	1.2	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
15 min Summer	167.069	0.0	45.3	18			
30 min Summer	102.772	0.0	56.5	32			
60 min Summer	63.219	0.0	70.2	60			
120 min Summer	38.889	0.0	87.0	94			
180 min Summer	29.268	0.0	98.5	126			
240 min Summer	23.922	0.0	107.6	162			
360 min Summer	18.004	0.0	121.7	230			
480 min Summer	14.716	0.0	132.8	298			
600 min Summer	12.585	0.0	142.1	364			
720 min Summer	11.075	0.0	150.1	432			
960 min Summer	8.655	0.0	156.3	558			
1440 min Summer	6.114	0.0	165.3	794			
2160 min Summer	4.320	0.0	174.5	1148			
2880 min Summer	3.376	0.0	181.2	1500			
4320 min Summer	2.505	0.0	200.5	2204			
5760 min Summer	2.027	0.0	215.2	2936			
7200 min Summer	1.720	0.0	227.0	3672			
©1982-2019 Innovyze							

DHA Transport Ltd							Page 2
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN			Porous pavement 3				
Date 06/03/2026 11:03			Designed by Chris				
File cas.CASX			Checked by				
Causeway			Source Control 2019.1				
Cascade Summary of Results for pp3.SRCX							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
8640 min Summer	31.293	0.093	0.0	1.9	1.9	0.8	O K
10080 min Summer	31.282	0.082	0.0	1.7	1.7	0.7	O K
15 min Winter	31.853	0.653	0.0	5.9	5.9	41.3	Flood Risk
30 min Winter	31.910	0.710	0.0	6.2	6.2	48.8	Flood Risk
60 min Winter	31.951	0.751	0.0	6.4	6.4	54.6	Flood Risk
120 min Winter	31.966	0.766	0.0	6.4	6.4	56.8	Flood Risk
180 min Winter	31.962	0.762	0.0	6.4	6.4	56.2	Flood Risk
240 min Winter	31.950	0.750	0.0	6.4	6.4	54.4	Flood Risk
360 min Winter	31.915	0.715	0.0	6.2	6.2	49.5	Flood Risk
480 min Winter	31.877	0.677	0.0	6.0	6.0	44.4	Flood Risk
600 min Winter	31.839	0.639	0.0	5.9	5.9	39.5	Flood Risk
720 min Winter	31.802	0.602	0.0	5.7	5.7	35.1	Flood Risk
960 min Winter	31.708	0.508	0.0	5.2	5.2	25.0	Flood Risk
1440 min Winter	31.564	0.364	0.0	4.3	4.3	12.8	O K
2160 min Winter	31.431	0.231	0.0	3.4	3.4	5.1	O K
2880 min Winter	31.359	0.159	0.0	2.7	2.7	2.4	O K
4320 min Winter	31.302	0.102	0.0	2.0	2.0	1.0	O K
5760 min Winter	31.281	0.081	0.0	1.6	1.6	0.6	O K
7200 min Winter	31.272	0.072	0.0	1.4	1.4	0.5	O K
8640 min Winter	31.266	0.066	0.0	1.2	1.2	0.4	O K
10080 min Winter	31.261	0.061	0.0	1.1	1.1	0.4	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
8640 min Summer	1.504	0.0	237.0	4352			
10080 min Summer	1.343	0.0	245.6	5112			
15 min Winter	167.069	0.0	45.3	18			
30 min Winter	102.772	0.0	56.5	31			
60 min Winter	63.219	0.0	70.2	58			
120 min Winter	38.889	0.0	87.0	96			
180 min Winter	29.268	0.0	98.5	134			
240 min Winter	23.922	0.0	107.6	172			
360 min Winter	18.004	0.0	121.7	246			
480 min Winter	14.716	0.0	132.8	316			
600 min Winter	12.585	0.0	142.1	386			
720 min Winter	11.075	0.0	150.1	450			
960 min Winter	8.655	0.0	156.3	576			
1440 min Winter	6.114	0.0	165.3	808			
2160 min Winter	4.320	0.0	174.5	1144			
2880 min Winter	3.376	0.0	181.2	1472			
4320 min Winter	2.505	0.0	200.5	2176			
5760 min Winter	2.027	0.0	215.2	2912			
7200 min Winter	1.720	0.0	227.1	3648			
8640 min Winter	1.504	0.0	237.0	4264			
10080 min Winter	1.343	0.0	245.6	4952			
©1982-2019 Innovyze							

DHA Transport Ltd		Page 3																																										
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 3																																											
Date 06/03/2026 11:03	Designed by Chris																																											
File cas.CASX	Checked by																																											
Causeway		Source Control 2019.1																																										
<p style="text-align: center;"><u>Cascade Rainfall Details for pp3.SRCX</u></p> <table> <tr> <td>Rainfall Model</td> <td>FEH</td> <td>D2 (1km)</td> <td>0.258</td> <td>Cv (Summer)</td> <td>1.000</td> </tr> <tr> <td>Return Period (years)</td> <td>100</td> <td>D3 (1km)</td> <td>0.379</td> <td>Cv (Winter)</td> <td>1.000</td> </tr> <tr> <td>FEH Rainfall Version</td> <td>1999</td> <td>E (1km)</td> <td>0.310</td> <td>Shortest Storm (mins)</td> <td>15</td> </tr> <tr> <td>Site Location</td> <td></td> <td>F (1km)</td> <td>2.349</td> <td>Longest Storm (mins)</td> <td>10080</td> </tr> <tr> <td>C (1km)</td> <td>-0.025</td> <td>Summer Storms</td> <td>Yes</td> <td>Climate Change %</td> <td>+45</td> </tr> <tr> <td>D1 (1km)</td> <td>0.414</td> <td>Winter Storms</td> <td>Yes</td> <td></td> <td></td> </tr> </table> <p style="text-align: center;"><u>Time Area Diagram</u></p> <p style="text-align: center;">Total Area (ha) 0.116</p> <table> <tr> <td>Time (mins)</td> <td>Area</td> </tr> <tr> <td>From:</td> <td>To: (ha)</td> </tr> <tr> <td>0</td> <td>4 0.116</td> </tr> </table>			Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000	Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000	FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15	Site Location		F (1km)	2.349	Longest Storm (mins)	10080	C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45	D1 (1km)	0.414	Winter Storms	Yes			Time (mins)	Area	From:	To: (ha)	0	4 0.116
Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000																																							
Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000																																							
FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15																																							
Site Location		F (1km)	2.349	Longest Storm (mins)	10080																																							
C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45																																							
D1 (1km)	0.414	Winter Storms	Yes																																									
Time (mins)	Area																																											
From:	To: (ha)																																											
0	4 0.116																																											
©1982-2019 Innovyze																																												

DHA Transport Ltd		Page 4																								
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 3																									
Date 06/03/2026 11:03 File cas.CASX	Designed by Chris Checked by																									
Causeway Source Control 2019.1																										
<p align="center"><u>Cascade Model Details for pp3.SRCX</u></p> <p align="center">Storage is Online Cover Level (m) 32.000</p> <p align="center"><u>Porous Car Park Structure</u></p> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00000</td> <td>Width (m)</td> <td>12.9</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>48.0</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>172.0</td> <td>Slope (1:X)</td> <td>50.0</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>31.200</td> <td>Membrane Depth (m)</td> <td>0</td> </tr> </table> <p align="center"><u>Orifice Outflow Control</u></p> <p align="center">Diameter (m) 0.060 Discharge Coefficient 0.600 Invert Level (m) 31.200</p>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	12.9	Membrane Percolation (mm/hr)	1000	Length (m)	48.0	Max Percolation (l/s)	172.0	Slope (1:X)	50.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	31.200	Membrane Depth (m)	0
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	12.9																							
Membrane Percolation (mm/hr)	1000	Length (m)	48.0																							
Max Percolation (l/s)	172.0	Slope (1:X)	50.0																							
Safety Factor	2.0	Depression Storage (mm)	5																							
Porosity	0.30	Evaporation (mm/day)	3																							
Invert Level (m)	31.200	Membrane Depth (m)	0																							
©1982-2019 Innovyze																										

DHA Transport Ltd		Page 1																																																																																																																																																																																																																																											
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN		Porous pavement 4A																																																																																																																																																																																																																																											
Date 06/03/2026 11:04 File cas.CASX		Designed by Chris Checked by																																																																																																																																																																																																																																											
Causeway		Source Control 2019.1																																																																																																																																																																																																																																											
<p style="text-align: center;"><u>Cascade Summary of Results for pp4 a.SRCX</u></p> <p style="text-align: center;">Upstream Outflow To Overflow To Structures</p> <p style="text-align: center;">pp3.SRCX pp4.SRCX (None)</p> <p style="text-align: center;">Half Drain Time : 44 minutes.</p> <table><tr><td>Storm Event</td><td>Max Level (m)</td><td>Max Depth (m)</td><td>Max Infiltration (l/s)</td><td>Max Control (l/s)</td><td>Max Σ Outflow (l/s)</td><td>Max Volume (m³)</td><td>Status</td></tr><tr><td>15 min Summer</td><td>31.456</td><td>0.256</td><td>0.0</td><td>5.5</td><td>5.5</td><td>17.6</td><td>O K</td></tr><tr><td>30 min Summer</td><td>31.515</td><td>0.315</td><td>0.0</td><td>6.2</td><td>6.2</td><td>21.6</td><td>O K</td></tr><tr><td>60 min Summer</td><td>31.588</td><td>0.388</td><td>0.0</td><td>7.0</td><td>7.0</td><td>26.6</td><td>O K</td></tr><tr><td>120 min Summer</td><td>31.651</td><td>0.451</td><td>0.0</td><td>7.5</td><td>7.5</td><td>31.0</td><td>O K</td></tr><tr><td>180 min Summer</td><td>31.670</td><td>0.470</td><td>0.0</td><td>7.7</td><td>7.7</td><td>32.3</td><td>O K</td></tr><tr><td>240 min Summer</td><td>31.679</td><td>0.479</td><td>0.0</td><td>7.8</td><td>7.8</td><td>32.9</td><td>O K</td></tr><tr><td>360 min Summer</td><td>31.682</td><td>0.482</td><td>0.0</td><td>7.8</td><td>7.8</td><td>33.1</td><td>O K</td></tr><tr><td>480 min Summer</td><td>31.676</td><td>0.476</td><td>0.0</td><td>7.8</td><td>7.8</td><td>32.7</td><td>O K</td></tr><tr><td>600 min Summer</td><td>31.667</td><td>0.467</td><td>0.0</td><td>7.7</td><td>7.7</td><td>32.1</td><td>O K</td></tr><tr><td>720 min Summer</td><td>31.656</td><td>0.456</td><td>0.0</td><td>7.6</td><td>7.6</td><td>31.3</td><td>O K</td></tr><tr><td>960 min Summer</td><td>31.614</td><td>0.414</td><td>0.0</td><td>7.2</td><td>7.2</td><td>28.4</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>31.543</td><td>0.343</td><td>0.0</td><td>6.5</td><td>6.5</td><td>23.5</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>31.464</td><td>0.264</td><td>0.0</td><td>5.6</td><td>5.6</td><td>18.1</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>31.409</td><td>0.209</td><td>0.0</td><td>4.9</td><td>4.9</td><td>14.3</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>31.351</td><td>0.151</td><td>0.0</td><td>4.0</td><td>4.0</td><td>10.4</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>31.319</td><td>0.119</td><td>0.0</td><td>3.3</td><td>3.3</td><td>8.2</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>31.302</td><td>0.102</td><td>0.0</td><td>2.9</td><td>2.9</td><td>7.0</td><td>O K</td></tr></table> <table><tr><td>Storm Event</td><td>Rain (mm/hr)</td><td>Flooded Volume (m³)</td><td>Discharge Volume (m³)</td><td>Time-Peak (mins)</td></tr><tr><td>15 min Summer</td><td>167.069</td><td>0.0</td><td>61.2</td><td>49</td></tr><tr><td>30 min Summer</td><td>102.772</td><td>0.0</td><td>76.2</td><td>34</td></tr><tr><td>60 min Summer</td><td>63.219</td><td>0.0</td><td>94.9</td><td>62</td></tr><tr><td>120 min Summer</td><td>38.889</td><td>0.0</td><td>117.6</td><td>120</td></tr><tr><td>180 min Summer</td><td>29.268</td><td>0.0</td><td>133.2</td><td>154</td></tr><tr><td>240 min Summer</td><td>23.922</td><td>0.0</td><td>145.5</td><td>182</td></tr><tr><td>360 min Summer</td><td>18.004</td><td>0.0</td><td>164.7</td><td>248</td></tr><tr><td>480 min Summer</td><td>14.716</td><td>0.0</td><td>179.7</td><td>314</td></tr><tr><td>600 min Summer</td><td>12.585</td><td>0.0</td><td>192.2</td><td>382</td></tr><tr><td>720 min Summer</td><td>11.075</td><td>0.0</td><td>203.1</td><td>450</td></tr><tr><td>960 min Summer</td><td>8.655</td><td>0.0</td><td>211.4</td><td>578</td></tr><tr><td>1440 min Summer</td><td>6.114</td><td>0.0</td><td>223.5</td><td>826</td></tr><tr><td>2160 min Summer</td><td>4.320</td><td>0.0</td><td>236.1</td><td>1188</td></tr><tr><td>2880 min Summer</td><td>3.376</td><td>0.0</td><td>245.0</td><td>1532</td></tr><tr><td>4320 min Summer</td><td>2.505</td><td>0.0</td><td>271.2</td><td>2244</td></tr><tr><td>5760 min Summer</td><td>2.027</td><td>0.0</td><td>291.0</td><td>2944</td></tr><tr><td>7200 min Summer</td><td>1.720</td><td>0.0</td><td>307.0</td><td>3672</td></tr></table>				Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status	15 min Summer	31.456	0.256	0.0	5.5	5.5	17.6	O K	30 min Summer	31.515	0.315	0.0	6.2	6.2	21.6	O K	60 min Summer	31.588	0.388	0.0	7.0	7.0	26.6	O K	120 min Summer	31.651	0.451	0.0	7.5	7.5	31.0	O K	180 min Summer	31.670	0.470	0.0	7.7	7.7	32.3	O K	240 min Summer	31.679	0.479	0.0	7.8	7.8	32.9	O K	360 min Summer	31.682	0.482	0.0	7.8	7.8	33.1	O K	480 min Summer	31.676	0.476	0.0	7.8	7.8	32.7	O K	600 min Summer	31.667	0.467	0.0	7.7	7.7	32.1	O K	720 min Summer	31.656	0.456	0.0	7.6	7.6	31.3	O K	960 min Summer	31.614	0.414	0.0	7.2	7.2	28.4	O K	1440 min Summer	31.543	0.343	0.0	6.5	6.5	23.5	O K	2160 min Summer	31.464	0.264	0.0	5.6	5.6	18.1	O K	2880 min Summer	31.409	0.209	0.0	4.9	4.9	14.3	O K	4320 min Summer	31.351	0.151	0.0	4.0	4.0	10.4	O K	5760 min Summer	31.319	0.119	0.0	3.3	3.3	8.2	O K	7200 min Summer	31.302	0.102	0.0	2.9	2.9	7.0	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	15 min Summer	167.069	0.0	61.2	49	30 min Summer	102.772	0.0	76.2	34	60 min Summer	63.219	0.0	94.9	62	120 min Summer	38.889	0.0	117.6	120	180 min Summer	29.268	0.0	133.2	154	240 min Summer	23.922	0.0	145.5	182	360 min Summer	18.004	0.0	164.7	248	480 min Summer	14.716	0.0	179.7	314	600 min Summer	12.585	0.0	192.2	382	720 min Summer	11.075	0.0	203.1	450	960 min Summer	8.655	0.0	211.4	578	1440 min Summer	6.114	0.0	223.5	826	2160 min Summer	4.320	0.0	236.1	1188	2880 min Summer	3.376	0.0	245.0	1532	4320 min Summer	2.505	0.0	271.2	2244	5760 min Summer	2.027	0.0	291.0	2944	7200 min Summer	1.720	0.0	307.0	3672
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																																						
15 min Summer	31.456	0.256	0.0	5.5	5.5	17.6	O K																																																																																																																																																																																																																																						
30 min Summer	31.515	0.315	0.0	6.2	6.2	21.6	O K																																																																																																																																																																																																																																						
60 min Summer	31.588	0.388	0.0	7.0	7.0	26.6	O K																																																																																																																																																																																																																																						
120 min Summer	31.651	0.451	0.0	7.5	7.5	31.0	O K																																																																																																																																																																																																																																						
180 min Summer	31.670	0.470	0.0	7.7	7.7	32.3	O K																																																																																																																																																																																																																																						
240 min Summer	31.679	0.479	0.0	7.8	7.8	32.9	O K																																																																																																																																																																																																																																						
360 min Summer	31.682	0.482	0.0	7.8	7.8	33.1	O K																																																																																																																																																																																																																																						
480 min Summer	31.676	0.476	0.0	7.8	7.8	32.7	O K																																																																																																																																																																																																																																						
600 min Summer	31.667	0.467	0.0	7.7	7.7	32.1	O K																																																																																																																																																																																																																																						
720 min Summer	31.656	0.456	0.0	7.6	7.6	31.3	O K																																																																																																																																																																																																																																						
960 min Summer	31.614	0.414	0.0	7.2	7.2	28.4	O K																																																																																																																																																																																																																																						
1440 min Summer	31.543	0.343	0.0	6.5	6.5	23.5	O K																																																																																																																																																																																																																																						
2160 min Summer	31.464	0.264	0.0	5.6	5.6	18.1	O K																																																																																																																																																																																																																																						
2880 min Summer	31.409	0.209	0.0	4.9	4.9	14.3	O K																																																																																																																																																																																																																																						
4320 min Summer	31.351	0.151	0.0	4.0	4.0	10.4	O K																																																																																																																																																																																																																																						
5760 min Summer	31.319	0.119	0.0	3.3	3.3	8.2	O K																																																																																																																																																																																																																																						
7200 min Summer	31.302	0.102	0.0	2.9	2.9	7.0	O K																																																																																																																																																																																																																																						
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)																																																																																																																																																																																																																																									
15 min Summer	167.069	0.0	61.2	49																																																																																																																																																																																																																																									
30 min Summer	102.772	0.0	76.2	34																																																																																																																																																																																																																																									
60 min Summer	63.219	0.0	94.9	62																																																																																																																																																																																																																																									
120 min Summer	38.889	0.0	117.6	120																																																																																																																																																																																																																																									
180 min Summer	29.268	0.0	133.2	154																																																																																																																																																																																																																																									
240 min Summer	23.922	0.0	145.5	182																																																																																																																																																																																																																																									
360 min Summer	18.004	0.0	164.7	248																																																																																																																																																																																																																																									
480 min Summer	14.716	0.0	179.7	314																																																																																																																																																																																																																																									
600 min Summer	12.585	0.0	192.2	382																																																																																																																																																																																																																																									
720 min Summer	11.075	0.0	203.1	450																																																																																																																																																																																																																																									
960 min Summer	8.655	0.0	211.4	578																																																																																																																																																																																																																																									
1440 min Summer	6.114	0.0	223.5	826																																																																																																																																																																																																																																									
2160 min Summer	4.320	0.0	236.1	1188																																																																																																																																																																																																																																									
2880 min Summer	3.376	0.0	245.0	1532																																																																																																																																																																																																																																									
4320 min Summer	2.505	0.0	271.2	2244																																																																																																																																																																																																																																									
5760 min Summer	2.027	0.0	291.0	2944																																																																																																																																																																																																																																									
7200 min Summer	1.720	0.0	307.0	3672																																																																																																																																																																																																																																									
©1982-2019 Innovyze																																																																																																																																																																																																																																													

DHA Transport Ltd		Page 2					
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN		Porous pavement 4A					
Date 06/03/2026 11:04 File cas.CASX		Designed by Chris Checked by					
Causeway		Source Control 2019.1					
Cascade Summary of Results for pp4 a.SRCX							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
8640 min Summer	31.293	0.093	0.0	2.5	2.5	6.4	O K
10080 min Summer	31.286	0.086	0.0	2.3	2.3	5.9	O K
15 min Winter	31.456	0.256	0.0	5.5	5.5	17.6	O K
30 min Winter	31.514	0.314	0.0	6.2	6.2	21.6	O K
60 min Winter	31.588	0.388	0.0	7.0	7.0	26.6	O K
120 min Winter	31.653	0.453	0.0	7.6	7.6	31.1	O K
180 min Winter	31.672	0.472	0.0	7.7	7.7	32.4	O K
240 min Winter	31.680	0.480	0.0	7.8	7.8	32.9	O K
360 min Winter	31.677	0.477	0.0	7.8	7.8	32.7	O K
480 min Winter	31.662	0.462	0.0	7.6	7.6	31.7	O K
600 min Winter	31.643	0.443	0.0	7.5	7.5	30.4	O K
720 min Winter	31.623	0.423	0.0	7.3	7.3	29.0	O K
960 min Winter	31.563	0.363	0.0	6.7	6.7	24.9	O K
1440 min Winter	31.470	0.270	0.0	5.7	5.7	18.6	O K
2160 min Winter	31.381	0.181	0.0	4.5	4.5	12.4	O K
2880 min Winter	31.332	0.132	0.0	3.6	3.6	9.0	O K
4320 min Winter	31.298	0.098	0.0	2.7	2.7	6.7	O K
5760 min Winter	31.285	0.085	0.0	2.2	2.2	5.8	O K
7200 min Winter	31.276	0.076	0.0	1.9	1.9	5.2	O K
8640 min Winter	31.270	0.070	0.0	1.6	1.6	4.8	O K
10080 min Winter	31.265	0.065	0.0	1.5	1.5	4.5	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
8640 min Summer	1.504	0.0	320.5	4368			
10080 min Summer	1.343	0.0	332.0	5048			
15 min Winter	167.069	0.0	61.2	49			
30 min Winter	102.772	0.0	76.2	34			
60 min Winter	63.219	0.0	94.9	62			
120 min Winter	38.889	0.0	117.6	118			
180 min Winter	29.268	0.0	133.2	166			
240 min Winter	23.922	0.0	145.5	188			
360 min Winter	18.004	0.0	164.7	262			
480 min Winter	14.716	0.0	179.7	334			
600 min Winter	12.585	0.0	192.2	404			
720 min Winter	11.075	0.0	203.1	472			
960 min Winter	8.655	0.0	211.4	604			
1440 min Winter	6.114	0.0	223.5	842			
2160 min Winter	4.320	0.0	236.1	1188			
2880 min Winter	3.376	0.0	245.0	1524			
4320 min Winter	2.505	0.0	271.2	2204			
5760 min Winter	2.027	0.0	291.0	2912			
7200 min Winter	1.720	0.0	307.1	3632			
8640 min Winter	1.504	0.0	320.5	4376			
10080 min Winter	1.343	0.0	332.1	5096			
©1982-2019 Innovzye							

DHA Transport Ltd		Page 3
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 4A	
Date 06/03/2026 11:04 File cas.CASX	Designed by Chris Checked by	

Causeway	Source Control 2019.1
----------	-----------------------

Cascade Rainfall Details for pp4 a.SRCX

Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000
Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000
FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15
Site Location		F (1km)	2.349	Longest Storm (mins)	10080
C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45
D1 (1km)	0.414	Winter Storms	Yes		

Time Area Diagram

Total Area (ha) 0.041

Time (mins) Area
From: To: (ha)

0 4 0.041

DHA Transport Ltd		Page 4																								
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 4A																									
Date 06/03/2026 11:04	Designed by Chris																									
File cas.CASX	Checked by																									
Causeway		Source Control 2019.1																								
<p align="center"><u>Cascade Model Details for pp4 a.SRCX</u></p> <p align="center">Storage is Online Cover Level (m) 32.000</p> <p align="center"><u>Porous Car Park Structure</u></p> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00000</td> <td>Width (m)</td> <td>5.2</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>44.0</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>63.6</td> <td>Slope (1:X)</td> <td>0.0</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>31.200</td> <td>Membrane Depth (m)</td> <td>0</td> </tr> </table> <p align="center"><u>Orifice Outflow Control</u></p> <p align="center">Diameter (m) 0.075 Discharge Coefficient 0.600 Invert Level (m) 31.200</p>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.2	Membrane Percolation (mm/hr)	1000	Length (m)	44.0	Max Percolation (l/s)	63.6	Slope (1:X)	0.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	31.200	Membrane Depth (m)	0
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.2																							
Membrane Percolation (mm/hr)	1000	Length (m)	44.0																							
Max Percolation (l/s)	63.6	Slope (1:X)	0.0																							
Safety Factor	2.0	Depression Storage (mm)	5																							
Porosity	0.30	Evaporation (mm/day)	3																							
Invert Level (m)	31.200	Membrane Depth (m)	0																							
©1982-2019 Innovyze																										

DHA Transport Ltd		Page 1					
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN		Porous pavement 4					
Date 06/03/2026 11:04 File cas.CASX		Designed by Chris Checked by					
Causeway		Source Control 2019.1					
Cascade Summary of Results for pp4.SRCX							
Upstream Outflow To Overflow To Structures							
pp4 a.SRCX pp6.SRCX (None) pp3.SRCX							
Half Drain Time : 5 minutes.							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	31.447	0.747	0.0	84.2	84.2	33.7	Flood Risk
30 min Summer	31.409	0.709	0.0	81.6	81.6	30.4	Flood Risk
60 min Summer	31.319	0.619	0.0	75.2	75.2	23.2	Flood Risk
120 min Summer	31.182	0.482	0.0	64.2	64.2	14.0	O K
180 min Summer	31.093	0.393	0.0	56.0	56.0	9.3	O K
240 min Summer	31.036	0.336	0.0	49.9	49.9	6.8	O K
360 min Summer	30.986	0.286	0.0	40.9	40.9	4.9	O K
480 min Summer	30.957	0.257	0.0	34.9	34.9	4.0	O K
600 min Summer	30.937	0.237	0.0	31.0	31.0	3.4	O K
720 min Summer	30.923	0.223	0.0	28.0	28.0	3.0	O K
960 min Summer	30.898	0.198	0.0	23.1	23.1	2.4	O K
1440 min Summer	30.868	0.168	0.0	17.7	17.7	1.7	O K
2160 min Summer	30.839	0.139	0.0	13.6	13.6	1.2	O K
2880 min Summer	30.825	0.125	0.0	11.3	11.3	0.9	O K
4320 min Summer	30.812	0.112	0.0	8.8	8.8	0.8	O K
5760 min Summer	30.804	0.104	0.0	7.3	7.3	0.7	O K
7200 min Summer	30.796	0.096	0.0	6.3	6.3	0.6	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
15 min Summer	167.069	0.0	133.8	12			
30 min Summer	102.772	0.0	166.2	20			
60 min Summer	63.219	0.0	206.1	36			
120 min Summer	38.889	0.0	255.0	66			
180 min Summer	29.268	0.0	288.6	96			
240 min Summer	23.922	0.0	315.0	126			
360 min Summer	18.004	0.0	356.2	184			
480 min Summer	14.716	0.0	388.6	246			
600 min Summer	12.585	0.0	415.6	306			
720 min Summer	11.075	0.0	439.0	366			
960 min Summer	8.655	0.0	457.1	488			
1440 min Summer	6.114	0.0	483.6	734			
2160 min Summer	4.320	0.0	511.2	1100			
2880 min Summer	3.376	0.0	531.1	1464			
4320 min Summer	2.505	0.0	588.7	2196			
5760 min Summer	2.027	0.0	632.7	2904			
7200 min Summer	1.720	0.0	668.4	3672			
©1982-2019 Innovyze							

DHA Transport Ltd							Page 2
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN			Porous pavement 4				
Date 06/03/2026 11:04			Designed by Chris				
File cas.CASX			Checked by				
Causeway			Source Control 2019.1				
Cascade Summary of Results for pp4.SRCX							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
8640 min Summer	30.789	0.089	0.0	5.5	5.5	0.5	O K
10080 min Summer	30.783	0.083	0.0	4.9	4.9	0.4	O K
15 min Winter	31.432	0.732	0.0	83.2	83.2	32.3	Flood Risk
30 min Winter	31.361	0.661	0.0	78.2	78.2	26.4	Flood Risk
60 min Winter	31.221	0.521	0.0	67.5	67.5	16.4	Flood Risk
120 min Winter	31.055	0.355	0.0	52.1	52.1	7.6	O K
180 min Winter	30.993	0.293	0.0	42.5	42.5	5.2	O K
240 min Winter	30.963	0.263	0.0	36.2	36.2	4.2	O K
360 min Winter	30.928	0.228	0.0	29.0	29.0	3.1	O K
480 min Winter	30.907	0.207	0.0	24.9	24.9	2.6	O K
600 min Winter	30.894	0.194	0.0	22.2	22.2	2.3	O K
720 min Winter	30.883	0.183	0.0	20.2	20.2	2.0	O K
960 min Winter	30.862	0.162	0.0	16.9	16.9	1.6	O K
1440 min Winter	30.835	0.135	0.0	13.0	13.0	1.1	O K
2160 min Winter	30.817	0.117	0.0	9.8	9.8	0.8	O K
2880 min Winter	30.807	0.107	0.0	7.8	7.8	0.7	O K
4320 min Winter	30.792	0.092	0.0	5.9	5.9	0.5	O K
5760 min Winter	30.782	0.082	0.0	4.8	4.8	0.4	O K
7200 min Winter	30.776	0.076	0.0	4.1	4.1	0.4	O K
8640 min Winter	30.771	0.071	0.0	3.6	3.6	0.3	O K
10080 min Winter	30.767	0.067	0.0	3.2	3.2	0.3	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
8640 min Summer	1.504	0.0	698.6	4384			
10080 min Summer	1.343	0.0	724.8	5032			
15 min Winter	167.069	0.0	133.8	13			
30 min Winter	102.772	0.0	166.2	21			
60 min Winter	63.219	0.0	206.1	38			
120 min Winter	38.889	0.0	255.0	66			
180 min Winter	29.268	0.0	288.6	96			
240 min Winter	23.922	0.0	315.0	126			
360 min Winter	18.004	0.0	356.2	186			
480 min Winter	14.716	0.0	388.6	246			
600 min Winter	12.585	0.0	415.6	306			
720 min Winter	11.075	0.0	439.0	370			
960 min Winter	8.655	0.0	457.1	490			
1440 min Winter	6.114	0.0	483.6	746			
2160 min Winter	4.320	0.0	511.2	1096			
2880 min Winter	3.376	0.0	531.1	1464			
4320 min Winter	2.505	0.0	588.7	2192			
5760 min Winter	2.027	0.0	632.7	2880			
7200 min Winter	1.720	0.0	668.4	3624			
8640 min Winter	1.504	0.0	698.7	4272			
10080 min Winter	1.343	0.0	724.9	5008			
©1982-2019 Innovyze							

DHA Transport Ltd		Page 3																																										
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN	Porous pavement 4																																											
Date 06/03/2026 11:04	Designed by Chris																																											
File cas.CASX	Checked by																																											
Causeway		Source Control 2019.1																																										
<p style="text-align: center;"><u>Cascade Rainfall Details for pp4.SRCX</u></p> <table> <tr> <td>Rainfall Model</td> <td>FEH</td> <td>D2 (1km)</td> <td>0.258</td> <td>Cv (Summer)</td> <td>1.000</td> </tr> <tr> <td>Return Period (years)</td> <td>100</td> <td>D3 (1km)</td> <td>0.379</td> <td>Cv (Winter)</td> <td>1.000</td> </tr> <tr> <td>FEH Rainfall Version</td> <td>1999</td> <td>E (1km)</td> <td>0.310</td> <td>Shortest Storm (mins)</td> <td>15</td> </tr> <tr> <td>Site Location</td> <td></td> <td>F (1km)</td> <td>2.349</td> <td>Longest Storm (mins)</td> <td>10080</td> </tr> <tr> <td>C (1km)</td> <td>-0.025</td> <td>Summer Storms</td> <td>Yes</td> <td>Climate Change %</td> <td>+45</td> </tr> <tr> <td>D1 (1km)</td> <td>0.414</td> <td>Winter Storms</td> <td>Yes</td> <td></td> <td></td> </tr> </table> <p style="text-align: center;"><u>Time Area Diagram</u></p> <p style="text-align: center;">Total Area (ha) 0.180</p> <table> <tr> <td>Time (mins)</td> <td>Area</td> </tr> <tr> <td>From:</td> <td>To: (ha)</td> </tr> <tr> <td>0</td> <td>4 0.180</td> </tr> </table>			Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000	Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000	FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15	Site Location		F (1km)	2.349	Longest Storm (mins)	10080	C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45	D1 (1km)	0.414	Winter Storms	Yes			Time (mins)	Area	From:	To: (ha)	0	4 0.180
Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000																																							
Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000																																							
FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15																																							
Site Location		F (1km)	2.349	Longest Storm (mins)	10080																																							
C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45																																							
D1 (1km)	0.414	Winter Storms	Yes																																									
Time (mins)	Area																																											
From:	To: (ha)																																											
0	4 0.180																																											
©1982-2019 Innovyze																																												

DHA Transport Ltd		Page 4																								
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 4																									
Date 06/03/2026 11:04 File cas.CASX	Designed by Chris Checked by																									
Causeway Source Control 2019.1																										
<p align="center"><u>Cascade Model Details for pp4.SRCX</u></p> <p align="center">Storage is Online Cover Level (m) 31.500</p> <p align="center"><u>Porous Car Park Structure</u></p> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00000</td> <td>Width (m)</td> <td>6.1</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>83.0</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>140.6</td> <td>Slope (1:X)</td> <td>66.0</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>30.700</td> <td>Membrane Depth (m)</td> <td>0</td> </tr> </table> <p align="center"><u>Orifice Outflow Control</u></p> <p align="center">Diameter (m) 0.225 Discharge Coefficient 0.600 Invert Level (m) 30.700</p>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.1	Membrane Percolation (mm/hr)	1000	Length (m)	83.0	Max Percolation (l/s)	140.6	Slope (1:X)	66.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	30.700	Membrane Depth (m)	0
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.1																							
Membrane Percolation (mm/hr)	1000	Length (m)	83.0																							
Max Percolation (l/s)	140.6	Slope (1:X)	66.0																							
Safety Factor	2.0	Depression Storage (mm)	5																							
Porosity	0.30	Evaporation (mm/day)	3																							
Invert Level (m)	30.700	Membrane Depth (m)	0																							
©1982-2019 Innovyze																										

DHA Transport Ltd		Page 1																																																																																																																																																																																																																																											
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN		Porous pavement 5																																																																																																																																																																																																																																											
Date 06/03/2026 11:05 File cas.CASX		Designed by Chris Checked by																																																																																																																																																																																																																																											
Causeway		Source Control 2019.1																																																																																																																																																																																																																																											
<p style="text-align: center;"><u>Cascade Summary of Results for pp5.SRCX</u></p> <p style="text-align: center;">Upstream Outflow To Overflow To Structures</p> <p style="text-align: center;">(None) pp6.SRCX (None)</p> <p style="text-align: center;">Half Drain Time : 13 minutes.</p> <table><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Control (l/s)</th><th>Max Σ Outflow (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>15 min Summer</td><td>31.191</td><td>0.491</td><td>0.0</td><td>13.9</td><td>13.9</td><td>16.4</td><td>O K</td></tr><tr><td>30 min Summer</td><td>31.199</td><td>0.499</td><td>0.0</td><td>14.0</td><td>14.0</td><td>17.0</td><td>O K</td></tr><tr><td>60 min Summer</td><td>31.181</td><td>0.481</td><td>0.0</td><td>13.7</td><td>13.7</td><td>15.8</td><td>O K</td></tr><tr><td>120 min Summer</td><td>31.130</td><td>0.430</td><td>0.0</td><td>12.9</td><td>12.9</td><td>12.6</td><td>O K</td></tr><tr><td>180 min Summer</td><td>31.082</td><td>0.382</td><td>0.0</td><td>12.0</td><td>12.0</td><td>9.9</td><td>O K</td></tr><tr><td>240 min Summer</td><td>31.041</td><td>0.341</td><td>0.0</td><td>11.3</td><td>11.3</td><td>7.9</td><td>O K</td></tr><tr><td>360 min Summer</td><td>30.976</td><td>0.276</td><td>0.0</td><td>9.9</td><td>9.9</td><td>5.2</td><td>O K</td></tr><tr><td>480 min Summer</td><td>30.930</td><td>0.230</td><td>0.0</td><td>8.8</td><td>8.8</td><td>3.6</td><td>O K</td></tr><tr><td>600 min Summer</td><td>30.896</td><td>0.196</td><td>0.0</td><td>8.0</td><td>8.0</td><td>2.6</td><td>O K</td></tr><tr><td>720 min Summer</td><td>30.871</td><td>0.171</td><td>0.0</td><td>7.3</td><td>7.3</td><td>2.0</td><td>O K</td></tr><tr><td>960 min Summer</td><td>30.835</td><td>0.135</td><td>0.0</td><td>5.9</td><td>5.9</td><td>1.2</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>30.807</td><td>0.107</td><td>0.0</td><td>4.2</td><td>4.2</td><td>0.8</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>30.787</td><td>0.087</td><td>0.0</td><td>3.0</td><td>3.0</td><td>0.5</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>30.774</td><td>0.074</td><td>0.0</td><td>2.3</td><td>2.3</td><td>0.4</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>30.760</td><td>0.060</td><td>0.0</td><td>1.7</td><td>1.7</td><td>0.2</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>30.754</td><td>0.054</td><td>0.0</td><td>1.4</td><td>1.4</td><td>0.2</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>30.750</td><td>0.050</td><td>0.0</td><td>1.2</td><td>1.2</td><td>0.2</td><td>O K</td></tr></table> <table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Discharge Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>15 min Summer</td><td>167.069</td><td>0.0</td><td>24.0</td><td>14</td></tr><tr><td>30 min Summer</td><td>102.772</td><td>0.0</td><td>30.1</td><td>23</td></tr><tr><td>60 min Summer</td><td>63.219</td><td>0.0</td><td>37.5</td><td>40</td></tr><tr><td>120 min Summer</td><td>38.889</td><td>0.0</td><td>46.6</td><td>72</td></tr><tr><td>180 min Summer</td><td>29.268</td><td>0.0</td><td>52.9</td><td>104</td></tr><tr><td>240 min Summer</td><td>23.922</td><td>0.0</td><td>57.8</td><td>134</td></tr><tr><td>360 min Summer</td><td>18.004</td><td>0.0</td><td>65.4</td><td>192</td></tr><tr><td>480 min Summer</td><td>14.716</td><td>0.0</td><td>71.4</td><td>252</td></tr><tr><td>600 min Summer</td><td>12.585</td><td>0.0</td><td>76.4</td><td>310</td></tr><tr><td>720 min Summer</td><td>11.075</td><td>0.0</td><td>80.8</td><td>370</td></tr><tr><td>960 min Summer</td><td>8.655</td><td>0.0</td><td>84.1</td><td>488</td></tr><tr><td>1440 min Summer</td><td>6.114</td><td>0.0</td><td>88.8</td><td>728</td></tr><tr><td>2160 min Summer</td><td>4.320</td><td>0.0</td><td>93.7</td><td>1076</td></tr><tr><td>2880 min Summer</td><td>3.376</td><td>0.0</td><td>97.1</td><td>1468</td></tr><tr><td>4320 min Summer</td><td>2.505</td><td>0.0</td><td>107.3</td><td>2156</td></tr><tr><td>5760 min Summer</td><td>2.027</td><td>0.0</td><td>114.9</td><td>2912</td></tr><tr><td>7200 min Summer</td><td>1.720</td><td>0.0</td><td>120.9</td><td>3544</td></tr></table>				Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status	15 min Summer	31.191	0.491	0.0	13.9	13.9	16.4	O K	30 min Summer	31.199	0.499	0.0	14.0	14.0	17.0	O K	60 min Summer	31.181	0.481	0.0	13.7	13.7	15.8	O K	120 min Summer	31.130	0.430	0.0	12.9	12.9	12.6	O K	180 min Summer	31.082	0.382	0.0	12.0	12.0	9.9	O K	240 min Summer	31.041	0.341	0.0	11.3	11.3	7.9	O K	360 min Summer	30.976	0.276	0.0	9.9	9.9	5.2	O K	480 min Summer	30.930	0.230	0.0	8.8	8.8	3.6	O K	600 min Summer	30.896	0.196	0.0	8.0	8.0	2.6	O K	720 min Summer	30.871	0.171	0.0	7.3	7.3	2.0	O K	960 min Summer	30.835	0.135	0.0	5.9	5.9	1.2	O K	1440 min Summer	30.807	0.107	0.0	4.2	4.2	0.8	O K	2160 min Summer	30.787	0.087	0.0	3.0	3.0	0.5	O K	2880 min Summer	30.774	0.074	0.0	2.3	2.3	0.4	O K	4320 min Summer	30.760	0.060	0.0	1.7	1.7	0.2	O K	5760 min Summer	30.754	0.054	0.0	1.4	1.4	0.2	O K	7200 min Summer	30.750	0.050	0.0	1.2	1.2	0.2	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	15 min Summer	167.069	0.0	24.0	14	30 min Summer	102.772	0.0	30.1	23	60 min Summer	63.219	0.0	37.5	40	120 min Summer	38.889	0.0	46.6	72	180 min Summer	29.268	0.0	52.9	104	240 min Summer	23.922	0.0	57.8	134	360 min Summer	18.004	0.0	65.4	192	480 min Summer	14.716	0.0	71.4	252	600 min Summer	12.585	0.0	76.4	310	720 min Summer	11.075	0.0	80.8	370	960 min Summer	8.655	0.0	84.1	488	1440 min Summer	6.114	0.0	88.8	728	2160 min Summer	4.320	0.0	93.7	1076	2880 min Summer	3.376	0.0	97.1	1468	4320 min Summer	2.505	0.0	107.3	2156	5760 min Summer	2.027	0.0	114.9	2912	7200 min Summer	1.720	0.0	120.9	3544
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																																						
15 min Summer	31.191	0.491	0.0	13.9	13.9	16.4	O K																																																																																																																																																																																																																																						
30 min Summer	31.199	0.499	0.0	14.0	14.0	17.0	O K																																																																																																																																																																																																																																						
60 min Summer	31.181	0.481	0.0	13.7	13.7	15.8	O K																																																																																																																																																																																																																																						
120 min Summer	31.130	0.430	0.0	12.9	12.9	12.6	O K																																																																																																																																																																																																																																						
180 min Summer	31.082	0.382	0.0	12.0	12.0	9.9	O K																																																																																																																																																																																																																																						
240 min Summer	31.041	0.341	0.0	11.3	11.3	7.9	O K																																																																																																																																																																																																																																						
360 min Summer	30.976	0.276	0.0	9.9	9.9	5.2	O K																																																																																																																																																																																																																																						
480 min Summer	30.930	0.230	0.0	8.8	8.8	3.6	O K																																																																																																																																																																																																																																						
600 min Summer	30.896	0.196	0.0	8.0	8.0	2.6	O K																																																																																																																																																																																																																																						
720 min Summer	30.871	0.171	0.0	7.3	7.3	2.0	O K																																																																																																																																																																																																																																						
960 min Summer	30.835	0.135	0.0	5.9	5.9	1.2	O K																																																																																																																																																																																																																																						
1440 min Summer	30.807	0.107	0.0	4.2	4.2	0.8	O K																																																																																																																																																																																																																																						
2160 min Summer	30.787	0.087	0.0	3.0	3.0	0.5	O K																																																																																																																																																																																																																																						
2880 min Summer	30.774	0.074	0.0	2.3	2.3	0.4	O K																																																																																																																																																																																																																																						
4320 min Summer	30.760	0.060	0.0	1.7	1.7	0.2	O K																																																																																																																																																																																																																																						
5760 min Summer	30.754	0.054	0.0	1.4	1.4	0.2	O K																																																																																																																																																																																																																																						
7200 min Summer	30.750	0.050	0.0	1.2	1.2	0.2	O K																																																																																																																																																																																																																																						
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)																																																																																																																																																																																																																																									
15 min Summer	167.069	0.0	24.0	14																																																																																																																																																																																																																																									
30 min Summer	102.772	0.0	30.1	23																																																																																																																																																																																																																																									
60 min Summer	63.219	0.0	37.5	40																																																																																																																																																																																																																																									
120 min Summer	38.889	0.0	46.6	72																																																																																																																																																																																																																																									
180 min Summer	29.268	0.0	52.9	104																																																																																																																																																																																																																																									
240 min Summer	23.922	0.0	57.8	134																																																																																																																																																																																																																																									
360 min Summer	18.004	0.0	65.4	192																																																																																																																																																																																																																																									
480 min Summer	14.716	0.0	71.4	252																																																																																																																																																																																																																																									
600 min Summer	12.585	0.0	76.4	310																																																																																																																																																																																																																																									
720 min Summer	11.075	0.0	80.8	370																																																																																																																																																																																																																																									
960 min Summer	8.655	0.0	84.1	488																																																																																																																																																																																																																																									
1440 min Summer	6.114	0.0	88.8	728																																																																																																																																																																																																																																									
2160 min Summer	4.320	0.0	93.7	1076																																																																																																																																																																																																																																									
2880 min Summer	3.376	0.0	97.1	1468																																																																																																																																																																																																																																									
4320 min Summer	2.505	0.0	107.3	2156																																																																																																																																																																																																																																									
5760 min Summer	2.027	0.0	114.9	2912																																																																																																																																																																																																																																									
7200 min Summer	1.720	0.0	120.9	3544																																																																																																																																																																																																																																									
©1982-2019 Innovyze																																																																																																																																																																																																																																													

DHA Transport Ltd							Page 2
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN			Porous pavement 5				
Date 06/03/2026 11:05			Designed by Chris				
File cas.CASX			Checked by				
Causeway			Source Control 2019.1				
Cascade Summary of Results for pp5.SRCX							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
8640 min Summer	30.748	0.048	0.0	1.0	1.0	0.2	O K
10080 min Summer	30.745	0.045	0.0	0.9	0.9	0.1	O K
15 min Winter	31.189	0.489	0.0	13.8	13.8	16.3	O K
30 min Winter	31.191	0.491	0.0	13.9	13.9	16.5	O K
60 min Winter	31.157	0.457	0.0	13.3	13.3	14.3	O K
120 min Winter	31.075	0.375	0.0	11.9	11.9	9.6	O K
180 min Winter	31.007	0.307	0.0	10.6	10.6	6.4	O K
240 min Winter	30.954	0.254	0.0	9.4	9.4	4.4	O K
360 min Winter	30.884	0.184	0.0	7.6	7.6	2.3	O K
480 min Winter	30.845	0.145	0.0	6.4	6.4	1.4	O K
600 min Winter	30.829	0.129	0.0	5.5	5.5	1.1	O K
720 min Winter	30.819	0.119	0.0	4.9	4.9	1.0	O K
960 min Winter	30.801	0.101	0.0	3.8	3.8	0.7	O K
1440 min Winter	30.782	0.082	0.0	2.7	2.7	0.5	O K
2160 min Winter	30.764	0.064	0.0	1.9	1.9	0.3	O K
2880 min Winter	30.756	0.056	0.0	1.5	1.5	0.2	O K
4320 min Winter	30.749	0.049	0.0	1.1	1.1	0.2	O K
5760 min Winter	30.744	0.044	0.0	0.9	0.9	0.1	O K
7200 min Winter	30.740	0.040	0.0	0.8	0.8	0.1	O K
8640 min Winter	30.737	0.037	0.0	0.7	0.7	0.1	O K
10080 min Winter	30.735	0.035	0.0	0.6	0.6	0.1	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
8640 min Summer	1.504	0.0	126.0	4360			
10080 min Summer	1.343	0.0	130.3	4976			
15 min Winter	167.069	0.0	24.0	15			
30 min Winter	102.772	0.0	30.1	24			
60 min Winter	63.219	0.0	37.5	42			
120 min Winter	38.889	0.0	46.6	74			
180 min Winter	29.268	0.0	52.9	106			
240 min Winter	23.922	0.0	57.8	134			
360 min Winter	18.004	0.0	65.4	192			
480 min Winter	14.716	0.0	71.4	248			
600 min Winter	12.585	0.0	76.4	308			
720 min Winter	11.075	0.0	80.8	368			
960 min Winter	8.655	0.0	84.1	484			
1440 min Winter	6.114	0.0	88.8	728			
2160 min Winter	4.320	0.0	93.7	1100			
2880 min Winter	3.376	0.0	97.1	1460			
4320 min Winter	2.505	0.0	107.3	2152			
5760 min Winter	2.027	0.0	114.9	2864			
7200 min Winter	1.720	0.0	121.0	3536			
8640 min Winter	1.504	0.0	126.0	4256			
10080 min Winter	1.343	0.0	130.4	4904			
©1982-2019 Innovzye							

DHA Transport Ltd		Page 3																																										
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 5																																											
Date 06/03/2026 11:05	Designed by Chris																																											
File cas.CASX	Checked by																																											
Causeway		Source Control 2019.1																																										
<p style="text-align: center;"><u>Cascade Rainfall Details for pp5.SRCX</u></p> <table> <tr> <td>Rainfall Model</td> <td>FEH</td> <td>D2 (1km)</td> <td>0.258</td> <td>Cv (Summer)</td> <td>1.000</td> </tr> <tr> <td>Return Period (years)</td> <td>100</td> <td>D3 (1km)</td> <td>0.379</td> <td>Cv (Winter)</td> <td>1.000</td> </tr> <tr> <td>FEH Rainfall Version</td> <td>1999</td> <td>E (1km)</td> <td>0.310</td> <td>Shortest Storm (mins)</td> <td>15</td> </tr> <tr> <td>Site Location</td> <td></td> <td>F (1km)</td> <td>2.349</td> <td>Longest Storm (mins)</td> <td>10080</td> </tr> <tr> <td>C (1km)</td> <td>-0.025</td> <td>Summer Storms</td> <td>Yes</td> <td>Climate Change %</td> <td>+45</td> </tr> <tr> <td>D1 (1km)</td> <td>0.414</td> <td>Winter Storms</td> <td>Yes</td> <td></td> <td></td> </tr> </table> <p style="text-align: center;"><u>Time Area Diagram</u></p> <p style="text-align: center;">Total Area (ha) 0.063</p> <table> <tr> <td>Time (mins)</td> <td>Area</td> </tr> <tr> <td>From: To:</td> <td>(ha)</td> </tr> <tr> <td>0</td> <td>4 0.063</td> </tr> </table>			Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000	Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000	FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15	Site Location		F (1km)	2.349	Longest Storm (mins)	10080	C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45	D1 (1km)	0.414	Winter Storms	Yes			Time (mins)	Area	From: To:	(ha)	0	4 0.063
Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000																																							
Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000																																							
FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15																																							
Site Location		F (1km)	2.349	Longest Storm (mins)	10080																																							
C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45																																							
D1 (1km)	0.414	Winter Storms	Yes																																									
Time (mins)	Area																																											
From: To:	(ha)																																											
0	4 0.063																																											
©1982-2019 Innovyze																																												

DHA Transport Ltd		Page 4																								
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 5																									
Date 06/03/2026 11:05 File cas.CASX	Designed by Chris Checked by																									
Causeway Source Control 2019.1																										
<p style="text-align: center;"><u>Cascade Model Details for pp5.SRCX</u></p> <p style="text-align: center;">Storage is Online Cover Level (m) 31.500</p> <p style="text-align: center;"><u>Porous Car Park Structure</u></p> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00000</td> <td>Width (m)</td> <td>9.1</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>50.0</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>126.4</td> <td>Slope (1:X)</td> <td>50.0</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>30.700</td> <td>Membrane Depth (m)</td> <td>0</td> </tr> </table> <p style="text-align: center;"><u>Orifice Outflow Control</u></p> <p style="text-align: center;">Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 30.700</p>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	9.1	Membrane Percolation (mm/hr)	1000	Length (m)	50.0	Max Percolation (l/s)	126.4	Slope (1:X)	50.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	30.700	Membrane Depth (m)	0
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	9.1																							
Membrane Percolation (mm/hr)	1000	Length (m)	50.0																							
Max Percolation (l/s)	126.4	Slope (1:X)	50.0																							
Safety Factor	2.0	Depression Storage (mm)	5																							
Porosity	0.30	Evaporation (mm/day)	3																							
Invert Level (m)	30.700	Membrane Depth (m)	0																							
©1982-2019 Innovyze																										

DHA Transport Ltd							Page 2
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN			Porous pavement 6				
Date 06/03/2026 11:17			Designed by Chris				
File cas.CASX			Checked by				
Causeway			Source Control 2019.1				
Cascade Summary of Results for pp6.SRCX							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
7200 min Summer	30.849	0.149	0.0	11.7	11.7	42.9	O K
8640 min Summer	30.838	0.138	0.0	10.2	10.2	39.7	O K
10080 min Summer	30.827	0.127	0.0	9.1	9.1	36.5	O K
15 min Winter	31.206	0.506	0.0	41.4	41.4	145.8	Flood Risk
30 min Winter	31.317	0.617	0.0	46.5	46.5	177.7	Flood Risk
60 min Winter	31.393	0.693	0.0	49.7	49.7	199.5	Flood Risk
120 min Winter	31.421	0.721	0.0	50.9	50.9	207.6	Flood Risk
180 min Winter	31.405	0.705	0.0	50.2	50.2	202.9	Flood Risk
240 min Winter	31.372	0.672	0.0	48.9	48.9	193.4	Flood Risk
360 min Winter	31.295	0.595	0.0	45.6	45.6	171.4	Flood Risk
480 min Winter	31.226	0.526	0.0	42.3	42.3	151.4	Flood Risk
600 min Winter	31.169	0.469	0.0	39.5	39.5	135.0	O K
720 min Winter	31.122	0.422	0.0	37.0	37.0	121.5	O K
960 min Winter	31.033	0.333	0.0	31.7	31.7	96.0	O K
1440 min Winter	30.944	0.244	0.0	24.9	24.9	70.2	O K
2160 min Winter	30.898	0.198	0.0	18.4	18.4	56.9	O K
2880 min Winter	30.871	0.171	0.0	14.6	14.6	49.1	O K
4320 min Winter	30.844	0.144	0.0	10.9	10.9	41.4	O K
5760 min Winter	30.824	0.124	0.0	8.8	8.8	35.8	O K
7200 min Winter	30.811	0.111	0.0	7.5	7.5	31.9	O K
8640 min Winter	30.802	0.102	0.0	6.6	6.6	29.2	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
7200 min Summer	1.720	0.0	1244.6	3672			
8640 min Summer	1.504	0.0	1300.1	4400			
10080 min Summer	1.343	0.0	1347.6	5136			
15 min Winter	167.069	0.0	247.4	24			
30 min Winter	102.772	0.0	307.9	33			
60 min Winter	63.219	0.0	383.4	56			
120 min Winter	38.889	0.0	474.7	90			
180 min Winter	29.268	0.0	537.5	126			
240 min Winter	23.922	0.0	586.8	162			
360 min Winter	18.004	0.0	663.8	228			
480 min Winter	14.716	0.0	724.2	292			
600 min Winter	12.585	0.0	774.6	356			
720 min Winter	11.075	0.0	818.3	418			
960 min Winter	8.655	0.0	851.9	538			
1440 min Winter	6.114	0.0	900.8	764			
2160 min Winter	4.320	0.0	953.1	1124			
2880 min Winter	3.376	0.0	989.9	1496			
4320 min Winter	2.505	0.0	1096.0	2204			
5760 min Winter	2.027	0.0	1178.6	2944			
7200 min Winter	1.720	0.0	1244.8	3672			
8640 min Winter	1.504	0.0	1300.4	4384			
©1982-2019 Innovzye							

DHA Transport Ltd		Page 3																										
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN																												
Date 06/03/2026 11:17 File cas.CASX																												
Porous pavement 6		Designed by Chris																										
Causeway		Checked by																										
		Source Control 2019.1																										
<p style="text-align: center;"><u>Cascade Summary of Results for pp6.SRCX</u></p> <table><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Control (l/s)</th><th>Max Σ Outflow (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>10080 min Winter</td><td>30.796</td><td>0.096</td><td>0.0</td><td>5.9</td><td>5.9</td><td>27.7</td><td>O K</td></tr></table> <table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Discharge Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>10080 min Winter</td><td>1.343</td><td>0.0</td><td>1348.1</td><td>5120</td></tr></table>			Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status	10080 min Winter	30.796	0.096	0.0	5.9	5.9	27.7	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	10080 min Winter	1.343	0.0	1348.1	5120
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status																					
10080 min Winter	30.796	0.096	0.0	5.9	5.9	27.7	O K																					
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)																								
10080 min Winter	1.343	0.0	1348.1	5120																								
©1982-2019 Innovyze																												

DHA Transport Ltd		Page 4																																										
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 6																																											
Date 06/03/2026 11:17	Designed by Chris																																											
File cas.CASX	Checked by																																											
Causeway		Source Control 2019.1																																										
<p style="text-align: center;"><u>Cascade Rainfall Details for pp6.SRCX</u></p> <table><tr><td>Rainfall Model</td><td>FEH</td><td>D2 (1km)</td><td>0.258</td><td>Cv (Summer)</td><td>1.000</td></tr><tr><td>Return Period (years)</td><td>100</td><td>D3 (1km)</td><td>0.379</td><td>Cv (Winter)</td><td>1.000</td></tr><tr><td>FEH Rainfall Version</td><td>1999</td><td>E (1km)</td><td>0.310</td><td>Shortest Storm (mins)</td><td>15</td></tr><tr><td>Site Location</td><td></td><td>F (1km)</td><td>2.349</td><td>Longest Storm (mins)</td><td>10080</td></tr><tr><td>C (1km)</td><td>-0.025</td><td>Summer Storms</td><td>Yes</td><td>Climate Change %</td><td>+45</td></tr><tr><td>D1 (1km)</td><td>0.414</td><td>Winter Storms</td><td>Yes</td><td></td><td></td></tr></table> <p style="text-align: center;"><u>Time Area Diagram</u></p> <p style="text-align: center;">Total Area (ha) 0.230</p> <table><tr><th>Time (mins)</th><th>Area</th></tr><tr><th>From:</th><th>To: (ha)</th></tr><tr><td>0</td><td>4 0.230</td></tr></table>			Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000	Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000	FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15	Site Location		F (1km)	2.349	Longest Storm (mins)	10080	C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45	D1 (1km)	0.414	Winter Storms	Yes			Time (mins)	Area	From:	To: (ha)	0	4 0.230
Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000																																							
Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000																																							
FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15																																							
Site Location		F (1km)	2.349	Longest Storm (mins)	10080																																							
C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45																																							
D1 (1km)	0.414	Winter Storms	Yes																																									
Time (mins)	Area																																											
From:	To: (ha)																																											
0	4 0.230																																											
©1982-2019 Innovyze																																												

DHA Transport Ltd		Page 5																								
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Porous pavement 6																									
Date 06/03/2026 11:17	Designed by Chris																									
File cas.CASX	Checked by																									
Causeway		Source Control 2019.1																								
<p align="center"><u>Cascade Model Details for pp6.SRCX</u></p> <p align="center">Storage is Online Cover Level (m) 31.500</p> <p align="center"><u>Porous Car Park Structure</u></p> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00000</td> <td>Width (m)</td> <td>8.0</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>120.0</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>266.7</td> <td>Slope (1:X)</td> <td>0.0</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>30.700</td> <td>Membrane Depth (m)</td> <td>0</td> </tr> </table> <p align="center"><u>Orifice Outflow Control</u></p> <p align="center">Diameter (m) 0.175 Discharge Coefficient 0.600 Invert Level (m) 30.700</p>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	8.0	Membrane Percolation (mm/hr)	1000	Length (m)	120.0	Max Percolation (l/s)	266.7	Slope (1:X)	0.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	30.700	Membrane Depth (m)	0
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	8.0																							
Membrane Percolation (mm/hr)	1000	Length (m)	120.0																							
Max Percolation (l/s)	266.7	Slope (1:X)	0.0																							
Safety Factor	2.0	Depression Storage (mm)	5																							
Porosity	0.30	Evaporation (mm/day)	3																							
Invert Level (m)	30.700	Membrane Depth (m)	0																							
©1982-2019 Innovyze																										

DHA Transport Ltd				Page 1																																																																																																																																																							
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN		basin 1																																																																																																																																																									
Date 06/03/2026 11:17		Designed by Chris																																																																																																																																																									
File cas.CASX		Checked by																																																																																																																																																									
Causeway		Source Control 2019.1																																																																																																																																																									
<div>Cascade Summary of Results for basin.SRCX</div> <div><div>Upstream Outflow To Overflow To Structures</div><div>pp6.SRCX (None) (None) pp5.SRCX pp4.SRCX pp4 a.SRCX pp3.SRCX pp2.SRCX pp2a.SRCX pp1.SRCX</div><div>Half Drain Time : 726 minutes.</div><table><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>15 min Summer</td><td>30.650</td><td>0.350</td><td>7.1</td><td>255.5</td><td>O K</td></tr><tr><td>30 min Summer</td><td>30.735</td><td>0.435</td><td>7.6</td><td>325.1</td><td>O K</td></tr><tr><td>60 min Summer</td><td>30.834</td><td>0.534</td><td>8.2</td><td>409.7</td><td>O K</td></tr><tr><td>120 min Summer</td><td>30.947</td><td>0.647</td><td>9.0</td><td>511.6</td><td>O K</td></tr><tr><td>180 min Summer</td><td>31.019</td><td>0.719</td><td>9.5</td><td>580.0</td><td>O K</td></tr><tr><td>240 min Summer</td><td>31.074</td><td>0.774</td><td>9.8</td><td>632.5</td><td>O K</td></tr><tr><td>360 min Summer</td><td>31.152</td><td>0.852</td><td>10.3</td><td>711.2</td><td>O K</td></tr><tr><td>480 min Summer</td><td>31.208</td><td>0.908</td><td>10.7</td><td>768.6</td><td>Flood Risk</td></tr><tr><td>600 min Summer</td><td>31.249</td><td>0.949</td><td>11.0</td><td>811.5</td><td>Flood Risk</td></tr><tr><td>720 min Summer</td><td>31.278</td><td>0.978</td><td>11.2</td><td>842.8</td><td>Flood Risk</td></tr><tr><td>960 min Summer</td><td>31.266</td><td>0.966</td><td>11.1</td><td>829.6</td><td>Flood Risk</td></tr><tr><td>1440 min Summer</td><td>31.219</td><td>0.919</td><td>10.8</td><td>780.5</td><td>Flood Risk</td></tr><tr><td>2160 min Summer</td><td>31.157</td><td>0.857</td><td>10.4</td><td>715.6</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>31.100</td><td>0.800</td><td>10.0</td><td>658.5</td><td>O K</td></tr></table><div><table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>15 min Summer</td><td>167.069</td><td>0.0</td><td>211</td></tr><tr><td>30 min Summer</td><td>102.772</td><td>0.0</td><td>243</td></tr><tr><td>60 min Summer</td><td>63.219</td><td>0.0</td><td>284</td></tr><tr><td>120 min Summer</td><td>38.889</td><td>0.0</td><td>338</td></tr><tr><td>180 min Summer</td><td>29.268</td><td>0.0</td><td>382</td></tr><tr><td>240 min Summer</td><td>23.922</td><td>0.0</td><td>420</td></tr><tr><td>360 min Summer</td><td>18.004</td><td>0.0</td><td>494</td></tr><tr><td>480 min Summer</td><td>14.716</td><td>0.0</td><td>574</td></tr><tr><td>600 min Summer</td><td>12.585</td><td>0.0</td><td>662</td></tr><tr><td>720 min Summer</td><td>11.075</td><td>0.0</td><td>754</td></tr><tr><td>960 min Summer</td><td>8.655</td><td>0.0</td><td>952</td></tr><tr><td>1440 min Summer</td><td>6.114</td><td>0.0</td><td>1170</td></tr><tr><td>2160 min Summer</td><td>4.320</td><td>0.0</td><td>1540</td></tr><tr><td>2880 min Summer</td><td>3.376</td><td>0.0</td><td>1928</td></tr></table></div></div>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	30.650	0.350	7.1	255.5	O K	30 min Summer	30.735	0.435	7.6	325.1	O K	60 min Summer	30.834	0.534	8.2	409.7	O K	120 min Summer	30.947	0.647	9.0	511.6	O K	180 min Summer	31.019	0.719	9.5	580.0	O K	240 min Summer	31.074	0.774	9.8	632.5	O K	360 min Summer	31.152	0.852	10.3	711.2	O K	480 min Summer	31.208	0.908	10.7	768.6	Flood Risk	600 min Summer	31.249	0.949	11.0	811.5	Flood Risk	720 min Summer	31.278	0.978	11.2	842.8	Flood Risk	960 min Summer	31.266	0.966	11.1	829.6	Flood Risk	1440 min Summer	31.219	0.919	10.8	780.5	Flood Risk	2160 min Summer	31.157	0.857	10.4	715.6	O K	2880 min Summer	31.100	0.800	10.0	658.5	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	167.069	0.0	211	30 min Summer	102.772	0.0	243	60 min Summer	63.219	0.0	284	120 min Summer	38.889	0.0	338	180 min Summer	29.268	0.0	382	240 min Summer	23.922	0.0	420	360 min Summer	18.004	0.0	494	480 min Summer	14.716	0.0	574	600 min Summer	12.585	0.0	662	720 min Summer	11.075	0.0	754	960 min Summer	8.655	0.0	952	1440 min Summer	6.114	0.0	1170	2160 min Summer	4.320	0.0	1540	2880 min Summer	3.376	0.0	1928
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status																																																																																																																																																						
15 min Summer	30.650	0.350	7.1	255.5	O K																																																																																																																																																						
30 min Summer	30.735	0.435	7.6	325.1	O K																																																																																																																																																						
60 min Summer	30.834	0.534	8.2	409.7	O K																																																																																																																																																						
120 min Summer	30.947	0.647	9.0	511.6	O K																																																																																																																																																						
180 min Summer	31.019	0.719	9.5	580.0	O K																																																																																																																																																						
240 min Summer	31.074	0.774	9.8	632.5	O K																																																																																																																																																						
360 min Summer	31.152	0.852	10.3	711.2	O K																																																																																																																																																						
480 min Summer	31.208	0.908	10.7	768.6	Flood Risk																																																																																																																																																						
600 min Summer	31.249	0.949	11.0	811.5	Flood Risk																																																																																																																																																						
720 min Summer	31.278	0.978	11.2	842.8	Flood Risk																																																																																																																																																						
960 min Summer	31.266	0.966	11.1	829.6	Flood Risk																																																																																																																																																						
1440 min Summer	31.219	0.919	10.8	780.5	Flood Risk																																																																																																																																																						
2160 min Summer	31.157	0.857	10.4	715.6	O K																																																																																																																																																						
2880 min Summer	31.100	0.800	10.0	658.5	O K																																																																																																																																																						
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)																																																																																																																																																								
15 min Summer	167.069	0.0	211																																																																																																																																																								
30 min Summer	102.772	0.0	243																																																																																																																																																								
60 min Summer	63.219	0.0	284																																																																																																																																																								
120 min Summer	38.889	0.0	338																																																																																																																																																								
180 min Summer	29.268	0.0	382																																																																																																																																																								
240 min Summer	23.922	0.0	420																																																																																																																																																								
360 min Summer	18.004	0.0	494																																																																																																																																																								
480 min Summer	14.716	0.0	574																																																																																																																																																								
600 min Summer	12.585	0.0	662																																																																																																																																																								
720 min Summer	11.075	0.0	754																																																																																																																																																								
960 min Summer	8.655	0.0	952																																																																																																																																																								
1440 min Summer	6.114	0.0	1170																																																																																																																																																								
2160 min Summer	4.320	0.0	1540																																																																																																																																																								
2880 min Summer	3.376	0.0	1928																																																																																																																																																								
©1982-2019 Innovyze																																																																																																																																																											

DHA Transport Ltd					Page 2																																																																																																																																				
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN			basin 1																																																																																																																																						
Date 06/03/2026 11:17			Designed by Chris																																																																																																																																						
File cas.CASX			Checked by																																																																																																																																						
Causeway			Source Control 2019.1																																																																																																																																						
Cascade Summary of Results for basin.SRCX																																																																																																																																									
<table><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>4320 min Summer</td><td>31.041</td><td>0.741</td><td>9.6</td><td>600.8</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>30.979</td><td>0.679</td><td>9.2</td><td>541.7</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>30.919</td><td>0.619</td><td>8.8</td><td>486.1</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>30.863</td><td>0.563</td><td>8.4</td><td>435.6</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>30.811</td><td>0.511</td><td>8.1</td><td>390.2</td><td>O K</td></tr><tr><td>15 min Winter</td><td>30.650</td><td>0.350</td><td>7.1</td><td>255.6</td><td>O K</td></tr><tr><td>30 min Winter</td><td>30.735</td><td>0.435</td><td>7.6</td><td>325.0</td><td>O K</td></tr><tr><td>60 min Winter</td><td>30.833</td><td>0.533</td><td>8.2</td><td>409.5</td><td>O K</td></tr><tr><td>120 min Winter</td><td>30.947</td><td>0.647</td><td>9.0</td><td>511.4</td><td>O K</td></tr><tr><td>180 min Winter</td><td>31.019</td><td>0.719</td><td>9.5</td><td>579.9</td><td>O K</td></tr><tr><td>240 min Winter</td><td>31.074</td><td>0.774</td><td>9.8</td><td>632.6</td><td>O K</td></tr><tr><td>360 min Winter</td><td>31.153</td><td>0.853</td><td>10.3</td><td>711.7</td><td>O K</td></tr><tr><td>480 min Winter</td><td>31.209</td><td>0.909</td><td>10.7</td><td>769.7</td><td>Flood Risk</td></tr><tr><td>600 min Winter</td><td>31.251</td><td>0.951</td><td>11.0</td><td>813.3</td><td>Flood Risk</td></tr><tr><td>720 min Winter</td><td>31.281</td><td>0.981</td><td>11.2</td><td>845.5</td><td>Flood Risk</td></tr><tr><td>960 min Winter</td><td>31.271</td><td>0.971</td><td>11.1</td><td>835.5</td><td>Flood Risk</td></tr><tr><td>1440 min Winter</td><td>31.219</td><td>0.919</td><td>10.8</td><td>779.5</td><td>Flood Risk</td></tr><tr><td>2160 min Winter</td><td>31.143</td><td>0.843</td><td>10.3</td><td>701.4</td><td>O K</td></tr><tr><td>2880 min Winter</td><td>31.065</td><td>0.765</td><td>9.8</td><td>624.0</td><td>O K</td></tr><tr><td>4320 min Winter</td><td>30.965</td><td>0.665</td><td>9.1</td><td>528.6</td><td>O K</td></tr><tr><td>5760 min Winter</td><td>30.870</td><td>0.570</td><td>8.5</td><td>442.2</td><td>O K</td></tr></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	4320 min Summer	31.041	0.741	9.6	600.8	O K	5760 min Summer	30.979	0.679	9.2	541.7	O K	7200 min Summer	30.919	0.619	8.8	486.1	O K	8640 min Summer	30.863	0.563	8.4	435.6	O K	10080 min Summer	30.811	0.511	8.1	390.2	O K	15 min Winter	30.650	0.350	7.1	255.6	O K	30 min Winter	30.735	0.435	7.6	325.0	O K	60 min Winter	30.833	0.533	8.2	409.5	O K	120 min Winter	30.947	0.647	9.0	511.4	O K	180 min Winter	31.019	0.719	9.5	579.9	O K	240 min Winter	31.074	0.774	9.8	632.6	O K	360 min Winter	31.153	0.853	10.3	711.7	O K	480 min Winter	31.209	0.909	10.7	769.7	Flood Risk	600 min Winter	31.251	0.951	11.0	813.3	Flood Risk	720 min Winter	31.281	0.981	11.2	845.5	Flood Risk	960 min Winter	31.271	0.971	11.1	835.5	Flood Risk	1440 min Winter	31.219	0.919	10.8	779.5	Flood Risk	2160 min Winter	31.143	0.843	10.3	701.4	O K	2880 min Winter	31.065	0.765	9.8	624.0	O K	4320 min Winter	30.965	0.665	9.1	528.6	O K	5760 min Winter	30.870	0.570	8.5	442.2	O K
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status																																																																																																																																				
4320 min Summer	31.041	0.741	9.6	600.8	O K																																																																																																																																				
5760 min Summer	30.979	0.679	9.2	541.7	O K																																																																																																																																				
7200 min Summer	30.919	0.619	8.8	486.1	O K																																																																																																																																				
8640 min Summer	30.863	0.563	8.4	435.6	O K																																																																																																																																				
10080 min Summer	30.811	0.511	8.1	390.2	O K																																																																																																																																				
15 min Winter	30.650	0.350	7.1	255.6	O K																																																																																																																																				
30 min Winter	30.735	0.435	7.6	325.0	O K																																																																																																																																				
60 min Winter	30.833	0.533	8.2	409.5	O K																																																																																																																																				
120 min Winter	30.947	0.647	9.0	511.4	O K																																																																																																																																				
180 min Winter	31.019	0.719	9.5	579.9	O K																																																																																																																																				
240 min Winter	31.074	0.774	9.8	632.6	O K																																																																																																																																				
360 min Winter	31.153	0.853	10.3	711.7	O K																																																																																																																																				
480 min Winter	31.209	0.909	10.7	769.7	Flood Risk																																																																																																																																				
600 min Winter	31.251	0.951	11.0	813.3	Flood Risk																																																																																																																																				
720 min Winter	31.281	0.981	11.2	845.5	Flood Risk																																																																																																																																				
960 min Winter	31.271	0.971	11.1	835.5	Flood Risk																																																																																																																																				
1440 min Winter	31.219	0.919	10.8	779.5	Flood Risk																																																																																																																																				
2160 min Winter	31.143	0.843	10.3	701.4	O K																																																																																																																																				
2880 min Winter	31.065	0.765	9.8	624.0	O K																																																																																																																																				
4320 min Winter	30.965	0.665	9.1	528.6	O K																																																																																																																																				
5760 min Winter	30.870	0.570	8.5	442.2	O K																																																																																																																																				
<table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>4320 min Summer</td><td>2.505</td><td>0.0</td><td>2720</td></tr><tr><td>5760 min Summer</td><td>2.027</td><td>0.0</td><td>3488</td></tr><tr><td>7200 min Summer</td><td>1.720</td><td>0.0</td><td>4256</td></tr><tr><td>8640 min Summer</td><td>1.504</td><td>0.0</td><td>5016</td></tr><tr><td>10080 min Summer</td><td>1.343</td><td>0.0</td><td>5752</td></tr><tr><td>15 min Winter</td><td>167.069</td><td>0.0</td><td>211</td></tr><tr><td>30 min Winter</td><td>102.772</td><td>0.0</td><td>243</td></tr><tr><td>60 min Winter</td><td>63.219</td><td>0.0</td><td>284</td></tr><tr><td>120 min Winter</td><td>38.889</td><td>0.0</td><td>338</td></tr><tr><td>180 min Winter</td><td>29.268</td><td>0.0</td><td>380</td></tr><tr><td>240 min Winter</td><td>23.922</td><td>0.0</td><td>418</td></tr><tr><td>360 min Winter</td><td>18.004</td><td>0.0</td><td>494</td></tr><tr><td>480 min Winter</td><td>14.716</td><td>0.0</td><td>570</td></tr><tr><td>600 min Winter</td><td>12.585</td><td>0.0</td><td>656</td></tr><tr><td>720 min Winter</td><td>11.075</td><td>0.0</td><td>746</td></tr><tr><td>960 min Winter</td><td>8.655</td><td>0.0</td><td>940</td></tr><tr><td>1440 min Winter</td><td>6.114</td><td>0.0</td><td>1190</td></tr><tr><td>2160 min Winter</td><td>4.320</td><td>0.0</td><td>1612</td></tr><tr><td>2880 min Winter</td><td>3.376</td><td>0.0</td><td>2032</td></tr><tr><td>4320 min Winter</td><td>2.505</td><td>0.0</td><td>2856</td></tr><tr><td>5760 min Winter</td><td>2.027</td><td>0.0</td><td>3656</td></tr></table>						Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	4320 min Summer	2.505	0.0	2720	5760 min Summer	2.027	0.0	3488	7200 min Summer	1.720	0.0	4256	8640 min Summer	1.504	0.0	5016	10080 min Summer	1.343	0.0	5752	15 min Winter	167.069	0.0	211	30 min Winter	102.772	0.0	243	60 min Winter	63.219	0.0	284	120 min Winter	38.889	0.0	338	180 min Winter	29.268	0.0	380	240 min Winter	23.922	0.0	418	360 min Winter	18.004	0.0	494	480 min Winter	14.716	0.0	570	600 min Winter	12.585	0.0	656	720 min Winter	11.075	0.0	746	960 min Winter	8.655	0.0	940	1440 min Winter	6.114	0.0	1190	2160 min Winter	4.320	0.0	1612	2880 min Winter	3.376	0.0	2032	4320 min Winter	2.505	0.0	2856	5760 min Winter	2.027	0.0	3656																																												
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)																																																																																																																																						
4320 min Summer	2.505	0.0	2720																																																																																																																																						
5760 min Summer	2.027	0.0	3488																																																																																																																																						
7200 min Summer	1.720	0.0	4256																																																																																																																																						
8640 min Summer	1.504	0.0	5016																																																																																																																																						
10080 min Summer	1.343	0.0	5752																																																																																																																																						
15 min Winter	167.069	0.0	211																																																																																																																																						
30 min Winter	102.772	0.0	243																																																																																																																																						
60 min Winter	63.219	0.0	284																																																																																																																																						
120 min Winter	38.889	0.0	338																																																																																																																																						
180 min Winter	29.268	0.0	380																																																																																																																																						
240 min Winter	23.922	0.0	418																																																																																																																																						
360 min Winter	18.004	0.0	494																																																																																																																																						
480 min Winter	14.716	0.0	570																																																																																																																																						
600 min Winter	12.585	0.0	656																																																																																																																																						
720 min Winter	11.075	0.0	746																																																																																																																																						
960 min Winter	8.655	0.0	940																																																																																																																																						
1440 min Winter	6.114	0.0	1190																																																																																																																																						
2160 min Winter	4.320	0.0	1612																																																																																																																																						
2880 min Winter	3.376	0.0	2032																																																																																																																																						
4320 min Winter	2.505	0.0	2856																																																																																																																																						
5760 min Winter	2.027	0.0	3656																																																																																																																																						
©1982-2019 Innovyze																																																																																																																																									

DHA Transport Ltd			Page 3																																									
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN		basin 1																																										
Date 06/03/2026 11:17		Designed by Chris																																										
File cas.CASX		Checked by																																										
Causeway		Source Control 2019.1																																										
<p style="text-align: center;"><u>Cascade Summary of Results for basin.SRCX</u></p> <table><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>7200 min Winter</td><td>30.785</td><td>0.485</td><td>7.9</td><td>367.9</td><td>O K</td></tr><tr><td>8640 min Winter</td><td>30.710</td><td>0.410</td><td>7.5</td><td>304.4</td><td>O K</td></tr><tr><td>10080 min Winter</td><td>30.643</td><td>0.343</td><td>7.0</td><td>250.0</td><td>O K</td></tr></table> <table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>7200 min Winter</td><td>1.720</td><td>0.0</td><td>4432</td></tr><tr><td>8640 min Winter</td><td>1.504</td><td>0.0</td><td>5200</td></tr><tr><td>10080 min Winter</td><td>1.343</td><td>0.0</td><td>5952</td></tr></table>					Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	7200 min Winter	30.785	0.485	7.9	367.9	O K	8640 min Winter	30.710	0.410	7.5	304.4	O K	10080 min Winter	30.643	0.343	7.0	250.0	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	7200 min Winter	1.720	0.0	4432	8640 min Winter	1.504	0.0	5200	10080 min Winter	1.343	0.0	5952
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status																																							
7200 min Winter	30.785	0.485	7.9	367.9	O K																																							
8640 min Winter	30.710	0.410	7.5	304.4	O K																																							
10080 min Winter	30.643	0.343	7.0	250.0	O K																																							
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)																																									
7200 min Winter	1.720	0.0	4432																																									
8640 min Winter	1.504	0.0	5200																																									
10080 min Winter	1.343	0.0	5952																																									
©1982-2019 Innovyze																																												

DHA Transport Ltd		Page 4																																										
Eclipse House Sittingbourne Road Maidstone ME14 3EN	basin 1																																											
Date 06/03/2026 11:17	Designed by Chris																																											
File cas.CASX	Checked by																																											
Causeway		Source Control 2019.1																																										
<p style="text-align: center;"><u>Cascade Rainfall Details for basin.SRCX</u></p> <table><tr><td>Rainfall Model</td><td>FEH</td><td>D2 (1km)</td><td>0.258</td><td>Cv (Summer)</td><td>1.000</td></tr><tr><td>Return Period (years)</td><td>100</td><td>D3 (1km)</td><td>0.379</td><td>Cv (Winter)</td><td>1.000</td></tr><tr><td>FEH Rainfall Version</td><td>1999</td><td>E (1km)</td><td>0.310</td><td>Shortest Storm (mins)</td><td>15</td></tr><tr><td>Site Location</td><td></td><td>F (1km)</td><td>2.349</td><td>Longest Storm (mins)</td><td>10080</td></tr><tr><td>C (1km)</td><td>-0.025</td><td>Summer Storms</td><td>Yes</td><td>Climate Change %</td><td>+45</td></tr><tr><td>D1 (1km)</td><td>0.414</td><td>Winter Storms</td><td>Yes</td><td></td><td></td></tr></table> <p style="text-align: center;"><u>Time Area Diagram</u></p> <p style="text-align: center;">Total Area (ha) 0.038</p> <table><tr><th>Time (mins)</th><th>Area</th></tr><tr><th>From:</th><th>To: (ha)</th></tr><tr><td>0</td><td>4 0.038</td></tr></table>			Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000	Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000	FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15	Site Location		F (1km)	2.349	Longest Storm (mins)	10080	C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45	D1 (1km)	0.414	Winter Storms	Yes			Time (mins)	Area	From:	To: (ha)	0	4 0.038
Rainfall Model	FEH	D2 (1km)	0.258	Cv (Summer)	1.000																																							
Return Period (years)	100	D3 (1km)	0.379	Cv (Winter)	1.000																																							
FEH Rainfall Version	1999	E (1km)	0.310	Shortest Storm (mins)	15																																							
Site Location		F (1km)	2.349	Longest Storm (mins)	10080																																							
C (1km)	-0.025	Summer Storms	Yes	Climate Change %	+45																																							
D1 (1km)	0.414	Winter Storms	Yes																																									
Time (mins)	Area																																											
From:	To: (ha)																																											
0	4 0.038																																											
©1982-2019 Innovyze																																												

DHA Transport Ltd		Page 5								
Eclipse House Sittingbourne Road Maidstone ME14 3EN	basin 1									
Date 06/03/2026 11:17 File cas.CASX	Designed by Chris Checked by									
Causeway Source Control 2019.1										
<p style="text-align: center;"><u>Cascade Model Details for basin.SRCX</u></p> <p style="text-align: center;">Storage is Online Cover Level (m) 31.500</p> <p style="text-align: center;"><u>Infiltration Basin Structure</u></p> <p style="text-align: center;">Invert Level (m) 30.300 Safety Factor 1.5 Infiltration Coefficient Base (m/hr) 0.04000 Porosity 1.00 Infiltration Coefficient Side (m/hr) 0.04000</p> <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th></tr><tr><td>0.000</td><td>664.0</td><td>1.200</td><td>1183.0</td></tr></table>			Depth (m)	Area (m²)	Depth (m)	Area (m²)	0.000	664.0	1.200	1183.0
Depth (m)	Area (m²)	Depth (m)	Area (m²)							
0.000	664.0	1.200	1183.0							
©1982-2019 Innovyze										

APPENDIX H



Maintenance Plan

Item	Task	Recommend Frequency	Responsibility
Porous Paving	Brushing and vacuuming over whole surface.	Annually, after autumn leaf fall	Management company
Chambers	Clean chambers	Annually	Management company
Sewer network	All pipes to be cleaned (jetted) and condition assessed	5 yearly	Management company
Channel drains and gullies	Clean out gullies and channel drains (grates and sumps)	Annually	Management company
Gutters/ Rainwater pipe gullies	Cleaning of gutters and trapped rainwater gullies to ensure removal of sediment and debris	Annually	Management company
Hydrobrake	Clean out chamber and check Hydrobrak	Annually	Management company
Infiltration Basin	Mow grass and check inlets	Monthly	Management company