



WATER DESIGN ENGINEERS

————— Pioneering —————

DRAINAGE STRATEGY REPORT

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0. Executive Summary

This Drainage Strategy has been prepared by Water Design Engineers (WDE) to support the proposed residential development at Stanwick, Northfields Lane, Westergate, Chichester. The purpose of the strategy is to demonstrate that surface water from the development can be managed safely, sustainably, and in full accordance with national policy, local planning requirements, and the standards of West Sussex County Council (LLFA). This adopts the FEH 2022 rainfall dataset compliance with current climate resilience standards

0.1 Site Conditions and Flood Risk

The site lies in **Flood Zone 1**, indicating a low risk of fluvial and coastal flooding. Surface water flood risk on the site itself is negligible, with medium-risk areas occurring only within the wider 250m area. Historical flooding has been recorded in the locality, but no constraints prevent the safe drainage of the site. Overall, the development is considered suitable for residential use with respect to flood risk, subject to implementation of the proposed SuDS measures.

0.2 Drainage Strategy Overview

The scheme adopts a **SuDS-led approach**, prioritising source control, water-quality treatment, flow control, and safe conveyance. Runoff from the proposed roof area and the permeable areas (1,533m²) is collected, treated and attenuated before being discharged in a controlled manner to the existing boundary ditch. Key components include:

- **Rainwater harvesting** via rainwater butts providing initial interception;
- **Bioretention shallow depressions** for both treatment and attenuation;
- **Localised pre-treatment** using sand, leaf and silt traps;
- **A Hydro-Brake flow control** to limit discharge to the allowable rate;
- **A bagwork headwall** forming a stable and maintainable outfall.

0.3 Hydraulic Performance

Surface water is attenuated on-site within shallow depressions, providing a total storage volume of 302.768 m³, sized to accommodate the 1 in 100-year storm event plus a 45% climate-change allowance. This ensures that runoff leaving the site will not exceed greenfield-equivalent rates and will not increase flood risk on or off the property.

0.4 Exceedance and Safety

Exceedance flows are directed along safe, predefined overland routes shown on the block plan. Flow paths avoid building entrances and direct water towards the existing ditch, ensuring no increased flood risk to neighbouring properties.

0.5 Management and Maintenance

All SuDS elements will be privately owned and maintained by the site owner. Simple routine actions—such as clearing debris from traps, pruning vegetation within bioretention areas, and periodic inspection of the Hydro-Brake and headwall—ensure the system remains effective throughout its lifecycle.

0.6 Conclusion

The proposed development can be drained safely and sustainably. The strategy delivers a compliant SuDS solution that manages runoff volumes and peak flows, improves water quality, and aligns with LLFA requirements. There will be no increase in flood risk to the site or surrounding land.

1. Introduction

This report has been prepared by Water Design Engineers (WDE) to outline a sustainable drainage strategy for the proposed development at Stanwick, Northfields Lane, Westergate, Chichester PO20 3UH. The aim of this report is to outline a site-appropriate surface water drainage strategy to ensure there is no increase in flood risk or pollution on or off the site, in accordance with local planning policy and the Lead Local Flood Authority (LLFA) standards.

1.1 Purpose

The purpose of this report is to detail a compliant surface water drainage strategy for the site. This is achieved through the following primary objective:

Surface Water (SuDS): Define a SuDS-led approach to manage runoff from the new impermeable areas, utilizing bioretention and flow control devices to manage discharge into the existing watercourse.

1.2 Scope & Limitations

This strategy is based on the supplied engineering drawings (Refs: ENV24502-WDE-00-DR-1000, ENV24502-WDE-00-DR-2000 and ENV24502-WDE-00-DR-3000). Attenuation volumes and outlet rate stated herein are based on the submitted hydraulic assessment for condition discharge. **No infiltration credit has been taken in the hydraulic assessment.**

Nominal surface water pipe diameters, pipe materials, and the proposed flow control device (including manufacturer, device type and design discharge rate) are shown on the drainage layout drawings. The drainage network has been checked to ensure adequate conveyance of the design flows associated with the 1 in 100-year storm event plus a 45% climate change allowance.

2. Site Location

Site Address: Stanwick, Northfields Lane, Westergate, Chichester, PO20 3UH

Local Planning Authority (LPA): Arun District Council

Lead Local Flood Authority (LLFA): West Sussex County Council



3. Site Description

3.1. Topography & Existing Features

The site is located at Stanwick, Northfields Lane, Westergate, Chichester. The existing topography is relatively flat, typical of the coastal plain area. The site boundaries are defined by existing vegetation and fencing. A key hydrological feature is the existing ditch/watercourse located along the site boundary, which currently serves as the natural drainage path for overland flow.

3.2. Catchment & Impermeable Areas

Catchment ID	Description	Surface Type	Area (m2)	PIMP (%)	Effective Area (m2)
1	Roof	Impermeable	110	100%	100
2	Roof	Impermeable	70	100%	60
5	Roof	Impermeable	120	100%	110
3	Driveway	Permeable Paving	455	100%	470
4	Landscaping/Ponds	Permeable Soft Landscaping	778	100%	793
TOTAL	Entire Site Footprint		1533	--	1533

- **Urban Creep Allowance:** 10% (applied to the roof area for modeling).
- **Volumetric Efficiency (CV):** 1.0 (100% runoff assumed from contributing impermeable area within the hydraulic assessment).

3.3. Hydrology (FEH 2022)

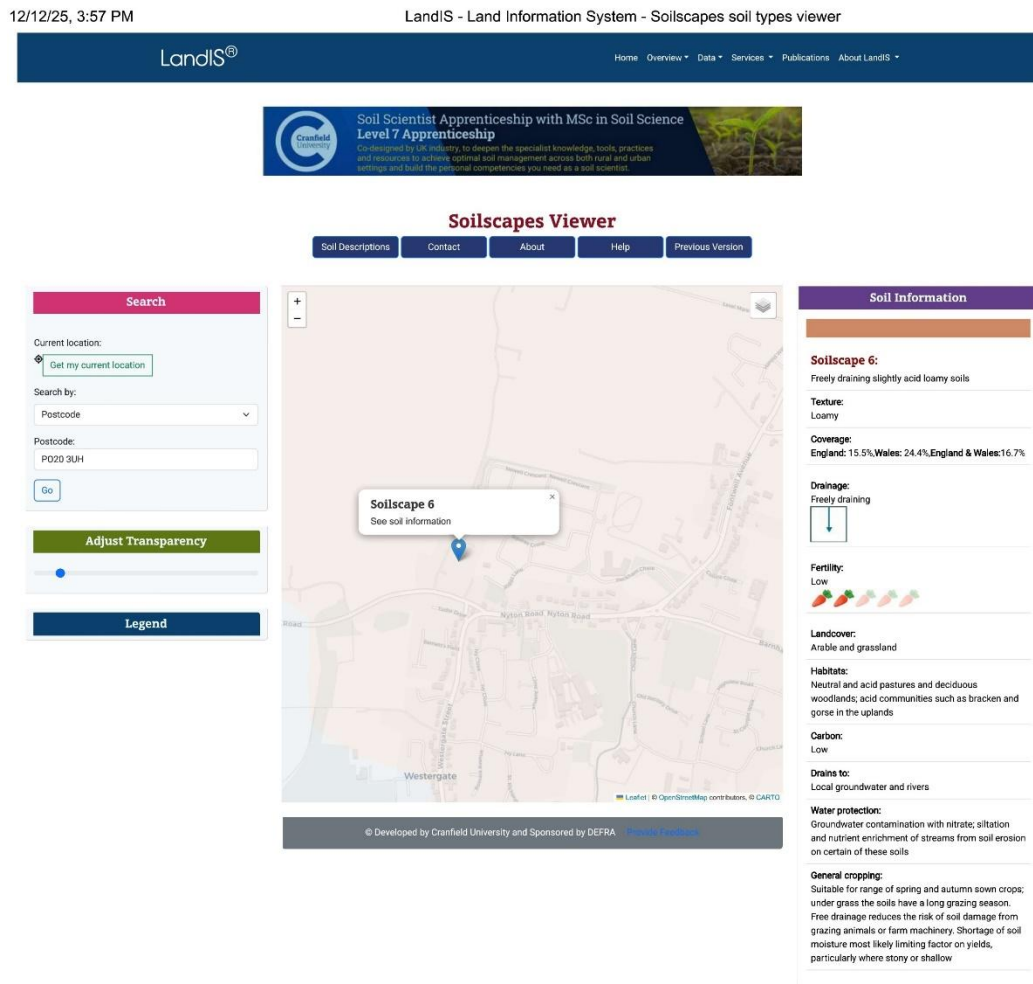
Table 3a: Ultimate Design Capacity Analysis (100yr + 45% CC + 10% Urban Creep, Cv = 1.0, no infiltration credit taken)

Storm Event	Total Inflow Volume (m³)	Max Attenuation Required (m³)	Total Available Storage (m³)	Spare Capacity (m³)
15 min Summer	17.2	16.42	302.76	286.34
30 min Summer	19.6	18.25	302.76	284.51
60 min Summer	22.4	20.42	302.76	282.34
120 min Winter	26.1	23.36	302.76	279.4
360 min Winter	31.8	27.57	302.76	275.19
1440 min Winter	36.5	29.74	302.76	273.02

3.4. Ground Investigation

Ground investigation has yet to be formally conducted. However, a desk-based assessment using the Cranfield Soilscales mapping indicates the site is situated on Soilscape 6 (Freely draining slightly acid loamy soils).

Although Soilscape 6 is classified as "freely draining", which typically supports infiltration, the drainage strategy has adopted a precautionary approach. The design utilizes attenuation and controlled discharge to the existing ditch rather than solely relying on infiltration. This ensures robustness against potential local variations, provides robustness against local soil variability and supports the site's water-quality and flood-risk mitigation objectives. No infiltration credit has been taken in the hydraulic assessment submitted for condition discharge.



Appendix J and Appendix K are site background ground investigation information, but they are not presented as hydraulic justification for infiltration credit.

3.5. Flood Risk Assessment

A detailed Flood Risk Assessment (Homecheck Professional Flood Report Ref: 65794798_1) has been reviewed:

- **Overall Rating:** The site has an overall flood risk rating of Moderate, meaning it is in an area susceptible to some flooding, though it has "Passed" the assessment.
- **Fluvial & Coastal:** The site is located in Flood Zone 1 (Low Probability) for river and coastal flooding. However, it is noted that Flood Zone 3 areas exist within 250m of the site.
- **Surface Water:** The risk of surface water flooding on-site is Negligible for 1 in 75, 1 in 200, and 1 in 1000-year events, although medium-risk surface water zones exist within 250m of the property.
- **Historical Flooding:** Regulatory body records indicate that historical flooding has occurred at the site or within 250m.
- **Insurance:** The property is considered insurable at standard terms.

4. Proposed Drainage Strategy

4.1. Runoff Disposal Hierarchy

Surface water is managed via controlled discharge to the existing watercourse. A **Hydro-Brake flow control** (located in MH4) restricts discharge to **0.3 l/s**. This ensure post-development discharge meets Greenfield rates for all events up to the 1 in 100-year (+45% CC) storm..

4.2. Detailed Flow Control Approach

To meet Lead Local Flood Authority (LLFA) standards, the allowable discharge is restricted to a greenfield equivalent rate of **0.3 l/s**. A **Hydro-Brake flow control device** is installed within the stormwater manhole (MH4). This device ensures that post-development discharge does not exceed the capacity of the ditch, even during extreme events and under surcharged conditions.

4.3. Detailed Flow Control Approach

Surface water attenuation is provided through a combination of engineered SuDS features:

- **Proposed Gravel Drain Channel:** As shown on drawing **DR-1000**, this high-porosity channel provides conveyance and initial treatment of surface runoff.
- **Bioretention Areas:** Shallow depressions hold water during peak events. The system provides the required **302.768 m³** of storage (based on the FEH22 6-hour critical storm). The system utilizes gravel surrounds to prevent soil scouring and includes sand and leaf traps as overflow mechanisms.
- **Silt Management:** Silt traps and inspection chambers are integrated into the network to manage debris and sediment before water reaches the flow control device, specifically addressing the LPA's concerns regarding blockage protection.

4.4. Detailed Flow Control Approach

Exceedance flows (those exceeding the 1 in 100-year + 45% CC capacity) are directed along shallow depression flow paths to safe routes as indicated by the arrows on **Drawing DR-1000**.

- **Safety:** These flows are managed entirely within the site boundary to ensure zero increase in off-site flood risk.
- **Surcharge Modeling:** The strategy has been verified under **surcharged outfall conditions** (ditch at top-of-bank level). This confirms that even if the ditch is full, the water levels within the SuDS features will not cause internal flooding to the property.

5. Proposed Surface Water Drainage (SuDS-led approach)

5.1. Suds Treatment Train & Conveyance

1. **Source Control:** Rainwater butts on downpipes (RWDP) provide initial interception.
2. **Conveyance:** A **proposed gravel drain channel** has been integrated into the site layout to manage and direct surface flows efficiently.
3. **Pre-Treatment:** Sand, leaf, and silt traps are installed upstream of attenuation features to prevent silt accumulation and blockages.
4. **Attenuation & Treatment:** Shallow bioretention depressions provide the required storage and improve water quality via filtration. **No infiltration credit has been taken in the hydraulic assessment.**
5. **Flow Control:** A **Hydro-Brake** unit within manhole MH4 restricts discharge to the allowable greenfield rate.

5.2. Surface Water Strategy Overview

Per LPA requirements, the system has been modelled under **surcharged outfall conditions** (assuming the receiving ditch is full to the top of the bank). The results confirm that the attenuation volume prevents on-site flooding even when the outfall is submerged.

5.3. Headwall and Outlet

The outfall is secured by a **typical bag work headwall** constructed of Hessian/Canvas bags filled with concrete. The outlet pipe is **100mm diameter**.

5.4. Exceedance Strategy

Exceedance flows defined as flows exceeding the capacity of the internal SuDS features are directed along safe overland flow routes. The block plan indicates specific flow directions for shallow depressions to ensure water moves away from structures and towards the safe discharge points.

6. Management & Maintenance

The drainage assets, including the bioretention areas, catchpits, and flow control devices, will be privately owned and maintained by the site owner.

6.1. SuDS Maintenance Schedule (Summary)

Table 5.1: SuDS Management and Maintenance Schedule

Asset	Action	Frequency
Gravel Drain Channel	Inspect for silt accumulation, debris, or invasive vegetation. Rake or replace top gravel layer if clogging occurs to maintain conveyance.	Quarterly and after major storm events.
Silt, Sand & Leaf Traps	Inspect traps and clear out accumulated sediment, leaves, and litter to prevent downstream blockage.	Monthly and after major storm events.
Bioretention Zones (Depressions)	Inspect for soil erosion or scouring. Prune vegetation and remove invasive species to maintain hydraulic capacity.	Seasonally (Spring/Autumn).
Hydro-Brake (Manhole MH4)	Inspect the flow control unit and the internal trash screen/basket. Remove any debris obstructing the orifice.	Annually and after major storm events.
Permeable Paving (Driveway)	Sweep surface with a stiff brush to remove grit/organic matter. Ensure joints remain filled with aggregate.	Annually.
Bagwork Headwall / Outfall	Inspect the discharge point for structural stability, bag degradation, or erosion/scouring of the ditch bank.	Annually.
General Site Inspection	Check all exceedance flow paths (magenta paths on DR-1000) are clear of obstructions (e.g., garden furniture or sheds).	Annually.

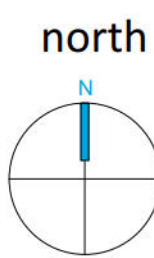
6.1. Maintenance Notes

- **Access:** Permanent clear access must be maintained to Manhole MH4 (containing the Hydro-Brake) and the boundary ditch for inspection and cleaning.
- **Waste Disposal:** Silt and debris removed during cleaning should be disposed of as per local waste regulations (non-hazardous waste).
- **Documentation:** The owner should maintain a logbook of all inspections and maintenance activities to demonstrate compliance with planning conditions if requested by the LPA.
- **Exceedance Routes:** Homeowners must ensure that the exceedance flow paths (shown on Drawing DR-1000) remain free of permanent obstructions such as sheds or raised landscaping that could divert water toward the building.
- **Access / inspection:** All drainage components shall be accessible for inspection and maintenance from surface level via chambers/manholes. Pipe runs shall be maintainable by jetting/rodding from chambers. No man-entry is required for routine inspection/maintenance.



Appendix A

Site Location Plan



00	01/06/2026	Issued For Planning Approval	DO	JR	JR
No	Date	Reason	DRN	CHK	APR
REVISIONS					



Welwyn, Pinewood Rd
High Wycombe
HP12 4DD
T: + 44 (0) 144 278 0676
E: info@waterdesign-engineers.co.uk
W: www.waterdesign-engineers.co.uk

Project
Stanwick, Northfields Lane, Westergate, Chichester

Drawing
SITE LOCATION PLAN

Scale	Date	Drawn
N.T.S	JUNE '26	DO
Drawing No.		Revision
-		00

☐ Preliminary	☐ Detailed Design
☒ Issued for Planning Approval	☐ Issued for Tender
☐ Issued for Construction	☐ As Built

Appendix B

Cranfield Soils Map



Soil Scientist Apprenticeship with MSc in Soil Science Level 7 Apprenticeship

Co-designed by UK industry, to deepen the specialist knowledge, tools, practices and resources to achieve optimal soil management across both rural and urban settings and build the personal competencies you need as a soil scientist.



Soilscape Viewer

[Soil Descriptions](#)[Contact](#)[About](#)[Help](#)[Previous Version](#)

Search

Current location:

[Get my current location](#)

Search by:

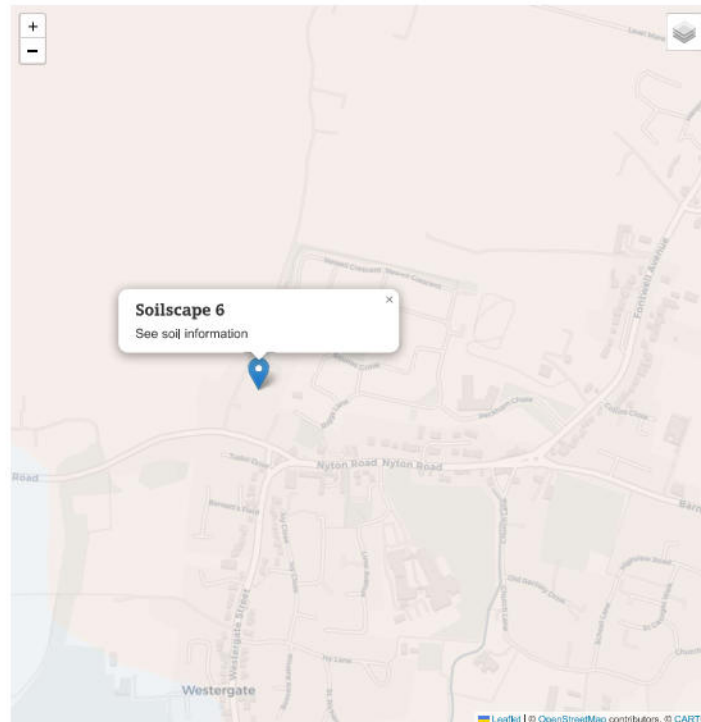
Postcode

Postcode:

PO20 3UH [Go](#)

Adjust Transparency

Legend

© Developed by Cranfield University and Sponsored by DEFRA [Provide Feedback](#)

Soil Information

Soilscape 6:

Freely draining slightly acid loamy soils

Texture:

Loamy

Coverage:

England: 15.5%, Wales: 24.4%, England & Wales: 16.7%

Drainage:

Freely draining

**Fertility:**

Low

**Landcover:**

Arable and grassland

Habitats:

Neutral and acid pastures and deciduous woodlands; acid communities such as bracken and gorse in the uplands

Carbon:

Low

Drains to:

Local groundwater and rivers

Water protection:

Groundwater contamination with nitrate; siltation and nutrient enrichment of streams from soil erosion on certain of these soils

General cropping:

Suitable for range of spring and autumn sown crops; under grass the soils have a long grazing season. Free drainage reduces the risk of soil damage from grazing animals or farm machinery. Shortage of soil moisture most likely limiting factor on yields, particularly where stony or shallow

About Us

LandIS, or the Land Information System is one of the offerings of the Cranfield Environment Centre (CEC). Incorporating the National Soil Resources Institute, we are the largest UK national and international centre for research and development, consultancy and training in soils and their interaction with the atmosphere, land use, geology and water resources.

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Appendix C

Environment Agency Flood Risk Maps

Flood Report



Flood Risk Assessment PASSED

Professional Opinion

The overall flood risk rating for the property has been assessed as being 'Moderate'. This means that the site is in an area which is susceptible to some flooding. General flood risk guidance and recommendations are on page 2 and information about flood resistance and resilience measures is on page 4.

This report is issued for the property described as:

**Stanwick Northfields Lane,
Westergate,
CHICHESTER,
West Sussex,
PO20 3UH**

Report Reference:

65794798_1

National Grid Reference:

493886E, 105712N

Client Reference:

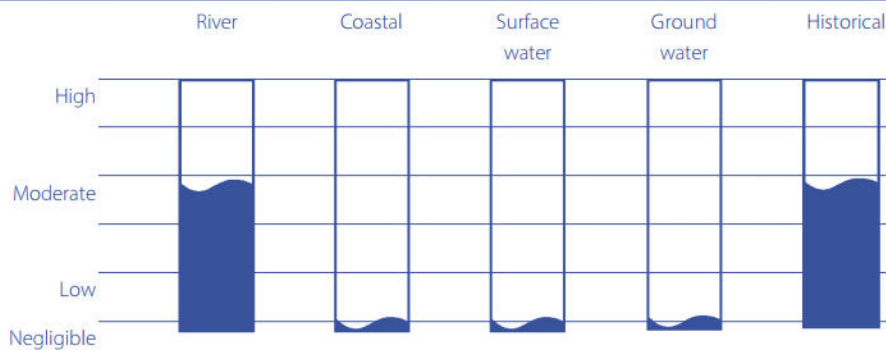
GilesVos_HCF

Report Date:

25 March 2015



Overall Flood Risk



Insurance: Yes

The flood risk identified is unlikely to affect obtaining insurance at standard terms

Contact Details

If you require any assistance please contact our customer services team on [REDACTED]

or [REDACTED] email

www.landmark.co.uk
Empowering People with Information



Save on your insurance*

We guarantee to beat the price of your lenders buildings and contents insurance.

* Subject to certain standard underwriting conditions including the number, type and value of previous losses.

Further information can be seen inside of the report.

Just call



Flood Risk Assessment

Professional Opinion



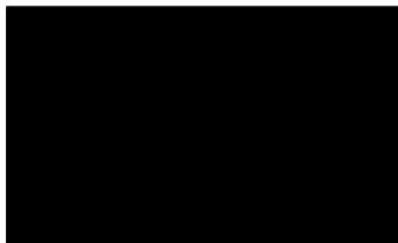
Passed

The property has been identified as being in an area susceptible to flooding from one or more sources following an assessment of all the data contained within this report. It would be prudent to consider the following recommendations and advice in order to further clarify the risk of flooding at the property and to take practical steps in reducing the consequences of any potential flood event.

RECOMMENDATIONS

1. A prudent purchaser may wish to consider further assessment of the property to identify appropriate flood protection measures. Such measures, including flood guards, gates, temporary barriers and tanking systems, may assist in reducing the effects of flooding on the property (if defences are absent or fail) and could help to obtain property insurance (if not already available). The regulatory body supports the use of kitemarked flood products, which have been independently tested and meet the required standards. An initial survey of the property can be conducted for around £300-400 plus VAT and most providers will deduct this from the costs of any recommended products. More information on flood protection measures is presented on page 4 along with additional advice on reducing the impacts of flooding. Details of providers are available from the Flood Protection Association (contact details can be found at the end of this report). Landmark would be happy to arrange a survey by an approved supplier. Please contact us for further information.
2. It would be prudent to ask the vendor to confirm whether or not they are aware of any previous flooding at the property. In addition, we would draw your attention to the additional advice on page 4.
3. You may wish to obtain insurance terms prior to exchange of contracts and completion of this transaction.

Approved by



Christopher S. Taylor BSc (Hons), MSc, AIEMA
Chartered Water and Environmental Manager
Technical Director, Argyll Environmental Ltd

Summary of Findings

A '-' indicates no data found. Those factors with a 'Yes' will offer further explanation in Sections A-D.

Section A.1 – River, Coastal, and Surface Water Flood Risk: 1 in 75 Year – From JBA

	On-site	1-250m
River	-	-
Coastal	-	-
Surface Water	-	YES

Section A.2 – River, Coastal, and Surface Water Flood Risk: 1 in 200 Year – From JBA

	On-site	1-250m
River	-	-
Coastal	-	-
Surface Water	-	YES

Section A.3 – River, Coastal and Surface Water Flood Risk: 1 in 1000 Year – From JBA

	On-site	1-250m
River	-	-
Coastal	-	-
Surface Water	-	YES

Section B – Floodplains, Flood Defences, and Flood Risk – From regulatory body

	On-site	1-250m
Rivers and coastal (zone 2)	YES	YES
Rivers and coastal (zone 3)	YES	YES
Flood defended area	-	-
Flood defences	-	YES
Risk of Flooding from Rivers and Sea	YES	YES

Section C – Groundwater

	On-site	1-250m
Risk of groundwater flooding	-	-

Section D – Historical

	On-site	1-250m
Historical flooding	YES	YES
Flood insurance claim rating	YES	YES

Flood Resistance and Resilience Measures

Flooding can usually be managed by the installation of flood protection measures either on or within the building(s) or across the property. Flood protection measures can be divided into two categories; flood resistance and flood resilience.

Flood resistance measures aim to prevent flood water from entering a property (i.e. barriers and baffles) while flood resilience measures aim to reduce the impact of flood water once it enters a property. Both flood resistance and flood resilience solutions can be integrated into design proposals for new developments or be retro-fitted to existing properties. A total solution may often include both resistance and resilience measures and will depend on a number of factors including flood source, likely flood depths, property design and age.

Most properties can be protected against shallow flash flooding from between £2000 and £6000, although significantly more may be required for high risk properties. Details of providers are available from the Flood Protection Association (contact details can be found at the end of this report). For further information about flood resistance measures or to be put in touch with one of our partners in this field please contact customer services on [REDACTED]

Guideline Costs for Resistance Measures

Building feature	Cost estimate including installation (excluding VAT)
Standard single door	£500-£995
Standard garage door	£700-£1500
Standard window	£350-£600
Single air brick	£40-£100
Patio doors	£500-£1500
Simple non-return valve	£20-£50
Large non-return valve	£300-£800
Tanking a basement, walls, or floors	£25 per metre ²

Additional Advice

In purchasing this report you have taken the first step in understanding the risk of flooding at your property. In addition to the installation of flood protection measures, such as those outlined above, there are a number of further practical steps you may wish to consider in order to ensure you are fully prepared in the event of a flood:

- **Understand your flood risk:** Take time to understand the sources of flooding affecting your property. Additional information on flooding in your area may be available from the Local Authority if they have completed a Strategic Flood Risk Assessment examining flood risk in the wider area. Alternatively, you may wish to consider a further strategic appraisal of flooding at your property to more closely examine available data and provide a more accurate estimate of anticipated flood depths. Further assessment can be undertaken starting from £500 plus VAT please contact customer services on [REDACTED] for more details.
- **Sign up to flood warnings:** The Environment Agency operates a free flood warning service providing alerts by phone, text or email when flooding is anticipated providing an opportunity for home owners to take necessary precautions.
- **Make a flood plan:** Prepare a flood plan outlining the precautions and actions you should take when a flood event is anticipated to help reduce the impact and damage flooding may cause. Sensible precautions would include raising electrical items, irreplaceable items and sentimental items off the ground or where possible moving them to a higher floor, rolling up carpets and rugs and turning off utilities. In addition, consider what actions you would take should the property need to be evacuated including access and egress routes and preparing a flood kit in advance containing warm clothing, medication, a torch, food and wellingtons.

Further information is available from The Environment Agency on how to prepare and what to do in the event of a flood at their website or by calling their Floodline on [REDACTED]

Property Location



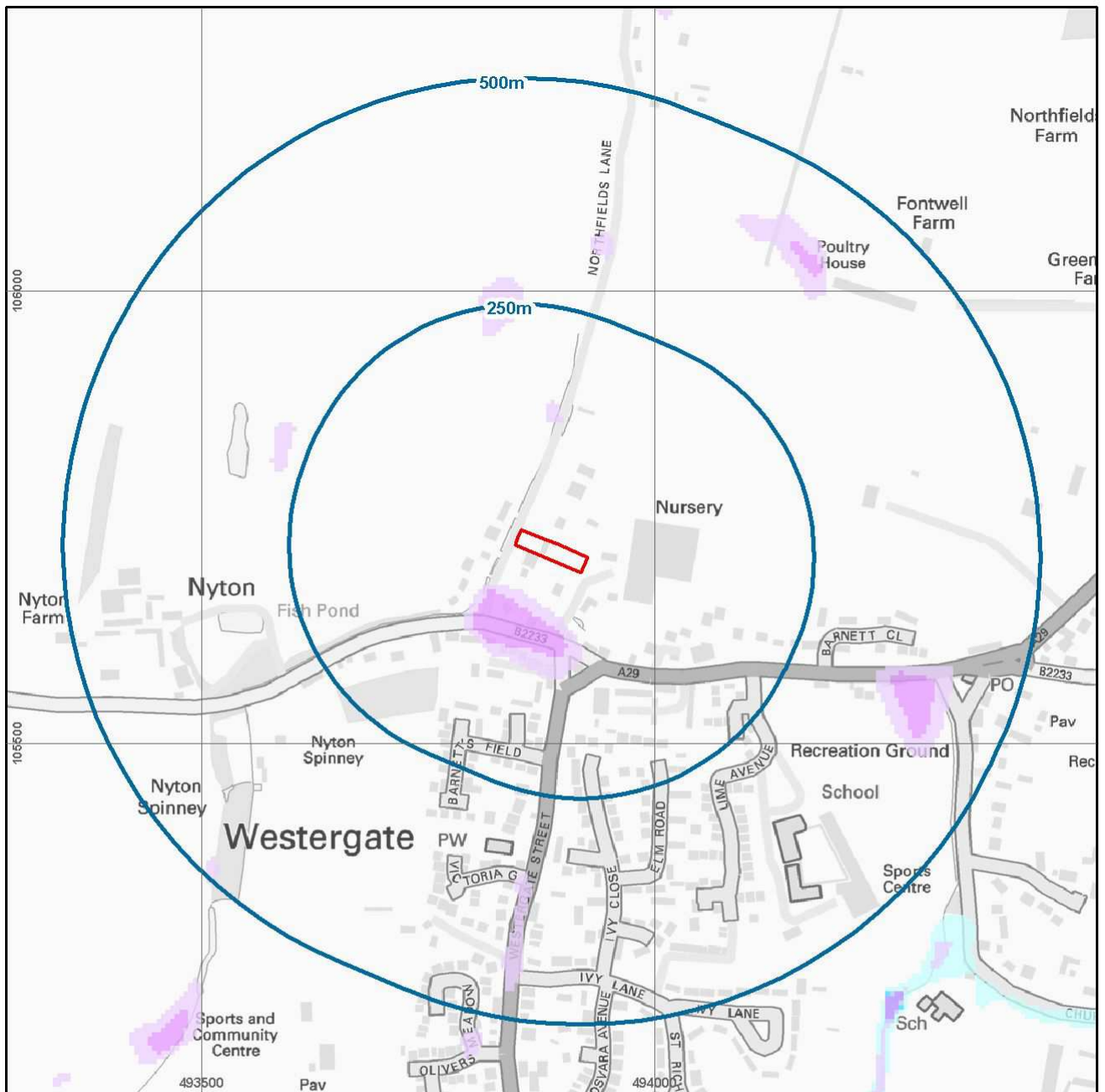
Section A.1 – River, Coastal and Surface Water Flood Risk: 1 in 75 Year – From JBA

Enquiry	Distance	Result	Note
River What is the risk of river water flooding?	On-site 1-250m	Negligible Negligible	Information regarding the risk of river (fluvial) flooding has been modelled by JBA Consulting in this instance using the anticipated water volumes expected during a 1 in 75 return period. This data has been modelled assuming an 'undefended' scenario where no defences are present. However, where flood defences are identified in this report this will be reflected in our overall risk assessment. The risk is classified by JBA into four categories, negligible, low (more than 0.1m), medium (more than 0.3m) and high (more than 1m) which reflect varying depths of river flooding.
Coastal What is the risk of coastal flooding?	On-site 1-250m	Negligible Negligible	Information regarding the risk of coastal (tidal) flooding has been modelled by JBA Consulting in this instance using the anticipated water volumes expected during a 1 in 75 return period. This data has been modelled assuming an 'undefended' scenario where no defences are present. However, where flood defences are identified in this report this will be reflected in our overall risk assessment. The risk is classified by JBA into four categories, negligible, low (more than 0.1m), medium (more than 0.3m) and high (more than 1m) which reflect varying depths of river flooding.
Surface Water What is the risk of surface water flooding?	On-site 1-250m	Negligible Medium	Information regarding the risk of natural surface water or pluvial flooding has been modelled by JBA Consulting in this instance using the anticipated water volumes expected during a 1 in 75 return period. The risk is classified by JBA into four categories, negligible, low (more than 0.1m), medium (more than 0.3m) and high (more than 1m) which reflect varying depths of potential surface water flooding.

Comment

Flood data provided by Jeremy Benn Associates Limited. © Copyright Jeremy Benn Associates Limited & JBA Risk Management Limited 2008-2015

Section A.1 – River, Coastal and Surface Water Flood Risk: 1 in 75 Year – From JBA



Contains Ordnance Survey data © Crown copyright and database right 2014

75yr Flood Risk



Client Site

Surface Water Depth

River Depth

Coastal Depth

10cm - 30cm

10cm - 30cm

10cm - 30cm

30cm - 1m

30cm - 1m

30cm - 1m

> 1m

> 1m

> 1m

metres
0 50 100 200

* - Not all features in legend
may be present in above map

Nominal scale at A4 paper size - 1:7,000

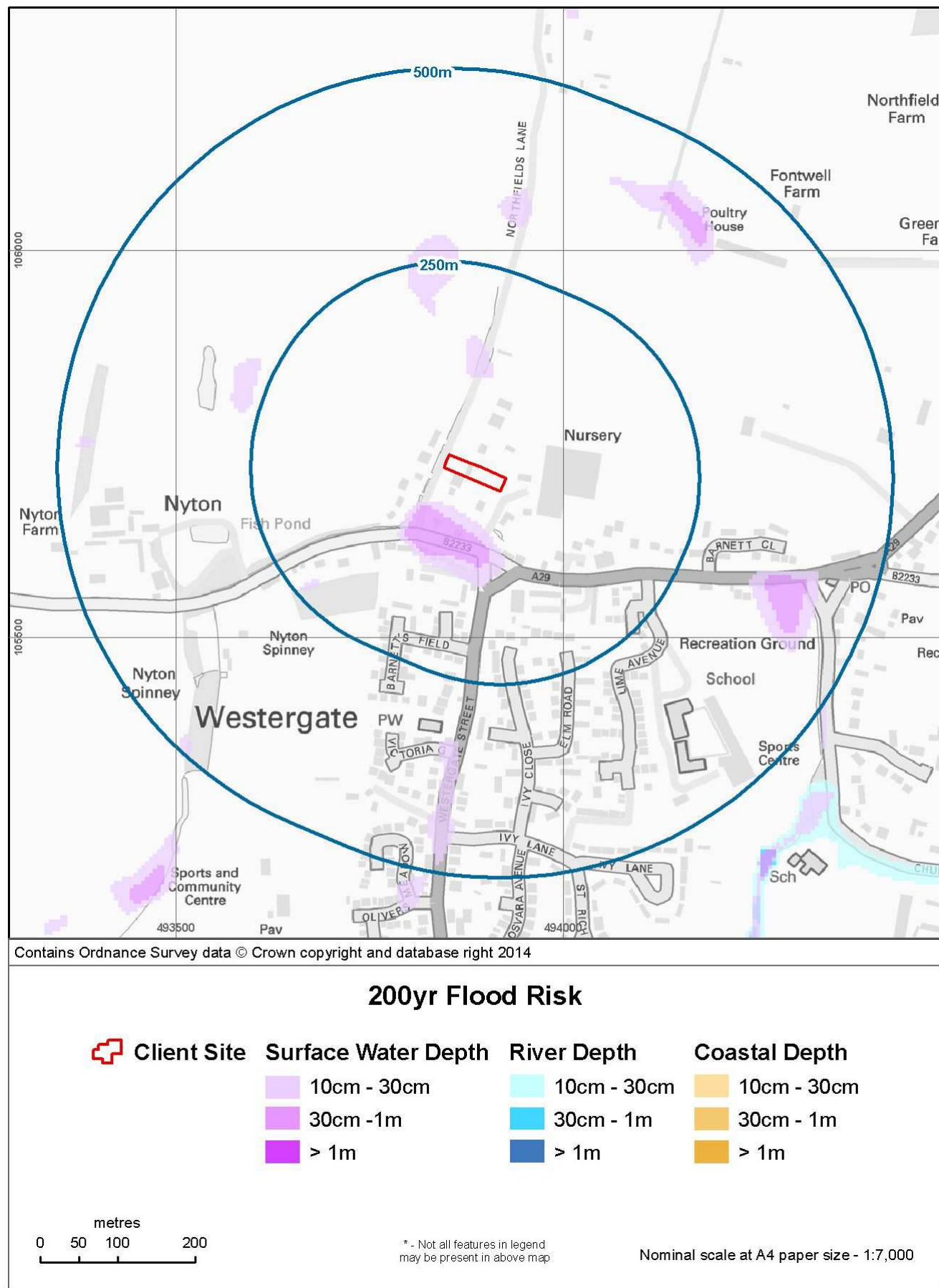
Section A.2 – River, Coastal, and Surface Water Flood Risk: 1 in 200 Year – From JBA

Enquiry	Distance	Result	Note
River What is the risk of river water flooding?	On-site 1-250m	Negligible Negligible	Information regarding the risk of river flooding has been modelled by JBA Consulting in this instance using the anticipated water volumes expected during a 1 in 200 return period. This data has been modelled assuming an 'undefended' scenario where no defences are present. However, where flood defences are identified in this report this will be reflected in our overall risk assessment. The risk is classified by JBA into four categories, negligible, low (more than 0.1m), medium (more than 0.3m) and high (more than 1m) which reflect varying depths of river flooding.
Coastal What is the risk of coastal flooding?	On-site 1-250m	Negligible Negligible	Information regarding the risk of coastal flooding has been modelled by JBA Consulting in this instance using the anticipated water volumes expected during a 1 in 200 return period. This data has been modelled assuming an 'undefended' scenario where no defences are present. However, where flood defences are identified in this report this will be reflected in our overall risk assessment. The risk is classified by JBA into four categories, negligible, low (more than 0.1m), medium (more than 0.3m) and high (more than 1m) which reflect varying depths of river flooding.
Surface Water What is the risk of surface water flooding?	On-site 1-250m	Negligible Medium	Information regarding the risk of natural surface water flooding has been modelled by JBA Consulting in this instance using the anticipated water volumes expected during a 1 in 200 return period. The risk is classified by JBA into four categories, negligible, low (more than 0.1m), medium (more than 0.3m) and high (more than 1m) which reflect varying depths of potential surface water flooding.

Comment

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Section A.2 – River, Coastal, and Surface Water Flood Risk: 1 in 200 Year – From JBA



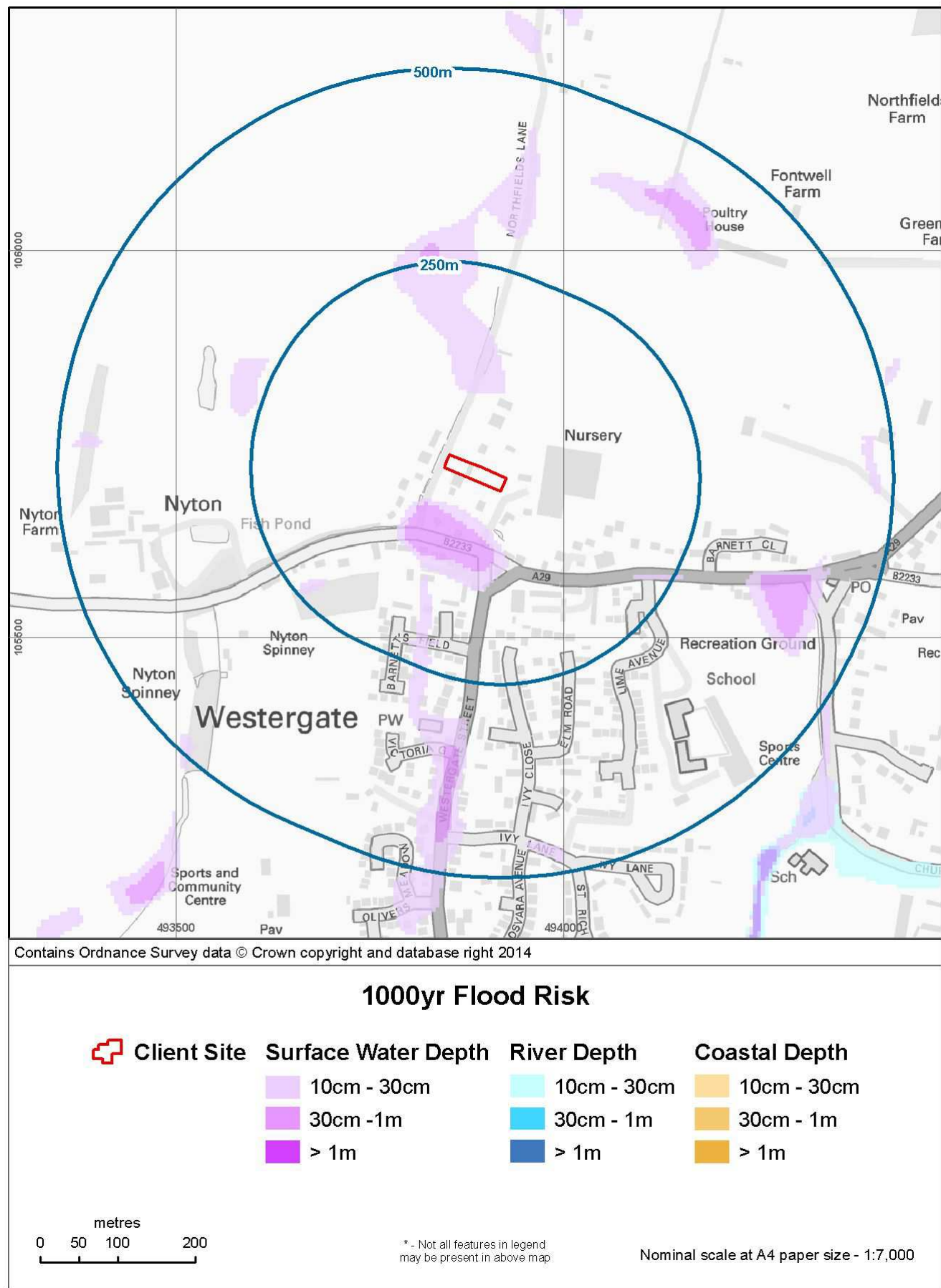
Section A.3 – River, Coastal and Surface Water Flood Risk: 1 in 1000 Year – From JBA

Enquiry	Distance	Result	Note
River	On-site	Negligible	Information regarding the risk of river (fluvial) flooding has been modelled by JBA Consulting in this instance using the anticipated water volumes expected during a 1 in 1000 return period. This data has been modelled assuming an 'undefended' scenario where no defences are present. However, where flood defences are identified in this report this will be reflected in our overall risk assessment. The risk is classified by JBA into four categories, negligible, low (more than 0.1m), medium (more than 0.3m) and high (more than 1m) which reflect varying depths of river flooding.
What is the risk of river water flooding?	1-250m	Negligible	
Coastal	On-site	Negligible	Information regarding the risk of coastal (tidal) flooding has been modelled by JBA Consulting in this instance using the anticipated water volumes expected during a 1 in 1000 return period. This data has been modelled assuming an 'undefended' scenario where no defences are present. However, where flood defences are identified in this report this will be reflected in our overall risk assessment. The risk is classified by JBA into four categories, negligible, low (more than 0.1m), medium (more than 0.3m) and high (more than 1m) which reflect varying depths of river flooding.
What is the risk of coastal flooding?	1-250m	Negligible	
Surface Water	On-site	Negligible	Information regarding the risk of natural surface water or pluvial flooding has been modelled by JBA Consulting in this instance using the anticipated water volumes expected during a 1 in 1000 return period. The risk is classified by JBA into four categories, negligible, low (more than 0.1m), medium (more than 0.3m) and high (more than 1m) which reflect varying depths of potential surface water flooding.
What is the risk of surface water flooding?	1-250m	Medium	

Comment

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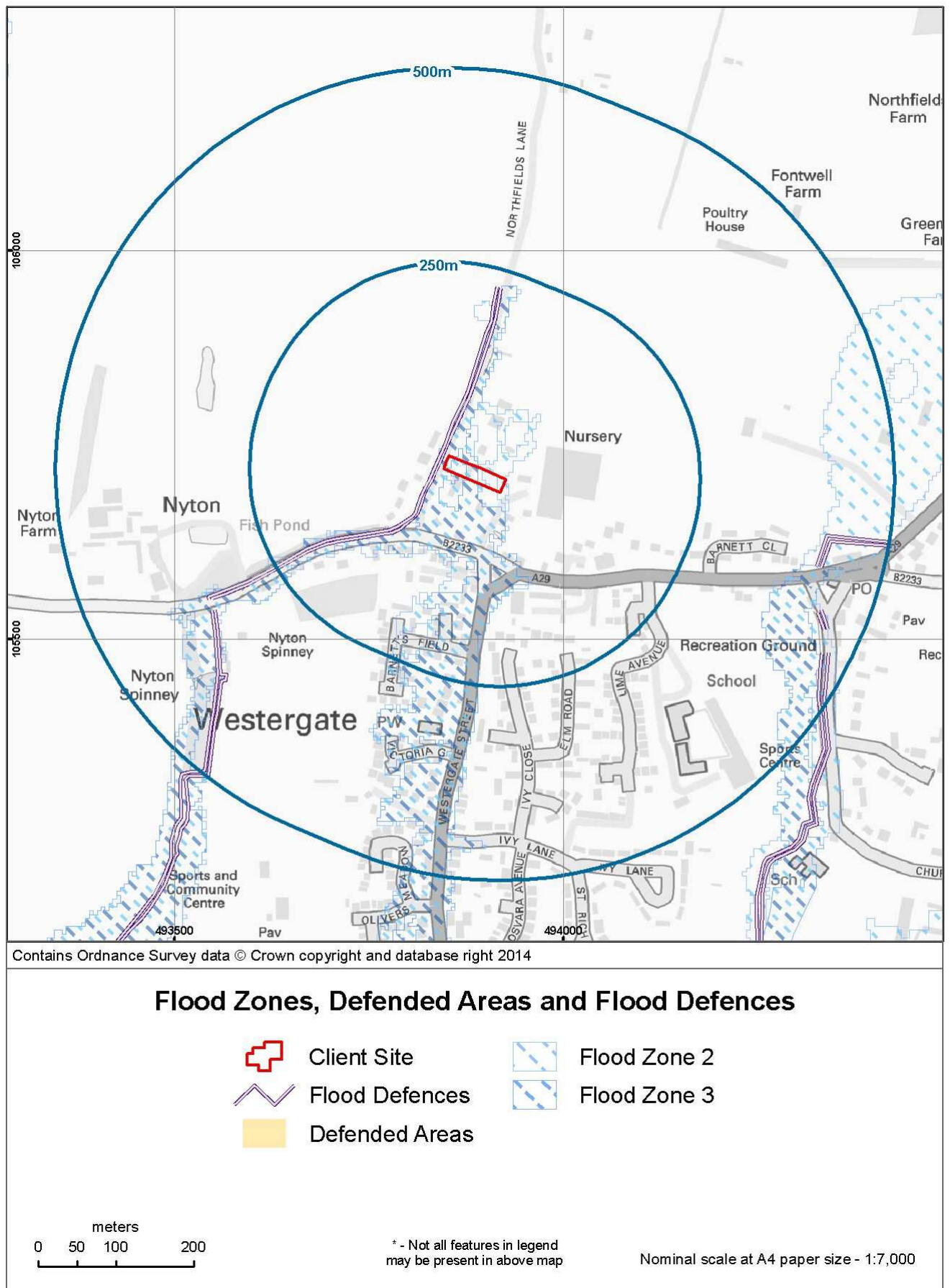
Section A.3 – River, Coastal and Surface Water Flood Risk: 1 in 1000 Year – From JBA



Section B – Floodplains, Flood Defences, and Flood Risk – From regulatory body

Enquiry	Distance	Result	Note
Rivers and coastal Is the property in an area affected by flooding (Flood Zone 3) or extreme flooding (Flood Zone 2)?	On-site 1-250m	YES YES	The site has been identified as being on or within 25m of Flood zone 3 according to the regulatory body Flood Map and is at a high risk of river or coastal flooding. The annual probability of flooding is either greater than 1% from rivers or greater than 0.5% from the sea. Properties within Flood Zone 3 may have difficulty obtaining flood insurance. In addition, all proposed developments would need to be accompanied by a full Flood Risk Assessment, in accordance with the National Planning Policy Framework. It is recommended further assessment is undertaken to further quantify the flood risk and suggest appropriate flood protection measures.
Flood defended area Is the property in an area benefiting from flood defences ?	On-site	NO	The site is not situated within 250m of an area benefiting from flood defences according to the regulatory body Flood Map. The Environment Agency defines areas benefiting from flood defences which should be afforded protection by existing flood defences during flood events with an annual probability of 1% from rivers and 0.5% from the sea. However, not all areas have been mapped and the property may still benefit from some flood defences.
Flood defences Are there any flood defences within 250m?	On-site 1-250m	NO YES	Flood defences were identified within 250m of the site which should afford it some level of flood protection. However, there may be a residual risk of flooding should the protection standard of those defences be exceeded (and the defences over-topped) or should the defences fail. The Environment Agency data regarding the presence and location of flood defences includes linear flood defences (such as walls and embankments). Not all flood defences may yet be registered and as a result not all flood defences may be shown.
Risk of Flooding from Rivers and Sea What is the flood likelihood category for the property?	On-site	Medium	The site is classified as being at a moderate risk of flooding. This classification relates to the locality as a whole, rather than the individual site and solely considers river and coastal flooding. Flood insurance should be widely available at standard terms for properties in this locality as the annual probability of flooding is less than 1.3%. However, it would be prudent to consider further assessment or the installation of flood protection measures. The data in the Risk of Flooding from Rivers and Sea dataset is sourced from The Environment Agency's National Property Dataset (NPD2). The information provided includes the flood likelihood category low, moderate, or significant according to the flood risk analysis. Some areas may be classified as having no result. This occurs where there is no output data from the analysis, but the area falls within the extreme flood outline (with a 0.1% or 1 in 1000 chance of flooding in any year).

Section B – Floodplains, Flood Defences, and Flood Risk – From regulatory body



Section C – Groundwater

Enquiry	Result	Note
Groundwater Flood Risk What is the risk of groundwater flooding based on the underlying geological conditions?	Negligible	ESI provides data to Argyll in relation to groundwater flooding. Through research and development, building on their expertise in addressing groundwater flooding issues for The Environment Agency and other clients in the UK, ESI has developed algorithms and calibrated predictions of the risk of groundwater flooding occurring. This differs from other suppliers of data regarding groundwater flooding which only report on the susceptibility of groundwater flooding. Susceptibility merely has to be identified, whereas risk must be quantified. The resulting map is a 50x50m classification of groundwater flooding risk into four categories (Negligible, Low, Moderate and High). ESI's classifications are based on the level of risk, combining severity and uncertainty that a site will suffer groundwater flooding within a return period of about 200 years. The map is a general purpose indicative screening tool, and is intended to provide a useful initial view for a wide variety of applications. However, it does not provide an alternative to a site specific assessment, and a detailed risk assessment should be used for any site where the impact of groundwater flooding would have significant adverse consequences.

What is groundwater flooding?

Groundwater flooding occurs when groundwater levels are sufficiently raised to exceed ground level. This can occur in two main ways:

1. Clearwater Flooding. This type of groundwater flooding occurs when the water table within a bedrock aquifer rises above ground level. This is dependent upon local geology.
2. Permeable Superficial Deposits (PSD) Flooding. This type of groundwater flooding is often associated with river flooding. It occurs when river levels are swollen and the water table rises in response, within the superficial deposits associated with the watercourse, and rises above ground level.

How is groundwater flood risk identified?

ESI are a consultancy specialising in groundwater flood risk. ESI have produced a national groundwater flood risk map, which considers a number of factors to determine the likelihood and severity of groundwater flooding in a 1 in 200 year return period (i.e. an extreme event). The key components considered are:

1. Bedrock geology
2. Superficial permeable deposits
3. Topography
4. Proximity to nearby watercourses

How accurate is the groundwater data?

Although it is the most comprehensive groundwater dataset available, the ESI groundwater risk map has a 50m resolution. Therefore, it should not be considered a property-specific flood risk assessment, but rather a risk screening tool of the potential for groundwater flooding based on local factors identified.

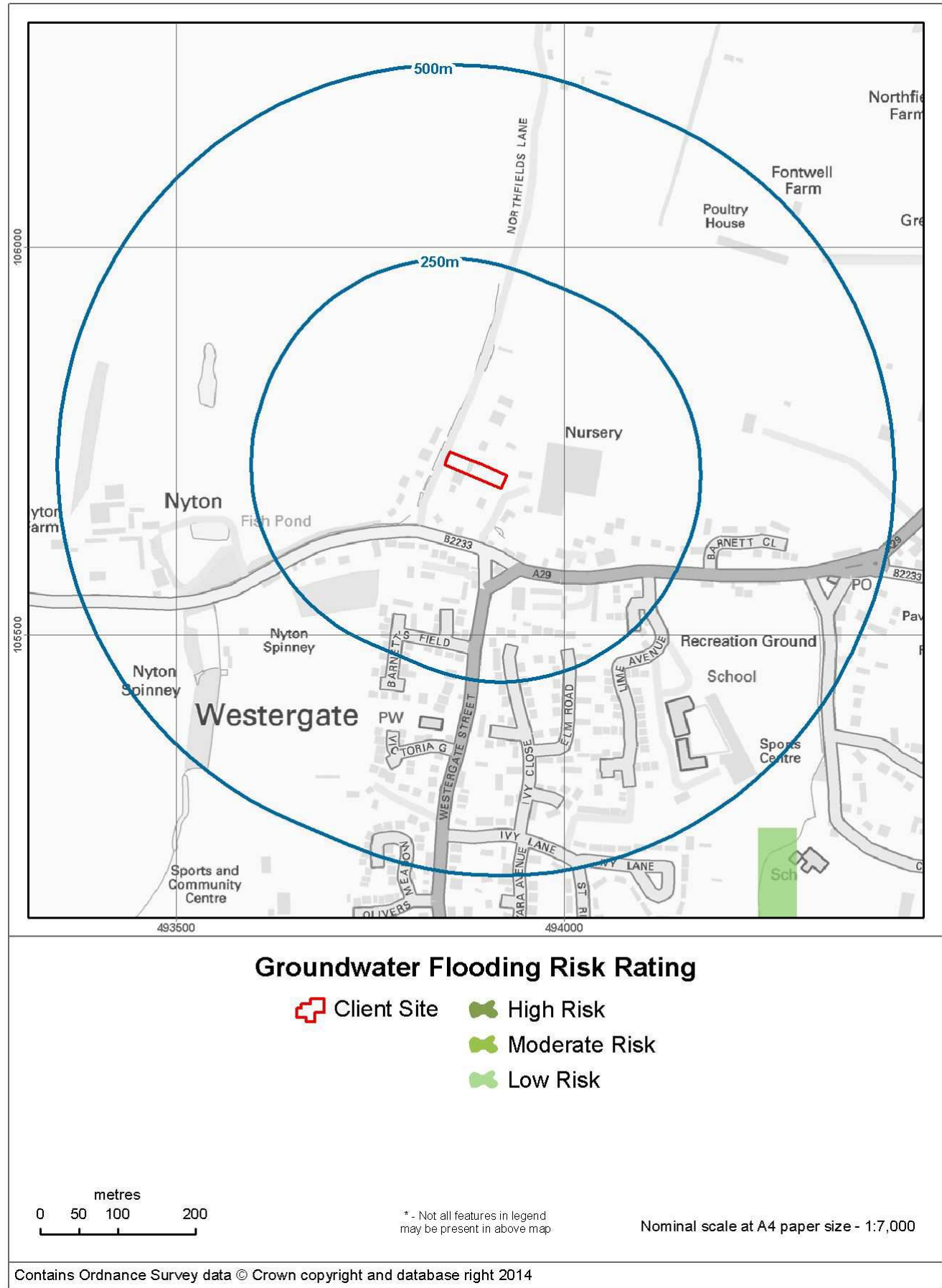
My property has been identified as being at risk of groundwater flooding, what should I do now?

There are some factors you can identify to establish if groundwater flooding is likely to be an issue. A property will be more susceptible to groundwater flooding if:

1. It has a basement or cellar
2. It is in a depression
3. It is located on a floodplain (i.e. within a Flood Zone 2 or Flood Zone 3)
4. It is located on a spring line or within an intermittent river valley such as a winterbourne (a stream that is dry through the summer months).

If any of the above apply to your property, you may wish to have a more detailed and property specific groundwater assessment report undertaken, to clarify if groundwater flooding is likely to be an issue. Please contact us for a quote.

Section C – Groundwater



Section D – Historical

Enquiry	Result	Note
Historical Flooding Have any historical flood events occurred at the site or within 250m?	YES	The regulatory body's records indicate the site has flooded in the past. It would be prudent to ask the property owner whether they are aware of any previous flooding at the property or in the surrounding area. It would be possible to ask the regulatory body for more details of the recorded incident of past flooding. The Environment Agency has collated extensive records (including outlines) of flooding from rivers, the sea, or groundwater which have occurred since c.1950 in order to map the outlines of recorded historical flood events. This information comes from various sources including maps, aerial photographs and private records. It is not necessarily comprehensive.
Flood Insurance Claim Rating How do Crawfords rate the area for insurance claims?	Low	Less than 2 claims Per 1000 households Crawford & Co is the world's largest independent provider of claims management solutions to the risk management and insurance industries. Crawford have compiled information in over 9,000 postcode sectors regarding the number of insurance claims made as a result of flooding. The risk has been classified by Crawford into five categories, too few, very low (no claims), low (less than 2 claims per 1000 households), moderate (between 2 and 5 claims per 1000 households) and high (more than 5 claims per 1000 households). This information is not necessarily comprehensive and excludes flood claims arising as a result of burst pipes and domestic appliances.

Flood Risk Screening Methodology

The Homecheck Professional® report is a desktop flood risk screening report, designed to enable home buyers and property professionals to assess the risk of flooding at residential sites. It examines two key areas; the overall risk of flooding at a site taking into account any flood defences present (where these are identified) and how flood risk affects the availability of insurance for a site. The report considers current Government guidance including the National Planning Policy Framework (NPPF) and the current agreement between insurance companies and central Government. The report has been designed and produced by qualified flood risk specialists using the data available in this report.

Flood Risk Rating

An overall flood risk rating is provided based on an assessment of the data provided within this report. The overall risk rating in the report takes into account the effect of flood defences, where these are identified, based on the presence of flood defences registered by The Environment Agency within the vicinity of the property. It should be noted that a residual risk of flooding may remain if such defences were to fail owing to extreme weather conditions, over-topping or poor maintenance. In addition, it should be noted that flood defences do not generally offer protection against groundwater or surface water flooding.

Where no flood defences are present in the vicinity of the property the overall risk rating provides a worst case scenario which may be alleviated by smaller scale local flood defences or recently constructed flood defences not currently registered by The Environment Agency. Replies in Scotland will always present the worst case scenario where there are no flood defences in the area benefiting the site or assuming any flood defences will fail or be over-topped. This is because data regarding flood defences in Scotland is currently unavailable from the Scottish Environment Protection Agency and Local Lead Flood Authorities.

The overall risk of flooding will be answered by one of four standard responses:

Response	Meaning
Negligible	The overall flood risk rating for the property is assessed to be 'Negligible'. Existing datasets do not indicate any risk at the property itself, or any feature within the locality of the property, which would be expected to pose a threat of flooding. It is not considered that any further investigations are necessary in regard to flood risk.
Low	The overall flood risk rating for the property is assessed to be 'Low'. Although large sites (over 1 ha) would require a Flood Risk Assessment examining the impact the development would have on local drainage to accompany any planning application, it is not considered necessary to undertake any other further investigations into the flood risk at the property.
Moderate	The overall flood risk rating for the property is assessed to be 'Moderate'. Information from existing datasets suggests that there are certain features which may present a risk to the property and its occupants. Further assessment would normally be suggested as a prudent measure to clarify the risk of flooding at the property.
High	The overall flood risk rating for property is assessed to be 'High', with a consequent risk to life and property. This means that existing datasets reveal significant flood risk issues which need to be addressed. Further assessment is usually recommended in order to clarify the risk of flooding at the property.

Flood Risk Gauges

The flood risk gauges provide a more detailed analysis of the risk from each of the four main types of flooding – river, coastal, groundwater and surface water. In addition, a fifth gauge provides an analysis of other factors (i.e. historic flood events) that may affect the overall flood risk. For undefended fluvial and tidal flood risk and surface water flood risk data provided by JBA, only the risk rating generated during the modelled the 1:200 year return event is considered in the overall risk assessment. The data on 1:75 year and 1:1000 year return events are provided for information only. For further information on each of these types of flooding, please refer to the Homecheck Professional® User Guide.

This analysis takes into account any existing flood defences, where these are identified, that are intended to protect the property and assumes that these work as designed. The analysis also takes into account the other information contained in those data sections of the report which are relevant to that particular type of flooding. The assessment of the risk as shown in the flood gauges should therefore take priority over the information in the individual data sections of the report.

Insurance Availability

An indication of whether the property is likely to be insurable for flood risk at standard terms is provided by this report. Replies in England and Wales are based on consideration of the Risk of Flooding from Rivers and Sea dataset supplied by The Environment Agency, surface water flooding data supplied by JBA Consulting and Groundwater Flooding risk data supplied by ESI. Replies in Scotland are based on the consideration of the river flood (undefended fluvial) data and surface water flooding data supplied by JBA Consulting. This data is commonly used by insurance companies to determine the suitability of a property for insurance, although they may access additional information which could affect their assessment.

Under the Association of British Insurers' Revised Statement of Principles on the Provision of Flooding Insurance (July 2008), the general policy of member companies is that flood insurance for domestic properties and small businesses should continue to be available for as many customers as possible until 1 July 2013, by which time a longer term solution should be implemented. The premiums charged and other terms will reflect the risk of flooding but insurance will be available:

- 1) for properties where the flood risk is not significant (generally defined as no worse than 1.33% or 1-in-75 years annual probability of flooding); and
- 2) to existing domestic property and small business customers at significant risk, providing The Environment Agency has announced plans to reduce that risk within five years, such as improving flood defences. (The commitment to offer cover will extend to the new owner of any applicable property subject to satisfactory information about the new owner).

However, for significant risk areas where no improvements in flood defences are planned, and in all cases other than domestic properties and small businesses, insurers cannot guarantee to provide cover, but will examine the risks on a case-by-case basis. The implementation of the revised Statement of Principles depends on action from the Government and is continually reviewed by insurers. In addition, the revised Statement of Principles does not apply to properties built after 1st January 2009. Different guidance applies to these (see Climate Change – Guidance on Insurance Issues for New Developments from www.abi.org.uk).

The responses to the question 'Is the property likely to be insurable at standard terms?' assumes the property is an existing domestic property or small business and makes no allowance for previous claims arising from any type of flooding, nor for non-flood related risks such as subsidence.

Response	Meaning
Yes	The property is likely to be considered acceptable by insurance companies at standard terms and flood insurance should not be difficult to obtain. No further action required.
No	The property may not be considered acceptable by insurance companies at standard terms, on the basis of current information. Further work may be required in order to obtain acceptable insurance terms for the flood risk. This could include a more detailed risk assessment or the use of accredited products, flood resilient materials and temporary defences to defend the property.

Limitations of the Report

The Homecheck Professional® report has been designed to satisfy basic flood-related environmental due-diligence enquiries for residential properties. It is a desktop review of information provided by the client and from selected private and public databases. It does not include a site investigation, nor are specific information requests made of the regulatory authorities for any relevant information. Therefore, Landmark cannot guarantee that all issues of concern will be identified by this report, or that the data and information supplied to it by third parties is accurate and complete. The assessment within the report has been undertaken on a point location provided by the client and a 25m buffer placed around that point in order to assess the most likely areas associated with the property of interest. Landmark cannot be responsible for incidents where the 25m buffer does not encompass the entirety of the property demise.

This report includes an assessment of surface water flooding which examines the risk of the general drainage network overflowing during periods of extreme rainfall. This report does not make a detailed site-specific assessment of the suitability of the existing drainage on the property. If this is required, then a site survey should be considered. The assessment of pluvial flooding does not take into account particular local or temporary factors that may cause surface water flooding such as the blockage or failure of structures on or within watercourses, drains, foul sewers, water mains, canals and other water infrastructure; and any history of drains flooding at the property or in the locality. Surface water flooding can occur before surface water reaches the general drainage network, for example on hills and inclines.

The Environment Agency and JBA fluvial and coastal flood data does not include flood risk from very small catchments as models of such small scale catchments are not considered to be reliable for UK-wide flood risk assessments. The potential impact of climate change on flood risk to the property would require further study.

Replies in Scotland are based on the best available data in that locality. The overall risk assessment and insurability assessment will still provide a response based on the best available information within this report. Where information is unavailable or has not been provided for a region the relevant data section will report No Data.

When answering any questions within this report, current applicable legislation is taken into account.

The data used in this report may have inherent limitations and qualifications. Further details are set out in the Homecheck Professional® User Guide which is available by calling one of our customer services team on [REDACTED] or emailing [REDACTED]

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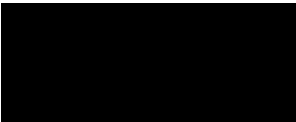
If you experience difficulties accessing our Terms & Conditions, if you copy and paste the link directly into your browser, you will be able to access our Terms & Conditions from there.

Should you still experience difficulties, then please telephone our Customer Service Team on [REDACTED]

Contacts

Landmark Information Group Limited

Imperium
Imperial Way
Reading
RG2 0TD

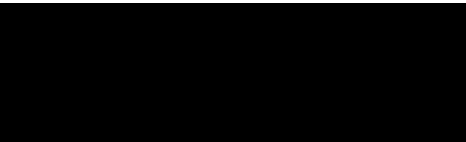


For advice on the report

Website www.landmark.co.uk

The Environment Agency

PO Box 544
Templeborough
Rotherham
S60 1BY



For advice on regulatory information

Flood Protection Association

10 Cavalry Ride
Norwich
NR3 1U



For advice on Flood Protection Measures

Website www.floodprotectionassoc.co.uk

Important Consumer Protection Information

This search has been produced by Landmark Information Group Ltd, Imperium, Imperial Way, Reading, RG2 0TD. Telephone [REDACTED] which is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered firms maintain compliance with the Code.

The Search Code:

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- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

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- display the Search Code logo prominently on their search reports
- act with integrity and carry out work with due skill, care and diligence
- at all times maintain adequate and appropriate insurance to protect consumers
- conduct business in an honest, fair and professional manner
- handle complaints speedily and fairly
- ensure that products and services comply with industry registration rules and standards and relevant laws
- monitor their compliance with the Code

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If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award compensation of up to £5,000 to you if he finds that you have suffered actual loss as a result of your search provider failing to keep to the Code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs Contact Details:

The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP

You can get more information about the PCCB from www.propertycodes.org.uk.

PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE

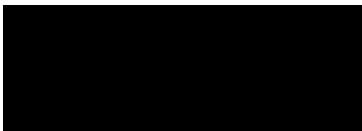
Complaints procedure

If you want to make a complaint, we will:

- Acknowledge it within 5 working days of receipt.
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final response, in writing, at the latest within 40 working days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

Complaints should be sent to:

Head of Customer Relations
Landmark Information Group Ltd
Landmark UK Property
Imperium
Imperial Way
Reading
RG2 0TD



If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): 

We will co-operate fully with the Ombudsman during an investigation and comply with his final decision.

Save on your insurance*

as a thank you for purchasing this report

- ✓ This report already confirms your property is an **acceptable flood risk**
- ✓ **Price Guarantee** - we will quote cheaper**
than your mortgage lender on the same basis of standard cover
- ✓ Quotes available for both buildings and contents
- ✓ £1,000,000 automatic buildings cover
- ✓ Policy underwritten at Lloyd's
- ✓ Monthly payment options available

* Subject to certain standard underwriting conditions including the number, type and value of previous losses

Just call [REDACTED]

to speak to our experienced team who look forward to tailoring a product for your new property that will give you the necessary coverage required by your Mortgage Lender.



** Subject to terms, please contact us for further information 1. Your quote must provide cover on an equivalent basis to the one offered by INSURE My IIGLU 2. The offer applies to new policyholders only 3. Qualifying criteria apply 4. You must send us proof of your lenders quote documentation detailing cover and premium to: INSURE MY IIGLU Three Whiting Street Bury St Edmunds Suffolk IP33 1NX. 5. INSURE MY IIGLU will not return any documentation received in conjunction with this offer 6. This offer is not available in Northern Ireland 7. The proof of lenders offer is required before guarantee can be applied 8. If you accept our standard quotation price before you send us valid proof, depending on your payment method, we will either refund you the difference between the price you paid and the price you should have paid had the guarantee applied or we will reduce your future payments 9. Refunds will be given by the same method and to the same card/account as the original payment

NOTICE TO LAWYERS Your CML insurance responsibilities:

Have you informed the lender if the insurance policy excess exceeds £1000?

The majority of lenders require notification of large policy excesses***.
Do you know what your client's lenders limits are?

Do you have regular contact with your client post sale?

59%*** of lenders require notification of future non renewal of policy.

Not all insurers or brokers agree to make this notification. Insure My IIGLU does.
In most cases, we even provide an indemnity cover for you should this fail to happen.

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to speak to our specialist team who look forward to tailoring a product for a property and provide you with the necessary coverage required by your mortgage lender



*** Based on data available from CML October 2013.

Appendix D

UKSuDS Greenfield Runoff Calculation

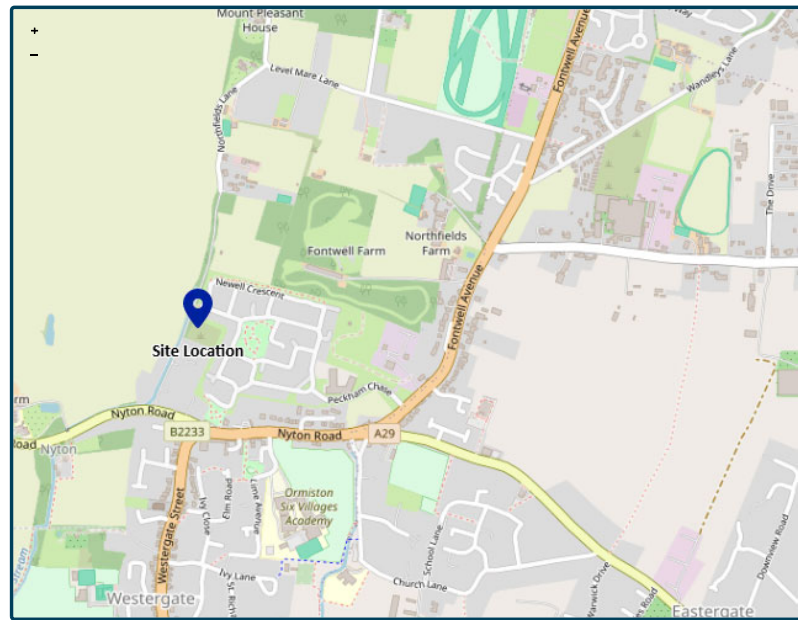
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015).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

Project details

Date	09/04/2026
Calculated by	DO
Reference	Stanwick Northfields Lane Westergate Chichester
Model version	2.2.3

Location

Site name	Stanwick Northfields Lane Westergate Chichester
Site location	Stanwick Northfields Lane Westergate Chichester



© OpenStreetMap (<https://www.openstreetmap.org/copyright>) contributors.

Site easting (British National Grid)	493924
Site northing (British National Grid)	105798

Site details

Total site area (ha)	.1533	ha
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Greenfield runoff

Method

Method	IH124		
IH124			
	<u>My value</u>	☐	<u>Map value</u>
SAAR (mm)	760 mm		760
How should SPR be derived?	WRAP soil type		
WRAP soil type	2	☐	2
SPR	0.3		
QBar (IH124) (l/s)	0.3 l/s		

Growth curve factors

	<u>My value</u>	☐	<u>Map value</u>
Hydrological region	7		7
1 year growth factor	0.85		
2 year growth factor	0.88		
10 year growth factor	1.62		
30 year growth factor	2.3		
100 year growth factor	3.19		
200 year growth factor	3.74		

Results

Method	IH124	
Flow rate 1 year (l/s)	0.3	l/s
Flow rate 2 year (l/s)	0.3	l/s
Flow rate 10 years (l/s)	0.5	l/s
Flow rate 30 years (l/s)	0.7	l/s
Flow rate 100 years (l/s)	1.0	l/s
Flow rate 200 years (l/s)	1.2	l/s

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

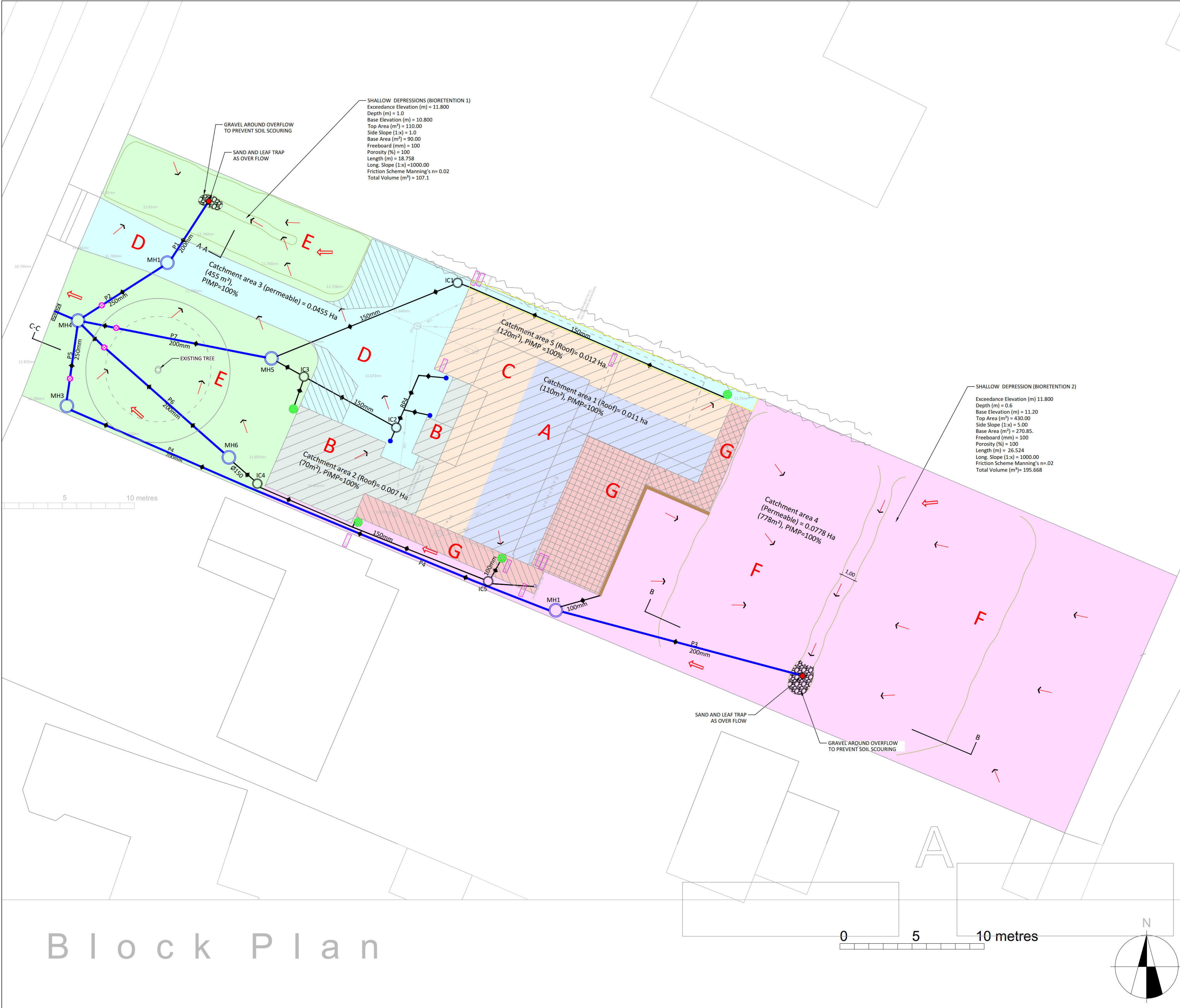
Disclaimer

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



Appendix E

Surface Water Drainage Strategy 1 of 3
24502-ENV-ZZ-00-DR-D-1000



LEGEND:

- PROPOSED BURIED PIPE- STORM WATER PIPE (P)
- PROPOSED RAINWATER PIPE (RP)
- PROPOSED GRAVEL DRAIN CHANNEL
- PROPOSED SURFACE WATER MANHOLE (MH)
- PROPOSED INSPECTION CHAMBER (IC)
- PROPOSED SAND AND LEAF TRAP
- PROPOSED SILT TRAP
- PROPOSED RAIN WATER BUTT
- PROPOSED RAIN WATER PIPE DOWN PIPE (RWDP)
- EXCEEDANCE FLOW DIRECTION
- RUNOFF FLOW DIRECTION

CATCHMENT AREA 3 (A+B+C) = 300m² IMPERMEABLE

- A CATCHMENT AREA 1 (ROOF)=110m²
- B CATCHMENT AREA 2 (ROOF)=70m²
- C CATCHMENT AREA 5 (ROOF) = 120m²

CATCHMENT AREA 3 (D+E) = 455m² , PERMEABLE

- D GRAVEL DRIVE AREA (PERMEABLE) = 179m²
- E GREEN AREA + SHALLOW DEPRESSION 1 (PERMEABLE) = 276m²

CATCHMENT AREA 4 (F+G) = 778m² , PERMEABLE

- F GREEN AREA + SHALLOW DEPRESSION 2 (PERMEABLE) = 689m²
- G GRAVEL PATH + PERMEABLE PAVING AREA (PERMEABLE) = 89m²

Scale 0 2.5 5 10 12.5
1:125

03 24/06/2026 Issued For Planning Approval DO JR JR
02 21/04/2026 Issued For Planning Approval DO JR JR
01 04/03/2026 Issued For Planning Approval DO JR JR
00 12/12/2025 Issued For Planning Approval DO JR JR

No	Date	Reason	DRN	CHK	APR
REVISIONS					

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Project
Stanwick, Northfields Lane, Westergate, Chichester

Drawing
SURFACE WATER DRAINAGE STRATEGY 1 of 3

Scale	Date	Drawn
1:125@ A1	JUNE '26	DO

Drawing No.	Revision
ENV24502-WDE-00-DR-1000	03

☐ Preliminary
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☐ Detailed Design
☐ Issued for Tender
☐ As Built

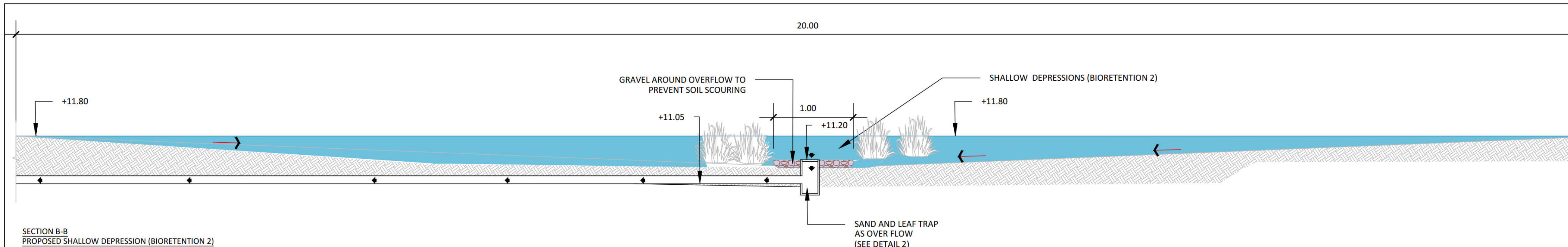
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Block Plan



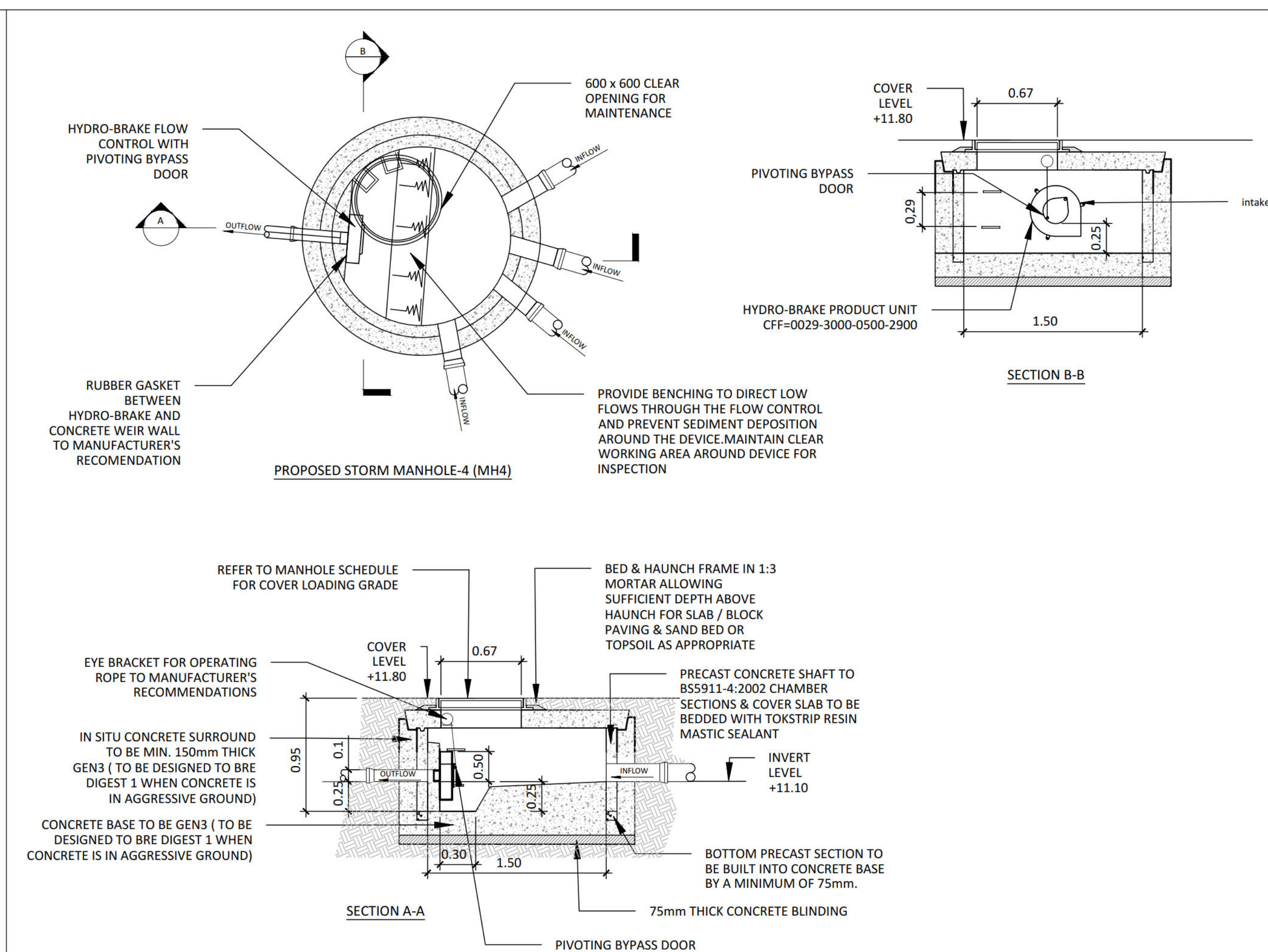
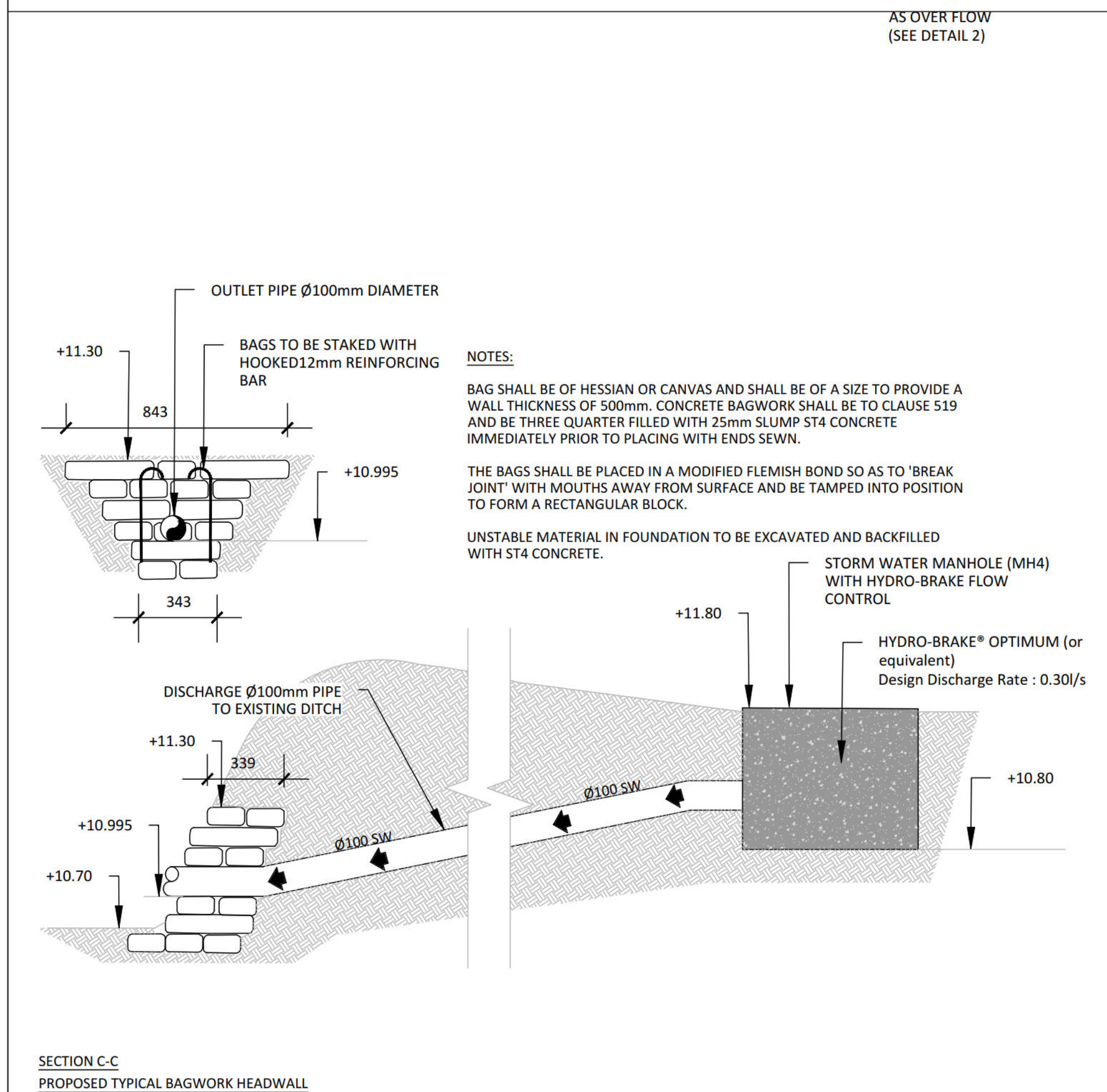
Appendix F

Surface Water Drainage Strategy 2 of 3
24502-ENV-ZZ-00-DR-D-2000

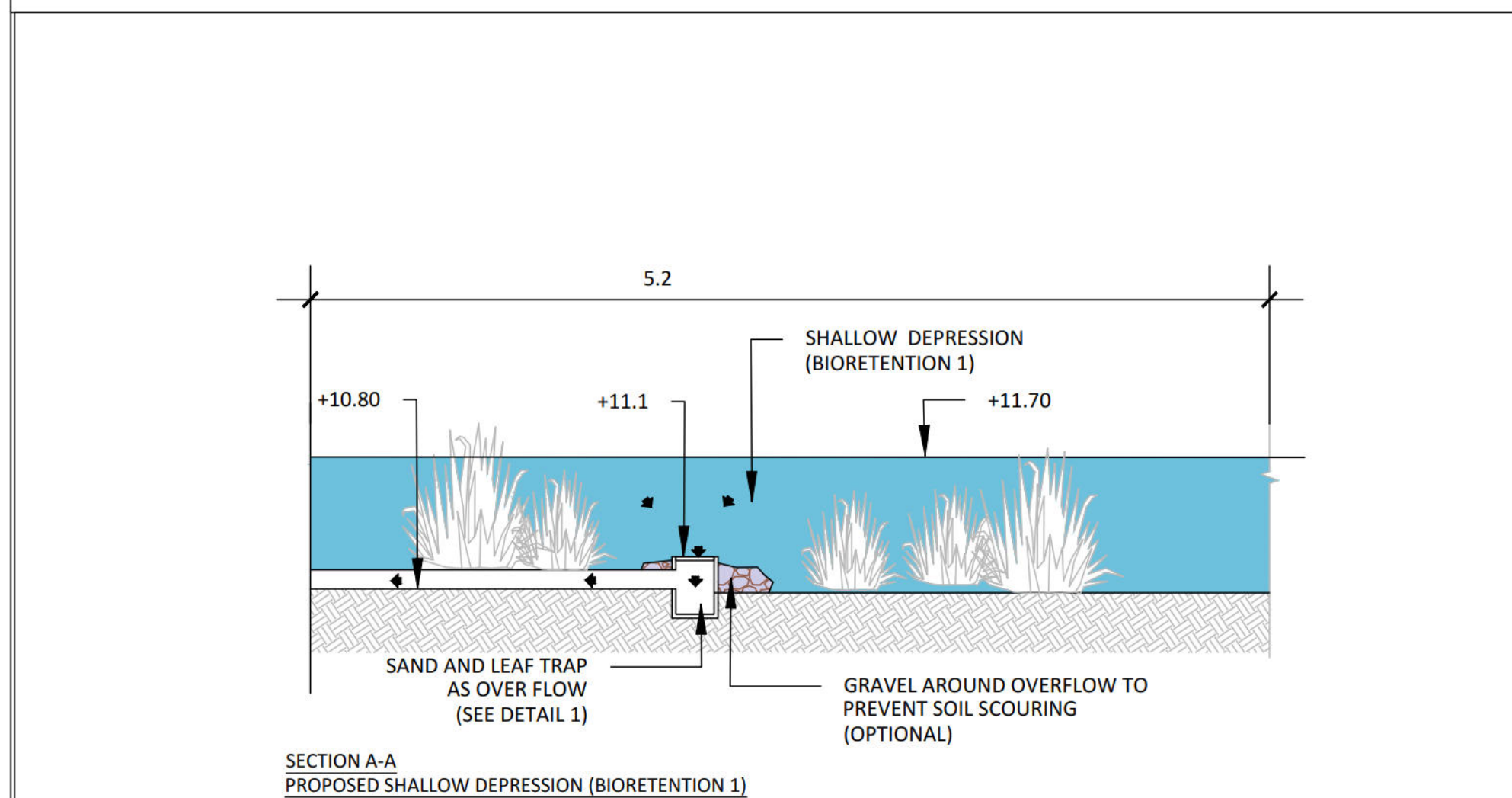


GENERAL NOTES:

1. ALL PIPE DIAMETERS SHOWN ARE NOMINAL INTERNAL DIAMETERS.
2. SURFACE WATER DRAINAGE PIPEWORK TO BE UPVC OR HDPE, MINIMUM STIFFNESS CLASS SN8, UNLESS NOTED OTHERWISE.
3. PIPEWORK HAS BEEN SIZED TO CONVEY DESIGN FLOWS ASSOCIATED WITH THE 1 IN 100-YEARS STORM EVENT PLUS 45% CLIMATE CHANGE ALLOWANCE.
4. FLOW RESTRICTION IS PROVIDED BY A PROPRIETARY FLOW CONTROL DEVICE (HYDRO-BRAKE OPTIMUM OR EQUIVALENT), INSTALLED WITHIN THE MANHOLE INDICATED ON THE DRAWING.
5. DESIGN DISCHARGE RATE THROUGH THE FLOW CONTROL DEVICE IS 0.3 L/S.
6. MANHOLE CONSTRUCTION: FLOW CONTROL ARRANGEMENT, OUTFALL/HEADWALL CONSTRUCTION, AND SUDS COMPONENT DETAILS ARE AS SHOWN ON THIS DRAWING FOR CONDITION DISCHARGE APPROVAL. INSTALLATION TO COMPLY WITH MANUFACTURER REQUIREMENTS AND THE DETAILS/NOTES ON THIS DRAWING. ANY PROPOSED DEVIATIONS TO THE APPROVED ARRANGEMENTS SHALL BE AGREED IN WRITING WITH THE LPA PRIOR TO IMPLEMENTATION.



03	24/06/2026	Issued For Planning Approval	DO	JR	JR	
02	21/04/2026	Issued For Planning Approval	DO	JR	JR	
01	04/03/2026	Issued For Planning Approval	DO	JR	JR	
00	12/12/2025	Issued For Planning Approval	DO	JR	JR	
No	Date	Reason	DRN	CHK	APR	
REVISIONS						



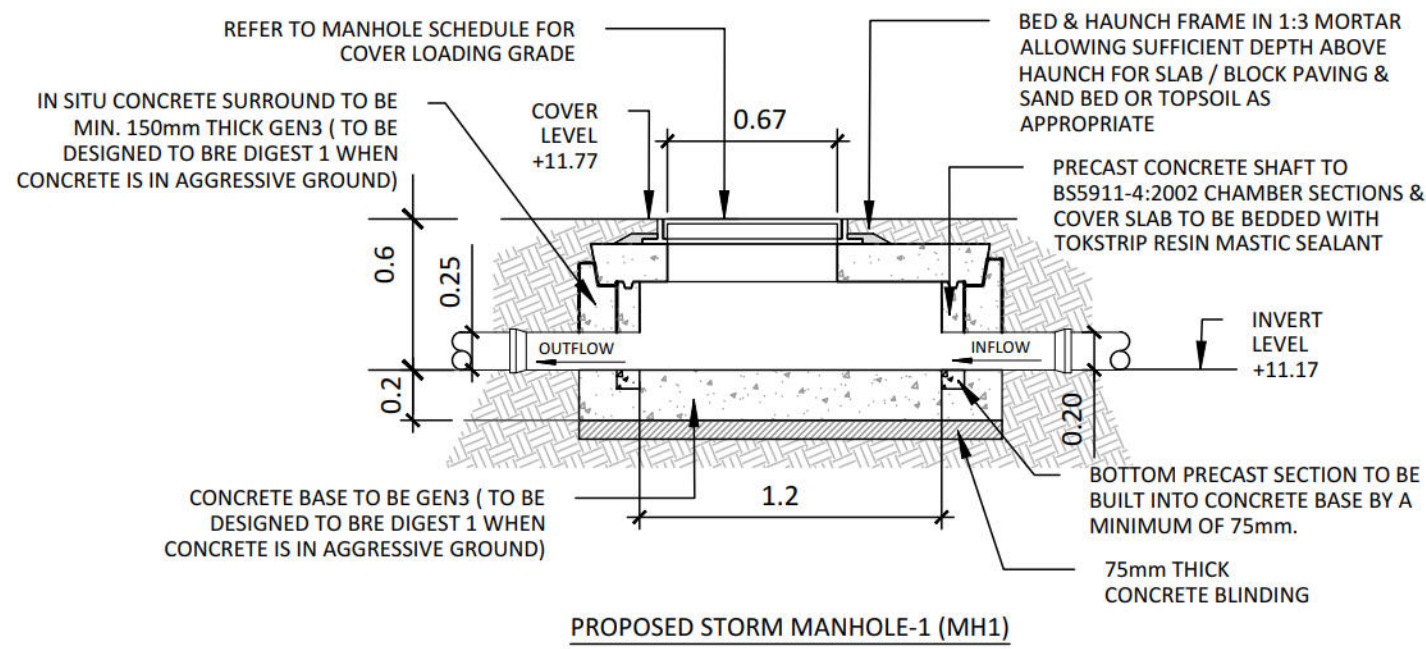
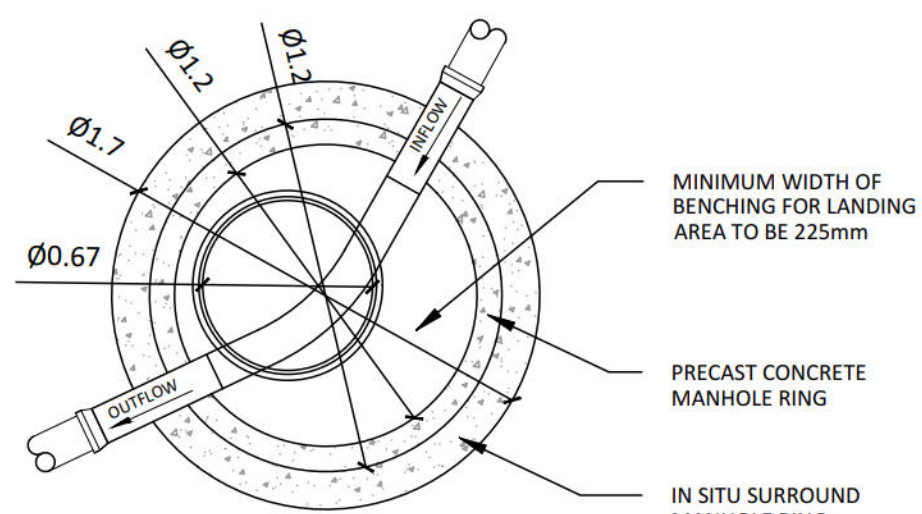
- FLOW CONTROL CHAMBER (MH4) – ANTI-BLOCKAGE AND MAINTENANCE REQUIREMENTS
1. FLOW CONTROL DEVICE: PROVIDE HYDRO-BRAKE® OPTIMUM (OR APPROVED EQUIVALENT) SIZED FOR $Q = 0.30$ L/S AS INDICATED ON THIS DRAWING.
 2. SILT MANAGEMENT: PROVIDE A SUMP / SILT TRAP WITHIN MH4 (OR IMMEDIATELY UPSTREAM) TO REDUCE RISK OF SILT INGRESS TO THE FLOW CONTROL. MINIMUM SUMP DEPTH TO BE 150 MM BELOW LOWEST INCOMING PIPE INVERT (OR AS PRACTICABLE SUBJECT TO CHAMBER DEPTH).
 3. DEBRIS / BLOCKAGE PROTECTION: PROVIDE DEBRIS PROTECTION TO PREVENT LEAF LITTER AND COARSE SEDIMENT ENTERING THE FLOW CONTROL DEVICE. THIS SHALL COMPRISE EITHER:
 - MANUFACTURER'S PROPRIETARY GUARD/SCREEN, OR
 - A STAINLESS STEEL / UPVC TRASH SCREEN / BASKET FIXED WITHIN THE CHAMBER AND REMOVABLE FROM SURFACE FOR CLEANING.
 4. MAINTENANCE ACCESS: THE FLOW CONTROL DEVICE AND ANY GUARD/SCREEN/BASKET SHALL BE FULLY ACCESSIBLE FROM SURFACE LEVEL FOR INSPECTION, CLEANING AND REPLACEMENT.
 5. RODDING / JETTING ACCESS: PROVIDE RODDING/JETTING ACCESS VIA CHAMBER TO ENABLE MAINTENANCE OF INCOMING AND OUTGOING PIPEWORK.
 6. INSPECTION AND MAINTENANCE REGIME: AS A MINIMUM, INSPECT MH4:
 - MONTHLY DURING AUTUMN/WINTER AND AFTER HEAVY RAINFALL EVENTS
 - QUARTERLY DURING SPRING/SUMMER
 - REMOVE DEBRIS FROM SCREEN/BASKET, CLEAR SILT FROM SUMP, AND CHECK FLOW CONDITION AND FIXINGS
 7. BLOCKAGE RESILIENCE: IF EVIDENCE OF FREQUENT BLOCKAGE IS OBSERVED DURING OPERATION, INCREASE INSPECTION FREQUENCY AND/OR UPGRADE DEBRIS PROTECTION ARRANGEMENTS.

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Project			
Stanwick, Northfields Lane, Westergate, Chichester			
Drawing			
SURFACE WATER DRAINAGE STRATEGY 2 of 3			
Scale		Date	
NTS@ A1		JUNE '26	
Drawn		DO	
Drawing No.		Revision	
ENV24502-WDE-00-DR-2000		03	
☐ Preliminary ☒ Issued for Planning Approval ☐ Issued for Construction		☐ Detailed Design ☐ Issued for Tender ☐ As Built	
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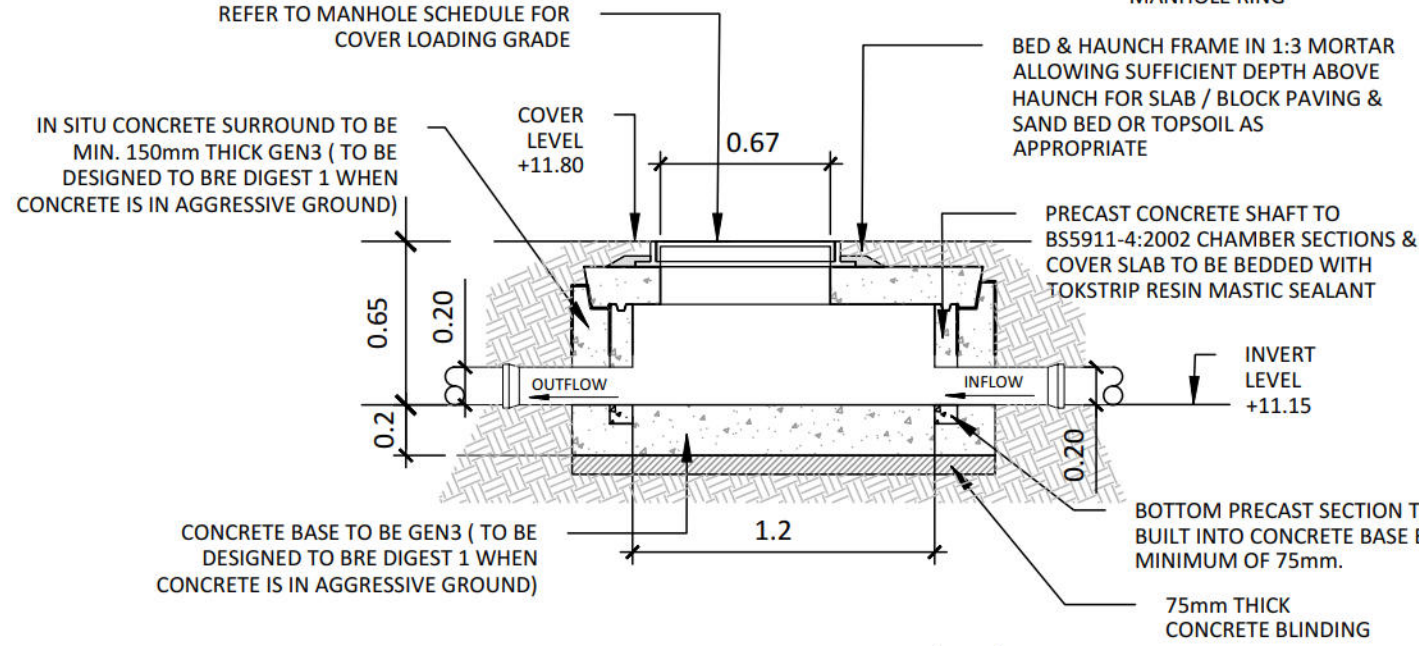
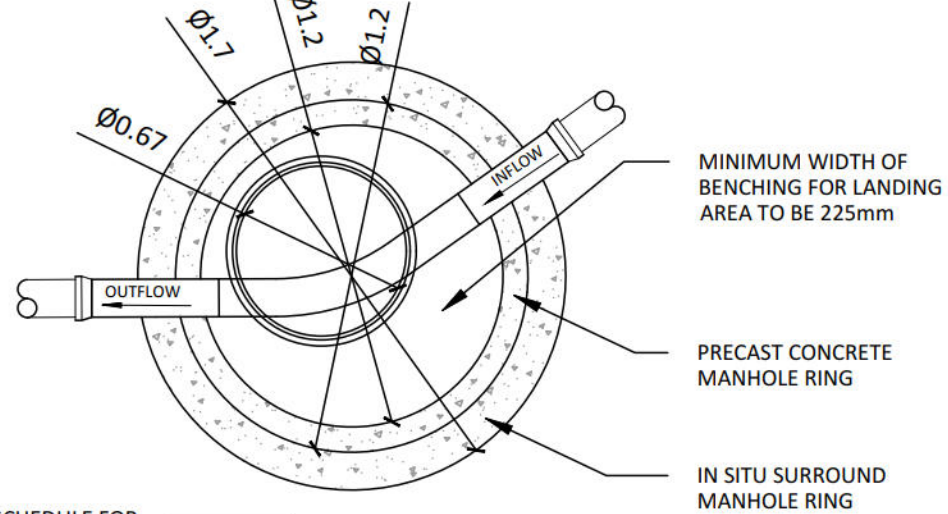


Appendix G

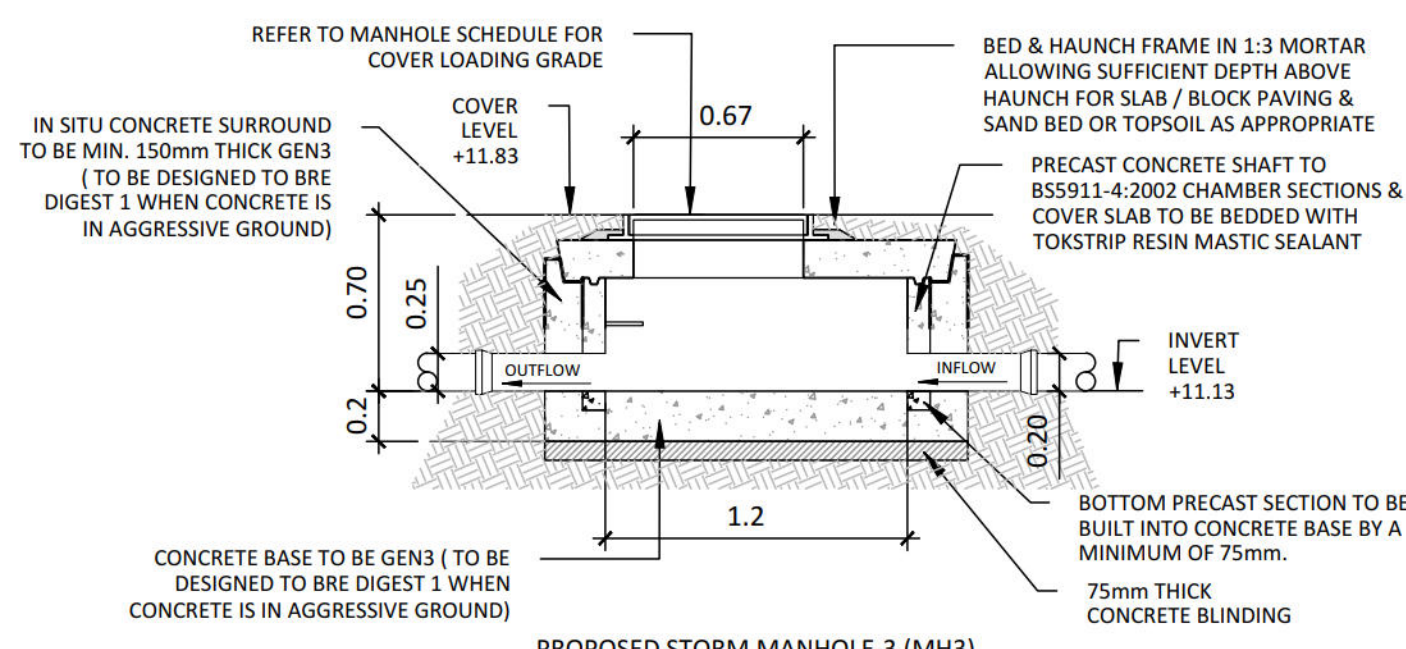
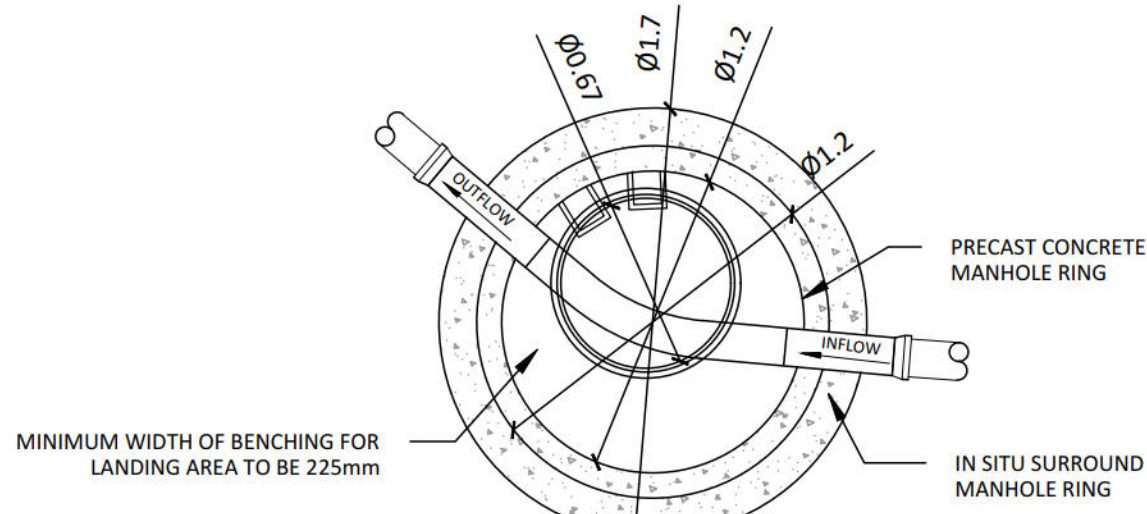
Surface Water Drainage Strategy 3 of 3
24502-ENV-ZZ-00-DR-D-3000



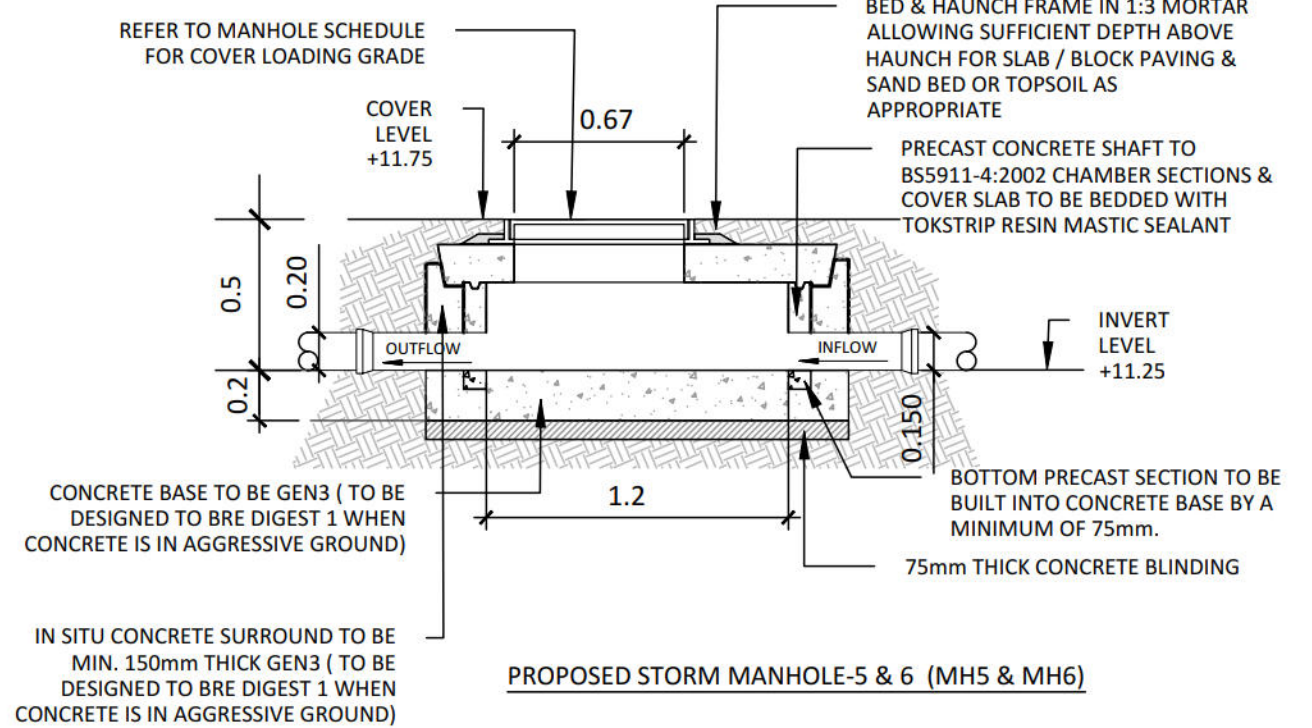
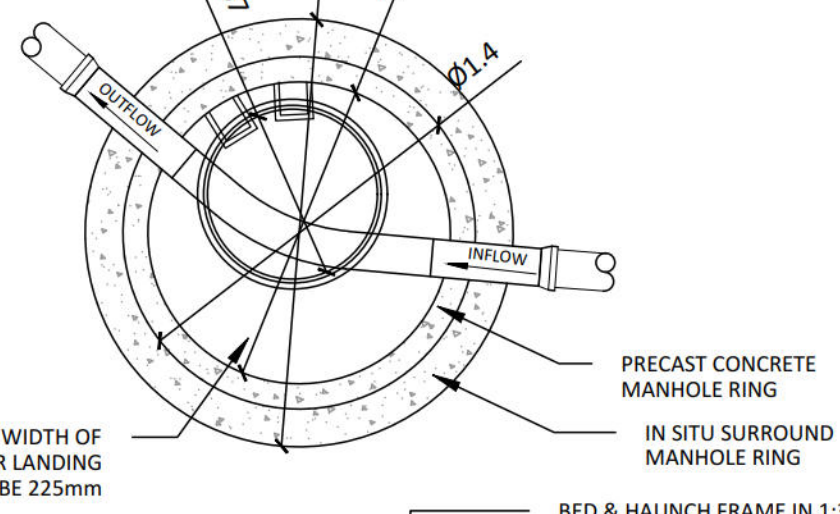
PROPOSED STORM MANHOLE-1 (MH1)



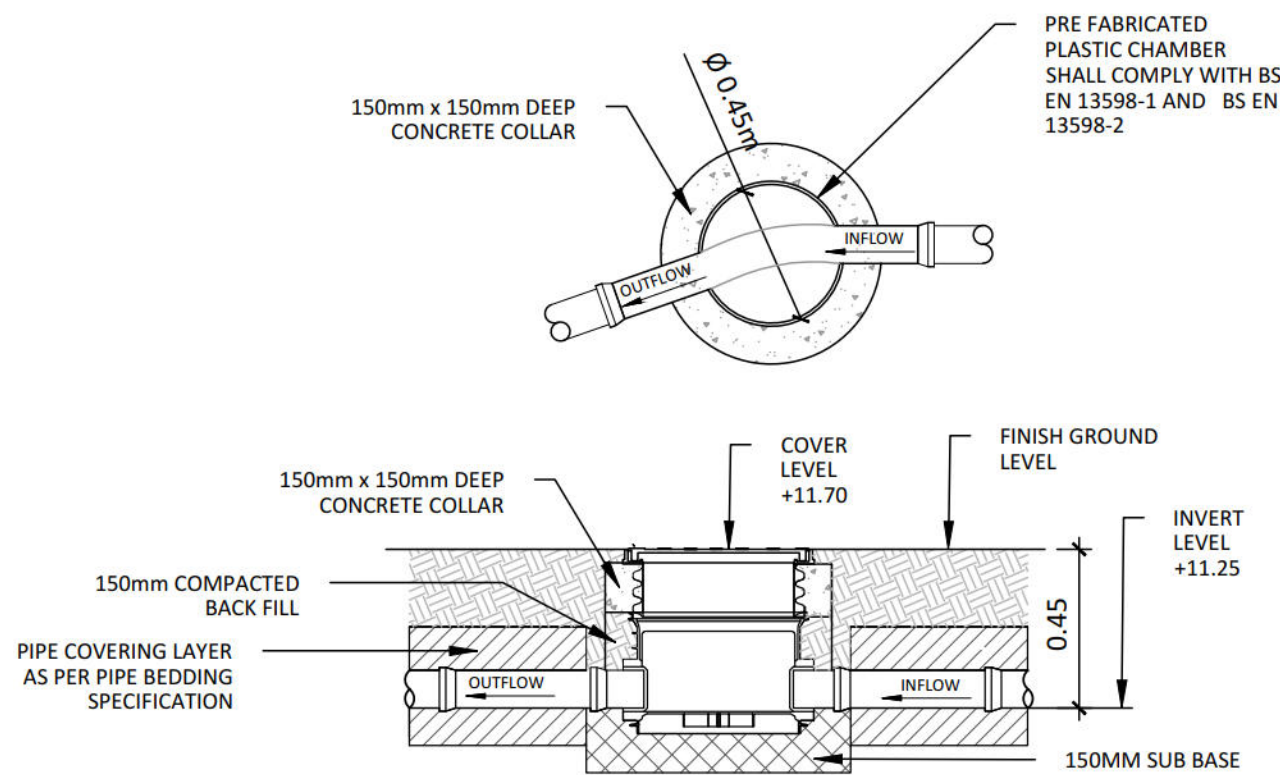
PROPOSED STORM MANHOLE-2 (MH2)



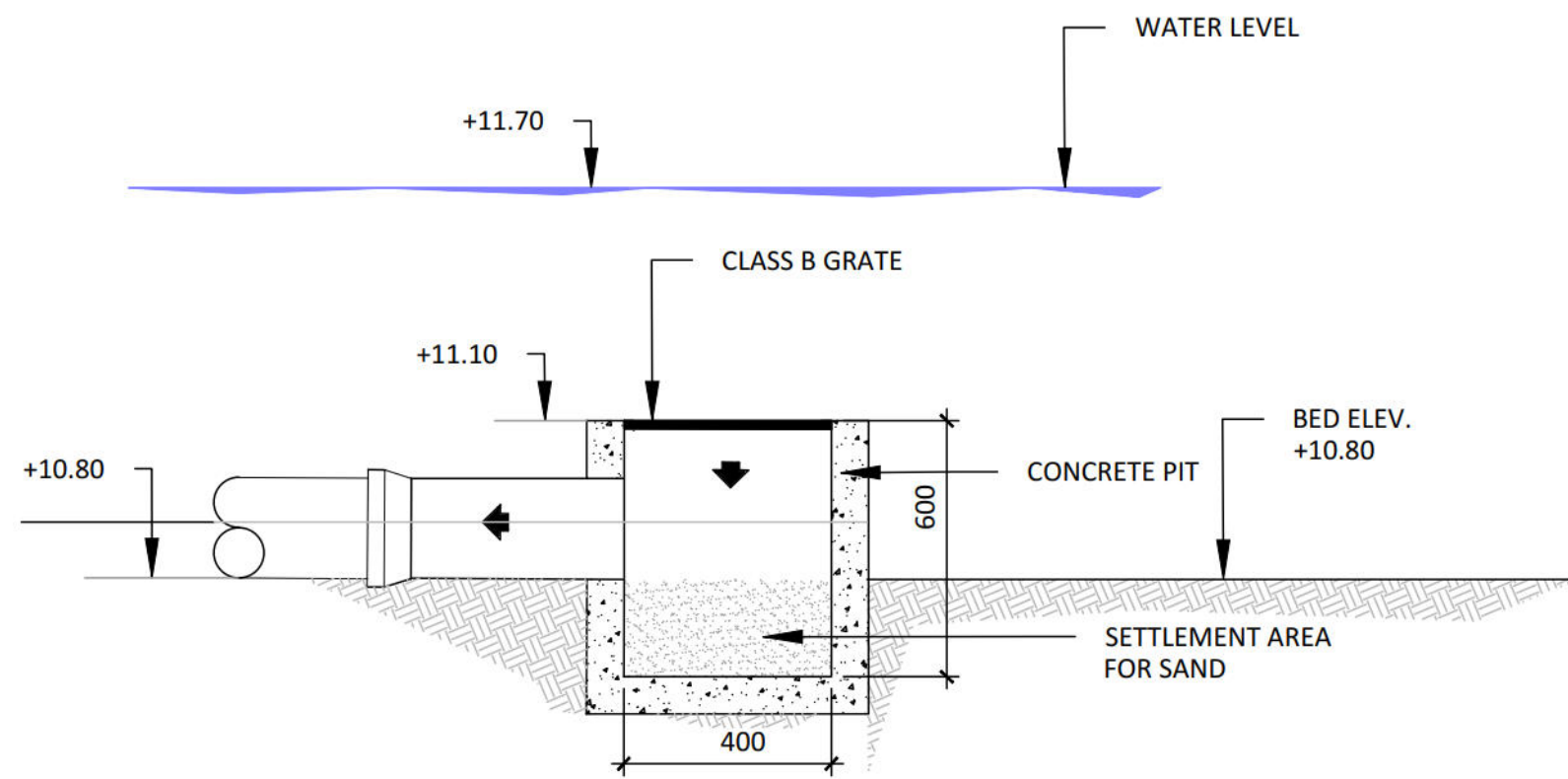
PROPOSED STORM MANHOLE-3 (MH3)



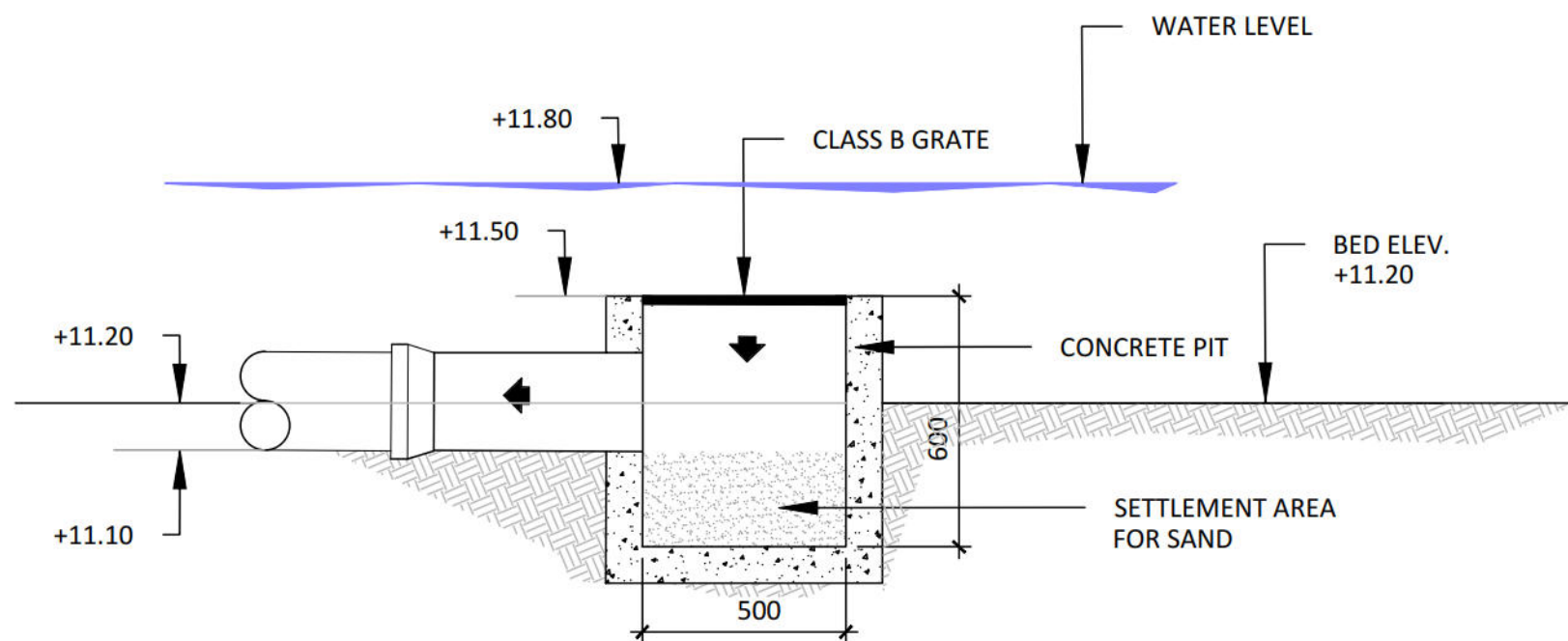
PROPOSED STORM MANHOLE-5 & 6 (MH5 & MH6)



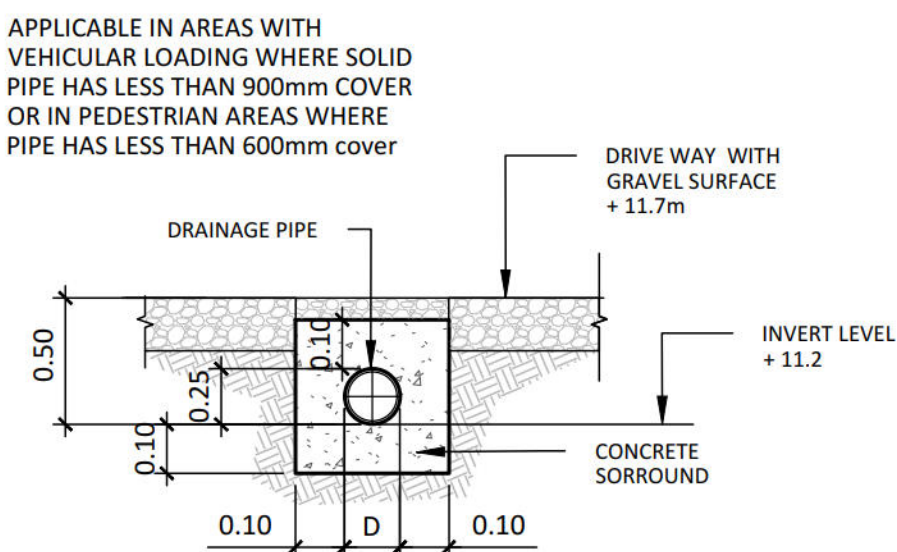
PROPOSED TYPICAL TYPE 5 INSPECTION CHAMBER (IC)1, 2, 3 & 4



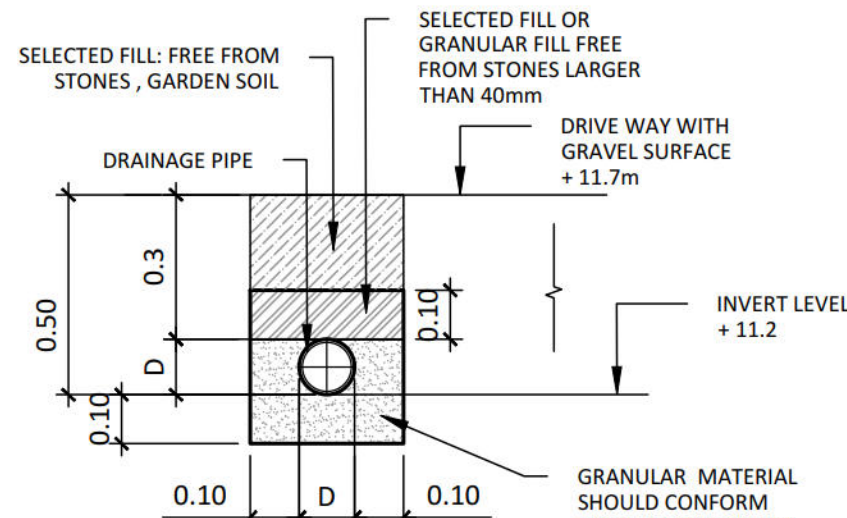
SAND AND LEAF TRAP DETAIL FOR SHALLOW DEPRESSION 1



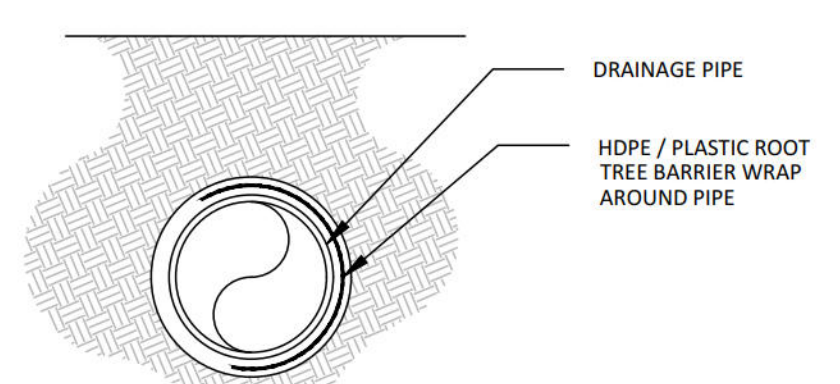
SAND AND LEAF TRAP DETAIL FOR SHALLOW DEPRESSION 2



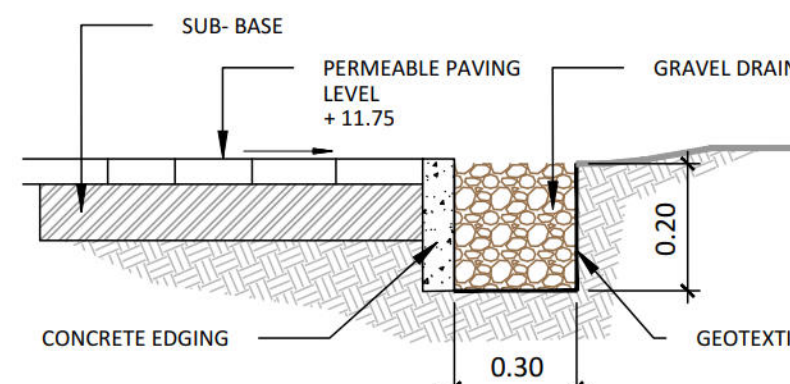
PROPOSED PIPE BEDDING FOR PIPE UNDER DRIVEWAY



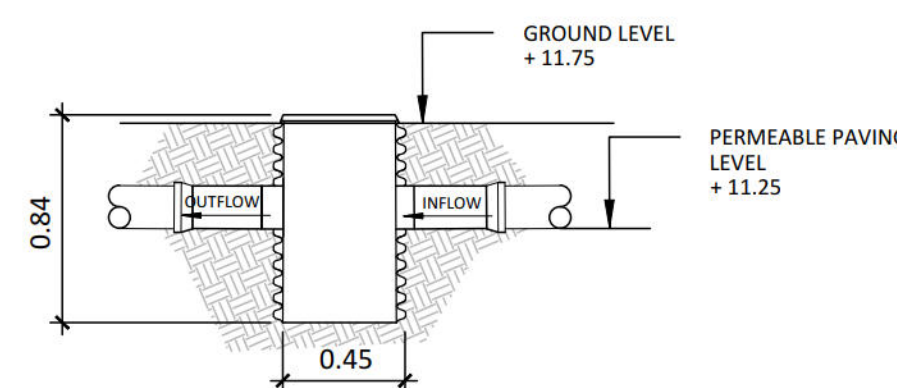
PROPOSED PIPE BEDDING FOR PIPE UNDER GREEN AREAS



PROPOSED PIPE PROTECTION TO TREE ROOTS



PROPOSED GRAVEL DRAIN CHANNEL



PROPOSED PLASTIC SILT TRAP

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7. ALL DIMENSIONS ARE IN METERS.

No	Date	Reason	DRN	CHK	APR
01	24/06/2026	Issued For Planning Approval	DO	JR	JR

REVISIONS



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Project

Stanwick, Northfields Lane, Westergate, Chichester

Drawing

SURFACE WATER DRAINAGE STRATEGY 3 of 3

Scale NTS@ A1 Date JUNE '26 Drawn DO

Drawing No. ENV24502-WDE-00-DR-3000 Revision 01

☐ Preliminary	☐ Detailed Design
☒ Issued for Planning Approval	☐ Issued for Tender
☐ Issued for Construction	☐ As Built

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Appendix H

InfoDrain Report

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: SuDS	Water Design Engineers (WDE):		





Catchment Area 1

Type : Catchment Area

Area (ha)	0.011
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	1.000
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area 2

Type : Catchment Area

Area (ha)	0.007
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	1.000
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area 3

Type : Catchment Area

Area (ha)	0.0455
-----------	--------

Preliminary Sizing

Volumetric Runoff Coefficient	1.000
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
	Report Details: Type: Inflows Storm Phase: SuDS		
Water Design Engineers (WDE):			



Catchment Area 4

Type : Catchment Area

Area (ha)	0.0778
-----------	--------

Preliminary Sizing	
Volumetric Runoff Coefficient	1.000
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing	
Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area 5

Type : Catchment Area

Area (ha)	0.012
-----------	-------

Preliminary Sizing	
Volumetric Runoff Coefficient	1.000
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing	
Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
	Water Design Engineers (WDE):		
Report Details: Type: Junctions Storm Phase: SuDS			



Name	Junction Type	Easting (m)	Northing (m)	Cover Elevation (m)	Depth (m)	Invert Elevation (m)	Chamber Shape	Diameter (m)
MH2	Manhole	494267.760	105703.922	11.800	0.750	11.050	Circular	1.200
MH3	Manhole	494234.063	105717.942	11.830	0.860	10.970	Circular	1.200
MH1	Manhole	494240.879	105728.221	11.770	0.970	10.800	Circular	1.200
MH5	Manhole	494248.118	105721.586	11.750	0.500	11.250	Circular	1.200
MH6	Manhole	494245.141	105714.722	11.750	0.500	11.250	Circular	1.200
MH4	Manhole	494234.689	105724.214	11.800	0.935	10.865	Circular	1.500

Name	Lock
MH2	None
MH3	None
MH1	None
MH5	None
MH6	None
MH4	None

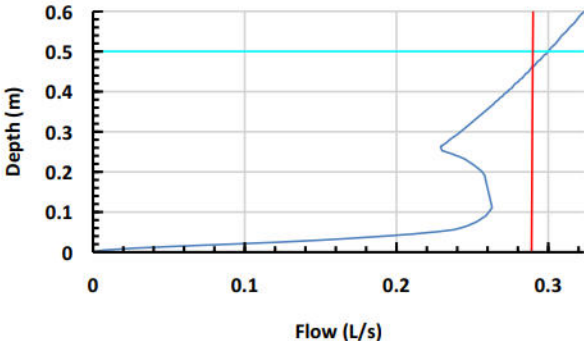
Inlets

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
MH2	Inlet	P3	(None)	No Restriction
MH3	Inlet	P4	(None)	No Restriction
MH1	Inlet	P1	(None)	No Restriction
MH5	Inlet	Catchment Area 5	(None)	No Restriction
MH6	Inlet	Catchment Area 2 Catchment Area 1	(None)	No Restriction
MH4	Inlet	P7 P6 P5 P2	(None)	No Restriction

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
Report Details: Type: Junctions Storm Phase: SuDS	Water Design Engineers (WDE):		



Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
MH2	Outlet	P4	Free Discharge
MH3	Outlet	P5	Free Discharge
MH1	Outlet	P2	Free Discharge
MH5	Outlet	P7	Free Discharge
MH6	Outlet	P6	Free Discharge
MH4	Outlet	(None)	Hydro-Brake®
	Invert Elevation (m)	11.700	
	Design Depth (m)	0.500	
	Design Flow (L/s)	0.3	
	Objective	Minimize Upstream Storage Requirements	
	Application	Surface Water Only	
	Sump Available	☒	
	Flush Flow (L/s)	0.29	
	Unit Reference	SFF-0029-3000-0500-2900	
			

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: SuDS	Water Design Engineers (WDE):		





Bioretention 2 (shallow depression)

Type : Bioretention

Ponding Area

Exceedance Elevation (m)	11.800
Depth (m)	0.600
Base Elevation (m)	11.200
Top Area (m²)	430.00
Side Slope (1:x)	5.00
Base Area (m²)	270.85
Freeboard (mm)	100
Porosity (%)	100
Length (m)	26.524
Long. Slope (1:x)	1000.00
Filtration Rate (m/hr)	0.000
Friction Scheme	Manning's n
n	0.02
Total Volume (m³)	195.668

Filter Area

Base Elevation (m)	0.00
--------------------	------

Filtration Layers

Use	Name	Filtration Layer Depth (mm)	Porosity (%)	Conductivity (m/hr)	Soil Type
	Soil	0.00	100	0.000	Soil Type
	Storage	0.00	100	0.000	

Inlets

Inlet

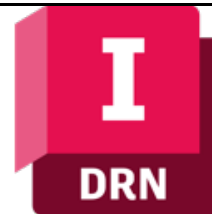
Inlet Type	Point Inflow
Incoming Item(s)	Catchment Area 4
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	P3
Outlet Type	Free Discharge

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: SuDS	Water Design Engineers (WDE):		



Advanced

Safety Factor	2.0
---------------	-----

Ponding Area

Side Infiltration Rate (m/hr)	0.0
Base Perimeter (m)	73.472
Top Perimeter (m)	85.472

Filter Area

Base Infiltration Rate (m/hr)	0.0
Side Infiltration Rate (m/hr)	0.0



Bioretention1 (shallow depression)

Type : Bioretention

Ponding Area

Exceedance Elevation (m)	11.800
Depth (m)	1.000
Base Elevation (m)	10.800
Top Area (m²)	110.00
Side Slope (1:x)	1.0
Base Area (m²)	90.00
Freeboard (mm)	100
Porosity (%)	100
Length (m)	18.758
Long. Slope (1:x)	1000.00
Filtration Rate (m/hr)	0.00
Friction Scheme	Manning's n
n	0.02
Total Volume (m³)	107.100

Filter Area

Base Elevation (m)	0.00
--------------------	------

Filtration Layers

Use	Name	Filtration Layer Depth (mm)	Porosity (%)	Conductivity (m/hr)	Soil Type
	Soil	0.00	100	0.00	Soil Type
	Storage	0.00	100	0.00	

Inlets

Inlet

Inlet Type	Lateral Inflow
Incoming Item(s)	Catchment Area 3
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026			
	Designed by: DO	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Storm Phase: SuDS	Water Design Engineers (WDE):			

Outlets

Outlet				
<table border="1"> <tr> <td>Outgoing Connection</td> <td>P1</td> </tr> <tr> <td>Outlet Type</td> <td>Free Discharge</td> </tr> </table>	Outgoing Connection	P1	Outlet Type	Free Discharge
Outgoing Connection	P1			
Outlet Type	Free Discharge			

Advanced

Safety Factor	2.0
Ponding Area	
Side Infiltration Rate (m/hr)	0.0
Base Perimeter (m)	47.112
Top Perimeter (m)	49.244
Filter Area	
Base Infiltration Rate (m/hr)	0.0
Side Infiltration Rate (m/hr)	0.0

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
	Report Details: Type: Connections Storm Phase: SuDS		
Water Design Engineers (WDE):			

Name	Length (m)	Connection Type	Slope (1:x)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Elevation (m)	Upstream Invert Elevation (m)
P4	36.498	Pipe	455.000		0.6	200	11.800	11.050
P3	15.273	Pipe	305.000		0.6	200	11.827	11.100
P1	6.013	Pipe	40.065		0.6	200	11.819	10.600
P7	13.684	Pipe	45.543		0.6	200	11.750	11.250
P6	14.119	Pipe	46.672		0.6	200	11.750	11.250
P5	6.303	Pipe	60.193		0.6	250	11.830	10.970
P2	7.374	Pipe	113.447		0.6	250	11.770	10.800

Name	Downstream Cover Elevation (m)	Downstream Invert Elevation (m)	Part Family	Lock	Culvert Type	Culvert Entrance
P4	11.830	10.970		None	(None)	(None)
P3	11.800	11.050		None	(None)	(None)
P1	11.770	10.800		None	(None)	(None)
P7	11.800	10.865		None	(None)	(None)
P6	11.800	10.865		None	(None)	(None)
P5	11.800	10.865		None	(None)	(None)
P2	11.800	10.865		None	(None)	(None)

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
Report Details: Type: Network Design Criteria Storm Phase: SuDS	Water Design Engineers (WDE):		



Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

FEH

Type: FEH

Site Location	GB 492752 106148 SU 92752 06148
Return Period (years)	100.0
Rainfall Version	2022

Pipe Options

Lock Slope Options	None
Design Options	Minimize Excavation
Design Level	Level Crowns
Min. Slope (1:x)	100.00
Max. Slope (1:x)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☒
Reduce Channel Depths	☐

Manhole Options

Apply Offset	☐
--------------	--------------------------

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
	Report Title: Rainfall Analysis Criteria		
Water Design Engineers (WDE):			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	10
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: SuDS	Water Design Engineers (WDE):		





Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area 1	FEH: 100 years: +45 %: 15 mins: Summer	0.01	9.0	3.925
Catchment Area 2	FEH: 100 years: +45 %: 15 mins: Summer	0.01	5.8	2.534
Catchment Area 3	FEH: 100 years: +45 %: 15 mins: Summer	0.04	43.9	19.115
Catchment Area 4	FEH: 100 years: +45 %: 15 mins: Summer	0.08	75.0	32.617
Catchment Area 5	FEH: 100 years: +45 %: 15 mins: Summer	0.01	10.4	4.522

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
	Report Details: Type: Junctions Summary Storm Phase: SuDS		
Water Design Engineers (WDE):			



Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Elevati on (m)	Invert Elevati on (m)	Max. Elevati on (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
MH2	FEH: 100 years: +45 %: 1440 mins: Summer	11.800	11.050	11.056	0.006	0.0	0.007	0.000	0.0	1.366	OK
MH3	FEH: 100 years: +45 %: 15 mins: Summer	11.830	10.970	10.978	0.008	0.6	0.009	0.000	0.0	0.037	OK
MH1	FEH: 100 years: +45 %: 15 mins: Summer	11.770	10.800	10.888	0.088	23.2	0.100	0.000	0.0	10.957	OK
MH5	FEH: 100 years: +45 %: 15 mins: Summer	11.750	11.250	11.304	0.054	10.4	0.061	0.000	10.2	4.523	OK
MH6	FEH: 100 years: +45 %: 15 mins: Summer	11.750	11.250	11.316	0.066	14.8	0.074	0.000	14.6	6.460	OK
MH4	FEH: 100 years: +45 %: 15 mins: Summer	11.800	10.865	10.981	0.116	24.8	0.205	0.000	0.0	10.998	OK

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
	Report Details: Type: Stormwater Controls Summary Storm Phase: SuDS		
Water Design Engineers (WDE):			



Critical Storm Per Item: Rank By: Max. US Depth

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Bioretention 2 (shallow depression)	FEH: 100 years: +45 %: 1440 mins: Winter	11.559	11.560	0.433	0.460	3.3	111.302	0.000	0.000	0.0	1.367	43.117	OK
Bioretention 1 (shallow depression)	FEH: 100 years: +45 %: 1440 mins: Winter	11.691	11.691	1.072	1.091	3.0	104.970	0.000	0.000	0.0	0.000	1.988	OK

Housing Extension and Site Drainage: Stanwick, Northfields Lane, Westergate,	Date: 24/06/2026		
	Designed by: DO	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: SuDS	Water Design Engineers (WDE):		





Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
P4	FEH: 100 years: +45 %: 1440 mins: Summer	Pipe	MH2	MH3	11.800	11.056	0.004	1.366	0.1	0	0.0	OK
P3	FEH: 100 years: +45 %: 1440 mins: Summer	Pipe	Bioretention 2 (shallow depression)	MH2	11.827	11.546	0.005	1.378	0.1	0	0.0	OK
P1	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	Bioretention 1 (shallow depression)	MH1	11.819	11.059	0.094	10.957	0.0	0	0.0	OK
P7	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	MH5	MH4	11.750	11.304	0.085	4.523	0.8	0.16	10.2	OK
P6	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	MH6	MH4	11.750	11.316	0.091	6.460	1.1	0.23	14.6	OK
P5	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	MH3	MH4	11.830	10.978	0.062	0.000	0.0	0	0.0	OK
P2	FEH: 100 years: +45 %: 15 mins: Summer	Pipe	MH1	MH4	11.770	10.888	0.102	10.959	0.0	0	0.0	OK

Appendix I

Land Drainage Consent



West Sussex Flood Risk Partnership



Ordinary Watercourse Land Drainage Consent

Land Drainage Act 1991

Name:

Mr G Vos

Consent applying to:

Connection to existing ditch, at Stanwick, Northfields lane, Aldingbourne.

Consent Number LDC/ARUN/2021/012

**Effective from
11th August 2021**

This note does not form part of the Certificate of Authorisation.

Introduction

The West Sussex Drainage Partnership

The West Sussex Drainage Partnership is a body consisting of West Sussex County Council and the District and Borough Authorities within West Sussex acting together in partnership, to carry out specific duties under the Land Drainage Act 1991 and Flood and Water Management Act 2010. It operates under delegated powers under section 13(4) of the Flood and Water Management Act 2010.

The Partnership aims to manage flood risk in the county through continued maintenance and regulation of ordinary watercourses, education and assistance of riparian ("river side") owners and through promotion of sustainable drainage systems (SuDS).

Legislation

Land Drainage Consents are required by virtue of the Land Drainage Act 1991. The following activities on an Ordinary (non-main) Watercourse require Local Authority Consent:

under Section 23 of the Land Drainage Act 1991;

- the erection or alteration of any mill dam, weir or other like obstruction to the flow of any watercourse
- the erection or alteration of any culvert that would be likely to affect the flow of any watercourse

under Sections 17 and 20(2) of the Land Drainage Act 1991

- any drainage works carried out by a local authority against flooding in connection with any watercourse

under Section 61F Land Drainage Act 1991 (Inserted by Schedule 22 Environment Act 1995)

- the operation of any drainage works, under the control of any Internal Drainage Board or local authority, so as to manage the level of water in a watercourse for the purposes of facilitating spray irrigation.

Note: Consent under the above legislation is required irrespective of whether the works are permanent or temporary.

Contraventions

In relation to Ordinary Watercourses, West Sussex Drainage Partnership can under Section 24 of the Land Drainage Act 1991 serve a legal notice requiring the person to abate the nuisance within a specified time. Failure to abide by such a notice can result in the West Sussex Drainage Partnership carrying out the necessary remedial work and seeking to recover costs.

Land Drainage Act 1991

Land Drainage Consent

Control of works affecting watercourses and/or flood defences

Consent number LDC/ARUN/2021/012

To: Mr G Vos

The West Sussex Drainage Partnership in exercise of its powers under Section 23 of the Land Drainage Act 1991 and subject to the conditions attached, hereby grants its consent in relation to the works or operations described in this Consent.

Watercourse: Not named

Location: Stanwick, Northfields Lane, Aldingbourne

Map reference: SU 93881 05715

Description of works: Connection of 100mm diameter surface water drain to existing ditch and associated headwall. Flows restricted to 2l/s.

As detailed on plans and sections

Drg no. 2021_P0137_002 Rev 0, PL/03 Rev D

In supporting documentation

The West Sussex Drainage Partnership does not accept any responsibility for the design and construction of the works referred hereto and any liability for any loss or damage which may arise out of their design, construction, maintenance or use.

This Consent shall come into effect on

Date 11th August 2021

Signed on behalf of the West Sussex Drainage Partnership



Mr Paul Cann
Principal Engineer (Drainage)

Date of signing

11th August 2021

Conditions

This consent is granted with the following conditions:

General

N/A

Timing

Works to be completed within six months of the date of this consent or else the consent will be deemed to have expired.

Temporary Works

N/A

Site Specific

Ditch to be cleaned out/desilted as necessary.

Other Information

This Consent does not remove from the applicant the necessity to obtain other licences, consents, approvals or permissions (including planning permission) which may be required in law or in order to comply with any duties or responsibilities for conservation or protection of the environment.

It is the applicants responsibility to ensure that he obtains the consent / permission of any owners and occupiers affected by the works.

This Consent does not confer any rights of entry or rights over property.

Works should be arranged to ensure there is no increase in flood risk to third parties.

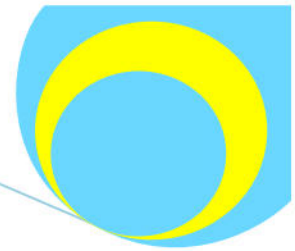
That the LLFA does not accept any responsibility for the design and construction of the works that are the subject of this Consent and any liability for any loss or damage which may arise out of their design, construction, maintenance or use.

The works must be undertaken in accordance with the approved plans, drawings, calculations, specifications and other relevant documents.

All reasonable precautions must be taken during the undertaking of the works so as not to obstruct, impede or interfere with the flow of water in, into or out of the watercourse and not to damage the banks or bed or any drainage works without the approval of the Lead Local Flood Authority.

Appendix J

Infiltration Test Result



Infiltration Test Results

Front test pit

Dimensions 1370mm x 630mm x 1000mm (l x w x d)

Percolation test details.

First test 31.1.21

Time at 75% level 0733

Time at 25% level 1955

Total test time 12h 22 mins

Second test 1.2.21

Time at 75% level 0613

Time at 25% level 1717

Test complete 11h 2 mins

Third test 2.2.21

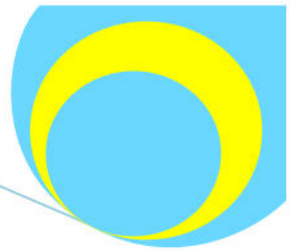
Time at 75% level 0609

Time at 25% level 1812

Test complete 12h 3 mins

Infiltration rate = 0.0122 m/hr





Back test pit

Dimensions 1550 x 660 x 1000mm (l x w x d)

Percolation test details

First test 23.1.21

Time at 75% level 1236

Time at 25% level 1857

Test complete 6h 21mins

Second test 24.1.21

Time at 75% level 0740

Time at 25% level 1752

Test complete 10h 12 mins

Third test 25.1.21

Time at 75% level 0600

Time at 25% level 1510

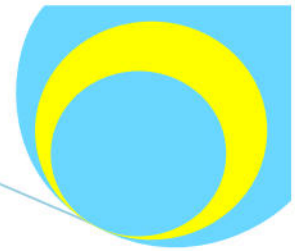
Test complete 9h 10 mins

Infiltration rate = 0.0155m/hr



Appendix K

Ground Water Monitoring Result



Groundwater Monitoring

All measurements are in mm below ground level

DATE	FRONT TEST PIT	BACK TEST PIT
23.1.21	1000mm	Percolation test
24.1.21	1000mm	Percolation test
25.1.21	1000mm	Percolation test
26.1.21	950mm	900mm
27.1.21	950mm	800mm
28.1.21	900mm	600mm
29.1.21	No data	500mm
30.1.21	No data	500mm
31.1.21	Percolation test	630mm
1.2.21	Percolation test	650mm
2.2.21	Percolation test	630mm
3.2.21	830mm	550mm
4.2.21	880mm	580mm
6.2.21	890mm	630mm
7.2.21	900mm	600mm
9.2.21	930mm	630mm
10.2.21	930mm	630mm
11.2.21	930mm	640mm
13.2.21	940mm	670mm
14.2.21	960mm	690mm

