

Final



Drainage Report

Toat Cafe, Stanes Cottage, Stanes Farm & Whitelands Farm, Pulborough

Date: May 2026

Ref: TCPo1

Status: Final



Prepared By: KPT Properties Ltd

For: Antonio Avenue Ltd

Appendix I - Southern Water sewer asset map

CONTENTS

1	Introduction	1
2	Pre-Development Conditions	3
2.1	Existing Site description	3
2.2	Flood Risk Assessment.....	3
2.3	Existing surface water drainage systems	4
2.4	Existing foul water drainage systems	5
2.5	Ground Conditions	5
2.6	Drainage Hierarchy.....	5
2.7	Greenfield runoff rates	7
2.8	Climate change allowances	7
2.9	Flood Risk Mitigation Measures	8
3	Surface Water Drainage Design proposals.....	9
3.1	SuDs Strategy.....	9
3.2	SuDS Suitability Assessment.....	9
3.3	National standards for sustainable drainage systems (2025)	10
3.4	Standard 1 – Runoff Destinations	11
3.5	Standard 2 – Management of everyday rainfall (interception).....	11
3.6	Standard 3 - Management of extreme rainfall and flooding	12
3.7	Standard 4: Water Quality	14
3.8	Standard 5: Amenity	15
3.9	Standard 6: Biodiversity.....	16
3.10	Standard 7: Design of drainage for construction, operation, maintenance, decommissioning and structural integrity	16
3.11	Surface Water Drainage Proforma	16
4	Foul Sewerage Strategy	17

APPENDICES

Appendix A – Topographical Survey

Appendix B – Greenfield Runoff Rate Estimation

Appendix C – Contributing Area plan

Appendix D - Drainage Strategy layout

Appendix E - Hydraulic modelling outputs

Appendix F – Exceedance mapping

Appendix G – Maintenance Schedules

Appendix H – WSCC Surface Water Drainage Proforma

Appendix I - Southern Water sewer asset map

The information contained in this report is intended for the use of the named client (or their approved contractors). Should a third party rely on any part of this report, that party does so wholly at its own risk and KPT Properties Ltd disclaim any liability to such parties. Should the purposes for which the report is used, or the proposed use of the site change, or details of the development proposals change, this report may no longer be valid and further use of reliance upon the report in those circumstances shall be at the client's risk. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The Author should in all such altered circumstances be commissioned to review and update this report accordingly.

1 INTRODUCTION

Scope of Services

KPT Properties Ltd was appointed by Antonio Avenue Ltd in November 2025 to provide flood risk, and surface water drainage design advice in relation to the proposed development at Toat Cafe, Stanes Cottage, Stanes Farm & Whitelands Farm, Pulborough, RH210 1DN. The site coordinates are: 505,990mE, 121,301mN

Development location and planning history

The site extents are shown outlined in red in Figure 3 below. A site location plan is provided in Figure 1 below.

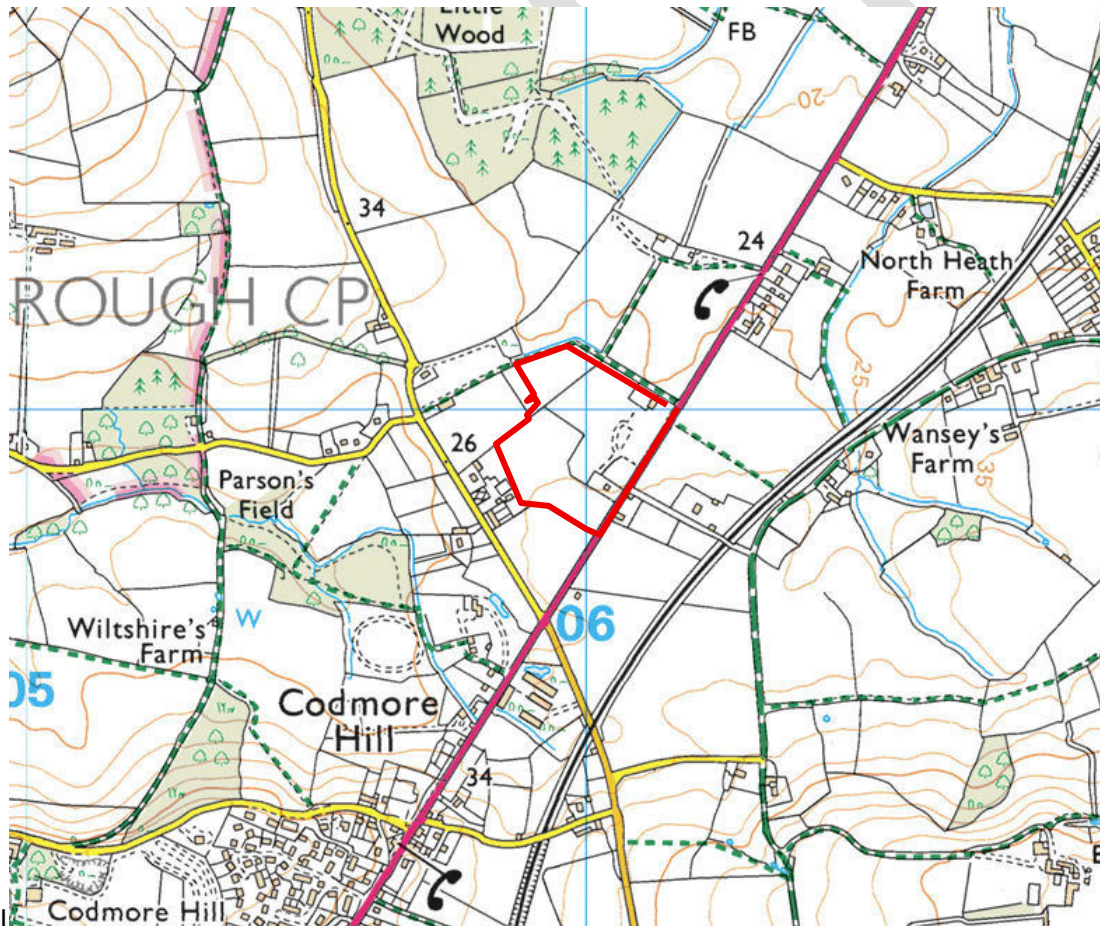


Figure 1: Site Location Plan

The site is located to the north of Pulborough, adjacent and north-west of Stane Street and bounded by fields to its northern, southern and western borders.

The site is currently a predominantly greenfield site although a large area of previously developed land lies close to the highway.

The proposals fall within Horsham District Council. West Sussex County Council discharge the responsibility of the Lead Local Flood Authority (LLFA).

This FRA has been prepared to support the outline planning application for the development and is compiled in accordance with current national and WSCC guidance along with the CIRIA SuDS manual (C753).

2 PRE-DEVELOPMENT CONDITIONS

2.1 Existing Site description

The site is located within a field of a broadly quadrilateral shape bounded by fields. The red-line boundary of the development describes an area of around 62,500sqm (6.25ha).

The surface levels fall from the southern corner of the site (31.67m AOD) to the northern corner with a base of ditch level of 25.02m AOD. A Topographical Survey is provided in **Appendix A**.

2.2 Flood Risk Assessment

A plan of the fluvial flood risk to the site is provided in Figure 2 below. The site is located within Flood zone 1.

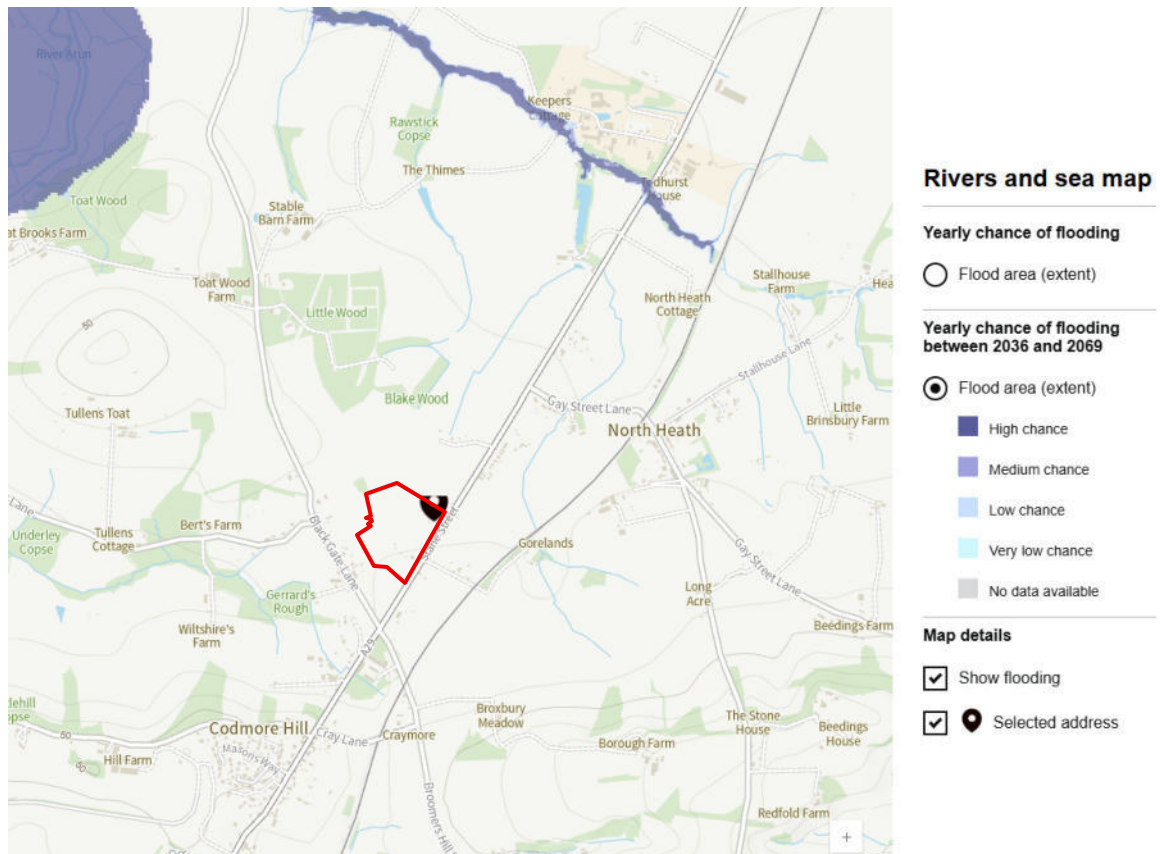


Figure 2: Fluvial flood risk at the site (Site outlined in red)

The surface water flood map is provided in Figure 3 below. It indicates limited areas where there is a high probability of surface water flooding. These areas correlate with ditches located at low point through the site which have been provided to drain the land. The small area of flooding in the north-east corner correlates well with the hardstanding parking area serving Toat Cafe which is restricted to the locations of the ditches shown on the topographical survey.

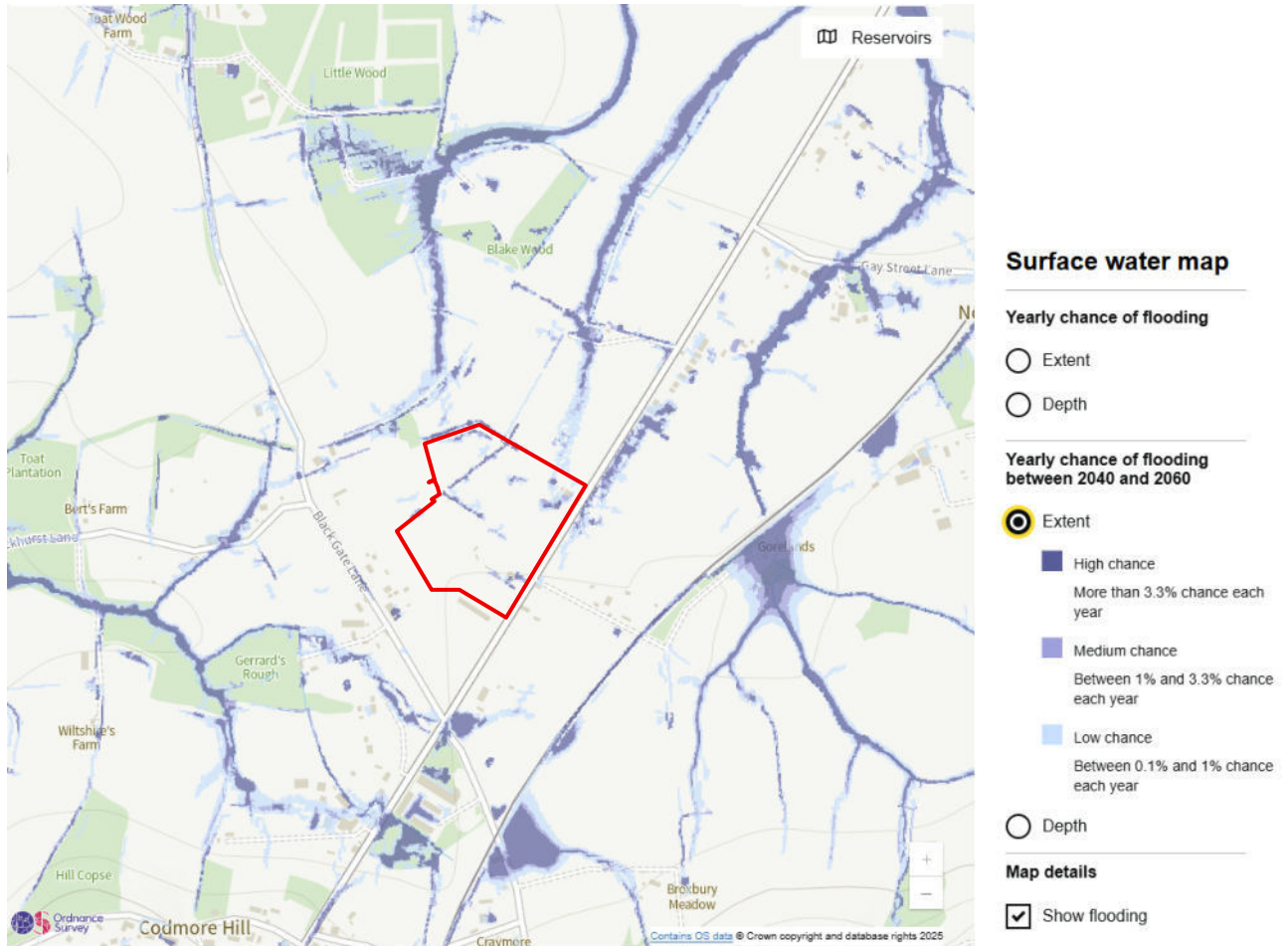


Figure 3: Surface Water flood risk at the site (Site outlined in red)

The site is outside a groundwater flood alert area and flooding from reservoirs is not likely to occur.

2.3 Existing surface water drainage systems

There appears to be a drainage system within the site indicated on the topographical survey. The numerous ditches within the site drain rainfall runoff from the hardstanding areas associated with the café, so the ditches are the most likely methods of draining the site.

These ditches are assumed to convey runoff in a north-easterly direction following the ground profile towards watercourses and onto the River Arun. This is supported by inspection of the ground topography and the direction of overland flow models as indicated in the surface water flood risk mapping.

It is noteworthy that the topographical survey shows that the high points in the site are on the eastern boundary alongside Stane Street. By inspection of the topographical survey and mapping, it is believed that drainage from the highway does not pass through the red-line boundary of the site.

2.4 Existing foul water drainage systems

Some chambers are located on the topographical survey which suggest that the buildings close to the Toat cafe are served by a foul drainage system. The destination of foul drainage from this site is not known. Given the distance of the site from the public sewer system, it is believed that foul sewage discharges to the local watercourses following treatment through septic tanks.

2.5 Ground Conditions

A preliminary Ground contamination Risk Assessment Report has been prepared by Ashdown Site Investigations Ltd (Report ref. R17021 dated December 2025). The ground conditions at the site have not been examined by a geotechnical survey, however the report states that the site is underlain by a bedrock of the Weald Clay Formation.

The Soilsclapes website describes the area as being ‘Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils’ which have impeded drainage (see Figure 4). This supports the indications from the Ashdown report and the presence of ditches to drain the land.

It is concluded that disposal of surface water runoff solely by infiltration forms of SuDS would not be suitable at the site due to largely impermeable soils.

2.6 Drainage Hierarchy

Part H3 of the Building Regulations sets out the hierarchy of preference for the disposal of surface water from new development as follows:

Rainwater Drainage

H3... (3) Rainwater from a system provided pursuant to sub-paragraphs (1) and (2) shall discharge to one of the following, listed in order of priority:

a) An adequate soakaway or some other adequate infiltration system; or, where that is not reasonably practicable,

- b) A watercourse, or, where that is not reasonably practicable,
- c) A sewer.

From inspection of the data available for the site, the most appropriate destination for surface water is to the ditch located to the north-east of the site. This follows the existing surface water runoff route for the site. It is proposed that an outlet into the existing ditch would be suitable.

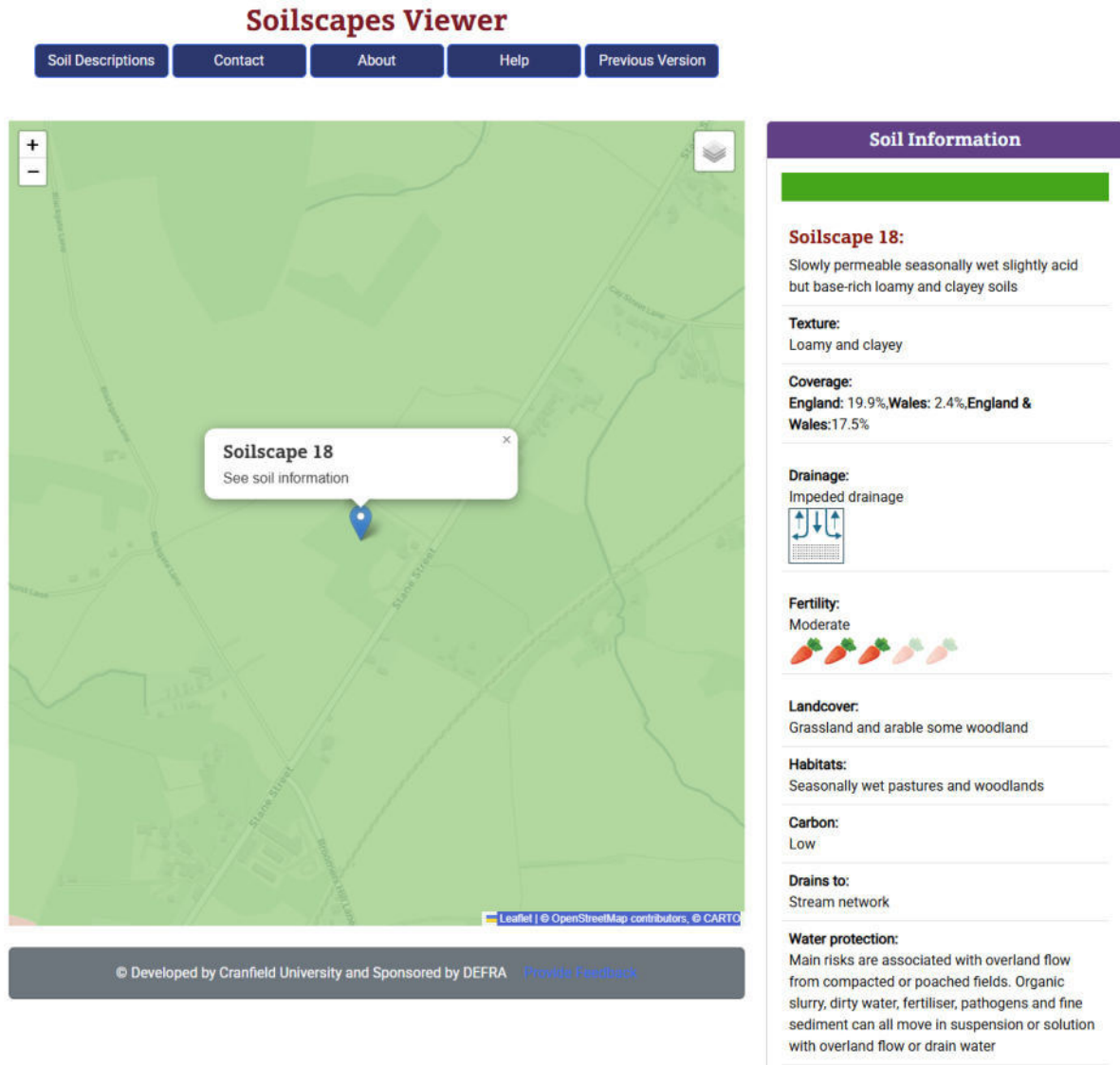


Figure 4: Soilscape mapping

2.7 Greenfield runoff rates

The site is currently occupied by buildings and hardstanding areas, some of these areas are drained by a piped system to field ditches (see topographical survey). The extent of hardstanding and roof area is approximately 6,000 sqm (0.6ha) and it is most likely that this drains to the existing ditches conveying runoff to the northern boundary of the site.

Where a drainage system is not observed to exist (i.e. within the parking area to the café) rainfall runoff is likely to pond at-surface and slowly drain to the ditches which convey runoff towards the local watercourses.

The site is considered to be greenfield with runoff from saturated soils draining to existing ditches, however the existing site would clearly have a flashy response to rainfall events due to the large area of hardstanding and the very slowly permeable nature of the Weald Clay.

An estimate of the greenfield runoff rate has been made using HR Wallingford's Greenfield runoff rate estimation tool used in conjunction with FEH Point Descriptors purchased from the UK Centre for Ecology & Hydrology's Flood Estimation Handbook Web Service. The output from that tool is provided in **Appendix B**. It states that the site's calculated value for QBAR is 75 l/s.

This value may be used as the peak allowable discharge rate from the development for the 50% AEP event after completion. It may also be used as the peak allowable discharge rate for the 1% AEP (i.e. 1 in 100 year) event since the volume of runoff discharged from the development is expected to be greater than the volume of greenfield runoff for the same event.

2.8 Climate change allowances

New developments must account for climate change and guidance for the allowances to be applied to each river catchment nationally is provided by the Environment Agency. Each river catchment has a specified peak rainfall allowance for the 3.3% and 1% annual exceedance rainfall event for the 2050s and 2070s epochs.

New development with a lifetime of 80 years is expected to be assessed against the 2070s epoch and apply the climate change allowance specified. For the Arun and Western Streams Management catchment, the upper end allowance for the 3.3% annual exceedance rainfall event is 40% and for the 1% annual exceedance rainfall event it is 45%.

These values are used in the hydraulic modelling to confirm that the surface water drainage strategy ensures that there is no increase in flood risk from the development and that the development is safe from surface water flooding.

2.9 Flood Risk Mitigation Measures

Of all sources of flooding, only that from pluvial (surface water) flooding is High. However, the areas where flooding is predicted correlates with the ditches located on the site and the hardstanding area used for parking at Toat Café and the roofs of the existing buildings.

Therefore, it is recommended that the ditches are retained as part of the development and used as conveyancing routes for surface water runoff in the same way as they currently operate. This will maintain the biodiversity, ecological, landscape and amenity benefits that the field boundaries currently provide.

The hardstanding area and the roof area of existing buildings will be demolished as part of the development. The hardstanding will be returned to soft landscaping and thus reduce the volume of runoff from the site

3 SURFACE WATER DRAINAGE DESIGN PROPOSALS

3.1 SuDs Strategy

The following measures were proposed for the new development:

1. A flow control device limiting flows to QBAR for all storm events;
2. At-surface storage for excess flows within shallow basins and swales
3. Existing drainage ditches retained for conveyancing and online storage
4. Permeable paved surfaces for access roads, private driveways and parking bays

3.2 SuDS Suitability Assessment

Table 1 assesses the applicability of a range of SuDS techniques to determine the most appropriate for incorporation into the drainage scheme, taking into account topography, available open space, and infiltration potential.

SuDS Feature	Applicable?	Comment
Green Roofs	✗	Not feasible due to the architectural vernacular of the development's dwellings and their roof pitches
Infiltration Basins	✗	Soils are insufficiently permeable to allow for an infiltration solution
Detention Basins	✓	Detention of surface water is suitable
Tanked Storage	✓	Tanked storage may be suitable but is not proposed
Rain Gardens	✓	Rain gardens may be considered suitable for the areas close to the blocks of flats.
Swales (with or without underdrain)	✓	Swales are considered suitable where there is sufficient space. Due to the topography of the site is considered essential to control rainfall at source and retain it at or close to the surface. Swales have been utilised wherever possible within the Masterplan to achieve this. In addition, the existing ditches have been incorporated into the masterplan to act as conveyance corridors wherever possible, to ensure the biodiversity of the habitats contained therein and to retain their inherent ecological and amenity value.
Permeable Paving (PP)	✓	PP is proposed in those areas where traffic movements will be low. The majority of the access roads are to be formed from a permeable pavement which will drain to the development's drainage system. Storage within the PP sub-base will be utilised through the use of flow limiters to reduce outflow and extend the response time from the pavement runoff. Other spaces, such as on-plot parking areas will be designed to infiltrate into the underlying soils and are considered to respond to rainfall similar to landscaped areas
Filter Strips	✗	Filter strips may be considered a suitable method of drainage within a residential development however they are likely to be redundant with the use of permeable pavements
Rainwater Harvesting	✓	Water butts shall be installed within housing plots to provide storage of rainwater for garden irrigation. These are considered to have no impact on the hydraulic modelling

Table 1: SuDS Suitability assessment

3.3 National standards for sustainable drainage systems (2025)

Revised National Standards for Sustainable Drainage (NSSDS) was published in June 2025 and are a key driver for sustainable drainage in England. The NSSDS sets out requirements relating to the following key aspects of drainage design and these are used as heading in this report:

- Runoff Destinations;
- Management of everyday rainfall (interception);
- Management of extreme rainfall and flooding;
- Water Quality;

- Amenity;
- Biodiversity; and
- Design of drainage for construction, operation, maintenance, decommissioning and structural integrity

3.4 Standard 1 - Runoff Destinations

In accordance with the drainage hierarchy, an assessment of practicable discharge methods has been assessed as follows:

NON-POTABLE USE

Rainwater harvesting has been considered as part of the development, however it is not considered economically practicable to incorporate a communal RWH system or one which delivers a non-potable supply for every property internally. Instead, water butts positioned on a rear rainwater downpipe are to be positioned on each property where a private garden is present so that all collected rainfall may be utilised for garden irrigation. It is assumed that the volumetric benefits of these water butts cannot be included within the hydraulic modelling and so their specification does not appear within it.

INFILTRATION TO GROUND

Due to the soil conditions expected at the site, infiltration forms of SuDS are not considered suitable where the area of the permeable surface is less than the area contributing to it. As with landscaped areas, areas of permeable pavement where no additional area discharges into the permeable structure shall be considered applicable without a connection to the modelled drainage network.

DISCHARGE TO AN ABOVE GROUND SURFACE WATER BODY

The drainage system serving the development site shall collect rainwater runoff and convey it to the ditch located at the northern corner of the site and be limited to the defined discharge rate (see Standard 3).

3.5 Standard 2 - Management of everyday rainfall (interception)

On-site storage shall be achieved through the use of detention basins in the northern corner of the site, re-use of a ditch through the site to maintain green corridors, use of swales and a small detention basin in open green areas, and permeable paved surfaces for access roads and parking areas.

Infiltration at the base of the basins, the ditches, the swales and the permeable surfaces will facilitate interception of the majority of the first 5mm of rainfall through the site during normal storm events, however without measurement of the soil permeability, the hydraulic modelling assumes that all runoff captured by the drainage system will be conveyed to the site outfall.

3.6 Standard 3 - Management of extreme rainfall and flooding

The Upper End of climate change allowances, as stated in Chapter 2 above, shall be incorporated into the hydraulic network modelling.

As the site is wholly located within Flood Zone 1, none of the proposed surface water drainage features will be located in areas identified at risk of flooding in the 1% AEP event from pluvial or fluvial sources.

CONTRIBUTING AREA CALCULATION

Table 2 below presents the total contributing areas to the drainage system within the site. A plan of the contributing areas in more detail is provided in Drawing TCP0101-P01 in **Appendix C**.

An urban creep allowance of 10% is applied within the modelling to the roof area of the houses to account for any extension allowed as permitted development through the lifetime of the development (The urban creep allowance is not applied to apartment blocks). From the Contributing Areas plan and the application of the urban creep factor, the total areas contributing runoff to the drainage system are calculated in Table 2 below

Residential Roofs	0.601 ha
Urban Creep	0.044 ha
Roads	1.131 ha
Total Contributing Area	1.776 ha

Table 2: Post-development contributing areas

RUNOFF RATES TO LOCAL WATERCOURSES

The peak allowable discharge rate from the development to surface waters or sewers for the 50% AEP event shall be limited to the equivalent QBAR greenfield runoff rate in accordance with the SuDS National Standards.

The QBAR greenfield runoff rate has been calculated using the area which shall be positively drained by the new drainage system.

Using the RefH2 application within Causeway Flow, the greenfield runoff rate for the 50% AEP event using the positively drained area of the new development (excluding the urban creep allowance) calculated in Table 2 (1.732ha) is 23.4 l/s

In accordance with the National Standards, the peak allowable discharge rate from the development for the 1% AEP event shall be limited to the 50% AEP greenfield runoff rate, i.e. 23.4 l/s. This is because the volume of runoff discharged from the development to surface waters for the 1% AEP, 6-hour rainfall event is expected to be greater than the volume of greenfield runoff for the same rainfall event.

The climate change allowance stated in Chapter 2 shall be applied to the post-development 1% AEP event within the network modelling to determine the extent of flooding during extreme events. The discharge from the site shall be limited to the same value.

HYDRAULIC MODELLING

A surface water network has been developed using the Causeway Flow hydraulic modelling software. A plan of the surface water network used to generate the hydraulic model is provided in **Appendix D** and an extract of the plan is provided in Figure 5 below.

A number of modelling parameters used in Causeway model have been identified below:

- Cv values for impermeable areas modelled using Summer and Winter storm profiles have been set to 1;
- As indicated in Chapter 2, a climate change allowance of 40% will be applied to the rainfall profiles for the 1 in 30 year event and 45% for the 1 in 100 year event;
- Urban creep is accounted for within the model by adding 10% to all roof areas (except roofs of the apartment blocks)

Hydraulic modelling has been carried out using Causeway Flow for storms up to the 1 in 100-year event with climate change with the results provided in **Appendix E**. The results demonstrate that no flooding is predicted from the site for all storm events of critical duration up to and including the 1 in 100 year plus climate change and urban creep allowances.

An exceedance plan demonstrating the expected routes of overland surface water flows during rainfall events of lower probability than the rainfall events modelled is provided in **Appendix F**.



Figure 5: Proposed surface water network (extract)

3.7 Standard 4: Water Quality

The proposed SuDS are recognised by CIRIA C753 as providing pollutant treatment benefits as follows:

SuDS Feature	Water Quality benefit
Detention Basin and swales	Pollutant removal is expected by filtration into the subsoil during the first 5mm of a storm event Particulate pollutants are removed through gravitational settlement within the detention ponds and swales Biodegradation and photolytic breakdown of hydrocarbons occurs during the drying processes between runoff events
Permeable Surfacing	Sediments and pollutants are removed by filtration and sedimentation through the gaps between permeable blocks and potential infiltration into the subsoil

Table 3: SuDS benefits to water quality

An assessment of pollutant treatment has been undertaken using the pollution index methodology outlined in the CIRIA SuDS Manual (C753).

Pollution Level	Hazard	Total Suspended Solids	Metals	Hydrocarbons
Low Traffic Roads		0.5	0.4	0.4
Roofs		0.2	0.2	0.25

Table 4: Pollution Hazard Levels for Contributing Areas

SuDS Components	Total Suspended Solids	Metals	Hydrocarbons
Detention Basin	0.5	0.5	0.6
Swales	0.5	0.6	0.6
Permeable Surfacing	0.7	0.6	0.7

Table 5: SuDS mitigation indices

The Pollution Hazard indices applicable to the hard surfaces draining to the surface water network have been identified in Table 4. Runoff from roads is considered to have the highest pollution indices and therefore has the greatest impact on the receiving waters. For this reason, roads are proposed to be permeable so that runoff can be treated within the road build-up.

The proposed surface water strategy employs detention basins, and swales wherever possible, to attenuate rainfall runoff into during storm events. These will provide adequate treatment for runoff from roofs.

Through inspection of Tables 4 and 5, the mitigation indices for the detention basin are greater than that for the roofs and the indices for permeable surfacing is greater than that for low traffic roads, therefore adequate water quality benefits are expected to be achieved. It is concluded that the proposals provide adequate treatment to the surface water runoff from the system when assessed using the Simple Index Approach.

3.8 Standard 5: Amenity

The detention basins and swales shall be designed in close co-operation with the landscape architect to ensure that multi-functionality of the area close to the ponds is retained and to ensure that their visual amenity and landscape character are in keeping with the development.

3.9 Standard 6: Biodiversity

Consideration of the benefit that the retention of the ditches and the associated trees, plus the provision of the detention basins can contribute to betterment in biodiversity within the site. This shall be assessed in more detail within the BNG assessment undertaken by the Client's Ecologist.

It is expected that the swales shall provide further benefits in combination with green corridors through the site.

3.10 Standard 7: Design of drainage for construction, operation, maintenance, decommissioning and structural integrity

It is understood that maintenance of the surface water system for the site will be undertaken by a private management company employed by property owners within the site.

Key elements of the strategy comprise the following:

- Permeable paving
- Detention basins
- Swales
- Flow control devices

The network will be maintained by the landowner in perpetuity. Tables G1 to G4 in **Appendix G** detail the activities necessary for the regular maintenance of the system proposed.

3.11 Surface Water Drainage Proforma

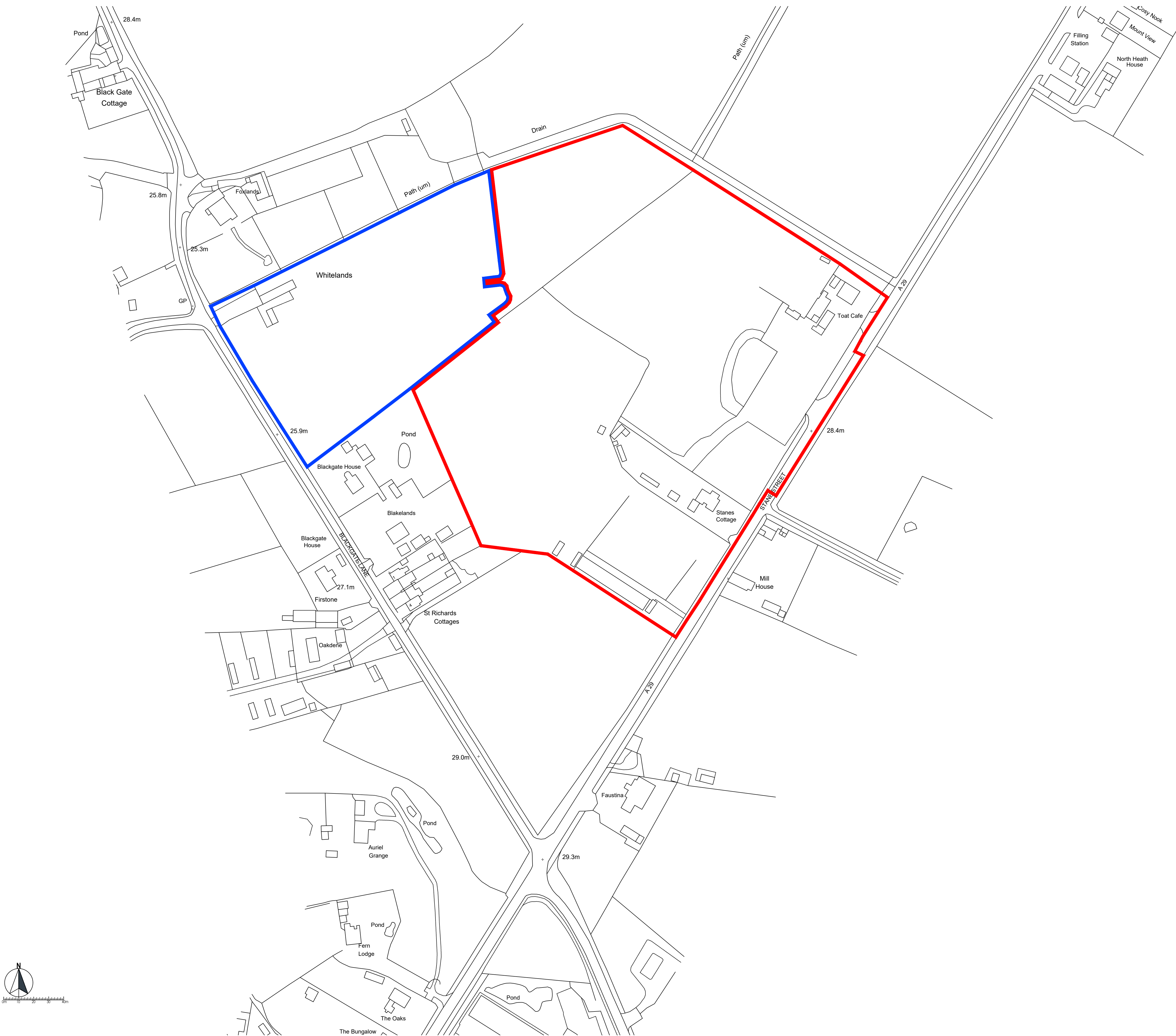
West Sussex County Council are understood to be the LLFA for this location and are therefore a statutory consultee. Their Surface Water Drainage Proforma is provided in **Appendix H**.

4 FOUL SEWERAGE STRATEGY

Sewer asset mapping provided by Southern Water identify a public foul sewer and a Southern Water pumping station at Stane Farm approximately 600m south west of the entrance into Toat Café from Stane Street (see sewer asset map in **Appendix I**).

A pre-development enquiry shall be submitted to Southern Water to establish whether any improvement works are necessary.

Appendix A - Topographical Survey



MCA

MICHAEL
CONOLEY
ARCHITECTS | ASSOCIATES

PROJECT:

Toat Cafe, Stanes Cottage, Stanes Farm and Whitelands Farm, Stane Street, Pulborough, West Sussex RH20 1DN

DATE:

03.26

SCALE:

1:1250

JOB NUMBER:

1726

PAPER SIZE:

A1

DRAWING TITLE:

Site Location Plan

DRAWING NUMBER:

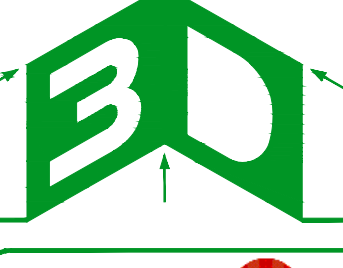
1726/OS-100

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Revisions			
Date	Revision	Amendment	

3D Services (South East) Ltd

Unit 5 Coopers Place, Combe Lane, Wormley, Surrey GU8 5SZ
Tel: 01428 684144 | Fax: 01428 685522 | surveys@3dservices.co.uk





THE SURVEY
ASSOCIATION

Client

ANTONIO AVENUE LTD

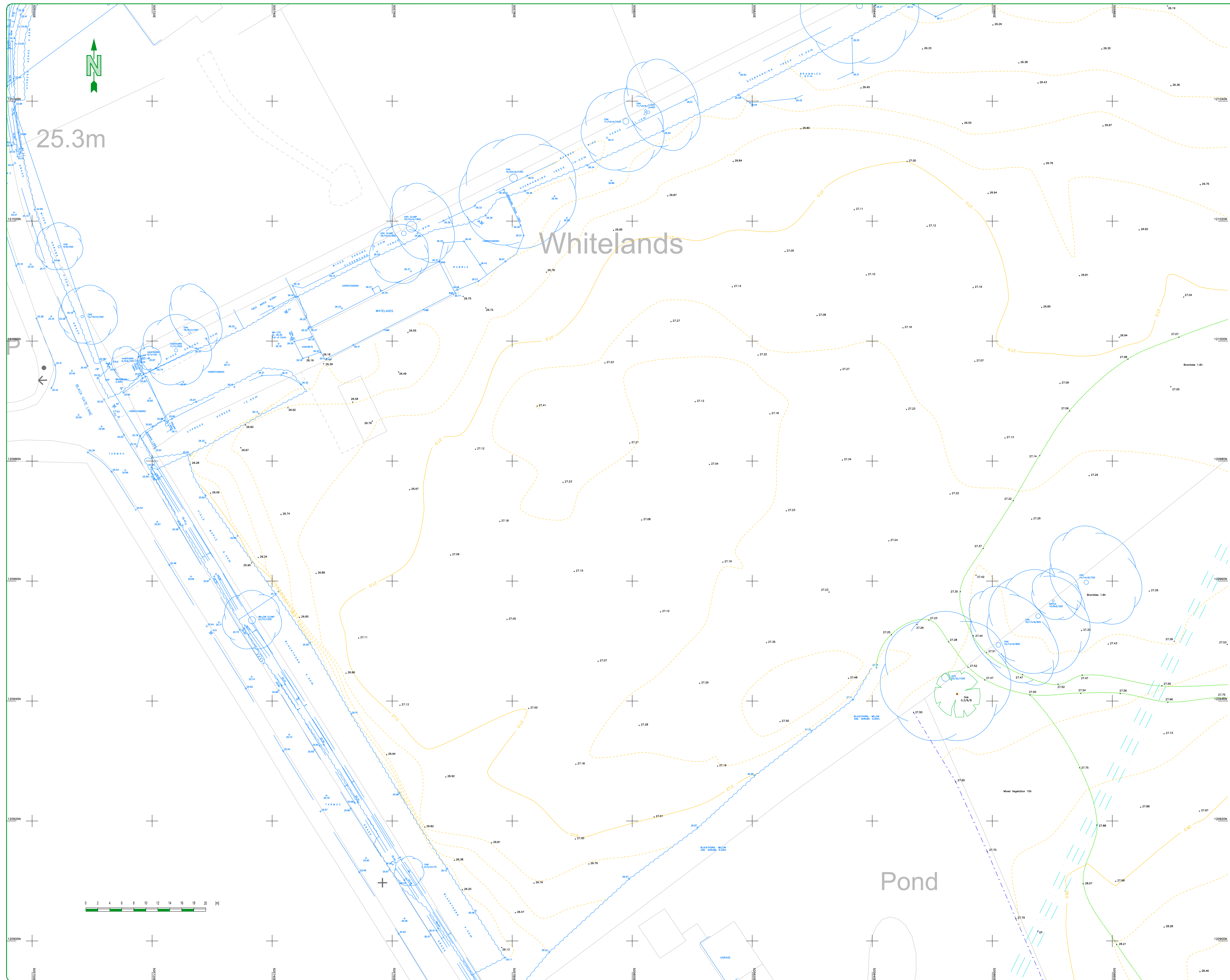
Surveyed/ JEM	Drawn CSG	Checked JEM	Date 02/12/25
Project STANES FARM AND WHITELANDS FARM, PULBROUGH			

Title

DETAIL SURVEY

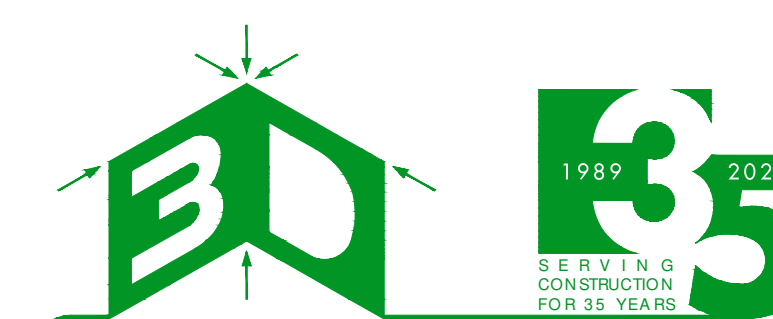
Sheet 1 of 2

Job No 25/264	Drawing No 25/264/01	Revision	Scale/Size 1:200 A0
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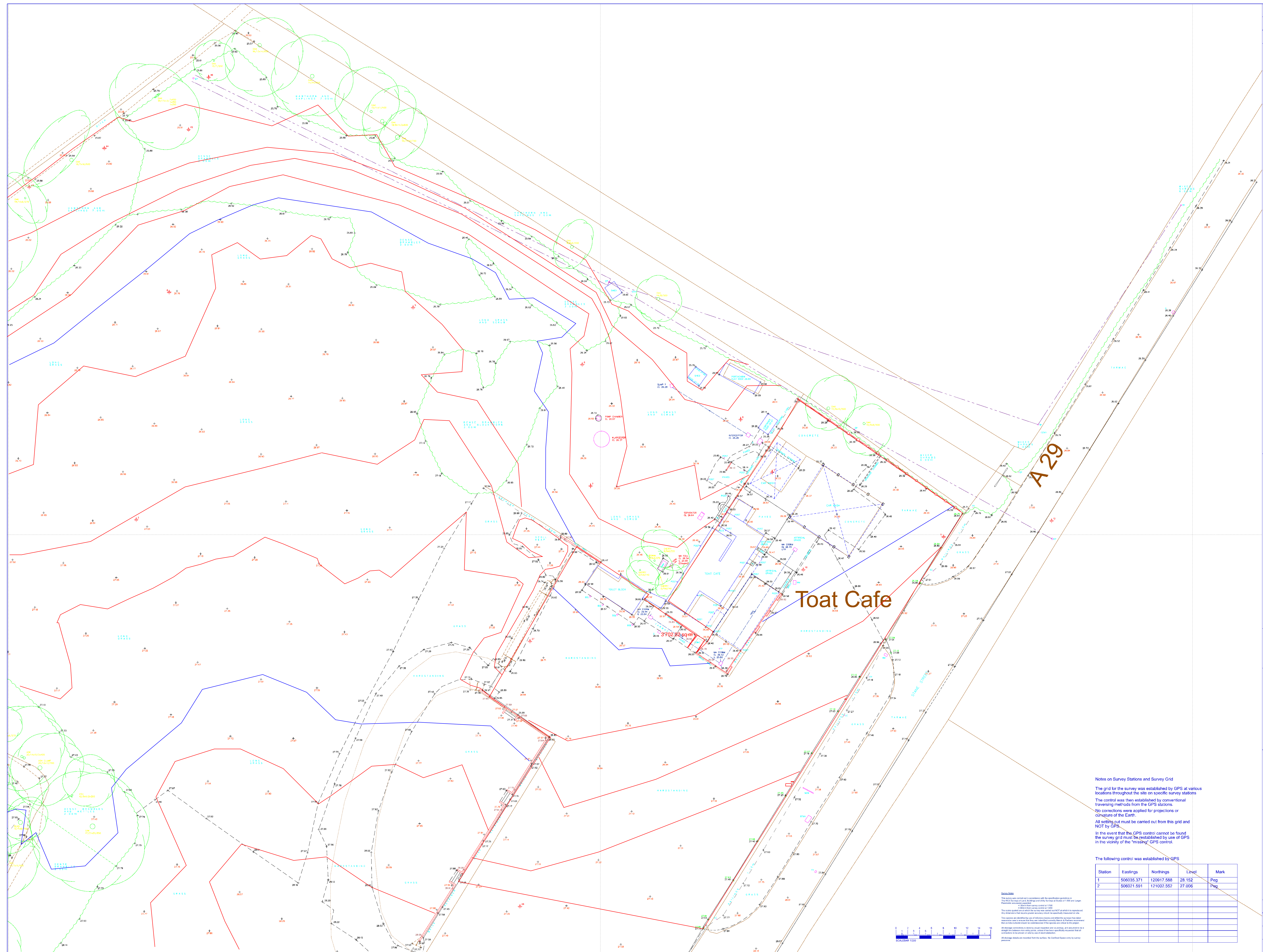
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Revisions		
Date	Revision	Amendment

3D Services (South East) Ltd
Unit 5 Coopers Place, Combe Lane, Wormley, Surrey GU8 5SZ
Tel: 01428 684144 ü Fax: 01428 685522 ü surveys@3dservices.co.uk



Member of		 THE SURVEY ASSOCIATION	
Client			
ANTONIO AVENUE LTD			
Surveyed	Drawn	Checked	Date
JEM	CSG	JEM	02/12/25
Project			
STANES FARM AND WHITELANDS FARM, PULBROUGH			
Title			
LEVEL SURVEY			
Job No	Drawing No	Revision	Scale/Size
25/264	25/264/03		1:200 A



Surveyed by: S Smith

Plotted by: S Brown

Drawn by: Acad

Legend

- ACU Air Conditioning Unit
- AV Valve
- BC Back Control
- BO Bolt
- BTB Bristle Trim Junction Box
- BYC Bristle Yarn Collector
- CL Cover Ledge
- CTV Cable Tray
- ELC Electric Emergency Cable Plug
- EM Electricity Cable Marker
- EN Emergency Noise
- ER Ear/Rod
- FF Fly Feed
- G Gully
- GV Gun Valve
- H Hauler/Belt
- II Invert Idler
- JF Jet Fuel
- LD Letter Box
- LC Lamp Column
- MR Mixer
- MFK Concrete Marker
- OF Outfit
- PM Pulley Machine
- RE Rending Eye
- RUP Rending Pulley Pipe
- SC Slip Couch
- SG Sign Post
- SV Stave
- TC Telephone Kiosk
- T Traffic Light
- TLC Traffic Light Cover
- TM Tackel Machine
- TR Telephone
- UTR Unlute To Raise
- US Unlute To Survey
- W Water
- WM Water Meter
- WV Water Valve
- WW Wump
- WWP Waste Water Pipe

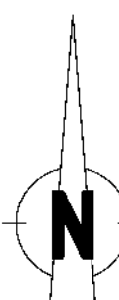
Data

- i) Trees shown thus 6/8x200 indicates
Ht. in metres/Spam. dia in metres
Trunk dia. in millimetres
- ii) Trees shown thus 6/8x200 indicates
Ht. in metres/Spam. dia in metres
Trunk dia. in millimetres
- iii) Grid : Metric and oriented to

iv) Levels : Metric and based on OS GPS DATA

Station	Survey station
---------	----------------

Value: 28.152m



Client

BLACKGATE BARNES LTD

Site

TOAT CAFE/STANES COTTAGE
STANE STREET
PULBOROUGH

SHEET 1 OF 3



Marvin & Partners
Limited

Martinique House
Hampshire Road
Bordon
Hampshire GU35 0HA

Tel : 01428 751888
Email: paul@maplimited.com

Date	JULY 2023
------	-----------

Scale	1/200 @ A
-------	-----------

Dwg./Job No.	23/6016
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Checked By

Notes on Survey Stations and Survey Grid

The control was then established by conventional traversing methods from the GPS stations.

No corrections were applied for projections or curvature of the Earth.

All setting out must be carried out from this grid and NOT by GPS.

In the event that the GPS control cannot be found the survey grid must be reestablished by use of GPS in the vicinity of the "missing" GPS control.

The following control was established by GPS

[illegible]

[Survey Method](#)

This survey was carried out in accordance with The specification guidelines by the RICS Surveyors of Land, Buildings and Utility Services at Stages of 1500 and Larger Professional accounts expected

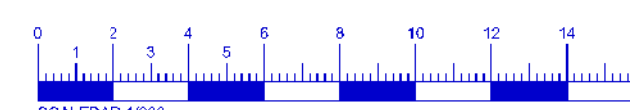
- >30 years from survey control at 1700
- >60m from survey control at 1500

The scales quoted are in which the survey was carried out NOT of which it is regarded. Any dimension or real value given is approximate especially measured on site.

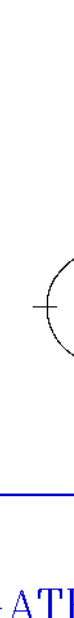
Two spots are identified by way of reference books and what the surveyor has taken relevant care to ensure they are correctly positioned. Manual & Planimeter readings at Adabo level must be corroborated if the species are critical to the project.

All drawings concerning entry done by audit inspection and so on, and are used to straighten it between many city points, unless it has been specifically requested that all connections be drawn on base by use of the electronic.

All drawings details are recorded from the architecture. No Confined Space entry by survey





Surveyed by:	S. Smith
Plotted by:	S. Brown
Drawn by:	Acad
Legend	ACU Air Conditioning Unit AVI Air Valve BC Barrier Control SOL Solard BTB British Telecom Junction Box BTM British Telecom Manhole CL Cover Lintel CTV Cable TV ECF Electricity Cable Pit EM Electricity Cable Marker EPF Electricity Pole ER Earth Rod FP Fly Polesant FP Flag Pole G Gully GV Gas Valve IB Illuminated Bollard IL Invert Lintel JB Junction Box LS Letter Box LC Lamp Column MH Manhole MKR Concrete Marker OJ Outfall PM Parking Meter RE Rooking Eye RWP Rainwater Pipe SC Stop Cock SF Siph Tap SV Valve Valve TOB Trench Box TL Traffic Light TLC Traffic Light Cover TM Ticket Machine TP Telegraph Pole UTR Unsable To Route UTS Unsable To Survey VC Vent Column WM Water Meter WO Waste Out WWP Waste Water Pipe
Data	i) Truss shown thru 9/6/20 indicates Rt in metres dia in millimetres Truss dia in millimetres ii) Truss shown thru 9/6/200 indicates Rt in metres dia in metres Truss dia in millimetres iii) GPS Meas and oriented to North iv) Levels: Metric and based on OS GPS DATA Stationed on Survey station 1 Value: 28.152m
	
Client	BLACKGATE BARNS LTD
Site	TOAT CAFE/STANES COTTAGE STANE STREET PULBOROUGH SHEET 3 OF 3
	 Marvin & Partners Limited Martinique House Hampshire Road Bordon Hampshire GU35 0HJ Tel : 01428 751888 Email: paul@maplimited.com
Date	JULY 2023
Scale	1/200 @ A0
Dwg/Job No.	23/6016
Checked By	

Appendix B - Greenfield Runoff Rate Estimation

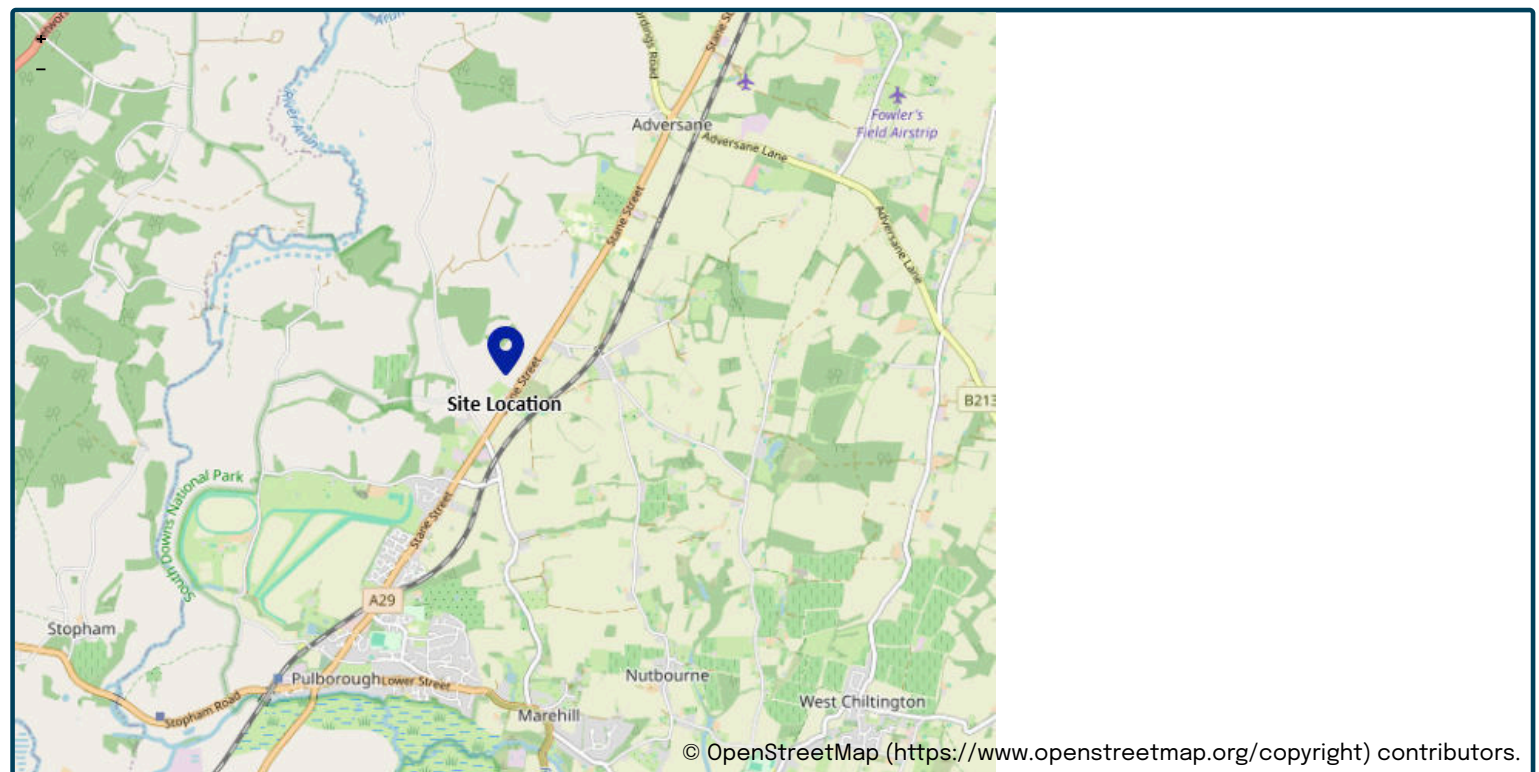
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). 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	17/04/2026
Calculated by	
Reference	
Model version	2.2.3

Location

Site name	Toat Cafe, Stane Street
Site location	Pulborough



Site easting (British National Grid)	506093
Site northing (British National Grid)	120959

Site details

Total site area (ha)	6.25	ha
----------------------	-----------------------------------	----

Greenfield runoff

Method

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

FEH statistical (2025)

	<u>My value</u>	<u>Map value</u>
SAAR9120 (mm)	861	mm
BFIHOST19scaled	0.266	
QMed-QBar conversion	1.136	1.136
QMed (l/s)	50	l/s
QBar (FEH statistical 2025) (l/s)	56.8	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	FEH statistical (2025)
Flow rate 1 year (l/s)	48.3
Flow rate 2 year (l/s)	50.0
Flow rate 10 years (l/s)	92.0
Flow rate 30 years (l/s)	130.6
Flow rate 100 years (l/s)	181.2
Flow rate 200 years (l/s)	212.4

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 C - Contributing Area plan

Roof Contributing Areas (ha)				Road Contributing Areas (ha)		
Unit	Node	Area	AreaUrban Creep	Name	Node	Area
1	37	0.009	0.0099	Access Road A1	J4	0.057
3	38	0.01	0.011	Access Road A2	J12	0.032
4	39	0.013	0.0143	Access Road A3	J13	0.065
5	30	0.009	0.0099	Access Road B1	41	0.041
7	48	0.01	0.011	Access Road B2	J16	0.021
8	66	0.009	0.0099	Access Road B3	J17	0.019
9	67	0.009	0.0099	Access Road C1	58	0.027
10	67	0.009	0.0099	Access Road C2	J18	0.029
11	29	0.01	0.011	Access Road C4	J19	0.041
21	63	0.013	0.0143	Access Road C5	J20	0.048
22	63	0.013	0.0143	Access Road D1	J21	0.019
23	60	0.018	0.0198	Access Road D2	J22	0.036
24	59	0.016	0.0176	Access Road D3	J23	0.029
25	58	0.011	0.0121	Access Road D4	J24	0.026
26	58	0.008	0.0088	Access Road E1	70	0.034
27	17	0.009	0.0099	Access Road E2	J28	0.006
28	17	0.008	0.0088	Access Road E3	J25	0.009
29	20	0.008	0.0088	Access Road E4	J26	0.007
34	62	0.008	0.0088	Access Road E5	37	0.013
45	62	0.007	0.0077	Access Road F1	J27	0.037
46	56	0.008	0.0088	Block A Car Park	19	0.093
47	56	0.009	0.0099	Block B Car Park 1	J14	0.032
54	10	0.01	0.011	Block B Car Park 2	12	0.01
12-13	67	0.018	0.0198	Block C Car Park	J15	0.022
14-15	68	0.016	0.0176	Car Park	65	0.043
16-20	64	0.033	0.0363	Crossover 1	61	0.028
2-6	49	0.017	0.0187	Crossover 2	48	0.023
30-31	21	0.014	0.0154	Main access road 1	43	0.095
32-33	62	0.016	0.0176	Main access road 2	44	0.031
35,36,37	45	0.018	0.0198	Main access road 3	45	0.032
38-40	55	0.018	0.0198	Main access road 4	47	0.045
41-44	54	0.016	0.0176	Main access road 5	51	0.018
49-50,51	14	0.019	0.0209	Main access road 6	28	0.028
52-53	5	0.018	0.0198	Main access road 7	29	0.021
55-70	11	0.008	0.008	Pump station	40	0.014
55-70	13	0.008	0.008			
55-70	110	0.009	0.009			
55-70	111	0.019	0.019			
55-70	16	0.004	0.004			
55-70	17	0.018	0.018			
55-70	19	0.016	0.016			
71-93	3	0.024	0.024			
71-94	1	0.029	0.029			
71-95	2	0.029	0.029			
		0.601	0.645			
Total Contributing Area =				1.776 ha		

NOTES:

KEY:

- Roof Area (Impermeable)
- Road Area (Permeable, such as Block Paving)
- Road Area (Impermeable, such as Tarmac)
- Swale
- Existing Drainage Ditch
- Detention Pond

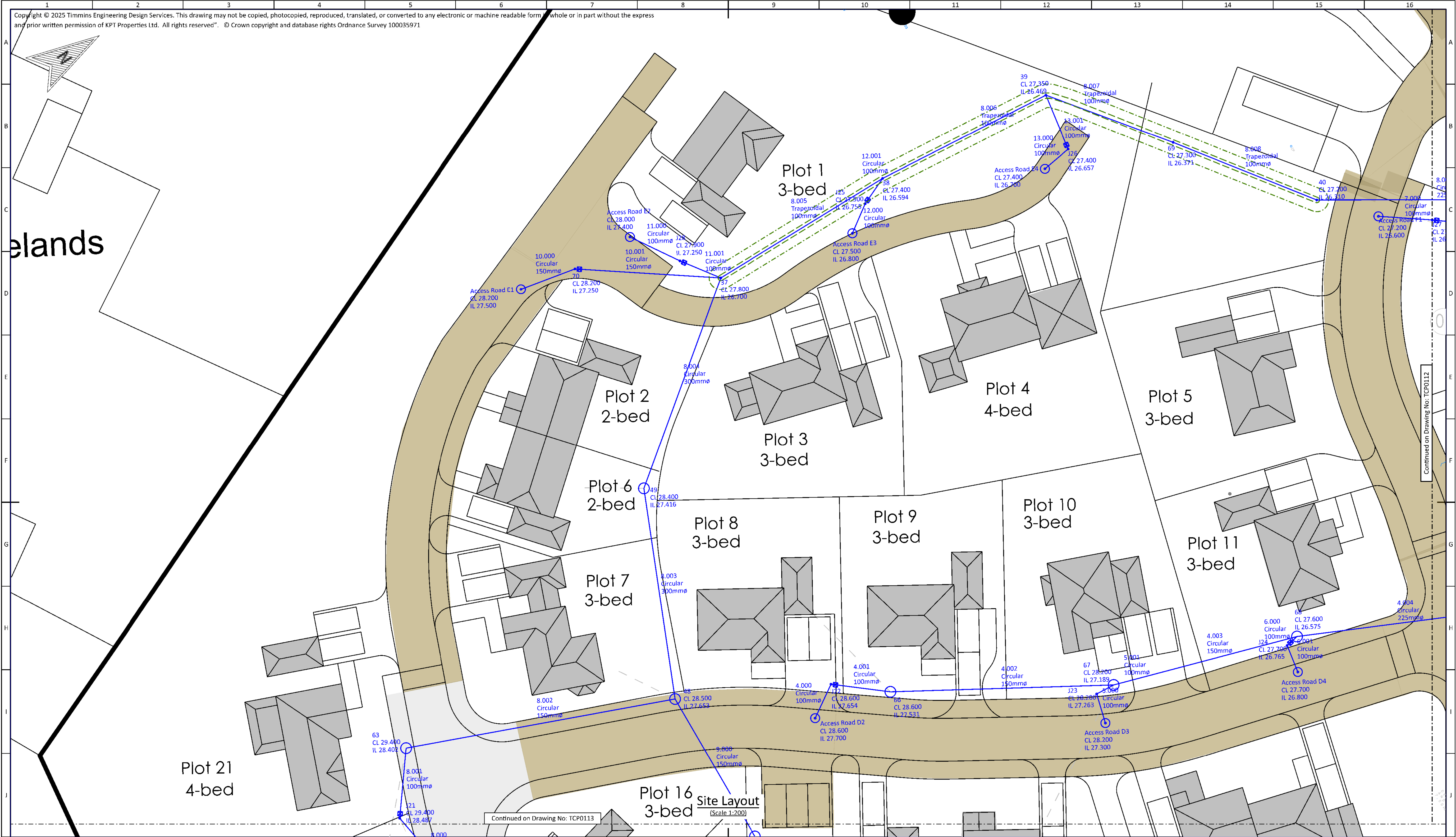
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In addition to the hazard/risks normally associated with the type of works detailed on this drawing take note of the above. It is assumed that all works on this drawing will be carried out by a competent contractor working where appropriate, to an appropriate method statement.		
SAFETY HEALTH AND ENVIRONMENTAL INFORMATION BOX		

REV	CREATED BY	DATE	APPROVED BY	DATE	AUTHORISED BY	DATE
P03	SI PARHAM	24/03/26				
P02	SI PARHAM	20/02/26	P TIMMINS	24/03/26	P TIMMINS	24/03/26
P01	SI PARHAM	09/12/25	P TIMMINS	20/02/26	P TIMMINS	20/02/26
REV	PURPOSE					

PROJECT	TOTE CAFE PULBOROUGH
CLIENT	ANTONIO AVENUE LTD
CLIENT ADDRESS	Netherton Farm Le Chemin Du Moulin St Quen Jersey JE3 2FL
DRAWING CLASSIFICATION	ISSUED FOR PLANNING

TITLE	TOTE CAFE CONTRIBUTING AREAS ASSESSMENT
TIMMINS ENGINEERING DESIGN SERVICES Telephone: 07900 404760 http://www.timminsconsulting.co.uk Registered in England and Wales No. 06950986	
DRAWING NUMBER	TCP0101
REV.	P03

Appendix D - Drainage Strategy layout



NOTES:
1. This drawing is to be read in conjunction with all other relevant drawings.

KEY:

- Roof Area (Impermeable)
- Road Area (Permeable, such as Block Paving)
- Road Area (Impermeable, such as Tarmac)
- Swale
- Existing Drainage Ditch
- Detention Pond
- New Private Inspection Chamber

Proposed Surface Water Drain

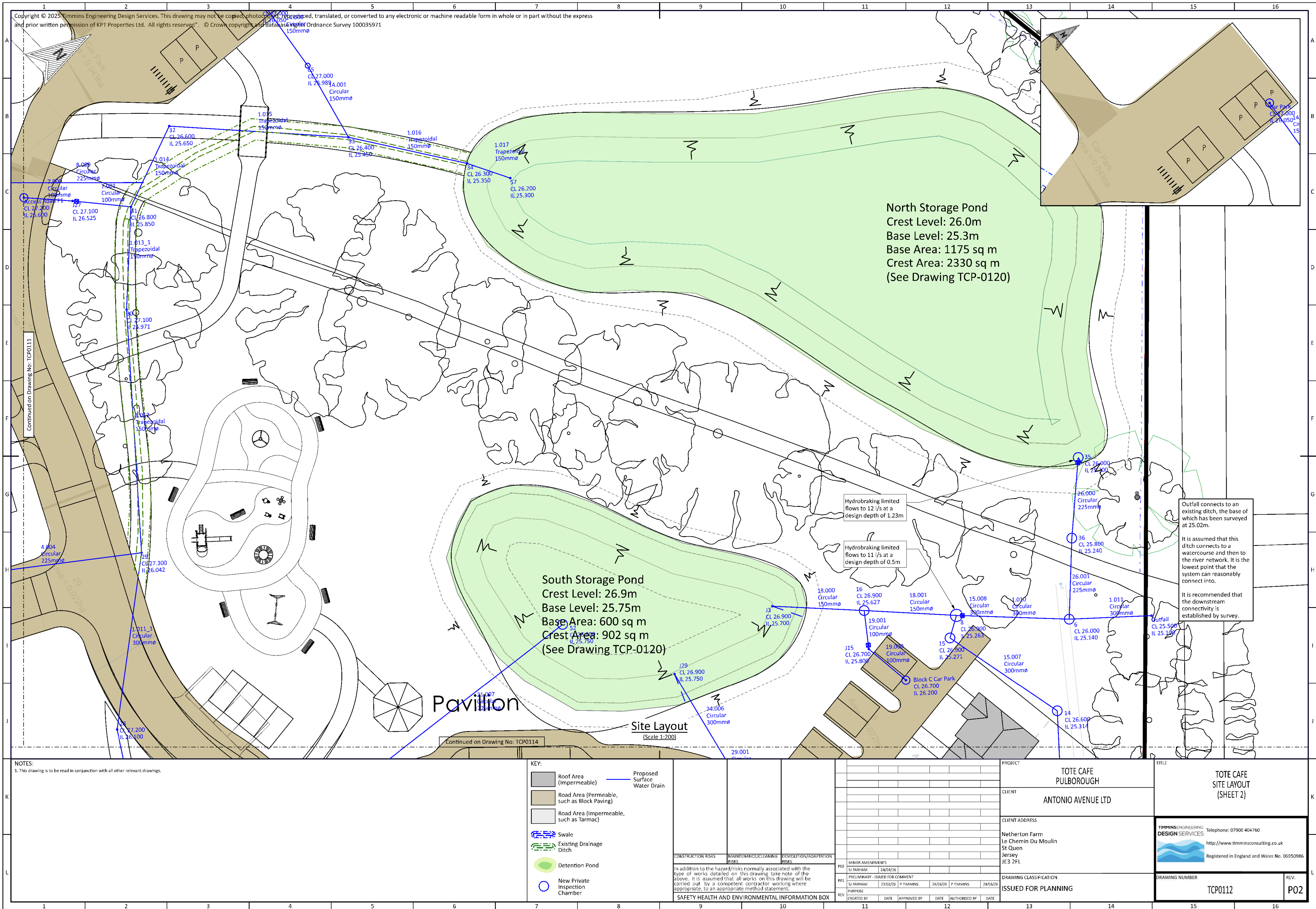
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In addition to the hazard/risks normally associated with the type of works detailed on this drawing take note of the above. It is assumed that all works on this drawing will be carried out by a competent contractor working where appropriate, to an appropriate method statement.		

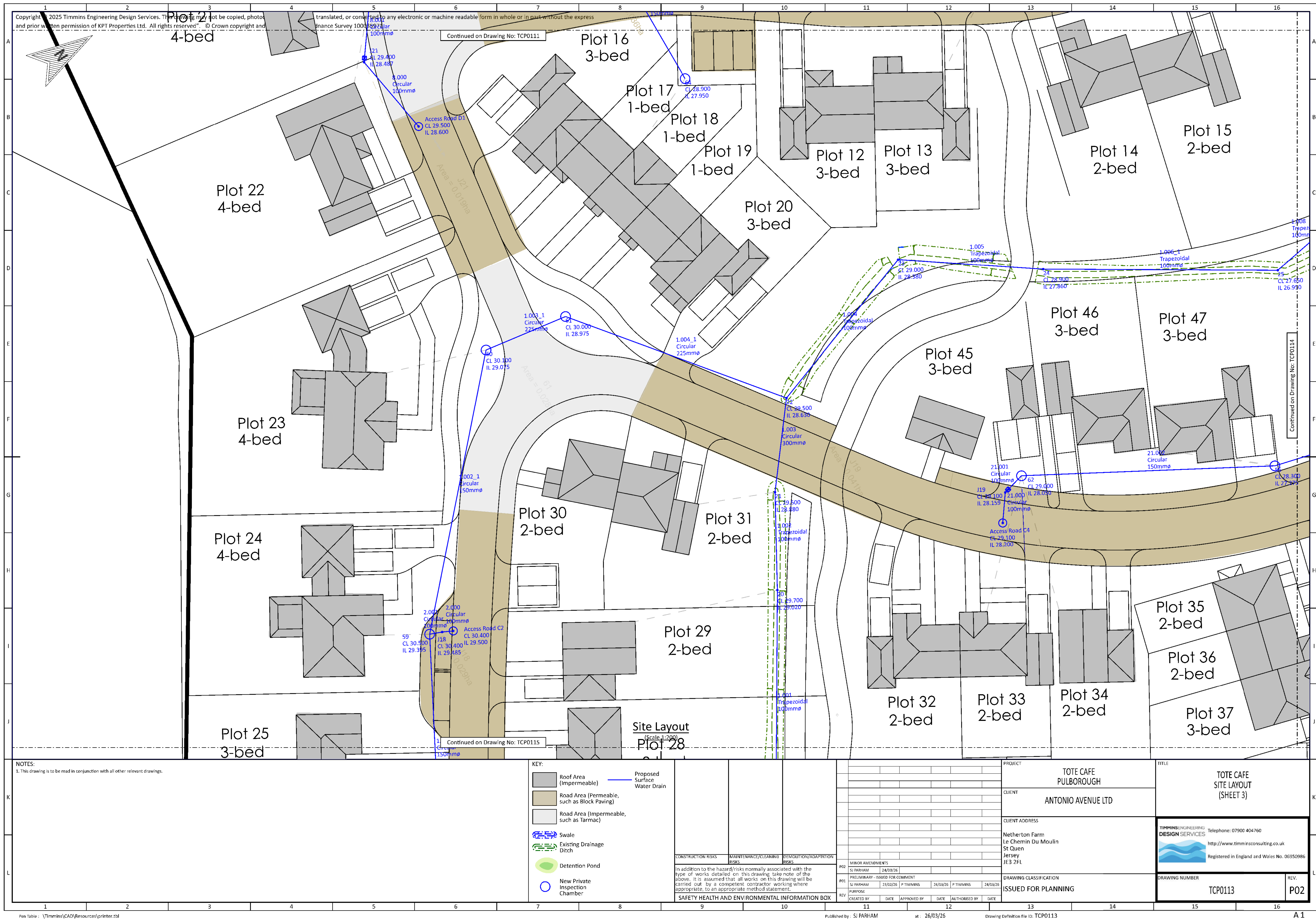
SAFETY HEALTH AND ENVIRONMENTAL INFORMATION BOX

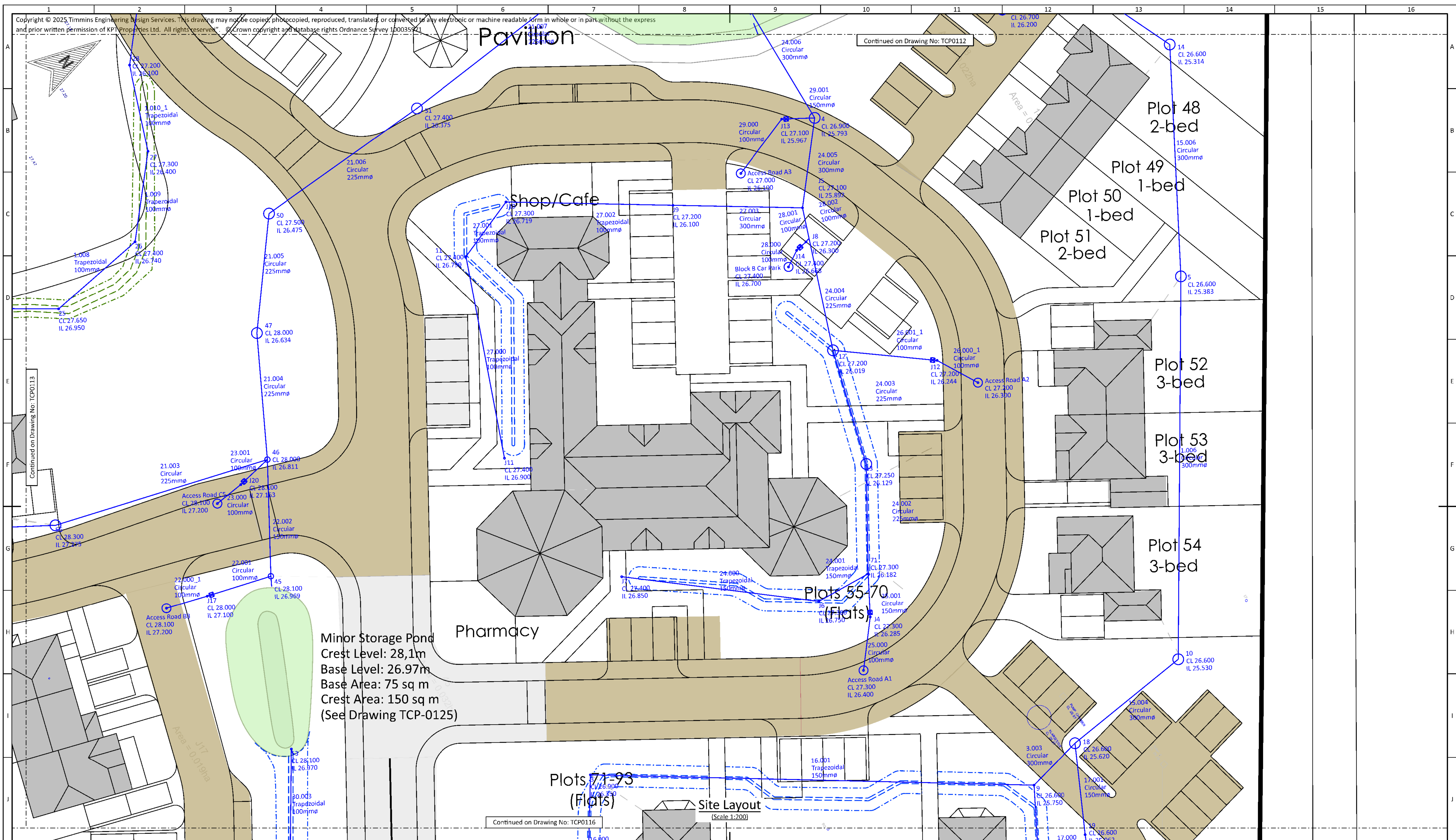
MINOR AMENDMENTS	REV	DESCRIPTION	DATE	APPROVED BY	DATE	AUTHORISED BY	DATE
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P01	SI PARHAM	23/02/26	P TIMMINS	24/03/26	P TIMMINS	24/03/26	
PURPOSE	CREATED BY	DATE	APPROVED BY	DATE	AUTHORISED BY	DATE	

PROJECT	TOTE CAFE PULBOROUGH
CLIENT	ANTONIO AVENUE LTD
CLIENT ADDRESS	Netherton Farm Le Chemin Du Moulin St Quen Jersey JE3 2FL
DRAWING CLASSIFICATION	ISSUED FOR PLANNING

TITLE		TOTE CAFE SITE LAYOUT (SHEET 1)	
TIMMINS ENGINEERING DESIGN SERVICES		Telephone: 07900 404760 http://www.timminsconsulting.co.uk Registered in England and Wales No. 06550986	
DRAWING NUMBER		TCP0111	
REV.		P02	







NOTES:

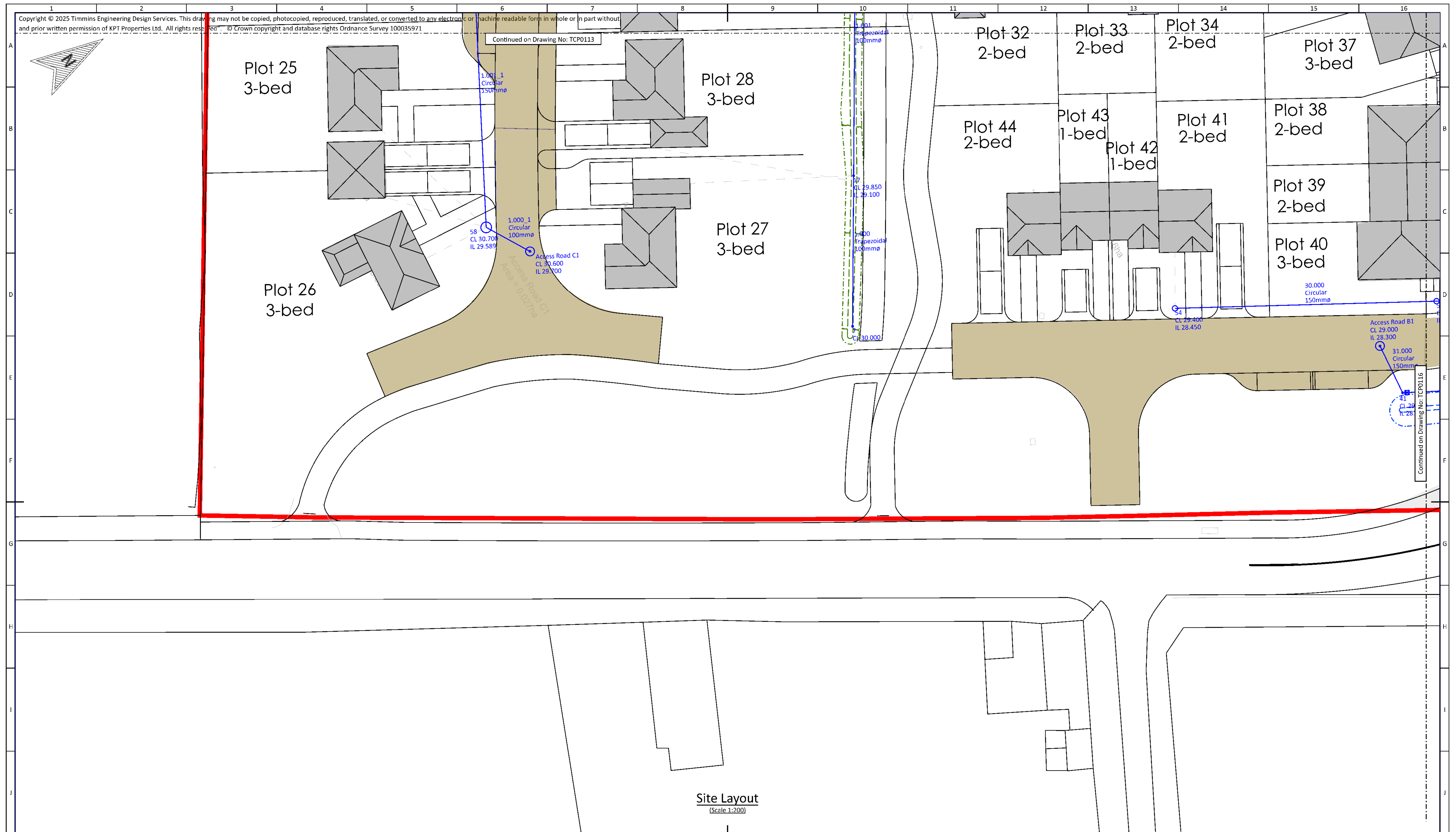
1. This drawing is to be read in conjunction with all other relevant drawings.

KEY: Roof Area (Impermeable) Proposed Surface Water Drain Road Area (Permeable, such as Block Paving) Road Area (Impermeable, such as Tarmac) Swale Existing Drainage Ditch Detention Pond New Private Inspection Chamber				
		CONSTRUCTION RISKS	MAINTENANCE/CLEANING RISKS	DEMOLITION/ADAPTATION RISKS
		In addition to the hazard/risks normally associated with the type of works detailed on this drawing take note of the above. It is assumed that all works on this drawing will be carried out by a competent contractor working where appropriate, to an appropriate method statement.		
		SAFETY HEALTH AND ENVIRONMENTAL INFORMATION BOX		

[illegible]

PROJECT	TOTE CAFE PULBOROUGH
CLIENT	ANTONIO AVENUE LTD
CLIENT ADDRESS	Netherton Farm Le Chemin Du Moulin St Quen Jersey JE3 2FL
DRAWING CLASSIFICATION	ISSUED FOR PLANNING

TITLE		K
TOTE CAFE SITE LAYOUT (SHEET 4)		
 TIMMINS ENGINEERING DESIGN SERVICES		L
Telephone: 07900 404760 http://www.timminsconsulting.co.uk Registered in England and Wales No. 06950986		
DRAWING NUMBER	TCP0114	REV. P02



NOTES:

1. This drawing is to be read in conjunction with all other relevant drawings.

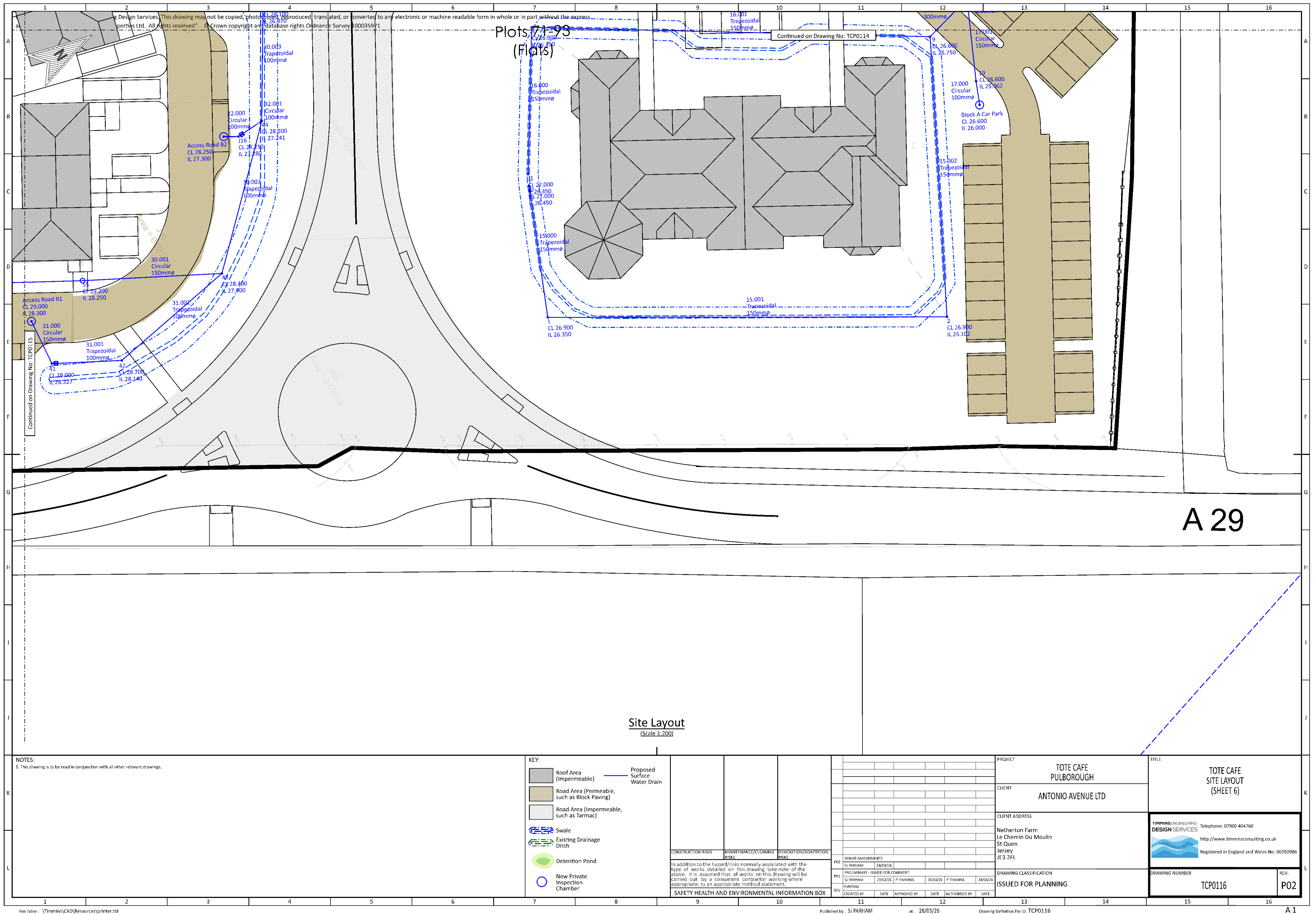
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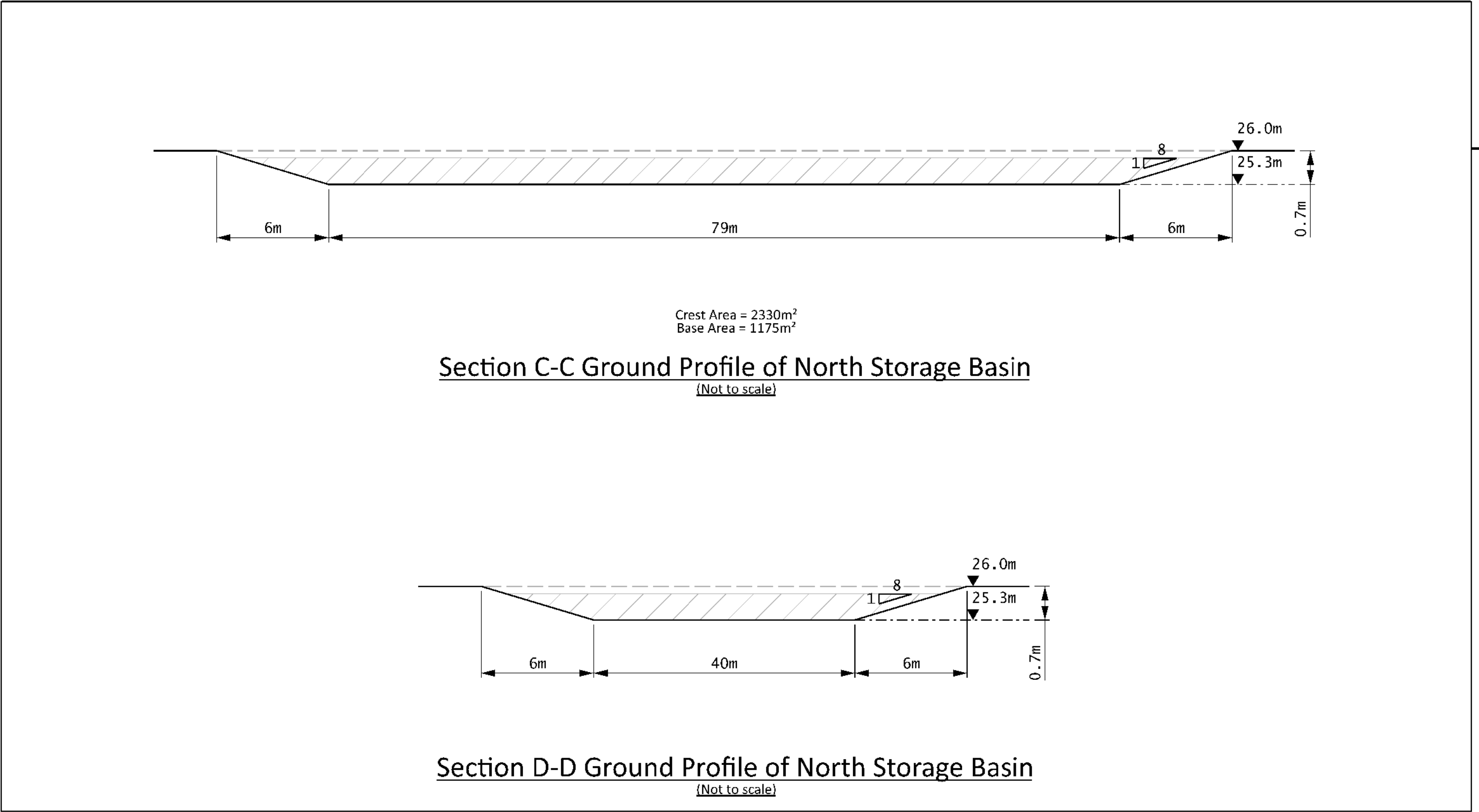
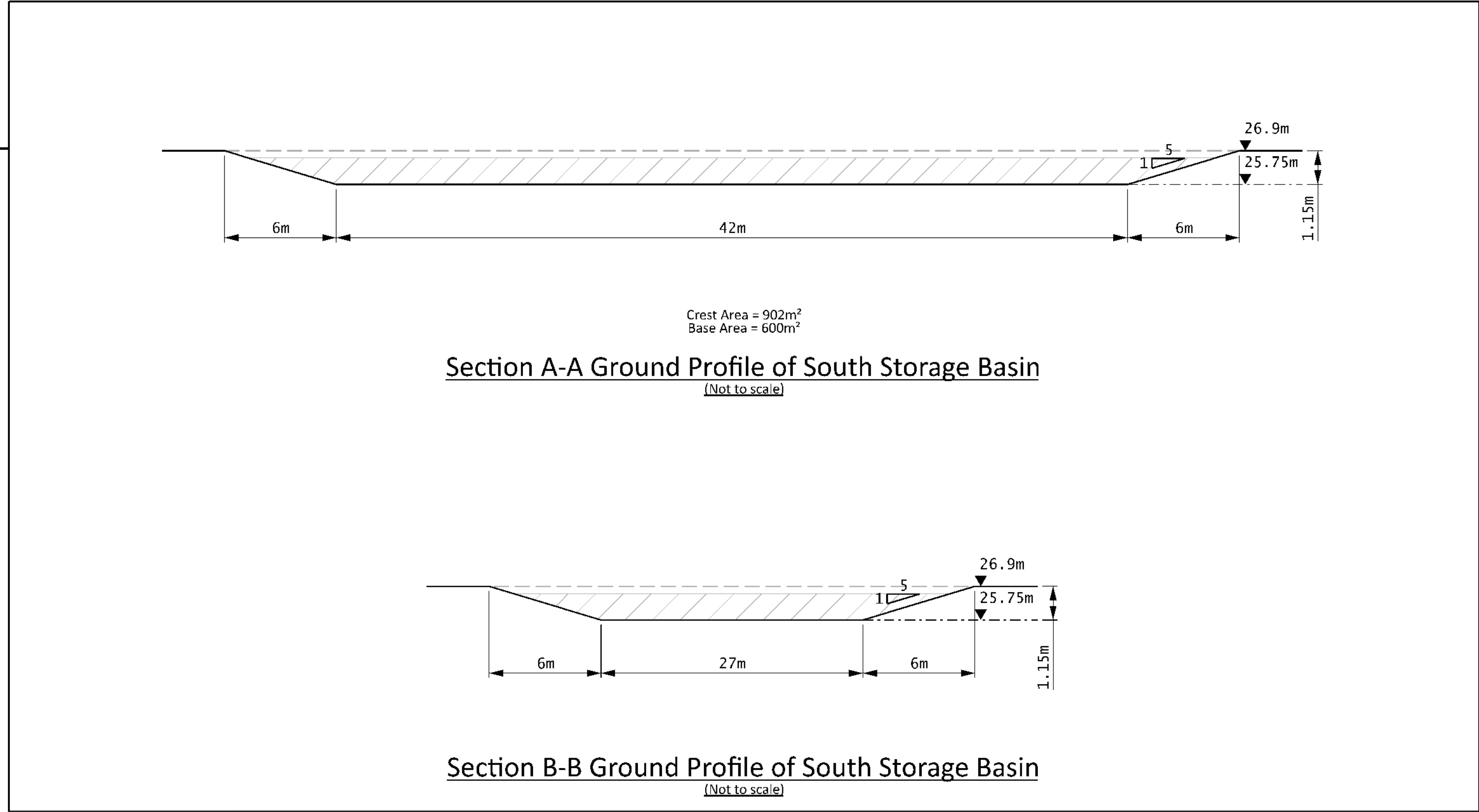
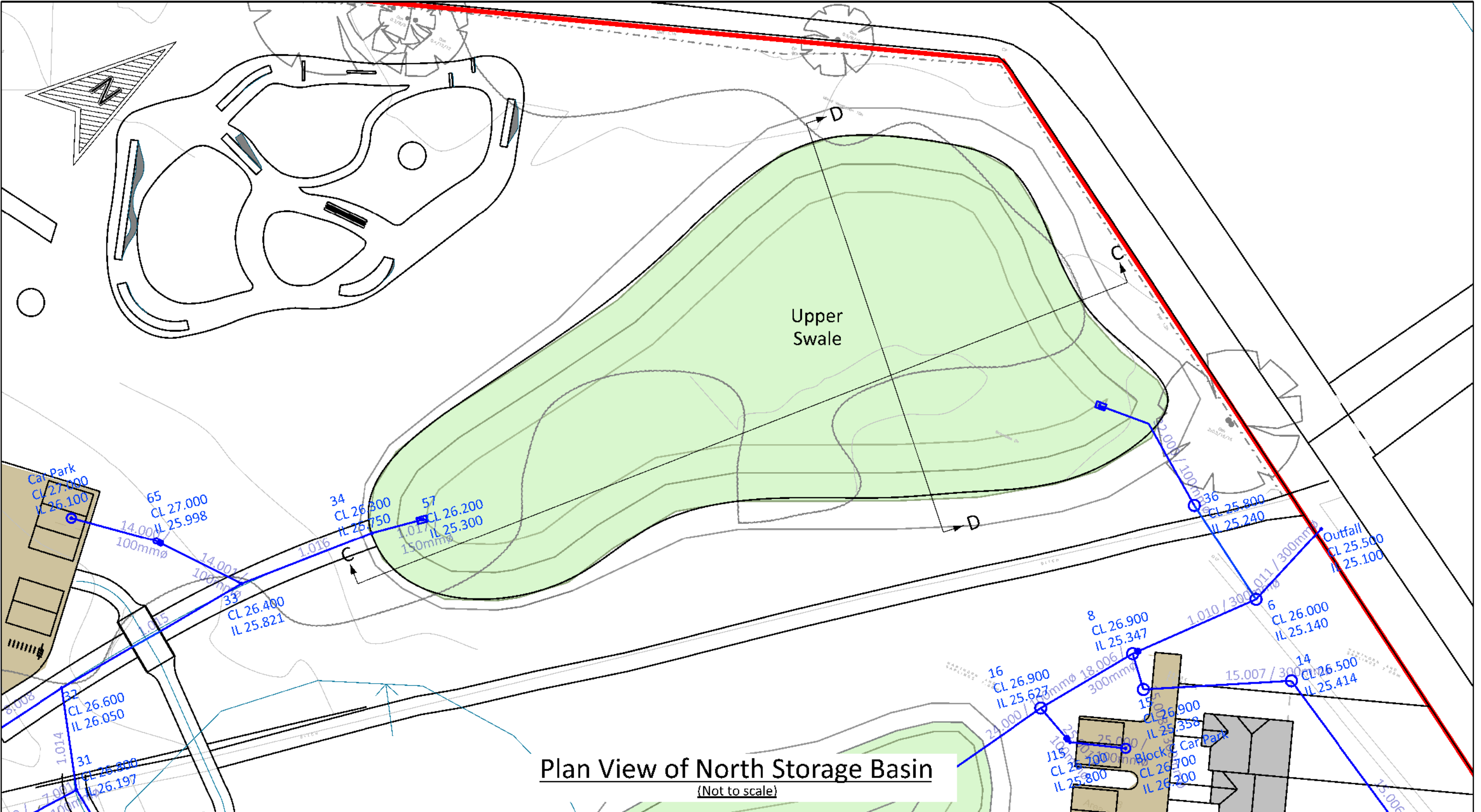
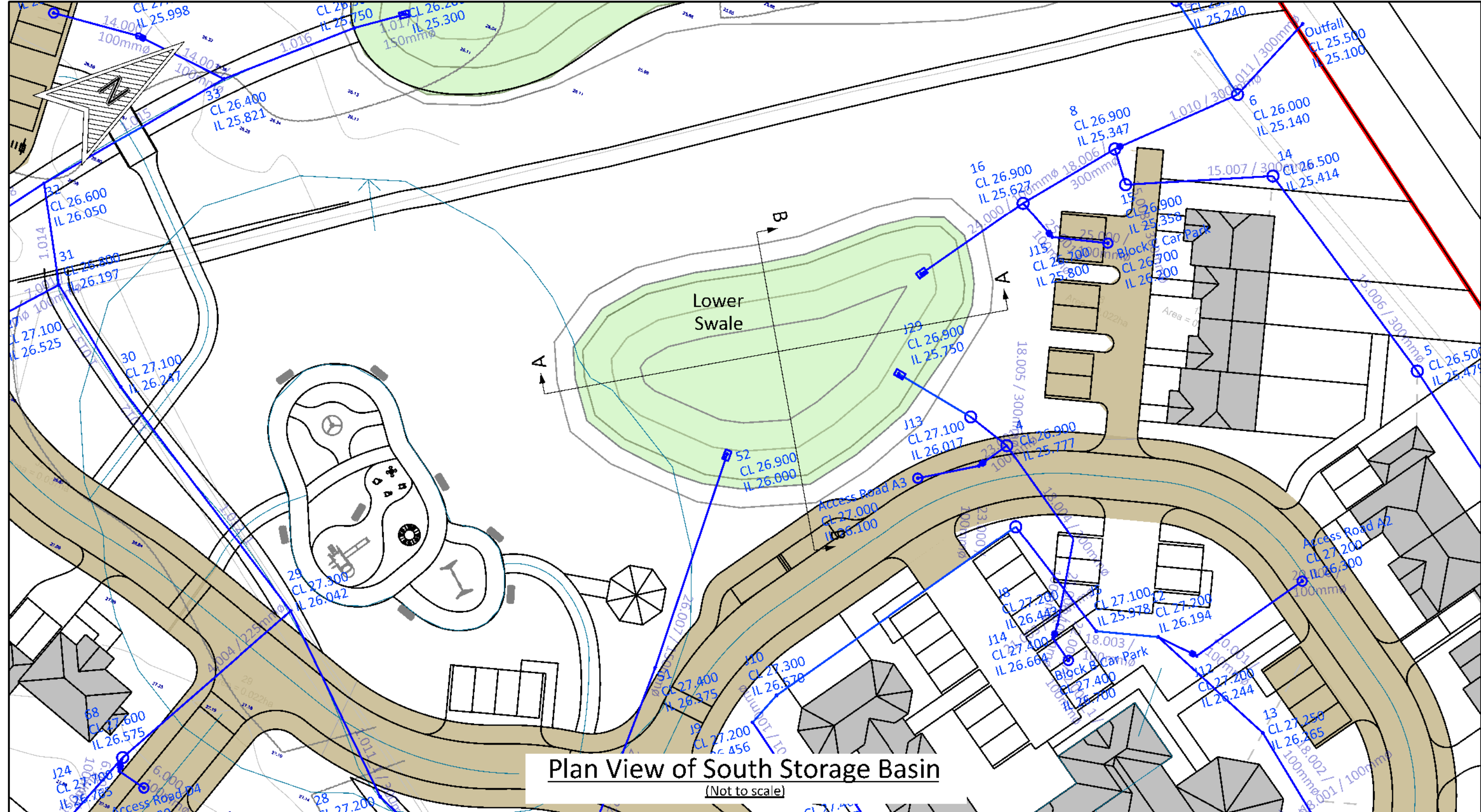
-  Roof Area (Impermeable)
-  Road Area (Permeable, such as Block Paving)
-  Road Area (Impermeable, such as Tarmac)
-  Swale
-  Existing Drainage Ditch
-  Detention Pond
-  New Private Inspection Chamber

 Proposed Surface Water Drain

[illegible]

PROJECT	TOTE CAFE PULBOROUGH	TITLE	TOTE CAFE SITE LAYOUT (SHEET 5)	K
CLIENT	ANTONIO AVENUE LTD			
CLIENT ADDRESS	Netherton Farm Le Chemin Du Moulin St Quen Jersey JE3 2FL	TIMMINS ENGINEERING DESIGN SERVICES Telephone: 07900 404760  http://www.timminsconsulting.co.uk Registered in England and Wales No. 06950986		
DRAWING CLASSIFICATION	ISSUED FOR PLANNING	DRAWING NUMBER	TCP0115	L
26			REV. P02	





NOTES:

K

L

KEY:

- Roof Area (Impermeable)
- Road Area (Permeable, such as Block Paving)
- Road Area (Impermeable, such as Tarmac)
- Swale
- Existing Drainage Ditch
- Detention Pond
- New Private Inspection Chamber
- Proposed Surface Water Drain

CONSTRUCTION RISKS	MAINTENANCE/CLEANING RISKS	DEMOLITION/ADAPTATION RISKS
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In addition to the hazard/risks normally associated with the type of works detailed on this drawing take note of the above. It is assumed that all works on this drawing will be carried out by a competent contractor working where appropriate, to an appropriate method statement.

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION BOX

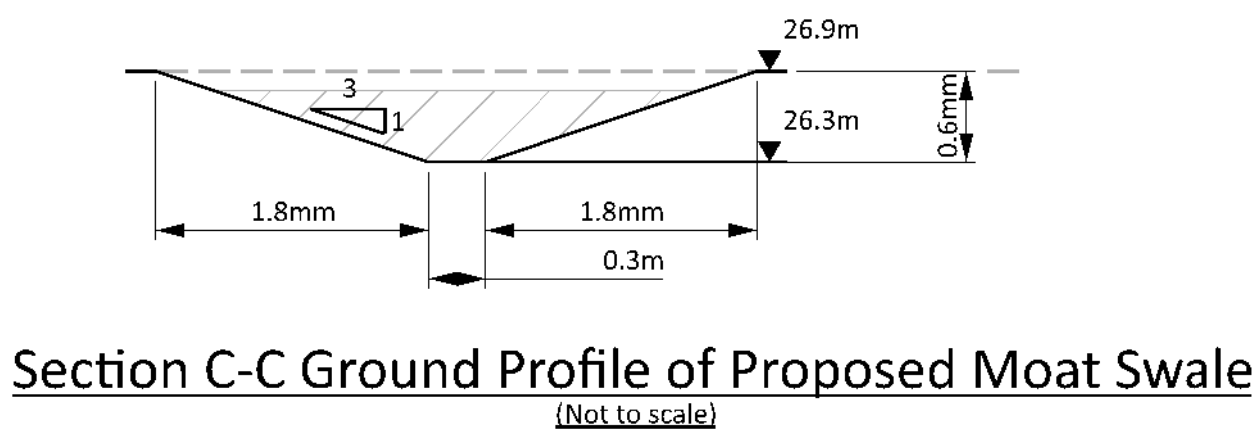
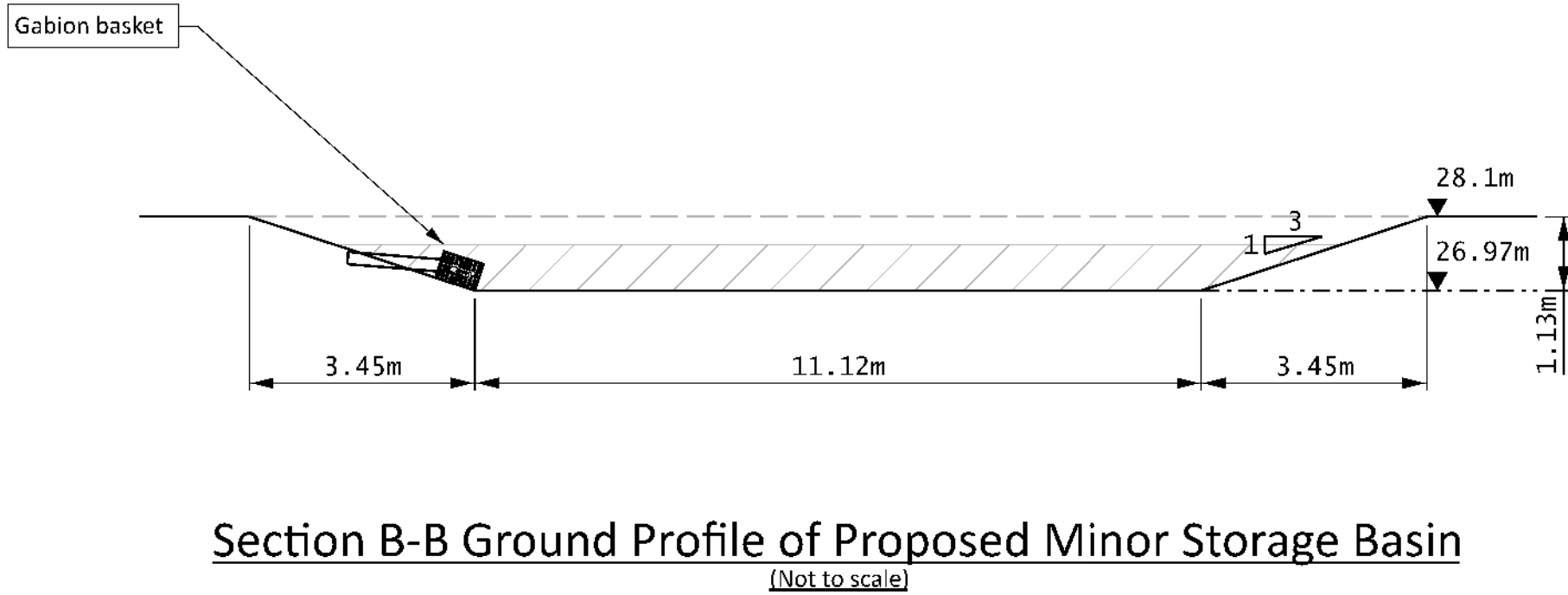
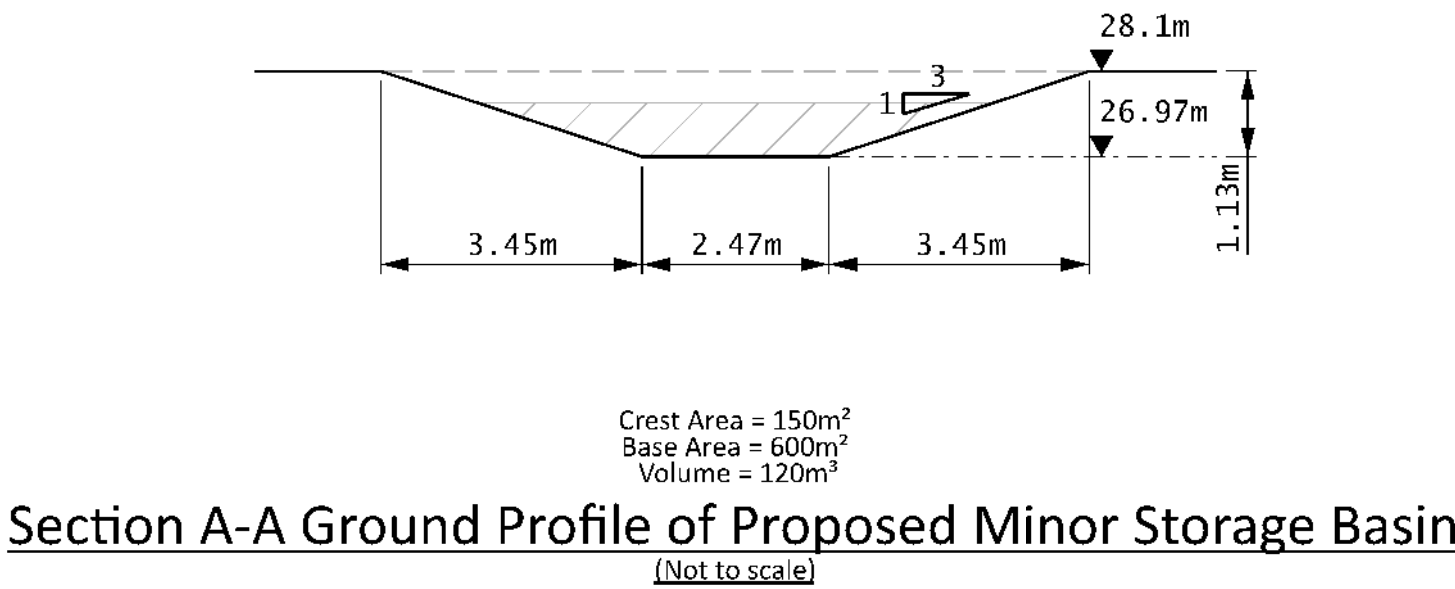
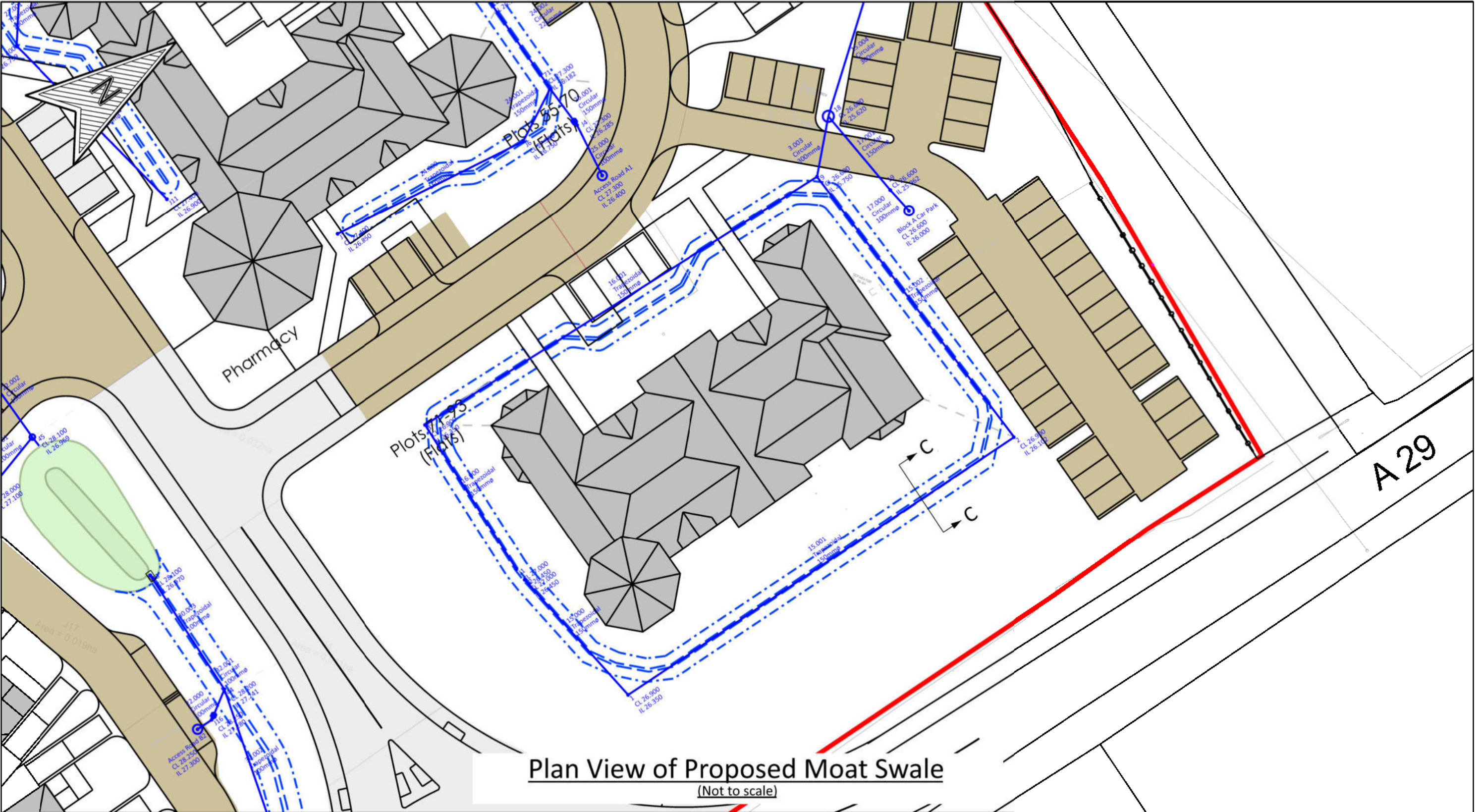
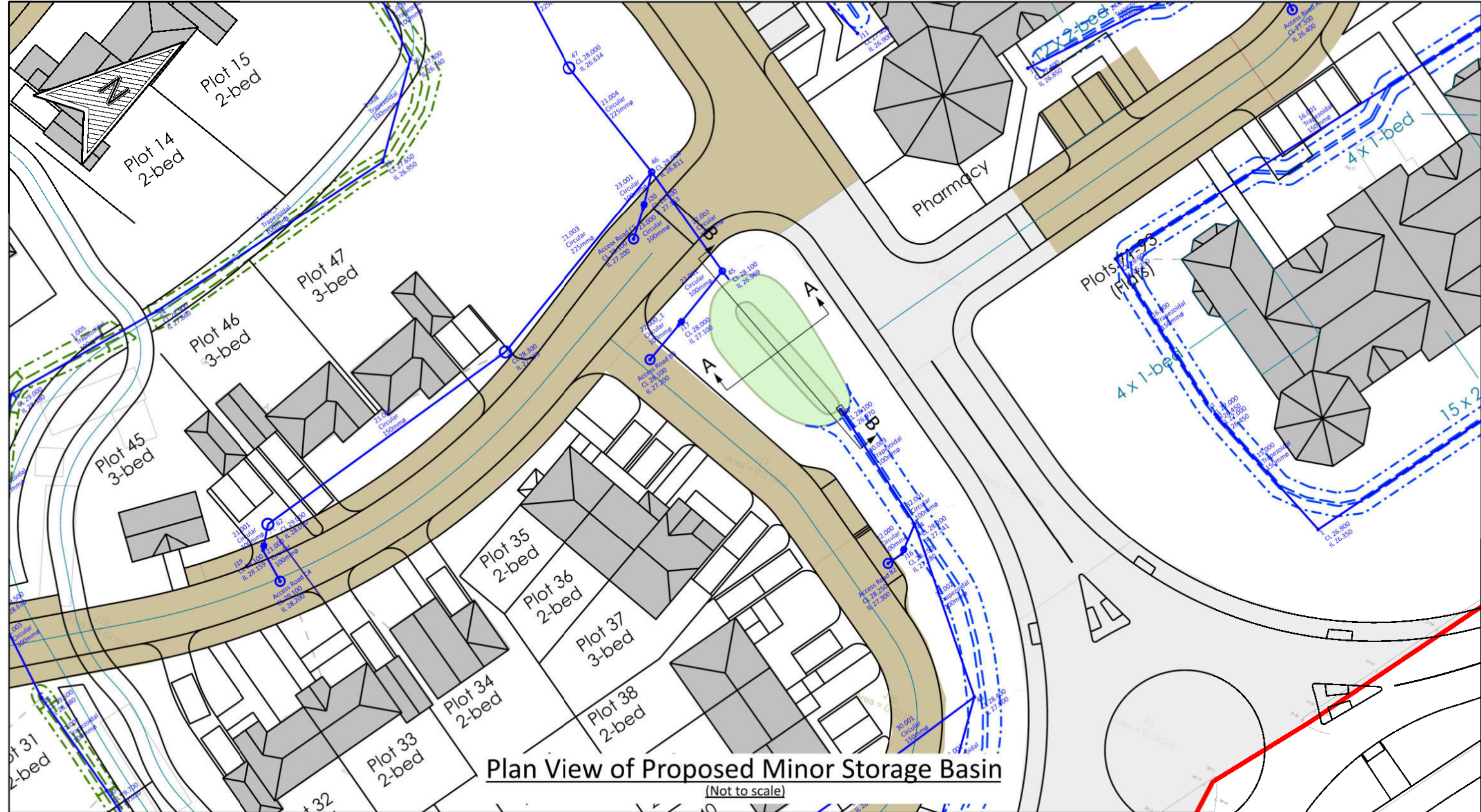
MINOR AMENDMENTS	REV	CREATED BY	DATE	APPROVED BY	DATE	AUTHORISED BY	DATE
P02	SI PARHAM	24/03/26					
P01	SI PARHAM	23/02/26	P TIMMINS	24/03/26	24/03/26		
PURPOSE							

PROJECT	TOTE CAFE PULBOROUGH
CLIENT	ANTONIO AVENUE LTD
CLIENT ADDRESS	Netherton Farm Le Chemin Du Moulin St Quen Jersey JE3 2FL

DRAWING CLASSIFICATION

ISSUED FOR PLANNING

TITLE	
TOTE CAFE UPPER AND LOWER SWALE DESIGN	
TIMMINS ENGINEERING DESIGN SERVICES Telephone: 07900 404760 http://www.timminsconsulting.co.uk Registered in England and Wales No. 06950986	
DRAWING NUMBER	REV.
TCP0120	P02



NOTES:

KEY:

- Roof Area (Impermeable)
- Road Area (Permeable, such as Block Paving)
- Road Area (Impermeable, such as Tarmac)
- Swale
- Existing Drainage Ditch
- Detention Pond
- New Private Inspection Chamber
- Proposed Surface Water Drain

CONSTRUCTION RISKS	MAINTENANCE/CLEANING RISKS	DEMOLITION/ADAPTATION RISKS
In addition to the hazard/risks normally associated with the type of works detailed on this drawing take note of the above. It is assumed that all works on this drawing will be carried out by a competent contractor working where appropriate, to an appropriate method statement.		
SAFETY HEALTH AND ENVIRONMENTAL INFORMATION BOX		

MINOR AMENDMENTS	REV	DESCRIPTION	DATE	APPROVED BY	DATE	AUTHORISED BY	DATE
P02	SI PARHAM	24/03/26					
P01	SI PARHAM	23/02/26	P TIMMINS	24/03/26			
P00	SI PARHAM	23/02/26	P TIMMINS	24/03/26			

PROJECT	TOTE CAFE PULBOROUGH
CLIENT	ANTONIO AVENUE LTD
CLIENT ADDRESS	Netherton Farm Le Chemin Du Moulin St Quen Jersey JE3 2FL

TITLE	TOTE CAFE MINOR AND MOAT SWALE DESIGN
TIMMINS ENGINEERING DESIGN SERVICES	Telephone: 07900 404760 http://www.timminsconsulting.co.uk Registered in England and Wales No. 06950986

DRAWING CLASSIFICATION	ISSUED FOR PLANNING
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DRAWING NUMBER	TCP0125	REV.	P02
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Appendix E - Hydraulic modelling outputs

Design Settings

Rainfall Methodology	FEH-22	Time of Entry (mins)	5.00	Connection Type	Level Soffits	Enforce best practice design rules	✓
Return Period (years)	1	Maximum Time of Concentration (mins)	30.00	Minimum Backdrop Height (m)	0.200		
Additional Flow (%)	0	Maximum Rainfall (mm/hr)	100.0	Preferred Cover Depth (m)	0.800		
CV	1.000	Minimum Velocity (m/s)	0.80	Include Intermediate Ground	✓		

Nodes

Name	Area (ha)	Add Area (%)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
1	0.029		5.00	26.900		506110.592	120952.888	0.550	26.350
2	0.029		5.00	26.900		506136.893	120994.905	0.798	26.102
3	0.024		5.00	26.900		506079.019	120970.310	0.550	26.350
J3			5.00	26.900		506014.681	121045.505	1.200	25.700
5	0.018	10	5.00	26.600	1200	506066.885	121055.725	1.217	25.383
6				26.000	1200	506035.507	121075.688	0.860	25.140
Outfall				25.500		506040.541	121084.532	0.400	25.100
8				26.900	1500	506027.704	121064.128	1.637	25.263
9				26.600		506106.304	121011.631	0.850	25.750
10	0.010	10	5.00	26.600	1200	506102.950	121032.748	1.070	25.530
11	0.008		5.00	27.400		506024.918	120987.823	0.601	26.799
J1			5.00	27.000		506094.240	120960.240	0.550	26.450
J2			5.00	27.000		506095.492	120959.575	0.550	26.450
J5				27.100		506040.761	121024.321	1.208	25.892
J6	0.004		5.00	27.300		506076.829	121001.657	0.550	26.750
J7	0.018		5.00	27.400		506062.127	120985.060	0.550	26.850
J8				27.200		506041.244	121022.790	0.900	26.300
J9	0.016		5.00	27.200		506032.830	121010.230	1.100	26.100
J10	0.009		5.00	27.300		506023.773	120995.733	0.581	26.719
J11	0.019		5.00	27.400		506043.982	120980.980	0.500	26.900
4				26.900	1200	506030.185	121030.509	1.107	25.793
12	0.010		5.00	27.200	1200	506054.046	121021.019	1.181	26.019
13	0.008		5.00	27.250	1200	506067.075	121017.528	1.121	26.129
14	0.019	10	5.00	26.600	1200	506044.310	121068.423	1.286	25.314
15				26.900	1200	506029.636	121061.973	1.629	25.271
16				26.900	1200	506021.153	121054.817	1.273	25.627
Block A Car Park			5.00	26.600		506116.758	121012.348	0.600	26.000
Block B Car Park			5.00	27.400		506042.722	121019.196	0.700	26.700
Access Road A1			5.00	27.300		506085.329	121002.338	0.900	26.400
Access Road A2			5.00	27.200		506064.908	121030.231	0.900	26.300
J4	0.057		5.00	27.300		506080.678	121006.138	1.015	26.285
18				26.600	1200	506104.762	121018.012	0.980	25.620
Access Road A3			5.00	27.000		506031.060	121020.206	0.900	26.100
Block C Car Park			5.00	26.700		506031.165	121054.605	0.500	26.200

Nodes

Name	Area (ha)	Add Area (%)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
19	0.093		5.00	26.600		506114.021	121013.543	0.638	25.962
J12	0.032		5.00	27.200		506060.397	121027.698	0.956	26.244
J13	0.065		5.00	27.100		506028.344	121027.314	1.133	25.967
J14	0.032		5.00	27.400		506041.486	121021.418	0.732	26.668
J15	0.022		5.00	26.700		506025.487	121052.773	0.900	25.800
7			5.00	30.000		506043.505	120849.209	0.740	29.260
17	0.017	10	5.00	29.850		506029.233	120858.308	0.750	29.100
20	0.008	10	5.00	29.700		506004.023	120874.349	0.680	29.020
21	0.014	10	5.00	29.500		505993.615	120880.540	0.620	28.880
22				29.500		505984.518	120887.916	0.870	28.630
23				29.000		505977.357	120908.687	0.620	28.380
24				28.900		505987.884	120923.225	1.040	27.860
25				27.650		506003.394	120947.682	0.700	26.950
26				27.400		506001.583	120958.919	0.660	26.740
27				27.300		505993.814	120965.490	0.900	26.400
28	0.028		5.00	27.200		505984.549	120968.857	1.100	26.100
29	0.031	3	5.00	27.300		505967.688	120983.021	1.258	26.042
30	0.009	10	5.00	27.100		505941.286	120997.407	1.129	25.971
31				26.800		505930.815	121004.606	0.950	25.850
32				26.600		505929.039	121007.573	1.025	25.575
33				26.400		505937.844	121031.912	0.950	25.450
34				26.300		505948.347	121042.602	0.950	25.350
35			5.00	26.000	1200	506019.195	121087.233	0.700	25.300
36				25.800	1200	506027.189	121081.288	0.560	25.240
37	0.022	4	5.00	27.800		505889.631	120928.179	1.100	26.700
38	0.010	10	5.00	27.400		505889.849	120949.362	0.806	26.594
39	0.013	10	5.00	27.350		505895.302	120968.774	0.857	26.493
40	0.014		5.00	27.200		505917.038	120990.958	0.988	26.212
41	0.041		5.00	29.000		506082.697	120897.627	0.773	28.227
42				28.700		506086.988	120905.209	0.560	28.140
43	0.095		5.00	28.400		506084.448	120921.472	0.500	27.900
44	0.031		5.00	28.200		506071.048	120935.755	0.959	27.241
45	0.050	4	5.00	28.000	600	506041.258	120951.902	1.031	26.969
46				28.000	600	506030.046	120958.476	1.189	26.811
47	0.045		5.00	28.000	1200	506017.447	120965.000	1.366	26.634
48	0.033	3	5.00	28.500	1200	505926.724	120898.892	0.847	27.653
49	0.017	10	5.00	28.400	1200	505904.982	120908.435	0.984	27.416
50				27.500	1200	506006.865	120973.238	1.025	26.475
51	0.018		5.00	27.400	1200	506005.692	120993.459	1.025	26.375
52				26.900	1200	506002.817	121022.368	1.150	25.750
53				28.100		506058.829	120943.601	1.130	26.970



Nodes

Name	Area (ha)	Add Area (%)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
54	0.016	10	5.00	29.400	600	506061.059	120880.988	0.950	28.450
55	0.018	10	5.00	29.200	600	506076.004	120906.320	0.950	28.250
56	0.017	10	5.00	28.300	1200	506023.670	120934.541	1.025	27.275
57				26.200		505952.719	121046.162	0.900	25.300
58	0.046	4	5.00	30.700	1200	506012.188	120820.243	1.084	29.616
59	0.016	10	5.00	30.500	1200	505985.817	120835.101	1.082	29.418
60	0.018	10	5.00	30.100	1200	505959.784	120859.650	1.025	29.075
61	0.028		5.00	30.000	1200	505961.505	120870.170	1.025	28.975
62	0.031	10	5.00	29.000	1200	506008.076	120907.389	0.950	28.050
63	0.026	10	5.00	29.400	1200	505915.411	120870.544	0.998	28.402
64	0.033	10	5.00	28.900	1200	505944.448	120898.279	0.950	27.950
65	0.043		5.00	27.000	600	505927.661	121032.357	1.011	25.989
66	0.009	10	5.00	28.600	1200	505938.819	120919.664	1.069	27.531
67	0.036	7	5.00	28.200	1200	505951.415	120941.179	1.011	27.189
68	0.016	10	5.00	27.600	1200	505957.716	120961.382	1.025	26.575
Access Road B1			5.00	29.000		506076.890	120898.267	0.700	28.300
Access Road B2			5.00	28.250		506070.186	120930.689	0.950	27.300
Access Road B3			5.00	28.100		506038.101	120940.135	0.900	27.200
J16	0.021		5.00	28.250		506071.149	120932.242	0.970	27.280
J17	0.019		5.00	28.000		506039.370	120944.706	0.900	27.100
Access Road C1			5.00	30.600		506014.759	120821.897	0.900	29.700
Access Road C2			5.00	30.400		505987.020	120837.784	0.900	29.500
J18	0.029		5.00	30.400		505986.414	120836.551	0.915	29.485
Access Road C4			5.00	29.100		506010.364	120902.437	0.900	28.200
J19	0.041		5.00	29.100		506007.555	120905.206	0.943	28.157
Access Road C5			5.00	28.100		506031.304	120952.829	0.900	27.200
J20	0.048		5.00	28.100		506029.375	120954.601	0.929	27.171
Access Road D1			5.00	29.500		505931.986	120867.271	0.900	28.600
J25	0.009		5.00	27.500		505891.199	120946.220	0.730	26.770
J21	0.019		5.00	29.400		505921.659	120865.784	0.913	28.487
J22	0.036		5.00	28.600		505934.580	120914.505	0.946	27.654
J23	0.029		5.00	28.200		505951.260	120939.041	0.937	27.263
J24	0.026		5.00	27.700		505957.983	120959.915	0.935	26.765
Access Road D4			5.00	27.700		505961.114	120959.353	0.900	26.800
Access Road D3			5.00	28.200		505954.524	120938.141	0.900	27.300
Access Road D2			5.00	28.600		505936.847	120910.996	0.900	27.700
Access Road E1			5.00	28.200		505878.861	120908.619	0.700	27.500
Access Road E2			5.00	28.000		505882.871	120922.607	0.600	27.400
Access Road E3			5.00	27.500		505893.326	120945.043	0.700	26.800
Access Road E4			5.00	27.400		505899.040	120966.664	0.700	26.700
Access Road F1			5.00	27.200		505922.829	120993.997	0.600	26.600



Nodes

Name	Area (ha)	Add Area (%)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
Car Park			5.00	27.000		505918.163	121031.767	0.950	26.050
70	0.034		5.00	28.200		505880.132	120914.929	0.950	27.250
J26	0.007		5.00	27.400		505898.079	120968.643	0.727	26.673
J27	0.037		5.00	27.100		505926.365	120998.866	0.575	26.525
J28	0.006		5.00	27.900		505885.599	120925.333	0.650	27.250
69				27.300		505907.982	120983.652	0.905	26.395
71				27.300		506078.560	121009.949	1.118	26.182
J29				26.900		506015.329	121030.794	1.150	25.750

Links

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
15.001	1	2	49.570	26.350	26.102	0.248	200.0	150
15.002	2	9	34.863	26.102	25.928	0.174	200.0	150
16.000	J1	3	18.251	26.450	26.350	0.100	182.5	150
15.006	5	14	25.901	25.383	25.314	0.069	375.4	300
1.011	6	Outfall	10.248	25.140	25.100	0.040	256.2	300
1.010	8	6	14.362	25.263	25.140	0.123	116.8	300
16.001	3	9	49.517	26.350	26.102	0.248	200.0	150
1.006	10	5	42.762	25.530	25.383	0.147	290.9	300
3.003	9	18	6.565	25.750	25.695	0.055	119.4	300
15.000	J2	1	16.514	26.450	26.350	0.100	165.1	150
24.000	J7	J6	22.172	26.850	26.750	0.100	221.7	150
24.001	J6	71	8.471	26.750	26.740	0.010	814.4	150

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
15.001	1.245	140.1	3.7	0.400	0.648	0.029	0.0	23	0.445
15.002	1.245	140.1	7.2	0.648	0.522	0.058	0.0	33	0.548
16.000	1.304	146.7	0.0	0.400	0.400	0.000	0.0	0	0.000
15.006	0.805	56.9	22.8	0.917	0.986	0.206	0.0	132	0.762
1.011	0.977	69.1	23.8	0.560	0.100	0.249	0.0	121	0.889
1.010	1.454	102.8	24.3	1.337	0.560	0.249	0.0	99	1.195
16.001	1.245	140.1	3.0	0.400	0.348	0.024	0.0	20	0.417
1.006	0.917	64.8	18.9	0.770	0.917	0.186	0.0	110	0.797
3.003	1.438	101.6	9.5	0.550	0.605	0.082	0.0	61	0.908
15.000	1.372	154.3	0.0	0.400	0.400	0.000	0.0	0	0.000
24.000	1.182	133.0	2.4	0.400	0.400	0.018	0.0	18	0.374
24.001	0.611	68.8	2.9	0.400	0.410	0.022	0.0	30	0.252

Links

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
27.000	J11	11	20.255	26.900	26.799	0.101	200.0	100
27.002	J10	J9	17.094	26.719	26.548	0.171	100.2	100
27.003	J9	J5	16.170	26.100	25.892	0.208	77.7	300
28.002	J8	J5	1.605	26.300	26.092	0.208	7.7	100
24.006	4	J29	14.859	25.793	25.753	0.040	371.5	300
24.005	J5	4	12.253	25.892	25.793	0.099	123.8	300
18.000	J3	16	11.340	25.700	25.627	0.073	155.3	150
27.001	11	J10	7.992	26.799	26.719	0.080	100.2	100
24.004	12	J5	13.689	26.019	25.967	0.052	263.3	225
24.003	13	12	13.489	26.129	26.019	0.110	122.6	225
15.007	14	15	16.029	25.314	25.271	0.043	372.8	300
15.008	15	8	2.894	25.271	25.263	0.008	361.8	300
18.001	16	8	11.385	25.627	25.413	0.214	53.2	150
17.000	Block A Car Park	19	2.987	26.000	25.962	0.038	79.2	100
28.001	J14	J8	1.393	26.668	26.650	0.018	77.4	100
15.004	18	10	14.847	25.620	25.536	0.084	176.8	300
28.000	Block B Car Park	J14	2.543	26.700	26.668	0.032	79.6	100
17.001	19	18	10.281	25.962	25.833	0.129	79.7	150
29.000	Access Road A3	J13	7.609	26.100	26.017	0.083	91.7	100

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
27.000	1.004	60.2	2.4	0.400	0.501	0.019	0.0	18	0.383
27.002	1.424	85.4	4.6	0.481	0.552	0.036	0.0	21	0.602
27.003	1.785	126.1	6.6	0.800	0.908	0.052	0.0	46	0.951
28.002	2.800	22.0	4.3	0.800	0.908	0.032	0.0	30	2.178
24.006	0.810	57.2	33.3	0.807	0.847	0.278	0.0	164	0.839
24.005	1.412	99.8	26.1	0.908	0.807	0.214	0.0	105	1.195
18.000	0.804	14.2	0.0	1.050	1.123	0.000	0.0	0	0.000
27.001	1.424	85.4	3.5	0.501	0.481	0.027	0.0	18	0.546
24.004	0.801	31.8	16.0	0.956	0.908	0.130	0.0	113	0.802
24.003	1.179	46.9	11.0	0.896	0.956	0.088	0.0	74	0.969
15.007	0.808	57.1	24.7	0.986	1.329	0.227	0.0	137	0.779
15.008	0.821	58.0	24.6	1.329	1.337	0.227	0.0	136	0.788
18.001	1.382	24.4	2.8	1.123	1.337	0.022	0.0	34	0.923
17.000	0.865	6.8	0.0	0.500	0.538	0.000	0.0	0	0.000
28.001	0.875	6.9	4.3	0.632	0.450	0.032	0.0	57	0.924
15.004	1.179	83.4	21.0	0.680	0.764	0.175	0.0	102	0.987
28.000	0.863	6.8	0.0	0.600	0.632	0.000	0.0	0	0.000
17.001	1.127	19.9	12.3	0.488	0.617	0.093	0.0	85	1.184
29.000	0.803	6.3	0.0	0.800	0.983	0.000	0.0	0	0.000



Links

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
29.001	J13	4	3.687	25.967	25.943	0.024	153.6	150
26.000_1	Access Road A2	J12	5.174	26.300	26.244	0.056	92.4	100
26.001_1	J12	12	9.217	26.244	26.144	0.100	92.2	100
25.000	Access Road A1	J4	6.006	26.400	26.335	0.065	92.4	100
25.001	J4	71	4.360	26.285	26.257	0.028	155.7	150
19.000	Block C Car Park	J15	5.966	26.200	26.125	0.075	79.5	100
19.001	J15	16	4.792	25.800	25.677	0.123	39.0	100
1.000	7	17	32.588	29.260	29.100	0.160	203.7	100
1.001	17	20	29.881	29.100	29.020	0.080	373.5	100
1.002	20	21	12.110	29.020	28.880	0.140	86.5	100
1.003	21	22	11.712	28.880	28.630	0.250	46.8	300
1.004	22	23	21.971	28.630	28.380	0.250	87.9	100
1.005	23	24	17.949	28.380	27.860	0.520	34.5	100
1.006_1	24	25	28.960	27.860	26.950	0.910	31.8	100
1.008	25	26	11.382	26.950	26.740	0.210	54.2	100
1.009	26	27	10.175	26.740	26.400	0.340	29.9	100
1.010_1	27	28	9.858	26.400	26.300	0.100	98.6	100
1.011_1	28	29	22.021	26.100	26.042	0.058	379.7	300
1.012	29	30	30.067	26.042	25.971	0.071	423.5	150

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
29.001	0.808	14.3	8.6	0.983	0.807	0.065	0.0	84	0.845
26.000_1	0.800	6.3	0.0	0.800	0.856	0.000	0.0	0	0.000
26.001_1	0.801	6.3	4.3	0.856	0.956	0.032	0.0	61	0.862
25.000	0.800	6.3	0.0	0.800	0.865	0.000	0.0	0	0.000
25.001	0.803	14.2	7.6	0.865	0.893	0.057	0.0	78	0.817
19.000	0.864	6.8	0.0	0.400	0.475	0.000	0.0	0	0.000
19.001	1.239	9.7	2.9	0.800	1.123	0.022	0.0	37	1.077
1.000	1.087	76.1	0.0	0.640	0.650	0.000	0.0	0	0.000
1.001	0.800	56.0	2.3	0.650	0.580	0.019	0.0	16	0.275
1.002	1.675	117.3	3.4	0.580	0.520	0.028	0.0	13	0.508
1.003	2.303	162.8	5.2	0.320	0.570	0.043	0.0	37	1.068
1.004	1.662	116.3	21.6	0.770	0.520	0.185	0.0	38	0.978
1.005	2.660	186.2	21.5	0.520	0.940	0.185	0.0	29	1.328
1.006_1	2.770	193.9	20.8	0.940	0.600	0.185	0.0	28	1.361
1.008	2.120	148.4	21.0	0.600	0.560	0.185	0.0	32	1.141
1.009	2.857	200.0	21.0	0.560	0.800	0.185	0.0	27	1.380
1.010_1	1.568	109.8	20.8	0.800	0.800	0.185	0.0	39	0.934
1.011_1	0.801	56.6	23.3	0.800	0.958	0.213	0.0	134	0.763
1.012	0.925	111.0	42.7	1.108	0.979	0.403	0.0	89	0.707

Links

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.013_1	30	31	12.707	25.971	25.850	0.121	105.0	150
1.014	31	32	3.458	25.850	25.575	0.275	12.6	150
1.015	32	33	25.883	25.575	25.450	0.125	207.1	150
1.016	33	34	14.986	25.450	25.350	0.100	149.9	150
1.017	34	57	5.638	25.350	25.300	0.050	112.8	150
26.000	35	36	9.962	25.300	25.240	0.060	166.0	225
8.005	37	38	21.184	26.700	26.594	0.106	200.0	100
8.006	38	39	20.163	26.594	26.493	0.101	200.0	100
8.007	39	69	19.549	26.493	26.395	0.098	200.0	100
8.009	40	32	20.495	26.212	25.575	0.637	32.2	225
31.001	41	42	8.712	28.227	28.140	0.087	100.0	100
31.002	42	43	16.460	28.140	27.900	0.240	68.6	100
30.002	43	44	19.585	27.900	27.700	0.200	97.9	100
30.003	44	53	14.521	27.241	27.096	0.145	100.0	100
22.002	45	46	12.997	26.969	26.886	0.083	156.6	150
21.004	46	47	14.188	26.811	26.634	0.177	80.0	225
21.005	47	50	13.411	26.634	26.475	0.159	84.3	225
8.003	48	49	23.744	27.653	27.416	0.237	100.2	300
8.004	49	37	25.010	27.416	26.700	0.716	34.9	300

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.013_1	1.870	224.4	42.2	0.979	0.800	0.412	0.0	59	1.152
1.014	5.429	651.4	47.3	0.800	0.875	0.449	0.0	34	2.460
1.015	1.328	159.4	72.7	0.875	0.800	0.705	0.0	98	1.068
1.016	1.563	187.6	76.4	0.800	0.800	0.747	0.0	92	1.214
1.017	1.804	216.5	76.2	0.800	0.750	0.747	0.0	85	1.343
26.000	1.012	40.2	0.0	0.475	0.335	0.000	0.0	0	0.000
8.005	1.004	60.2	24.4	1.000	0.706	0.200	0.0	63	0.785
8.006	1.004	60.2	26.2	0.706	0.757	0.220	0.0	66	0.806
8.007	1.004	60.2	28.1	0.757	0.805	0.241	0.0	68	0.821
8.009	2.314	92.0	29.1	0.763	0.800	0.255	0.0	87	2.056
31.001	1.425	85.5	5.5	0.673	0.460	0.041	0.0	23	0.641
31.002	1.724	103.4	5.4	0.460	0.400	0.041	0.0	21	0.730
30.002	1.440	86.4	21.8	0.400	0.400	0.174	0.0	49	0.985
30.003	1.425	85.5	27.9	0.859	0.904	0.225	0.0	57	1.055
22.002	0.800	14.1	9.2	0.881	0.964	0.071	0.0	88	0.851
21.004	1.463	58.2	27.0	0.964	1.141	0.212	0.0	108	1.436
21.005	1.424	56.6	32.3	1.141	0.800	0.257	0.0	122	1.469
8.003	1.570	111.0	14.8	0.547	0.684	0.118	0.0	74	1.102
8.004	2.669	188.6	17.1	0.684	0.800	0.137	0.0	61	1.679



Links

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
21.006	50	51	20.255	26.475	26.375	0.100	202.5	225
21.007	51	52	29.052	26.375	26.100	0.275	105.6	225
1.001_1	58	59	30.269	29.616	29.418	0.198	152.9	150
30.000	54	55	29.412	28.450	28.250	0.200	147.1	150
30.001	55	43	17.346	28.250	28.033	0.217	80.0	150
21.003	56	46	24.770	27.275	26.811	0.464	53.4	225
1.002_1	59	60	35.782	29.418	29.150	0.268	133.5	150
1.003_1	60	61	10.660	29.075	28.975	0.100	106.6	225
1.004_1	61	22	29.061	28.975	28.700	0.275	105.7	225
21.002	62	56	31.311	28.050	27.350	0.700	44.7	150
8.002	63	48	30.522	28.402	27.750	0.652	46.8	150
9.000	64	48	17.735	27.950	27.728	0.222	80.0	150
14.001	65	33	10.193	25.989	25.862	0.127	80.0	150
4.002	66	67	24.931	27.531	27.189	0.342	72.9	150
4.003	67	68	21.163	27.189	26.650	0.539	39.3	150
4.004	68	29	23.826	26.575	26.277	0.298	80.0	225
31.000	Access Road B1	41	5.842	28.300	28.227	0.073	80.0	150
32.001	J16	44	3.514	27.280	27.241	0.039	90.1	100
22.000	Access Road B2	J16	1.827	27.300	27.280	0.020	91.4	100

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
21.006	0.915	36.4	31.5	0.800	0.800	0.257	0.0	162	1.026
21.007	1.271	50.6	32.9	0.800	0.575	0.275	0.0	132	1.351
1.001_1	0.810	14.3	6.1	0.934	0.932	0.047	0.0	68	0.778
30.000	0.826	14.6	2.3	0.800	0.800	0.018	0.0	40	0.603
30.001	1.125	19.9	4.7	0.800	0.217	0.037	0.0	50	0.927
21.003	1.794	71.3	11.9	0.800	0.964	0.093	0.0	62	1.339
1.002_1	0.868	15.3	11.5	0.932	0.800	0.094	0.0	97	0.951
1.003_1	1.266	50.3	13.8	0.800	0.800	0.113	0.0	80	1.084
1.004_1	1.271	50.5	16.8	0.800	0.575	0.142	0.0	89	1.146
21.002	1.508	26.7	9.7	0.800	0.800	0.075	0.0	62	1.389
8.002	1.474	26.0	6.1	0.848	0.600	0.048	0.0	50	1.209
9.000	1.125	19.9	4.7	0.800	0.622	0.036	0.0	50	0.922
14.001	1.125	19.9	5.6	0.861	0.388	0.043	0.0	55	0.971
4.002	1.179	20.8	6.0	0.919	0.861	0.046	0.0	55	1.018
4.003	1.611	28.5	14.6	0.861	0.800	0.114	0.0	76	1.618
4.004	1.463	58.2	19.8	0.800	0.798	0.158	0.0	90	1.325
31.000	1.125	19.9	0.0	0.550	0.623	0.000	0.0	0	0.000
32.001	0.810	6.4	2.8	0.870	0.859	0.021	0.0	46	0.785
22.000	0.805	6.3	0.0	0.850	0.870	0.000	0.0	0	0.000

Links

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
22.000_1	Access Road B3	J17	4.744	27.200	27.100	0.100	47.4	100
22.001	J17	45	7.440	27.100	27.019	0.081	91.8	100
1.000_1	Access Road C1	58	3.057	29.700	29.666	0.034	89.9	100
2.000	Access Road C2	J18	1.374	29.500	29.485	0.015	91.6	100
2.001	J18	59	1.568	29.485	29.468	0.017	92.2	100
21.000	Access Road C4	J19	3.944	28.200	28.157	0.043	91.7	100
21.001	J19	62	2.244	28.157	28.100	0.057	39.4	100
23.000	Access Road C5	J20	2.619	27.200	27.171	0.029	90.3	100
23.001	J20	46	3.933	27.171	26.936	0.235	16.7	100
13.000	Access Road E4	J26	2.200	26.700	26.673	0.027	80.0	100
8.000	Access Road D1	J21	10.434	28.600	28.487	0.113	92.3	100
8.001	J21	63	7.855	28.487	28.402	0.085	92.4	100
6.000	Access Road D4	J24	3.181	26.800	26.765	0.035	90.9	100
6.001	J24	68	1.491	26.765	26.700	0.065	22.9	100
5.000	Access Road D3	J23	3.386	27.300	27.263	0.037	91.5	100
5.001	J23	67	2.144	27.263	27.239	0.024	89.3	100
4.000	Access Road D2	J22	4.178	27.700	27.654	0.046	90.8	100
4.001	J22	66	6.677	27.654	27.581	0.073	91.5	100
10.001	70	37	16.303	27.250	27.100	0.150	108.7	150

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
22.000_1	1.122	8.8	0.0	0.800	0.800	0.000	0.0	0	0.000
22.001	0.803	6.3	2.5	0.800	0.881	0.019	0.0	43	0.753
1.000_1	0.811	6.4	0.0	0.800	0.934	0.000	0.0	0	0.000
2.000	0.804	6.3	0.0	0.800	0.815	0.000	0.0	0	0.000
2.001	0.801	6.3	3.9	0.815	0.932	0.029	0.0	57	0.841
21.000	0.803	6.3	0.0	0.800	0.843	0.000	0.0	0	0.000
21.001	1.232	9.7	5.5	0.843	0.800	0.041	0.0	54	1.267
23.000	0.809	6.4	0.0	0.800	0.829	0.000	0.0	0	0.000
23.001	1.897	14.9	6.4	0.829	0.964	0.048	0.0	46	1.824
13.000	0.861	6.8	0.0	0.600	0.627	0.000	0.0	0	0.000
8.000	0.800	6.3	0.0	0.800	0.813	0.000	0.0	0	0.000
8.001	0.800	6.3	2.5	0.813	0.898	0.019	0.0	44	0.757
6.000	0.807	6.3	0.0	0.800	0.835	0.000	0.0	0	0.000
6.001	1.618	12.7	3.5	0.835	0.800	0.026	0.0	36	1.376
5.000	0.804	6.3	0.0	0.800	0.837	0.000	0.0	0	0.000
5.001	0.814	6.4	3.9	0.837	0.861	0.029	0.0	57	0.855
4.000	0.807	6.3	0.0	0.800	0.846	0.000	0.0	0	0.000
4.001	0.804	6.3	4.8	0.846	0.919	0.036	0.0	64	0.882
10.001	0.963	17.0	4.5	0.800	0.550	0.034	0.0	52	0.813



Links

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
10.000	Access Road E1	70	6.437	27.500	27.250	0.250	25.7	150
11.000	Access Road E2	J28	3.857	27.400	27.250	0.150	25.7	100
13.001	J26	39	2.780	26.673	26.638	0.035	79.4	100
12.000	Access Road E3	J25	2.431	26.800	26.770	0.030	80.0	100
12.001	J25	38	3.420	26.770	26.727	0.043	79.5	100
7.000	Access Road F1	J27	6.018	26.600	26.525	0.075	80.0	100
7.001	J27	31	7.263	26.525	26.434	0.091	80.0	100
14.000	Car Park	65	9.516	26.050	25.989	0.061	156.0	150
11.001	J28	37	4.935	27.250	27.100	0.150	32.9	100
26.001	36	6	10.027	25.240	25.160	0.080	125.3	225
8.008	69	40	11.636	26.395	26.337	0.058	200.0	100
24.002	71	13	13.760	26.182	26.129	0.053	259.6	225

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
10.000	1.992	35.2	0.0	0.550	0.800	0.000	0.0	0	0.000
11.000	1.528	12.0	0.0	0.500	0.550	0.000	0.0	0	0.000
13.001	0.864	6.8	0.9	0.627	0.612	0.007	0.0	25	0.598
12.000	0.861	6.8	0.0	0.600	0.630	0.000	0.0	0	0.000
12.001	0.863	6.8	1.2	0.630	0.573	0.009	0.0	29	0.650
7.000	0.861	6.8	0.0	0.500	0.475	0.000	0.0	0	0.000
7.001	0.861	6.8	4.9	0.475	0.266	0.037	0.0	63	0.937
14.000	0.802	14.2	0.0	0.800	0.861	0.000	0.0	0	0.000
11.001	1.349	10.6	0.8	0.550	0.600	0.006	0.0	19	0.804
26.001	1.166	46.4	0.0	0.335	0.615	0.000	0.0	0	0.000
8.008	1.004	60.2	27.8	0.805	0.763	0.241	0.0	68	0.816
24.002	0.807	32.1	10.1	0.893	0.896	0.080	0.0	87	0.716



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
15.001	49.570	200.0	150	Swale 1	26.900	26.350	0.400	26.900	26.102	0.648
15.002	34.863	200.0	150	Swale 1	26.900	26.102	0.648	26.600	25.928	0.522
16.000	18.251	182.5	150	Swale 1	27.000	26.450	0.400	26.900	26.350	0.400
15.006	25.901	375.4	300	Circular	26.600	25.383	0.917	26.600	25.314	0.986
1.011	10.248	256.2	300	Circular	26.000	25.140	0.560	25.500	25.100	0.100
1.010	14.362	116.8	300	Circular	26.900	25.263	1.337	26.000	25.140	0.560
16.001	49.517	200.0	150	Swale 1	26.900	26.350	0.400	26.600	26.102	0.348
1.006	42.762	290.9	300	Circular	26.600	25.530	0.770	26.600	25.383	0.917
3.003	6.565	119.4	300	Circular	26.600	25.750	0.550	26.600	25.695	0.605
15.000	16.514	165.1	150	Swale 1	27.000	26.450	0.400	26.900	26.350	0.400
24.000	22.172	221.7	150	Swale 1	27.400	26.850	0.400	27.300	26.750	0.400
24.001	8.471	814.4	150	Swale 1	27.300	26.750	0.400	27.300	26.740	0.410
27.000	20.255	200.0	100	Swale 1	27.400	26.900	0.400	27.400	26.799	0.501
27.002	17.094	100.2	100	Swale 1	27.300	26.719	0.481	27.200	26.548	0.552
27.003	16.170	77.7	300	Circular	27.200	26.100	0.800	27.100	25.892	0.908
28.002	1.605	7.7	100	Circular	27.200	26.300	0.800	27.100	26.092	0.908
24.006	14.859	371.5	300	Circular	26.900	25.793	0.807	26.900	25.753	0.847
24.005	12.253	123.8	300	Circular	27.100	25.892	0.908	26.900	25.793	0.807
18.000	11.340	155.3	150	Circular	26.900	25.700	1.050	26.900	25.627	1.123

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
15.001	1		Junction		2		Junction	
15.002	2		Junction		9		Junction	
16.000	J1		Junction		3		Junction	
15.006	5	1200	Manhole	Adoptable	14	1200	Manhole	Adoptable
1.011	6	1200	Manhole	Adoptable	Outfall		Junction	
1.010	8	1500	Manhole	Adoptable	6	1200	Manhole	Adoptable
16.001	3		Junction		9		Junction	
1.006	10	1200	Manhole	Adoptable	5	1200	Manhole	Adoptable
3.003	9		Junction		18	1200	Manhole	Adoptable
15.000	J2		Junction		1		Junction	
24.000	J7		Junction		J6		Junction	
24.001	J6		Junction		71		Junction	
27.000	J11		Junction		11		Junction	
27.002	J10		Junction		J9		Junction	
27.003	J9		Junction		J5		Junction	
28.002	J8		Junction		J5		Junction	
24.006	4	1200	Manhole	Adoptable	J29		Junction	
24.005	J5		Junction		4	1200	Manhole	Adoptable
18.000	J3		Junction		16	1200	Manhole	Adoptable

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
27.001	7.992	100.2	100	Swale 1	27.400	26.799	0.501	27.300	26.719	0.481
24.004	13.689	263.3	225	Circular	27.200	26.019	0.956	27.100	25.967	0.908
24.003	13.489	122.6	225	Circular	27.250	26.129	0.896	27.200	26.019	0.956
15.007	16.029	372.8	300	Circular	26.600	25.314	0.986	26.900	25.271	1.329
15.008	2.894	361.8	300	Circular	26.900	25.271	1.329	26.900	25.263	1.337
18.001	11.385	53.2	150	Circular	26.900	25.627	1.123	26.900	25.413	1.337
17.000	2.987	79.2	100	Circular	26.600	26.000	0.500	26.600	25.962	0.538
28.001	1.393	77.4	100	Circular	27.400	26.668	0.632	27.200	26.650	0.450
15.004	14.847	176.8	300	Circular	26.600	25.620	0.680	26.600	25.536	0.764
28.000	2.543	79.6	100	Circular	27.400	26.700	0.600	27.400	26.668	0.632
17.001	10.281	79.7	150	Circular	26.600	25.962	0.488	26.600	25.833	0.617
29.000	7.609	91.7	100	Circular	27.000	26.100	0.800	27.100	26.017	0.983
29.001	3.687	153.6	150	Circular	27.100	25.967	0.983	26.900	25.943	0.807
26.000_1	5.174	92.4	100	Circular	27.200	26.300	0.800	27.200	26.244	0.856
26.001_1	9.217	92.2	100	Circular	27.200	26.244	0.856	27.200	26.144	0.956
25.000	6.006	92.4	100	Circular	27.300	26.400	0.800	27.300	26.335	0.865
25.001	4.360	155.7	150	Circular	27.300	26.285	0.865	27.300	26.257	0.893
19.000	5.966	79.5	100	Circular	26.700	26.200	0.400	26.700	26.125	0.475
19.001	4.792	39.0	100	Circular	26.700	25.800	0.800	26.900	25.677	1.123

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
27.001	11		Junction		J10		Junction	
24.004	12	1200	Manhole	Adoptable	J5		Junction	
24.003	13	1200	Manhole	Adoptable	12	1200	Manhole	Adoptable
15.007	14	1200	Manhole	Adoptable	15	1200	Manhole	Adoptable
15.008	15	1200	Manhole	Adoptable	8	1500	Manhole	Adoptable
18.001	16	1200	Manhole	Adoptable	8	1500	Manhole	Adoptable
17.000	Block A Car Park		Junction		19		Junction	
28.001	J14		Junction		J8		Junction	
15.004	18	1200	Manhole	Adoptable	10	1200	Manhole	Adoptable
28.000	Block B Car Park		Junction		J14		Junction	
17.001	19		Junction		18	1200	Manhole	Adoptable
29.000	Access Road A3		Junction		J13		Junction	
29.001	J13		Junction		4	1200	Manhole	Adoptable
26.000_1	Access Road A2		Junction		J12		Junction	
26.001_1	J12		Junction		12	1200	Manhole	Adoptable
25.000	Access Road A1		Junction		J4		Junction	
25.001	J4		Junction		71		Junction	
19.000	Block C Car Park		Junction		J15		Junction	
19.001	J15		Junction		16	1200	Manhole	Adoptable

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	32.588	203.7	100	Existing Ditch	30.000	29.260	0.640	29.850	29.100	0.650
1.001	29.881	373.5	100	Existing Ditch	29.850	29.100	0.650	29.700	29.020	0.580
1.002	12.110	86.5	100	Existing Ditch	29.700	29.020	0.580	29.500	28.880	0.520
1.003	11.712	46.8	300	Circular	29.500	28.880	0.320	29.500	28.630	0.570
1.004	21.971	87.9	100	Existing Ditch	29.500	28.630	0.770	29.000	28.380	0.520
1.005	17.949	34.5	100	Existing Ditch	29.000	28.380	0.520	28.900	27.860	0.940
1.006_1	28.960	31.8	100	Existing Ditch	28.900	27.860	0.940	27.650	26.950	0.600
1.008	11.382	54.2	100	Existing Ditch	27.650	26.950	0.600	27.400	26.740	0.560
1.009	10.175	29.9	100	Existing Ditch	27.400	26.740	0.560	27.300	26.400	0.800
1.010_1	9.858	98.6	100	Existing Ditch	27.300	26.400	0.800	27.200	26.300	0.800
1.011_1	22.021	379.7	300	Circular	27.200	26.100	0.800	27.300	26.042	0.958
1.012	30.067	423.5	150	Existing Ditch	27.300	26.042	1.108	27.100	25.971	0.979
1.013_1	12.707	105.0	150	Existing Ditch	27.100	25.971	0.979	26.800	25.850	0.800
1.014	3.458	12.6	150	Existing Ditch	26.800	25.850	0.800	26.600	25.575	0.875
1.015	25.883	207.1	150	Existing Ditch	26.600	25.575	0.875	26.400	25.450	0.800
1.016	14.986	149.9	150	Existing Ditch	26.400	25.450	0.800	26.300	25.350	0.800
1.017	5.638	112.8	150	Existing Ditch	26.300	25.350	0.800	26.200	25.300	0.750
26.000	9.962	166.0	225	Circular	26.000	25.300	0.475	25.800	25.240	0.335
8.005	21.184	200.0	100	Swale 1	27.800	26.700	1.000	27.400	26.594	0.706

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	7		Junction		17		Junction	
1.001	17		Junction		20		Junction	
1.002	20		Junction		21		Junction	
1.003	21		Junction		22		Junction	
1.004	22		Junction		23		Junction	
1.005	23		Junction		24		Junction	
1.006_1	24		Junction		25		Junction	
1.008	25		Junction		26		Junction	
1.009	26		Junction		27		Junction	
1.010_1	27		Junction		28		Junction	
1.011_1	28		Junction		29		Junction	
1.012	29		Junction		30		Junction	
1.013_1	30		Junction		31		Junction	
1.014	31		Junction		32		Junction	
1.015	32		Junction		33		Junction	
1.016	33		Junction		34		Junction	
1.017	34		Junction		57		Junction	
26.000	35	1200	Manhole	Adoptable	36	1200	Manhole	Adoptable
8.005	37		Junction		38		Junction	



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
8.006	20.163	200.0	100	Swale 1	27.400	26.594	0.706	27.350	26.493	0.757
8.007	19.549	200.0	100	Swale 1	27.350	26.493	0.757	27.300	26.395	0.805
8.009	20.495	32.2	225	Circular	27.200	26.212	0.763	26.600	25.575	0.800
31.001	8.712	100.0	100	Swale 1	29.000	28.227	0.673	28.700	28.140	0.460
31.002	16.460	68.6	100	Swale 1	28.700	28.140	0.460	28.400	27.900	0.400
30.002	19.585	97.9	100	Swale 1	28.400	27.900	0.400	28.200	27.700	0.400
30.003	14.521	100.0	100	Swale 1	28.200	27.241	0.859	28.100	27.096	0.904
22.002	12.997	156.6	150	Circular	28.000	26.969	0.881	28.000	26.886	0.964
21.004	14.188	80.0	225	Circular	28.000	26.811	0.964	28.000	26.634	1.141
21.005	13.411	84.3	225	Circular	28.000	26.634	1.141	27.500	26.475	0.800
8.003	23.744	100.2	300	Circular	28.500	27.653	0.547	28.400	27.416	0.684
8.004	25.010	34.9	300	Circular	28.400	27.416	0.684	27.800	26.700	0.800
21.006	20.255	202.5	225	Circular	27.500	26.475	0.800	27.400	26.375	0.800
21.007	29.052	105.6	225	Circular	27.400	26.375	0.800	26.900	26.100	0.575
1.001_1	30.269	152.9	150	Circular	30.700	29.616	0.934	30.500	29.418	0.932
30.000	29.412	147.1	150	Circular	29.400	28.450	0.800	29.200	28.250	0.800
30.001	17.346	80.0	150	Circular	29.200	28.250	0.800	28.400	28.033	0.217
21.003	24.770	53.4	225	Circular	28.300	27.275	0.800	28.000	26.811	0.964
1.002_1	35.782	133.5	150	Circular	30.500	29.418	0.932	30.100	29.150	0.800

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
8.006	38		Junction		39		Junction	
8.007	39		Junction		69		Junction	
8.009	40		Junction		32		Junction	
31.001	41		Junction		42		Junction	
31.002	42		Junction		43		Junction	
30.002	43		Junction		44		Junction	
30.003	44		Junction		53		Junction	
22.002	45	600	Manhole	Adoptable	46	600	Manhole	Adoptable
21.004	46	600	Manhole	Adoptable	47	1200	Manhole	Adoptable
21.005	47	1200	Manhole	Adoptable	50	1200	Manhole	Adoptable
8.003	48	1200	Manhole	Adoptable	49	1200	Manhole	Adoptable
8.004	49	1200	Manhole	Adoptable	37		Junction	
21.006	50	1200	Manhole	Adoptable	51	1200	Manhole	Adoptable
21.007	51	1200	Manhole	Adoptable	52	1200	Manhole	Adoptable
1.001_1	58	1200	Manhole	Adoptable	59	1200	Manhole	Adoptable
30.000	54	600	Manhole	Adoptable	55	600	Manhole	Adoptable
30.001	55	600	Manhole	Adoptable	43		Junction	
21.003	56	1200	Manhole	Adoptable	46	600	Manhole	Adoptable
1.002_1	59	1200	Manhole	Adoptable	60	1200	Manhole	Adoptable



Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.003_1	10.660	106.6	225	Circular	30.100	29.075	0.800	30.000	28.975	0.800
1.004_1	29.061	105.7	225	Circular	30.000	28.975	0.800	29.500	28.700	0.575
21.002	31.311	44.7	150	Circular	29.000	28.050	0.800	28.300	27.350	0.800
8.002	30.522	46.8	150	Circular	29.400	28.402	0.848	28.500	27.750	0.600
9.000	17.735	80.0	150	Circular	28.900	27.950	0.800	28.500	27.728	0.622
14.001	10.193	80.0	150	Circular	27.000	25.989	0.861	26.400	25.862	0.388
4.002	24.931	72.9	150	Circular	28.600	27.531	0.919	28.200	27.189	0.861
4.003	21.163	39.3	150	Circular	28.200	27.189	0.861	27.600	26.650	0.800
4.004	23.826	80.0	225	Circular	27.600	26.575	0.800	27.300	26.277	0.798
31.000	5.842	80.0	150	Circular	29.000	28.300	0.550	29.000	28.227	0.623
32.001	3.514	90.1	100	Circular	28.250	27.280	0.870	28.200	27.241	0.859
22.000	1.827	91.4	100	Circular	28.250	27.300	0.850	28.250	27.280	0.870
22.000_1	4.744	47.4	100	Circular	28.100	27.200	0.800	28.000	27.100	0.800
22.001	7.440	91.8	100	Circular	28.000	27.100	0.800	28.000	27.019	0.881
1.000_1	3.057	89.9	100	Circular	30.600	29.700	0.800	30.700	29.666	0.934
2.000	1.374	91.6	100	Circular	30.400	29.500	0.800	30.400	29.485	0.815
2.001	1.568	92.2	100	Circular	30.400	29.485	0.815	30.500	29.468	0.932
21.000	3.944	91.7	100	Circular	29.100	28.200	0.800	29.100	28.157	0.843
21.001	2.244	39.4	100	Circular	29.100	28.157	0.843	29.000	28.100	0.800

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.003_1	60	1200	Manhole	Adoptable	61	1200	Manhole	Adoptable
1.004_1	61	1200	Manhole	Adoptable	22		Junction	
21.002	62	1200	Manhole	Adoptable	56	1200	Manhole	Adoptable
8.002	63	1200	Manhole	Adoptable	48	1200	Manhole	Adoptable
9.000	64	1200	Manhole	Adoptable	48	1200	Manhole	Adoptable
14.001	65	600	Manhole	Adoptable	33		Junction	
4.002	66	1200	Manhole	Adoptable	67	1200	Manhole	Adoptable
4.003	67	1200	Manhole	Adoptable	68	1200	Manhole	Adoptable
4.004	68	1200	Manhole	Adoptable	29		Junction	
31.000	Access Road B1		Junction		41		Junction	
32.001	J16		Junction		44		Junction	
22.000	Access Road B2		Junction		J16		Junction	
22.000_1	Access Road B3		Junction		J17		Junction	
22.001	J17		Junction		45	600	Manhole	Adoptable
1.000_1	Access Road C1		Junction		58	1200	Manhole	Adoptable
2.000	Access Road C2		Junction		J18		Junction	
2.001	J18		Junction		59	1200	Manhole	Adoptable
21.000	Access Road C4		Junction		J19		Junction	
21.001	J19		Junction		62	1200	Manhole	Adoptable

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
23.000	2.619	90.3	100	Circular	28.100	27.200	0.800	28.100	27.171	0.829
23.001	3.933	16.7	100	Circular	28.100	27.171	0.829	28.000	26.936	0.964
13.000	2.200	80.0	100	Circular	27.400	26.700	0.600	27.400	26.673	0.627
8.000	10.434	92.3	100	Circular	29.500	28.600	0.800	29.400	28.487	0.813
8.001	7.855	92.4	100	Circular	29.400	28.487	0.813	29.400	28.402	0.898
6.000	3.181	90.9	100	Circular	27.700	26.800	0.800	27.700	26.765	0.835
6.001	1.491	22.9	100	Circular	27.700	26.765	0.835	27.600	26.700	0.800
5.000	3.386	91.5	100	Circular	28.200	27.300	0.800	28.200	27.263	0.837
5.001	2.144	89.3	100	Circular	28.200	27.263	0.837	28.200	27.239	0.861
4.000	4.178	90.8	100	Circular	28.600	27.700	0.800	28.600	27.654	0.846
4.001	6.677	91.5	100	Circular	28.600	27.654	0.846	28.600	27.581	0.919
10.001	16.303	108.7	150	Circular	28.200	27.250	0.800	27.800	27.100	0.550
10.000	6.437	25.7	150	Circular	28.200	27.500	0.550	28.200	27.250	0.800
11.000	3.857	25.7	100	Circular	28.000	27.400	0.500	27.900	27.250	0.550
13.001	2.780	79.4	100	Circular	27.400	26.673	0.627	27.350	26.638	0.612
12.000	2.431	80.0	100	Circular	27.500	26.800	0.600	27.500	26.770	0.630
12.001	3.420	79.5	100	Circular	27.500	26.770	0.630	27.400	26.727	0.573
7.000	6.018	80.0	100	Circular	27.200	26.600	0.500	27.100	26.525	0.475
7.001	7.263	80.0	100	Circular	27.100	26.525	0.475	26.800	26.434	0.266

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
23.000	Access Road C5		Junction		J20		Junction	
23.001	J20		Junction		46	600	Manhole	Adoptable
13.000	Access Road E4		Junction		J26		Junction	
8.000	Access Road D1		Junction		J21		Junction	
8.001	J21		Junction		63	1200	Manhole	Adoptable
6.000	Access Road D4		Junction		J24		Junction	
6.001	J24		Junction		68	1200	Manhole	Adoptable
5.000	Access Road D3		Junction		J23		Junction	
5.001	J23		Junction		67	1200	Manhole	Adoptable
4.000	Access Road D2		Junction		J22		Junction	
4.001	J22		Junction		66	1200	Manhole	Adoptable
10.001	70		Junction		37		Junction	
10.000	Access Road E1		Junction		70		Junction	
11.000	Access Road E2		Junction		J28		Junction	
13.001	J26		Junction		39		Junction	
12.000	Access Road E3		Junction		J25		Junction	
12.001	J25		Junction		38		Junction	
7.000	Access Road F1		Junction		J27		Junction	
7.001	J27		Junction		31		Junction	

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
14.000	9.516	156.0	150	Circular	27.000	26.050	0.800	27.000	25.989	0.861
11.001	4.935	32.9	100	Circular	27.900	27.250	0.550	27.800	27.100	0.600
26.001	10.027	125.3	225	Circular	25.800	25.240	0.335	26.000	25.160	0.615
8.008	11.636	200.0	100	Swale 1	27.300	26.395	0.805	27.200	26.337	0.763
24.002	13.760	259.6	225	Circular	27.300	26.182	0.893	27.250	26.129	0.896

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
14.000	Car Park		Junction		65	600	Manhole	Adoptable
11.001	J28		Junction		37		Junction	
26.001	36	1200	Manhole	Adoptable	6	1200	Manhole	Adoptable
8.008	69		Junction		40		Junction	
24.002	71		Junction		13	1200	Manhole	Adoptable

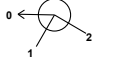
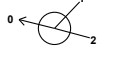
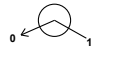
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
1	506110.592	120952.888	26.900	0.550			1	15.000	26.350	150
2	506136.893	120994.905	26.900	0.798			1	15.001	26.102	150
3	506079.019	120970.310	26.900	0.550			1	16.000	26.350	150
J3	506014.681	121045.505	26.900	1.200			0	18.000	25.700	150
5	506066.885	121055.725	26.600	1.217	1200		1	1.006	25.383	300
6	506035.507	121075.688	26.000	0.860	1200		1	26.001	25.160	225
							2	1.010	25.140	300
							0	1.011	25.140	300

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
Outfall	506040.541	121084.532	25.500	0.400			1	1.011	25.100	300
8	506027.704	121064.128	26.900	1.637	1500		1 2	18.001 15.008	25.413 25.263	150 300
9	506106.304	121011.631	26.600	0.850			0 1 2	1.010 16.001 15.002	25.263 26.102 25.928	300 150 150
10	506102.950	121032.748	26.600	1.070	1200		1	15.004	25.536	300
11	506024.918	120987.823	27.400	0.601			0 1	1.006 27.000	25.530 26.799	300 100
J1	506094.240	120960.240	27.000	0.550			0	27.001	26.799	100
J2	506095.492	120959.575	27.000	0.550			0	16.000	26.450	150
J5	506040.761	121024.321	27.100	1.208			0 1 2 3 4	15.000 28.002 27.003 24.004 24.005	26.450 26.092 25.892 25.967 25.892	150 100 300 225 300
J6	506076.829	121001.657	27.300	0.550			1	24.000	26.750	150
J7	506062.127	120985.060	27.400	0.550			0	24.001	26.750	150
							0	24.000	26.850	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
J8	506041.244	121022.790	27.200	0.900			1 28.001	26.650	100
							0 28.002	26.300	100
J9	506032.830	121010.230	27.200	1.100			1 27.002	26.548	100
							0 27.003	26.100	300
J10	506023.773	120995.733	27.300	0.581			1 27.001	26.719	100
							0 27.002	26.719	100
J11	506043.982	120980.980	27.400	0.500			0 27.000	26.900	100
4	506030.185	121030.509	26.900	1.107	1200		1 29.001	25.943	150
							2 24.005	25.793	300
							0 24.006	25.793	300
12	506054.046	121021.019	27.200	1.181	1200		1 26.001_1	26.144	100
							2 24.003	26.019	225
							0 24.004	26.019	225
13	506067.075	121017.528	27.250	1.121	1200		1 24.002	26.129	225
							0 24.003	26.129	225
14	506044.310	121068.423	26.600	1.286	1200		1 15.006	25.314	300
							0 15.007	25.314	300
15	506029.636	121061.973	26.900	1.629	1200		1 15.007	25.271	300
							0 15.008	25.271	300
16	506021.153	121054.817	26.900	1.273	1200		1 19.001	25.677	100
							2 18.000	25.627	150
							0 18.001	25.627	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
Block A Car Park	506116.758	121012.348	26.600	0.600					
						0	17.000	26.000	100
Block B Car Park	506042.722	121019.196	27.400	0.700					
						0	28.000	26.700	100
Access Road A1	506085.329	121002.338	27.300	0.900					
						0	25.000	26.400	100
Access Road A2	506064.908	121030.231	27.200	0.900					
						0	26.000_1	26.300	100
J4	506080.678	121006.138	27.300	1.015			1	25.000	26.335
						0	25.001	26.285	150
18	506104.762	121018.012	26.600	0.980	1200		1 2	17.001 3.003	25.833 25.695
						0	15.004	25.620	300
Access Road A3	506031.060	121020.206	27.000	0.900					
						0	29.000	26.100	100
Block C Car Park	506031.165	121054.605	26.700	0.500					
						0	19.000	26.200	100
19	506114.021	121013.543	26.600	0.638			1	17.000	25.962
						0	17.001	25.962	150
J12	506060.397	121027.698	27.200	0.956			1	26.000_1	26.244
						0	26.001_1	26.244	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
J13	506028.344	121027.314	27.100	1.133			1 29.000	26.017	100
							0 29.001	25.967	150
J14	506041.486	121021.418	27.400	0.732			1 28.000	26.668	100
							0 28.001	26.668	100
J15	506025.487	121052.773	26.700	0.900			1 19.000	26.125	100
							0 19.001	25.800	100
7	506043.505	120849.209	30.000	0.740			0 1.000	29.260	100
							1 1.000	29.100	100
17	506029.233	120858.308	29.850	0.750			0 1.001	29.100	100
							1 1.001	29.020	100
20	506004.023	120874.349	29.700	0.680			0 1.002	29.020	100
							1 1.002	28.880	100
21	505993.615	120880.540	29.500	0.620			0 1.003	28.880	300
							1 1.003	28.630	300
22	505984.518	120887.916	29.500	0.870			2 1.004_1	28.700	225
							0 1.004	28.630	100
23	505977.357	120908.687	29.000	0.620			1 1.004	28.380	100
							0 1.005	28.380	100
24	505987.884	120923.225	28.900	1.040			1 1.005	27.860	100
							0 1.006_1	27.860	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
25	506003.394	120947.682	27.650	0.700		 1	1.006_1	26.950	100
						0	1.008	26.950	100
26	506001.583	120958.919	27.400	0.660		 1	1.008	26.740	100
						0	1.009	26.740	100
27	505993.814	120965.490	27.300	0.900		 1	1.009	26.400	100
						0	1.010_1	26.400	100
28	505984.549	120968.857	27.200	1.100		 1	1.010_1	26.300	100
						0	1.011_1	26.100	300
29	505967.688	120983.021	27.300	1.258		 1	1.011_1	26.042	300
						0	1.012	26.042	150
30	505941.286	120997.407	27.100	1.129		 1	1.012	25.971	150
						0	1.013_1	25.971	150
31	505930.815	121004.606	26.800	0.950		 1	1.013_1	25.850	150
						0	1.014	25.850	150
32	505929.039	121007.573	26.600	1.025		 1	1.014	25.575	150
						0	1.015	25.575	150
33	505937.844	121031.912	26.400	0.950		 1	1.015	25.450	150
						0	1.016	25.450	150
34	505948.347	121042.602	26.300	0.950		 1	1.016	25.350	150
						0	1.017	25.350	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
35	506019.195	121087.233	26.000	0.700	1200		0	26.000	25.300	225
36	506027.189	121081.288	25.800	0.560	1200		1	26.000	25.240	225
37	505889.631	120928.179	27.800	1.100			0	26.001	25.240	225
38	505889.849	120949.362	27.400	0.806			1	11.001	27.100	100
39	505895.302	120968.774	27.350	0.857			2	10.001	27.100	150
40	505917.038	120990.958	27.200	0.988			3	8.004	26.700	300
41	506082.697	120897.627	29.000	0.773			0	8.005	26.700	100
42	506086.988	120905.209	28.700	0.560			1	12.001	26.727	100
43	506084.448	120921.472	28.400	0.500			2	8.005	26.594	100
44	506071.048	120935.755	28.200	0.959			0	8.006	26.594	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
45	506041.258	120951.902	28.000	1.031	600		1 22.001	27.019	100
							0 22.002	26.969	150
46	506030.046	120958.476	28.000	1.189	600		1 23.001	26.936	100
							2 22.002	26.886	150
							3 21.003	26.811	225
							0 21.004	26.811	225
47	506017.447	120965.000	28.000	1.366	1200		1 21.004	26.634	225
							0 21.005	26.634	225
48	505926.724	120898.892	28.500	0.847	1200		1 9.000	27.728	150
							2 8.002	27.750	150
							0 8.003	27.653	300
49	505904.982	120908.435	28.400	0.984	1200		1 8.003	27.416	300
							0 8.004	27.416	300
50	506006.865	120973.238	27.500	1.025	1200		1 21.005	26.475	225
							0 21.006	26.475	225
51	506005.692	120993.459	27.400	1.025	1200		1 21.006	26.375	225
							0 21.007	26.375	225
52	506002.817	121022.368	26.900	1.150	1200		1 21.007	26.100	225
53	506058.829	120943.601	28.100	1.130			1 30.003	27.096	100
54	506061.059	120880.988	29.400	0.950	600				
							0 30.000	28.450	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
55	506076.004	120906.320	29.200	0.950	600	 1	30.000	28.250	150
						0	30.001	28.250	150
56	506023.670	120934.541	28.300	1.025	1200	 1	21.002	27.350	150
						0	21.003	27.275	225
57	505952.719	121046.162	26.200	0.900		 1	1.017	25.300	150
58	506012.188	120820.243	30.700	1.084	1200	 1	1.000_1	29.666	100
						0	1.001_1	29.616	150
59	505985.817	120835.101	30.500	1.082	1200	 1	2.001	29.468	100
						2	1.001_1	29.418	150
						0	1.002_1	29.418	150
60	505959.784	120859.650	30.100	1.025	1200	 1	1.002_1	29.150	150
						0	1.003_1	29.075	225
61	505961.505	120870.170	30.000	1.025	1200	 1	1.003_1	28.975	225
						0	1.004_1	28.975	225
62	506008.076	120907.389	29.000	0.950	1200	 1	21.001	28.100	100
						0	21.002	28.050	150
63	505915.411	120870.544	29.400	0.998	1200	 1	8.001	28.402	100
						0	8.002	28.402	150
64	505944.448	120898.279	28.900	0.950	1200	 1			
						0	9.000	27.950	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
65	505927.661	121032.357	27.000	1.011	600		1 14.000	25.989	150
							0 14.001	25.989	150
66	505938.819	120919.664	28.600	1.069	1200		1 4.001	27.581	100
							0 4.002	27.531	150
67	505951.415	120941.179	28.200	1.011	1200		1 5.001	27.239	100
							2 4.002	27.189	150
							0 4.003	27.189	150
68	505957.716	120961.382	27.600	1.025	1200		1 6.001	26.700	100
							2 4.003	26.650	150
							0 4.004	26.575	225
Access Road B1	506076.890	120898.267	29.000	0.700			0 31.000	28.300	150
Access Road B2	506070.186	120930.689	28.250	0.950			0 22.000	27.300	100
Access Road B3	506038.101	120940.135	28.100	0.900			0 22.000_1	27.200	100
J16	506071.149	120932.242	28.250	0.970			1 22.000	27.280	100
							0 32.001	27.280	100
J17	506039.370	120944.706	28.000	0.900			1 22.000_1	27.100	100
							0 22.001	27.100	100
Access Road C1	506014.759	120821.897	30.600	0.900			0 1.000_1	29.700	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
Access Road C2	505987.020	120837.784	30.400	0.900			0	2.000	29.500	100
J18	505986.414	120836.551	30.400	0.915			1	2.000	29.485	100
							0	2.001	29.485	100
Access Road C4	506010.364	120902.437	29.100	0.900			0	21.000	28.200	100
J19	506007.555	120905.206	29.100	0.943			1	21.000	28.157	100
							0	21.001	28.157	100
Access Road C5	506031.304	120952.829	28.100	0.900			0	23.000	27.200	100
J20	506029.375	120954.601	28.100	0.929			1	23.000	27.171	100
							0	23.001	27.171	100
Access Road D1	505931.986	120867.271	29.500	0.900			0	8.000	28.600	100
J25	505891.199	120946.220	27.500	0.730			1	12.000	26.770	100
							0	12.001	26.770	100
J21	505921.659	120865.784	29.400	0.913			1	8.000	28.487	100
							0	8.001	28.487	100
J22	505934.580	120914.505	28.600	0.946			1	4.000	27.654	100
							0	4.001	27.654	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
J23	505951.260	120939.041	28.200	0.937			1	5.000	27.263	100
							0	5.001	27.263	100
J24	505957.983	120959.915	27.700	0.935			1	6.000	26.765	100
							0	6.001	26.765	100
Access Road D4	505961.114	120959.353	27.700	0.900			0	6.000	26.800	100
Access Road D3	505954.524	120938.141	28.200	0.900			0	5.000	27.300	100
Access Road D2	505936.847	120910.996	28.600	0.900			0	4.000	27.700	100
Access Road E1	505878.861	120908.619	28.200	0.700			0	10.000	27.500	150
Access Road E2	505882.871	120922.607	28.000	0.600			0	11.000	27.400	100
Access Road E3	505893.326	120945.043	27.500	0.700			0	12.000	26.800	100
Access Road E4	505899.040	120966.664	27.400	0.700			0	13.000	26.700	100
Access Road F1	505922.829	120993.997	27.200	0.600			0	7.000	26.600	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
Car Park	505918.163	121031.767	27.000	0.950						
						0	14.000	26.050	150	
70	505880.132	120914.929	28.200	0.950			1	10.000	27.250	150
						0	10.001	27.250	150	
J26	505898.079	120968.643	27.400	0.727			1	13.000	26.673	100
						0	13.001	26.673	100	
J27	505926.365	120998.866	27.100	0.575			1	7.000	26.525	100
						0	7.001	26.525	100	
J28	505885.599	120925.333	27.900	0.650			1	11.000	27.250	100
						0	11.001	27.250	100	
69	505907.982	120983.652	27.300	0.905			1	8.007	26.395	100
						0	8.008	26.395	100	
71	506078.560	121009.949	27.300	1.118			1	25.001	26.257	150
						2	24.001	26.740	150	
						0	24.002	26.182	225	
J29	506015.329	121030.794	26.900	1.150			1	24.006	25.753	300

SuDS Carriers

Link	US Node	DS Node	Link Type	Base Inf Coef (m/hr)	Sides Inf Coef (m/hr)	Safety Factor	Time to Half Empty (mins)
15.001	1	2	Swale 1	0.00000	0.00000	2.0	345
15.002	2	9	Swale 1	0.00000	0.00000	2.0	480
16.000	J1	3	Swale 1	0.00000	0.00000	2.0	165
16.001	3	9	Swale 1	0.00000	0.00000	2.0	345
15.000	J2	1	Swale 1	0.00000	0.00000	2.0	165

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Page 30

SuDS Carriers

Link	US Node	DS Node	Link Type	Base Inf Coef (m/hr)	Sides Inf Coef (m/hr)	Safety Factor	Time to Half Empty (mins)
24.000	J7	J6	Swale 1	0.00000	0.00000	2.0	5
24.001	J6	71	Swale 1	0.00000	0.00000	2.0	4
27.000	J11	11	Swale 1	0.00000	0.00000	2.0	4
27.002	J10	J9	Swale 1	0.00000	0.00000	2.0	5
27.001	11	J10	Swale 1	0.00000	0.00000	2.0	5
8.005	37	38	Swale 1	0.00000	0.00000	2.0	5
8.006	38	39	Swale 1	0.00000	0.00000	2.0	5
8.007	39	69	Swale 1	0.00000	0.00000	2.0	3
31.001	41	42	Swale 1	0.00000	0.00000	2.0	371
31.002	42	43	Swale 1	0.00000	0.00000	2.0	5
30.002	43	44	Swale 1	0.00000	0.00000	2.0	17
30.003	44	53	Swale 1	0.00000	0.00000	2.0	31
8.008	69	40	Swale 1	0.00000	0.00000	2.0	3

Simulation Settings

Rainfall Methodology	FEH-22	Winter CV	1.000	Drain Down Time (mins)	1600	Check Discharge Rate(s)	✓	100 year (l/s)	73.9
Rainfall Events	Singular	Analysis Speed	Detailed	Additional Storage (m³/ha)	0.0	2 year (l/s)	23.4	Check Discharge Volume	x
Summer CV	1.000	Skip Steady State	x	Starting Level (m)		30 year (l/s)	57.9		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0	30	40	0	0	100	45	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Include Baseflow	✓	Q 2 year (l/s)	23.4
Greenfield Method	ReFH2	Positively Drained Area (ha)	1.732	Q 30 year (l/s)	57.9
Region	England, Wales, NI	Betterment (%)	0	Q 100 year (l/s)	73.9

Node J14 Online Orifice Control

Flap Valve	x	Invert Level (m)	26.668	Design Flow (l/s)	1.0	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Depth (m)	0.500	Diameter (m)	0.026		

Node J4 Online Orifice Control

Flap Valve	x	Invert Level (m)	26.285	Design Flow (l/s)	4.0	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Depth (m)	0.500	Diameter (m)	0.052		

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29/03/2026

Page 31



Node 70 Online Orifice Control

Flap Valve	x	Invert Level (m)	27.250	Design Flow (l/s)	1.0	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Depth (m)	0.500	Diameter (m)	0.026		

Node J26 Online Orifice Control

Flap Valve	x	Invert Level (m)	26.673	Design Flow (l/s)	1.0	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Depth (m)	0.500	Diameter (m)	0.026		

Node J25 Online Orifice Control

Flap Valve	x	Invert Level (m)	26.770	Design Flow (l/s)	1.0	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Depth (m)	0.500	Diameter (m)	0.026		

Node J27 Online Orifice Control

Flap Valve	x	Invert Level (m)	26.525	Design Flow (l/s)	3.0	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Depth (m)	0.500	Diameter (m)	0.045		

Node J19 Online Orifice Control

Flap Valve	x	Invert Level (m)	28.157	Design Flow (l/s)	3.0	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Depth (m)	0.500	Diameter (m)	0.045		

Node J20 Online Orifice Control

Flap Valve	x	Invert Level (m)	27.171	Design Flow (l/s)	1.0	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Depth (m)	0.500	Diameter (m)	0.026		

Node J17 Online Orifice Control

Flap Valve	x	Invert Level (m)	27.100	Design Flow (l/s)	3.0	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Depth (m)	0.500	Diameter (m)	0.045		

Node J16 Online Orifice Control

Flap Valve	x	Invert Level (m)	27.280	Design Flow (l/s)	1.0	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Depth (m)	0.500	Diameter (m)	0.026		

Node J24 Online Orifice Control

Flap Valve	x	Invert Level (m)	26.765	Design Flow (l/s)	3.0	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Depth (m)	0.500	Diameter (m)	0.045		

Node J28 Online Orifice Control

Flap Valve	x	Invert Level (m)	27.250	Design Flow (l/s)	1.0	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Depth (m)	0.500	Diameter (m)	0.026		

Node Block A Car Park Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	30.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	26.000	Length (m)	30.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	390	Slope (1:X)	400.0		

Node Block B Car Park Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	15.000	Depth (m)	0.350
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	26.700	Length (m)	20.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	328	Slope (1:X)	1000.0		

Node Access Road A1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	11.800	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	26.400	Length (m)	50.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	128	Slope (1:X)	500.0		

Node Access Road A2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	11.000	Depth (m)	0.350
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	26.300	Length (m)	40.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	675	Slope (1:X)	500.0		

Node Access Road A3 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	12.900	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	26.100	Length (m)	50.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	476	Slope (1:X)	500.0		

Node Block C Car Park Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	10.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	26.200	Length (m)	20.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	512	Slope (1:X)	250.0		

Node 45 Pond Storage Structure

Invert Level (m)	26.970	Time to half empty (mins)	39	Analyse flow through structure	x
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Inlets
53

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	30.0	1.030	150.0

Node 35 Pond Storage Structure

Invert Level (m) 25.300 | Time to half empty (mins) 544 | Analyse flow through structure x

Inlets
57

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	1175.0	0.600	2329.2

Node J3 Pond Storage Structure

Invert Level (m) 25.750 | Time to half empty (mins) 984 | Analyse flow through structure x

Inlets
52 | J29

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	600.0	1.150	902.3

Node Access Road B1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	10.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	28.300	Length (m)	40.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	264	Slope (1:X)	100.0		

Node Access Road B2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	6.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	27.300	Length (m)	34.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	160	Slope (1:X)	100.0		

Node Access Road B3 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	5.500	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	27.200	Length (m)	30.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	50	Slope (1:X)	200.0		

Node Access Road C1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	8.000	Depth (m)	0.350
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	29.700	Length (m)	25.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	15	Slope (1:X)	400.0		

Node Access Road C2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	8.800	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	29.500	Length (m)	33.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	19	Slope (1:X)	200.0		

Node Access Road C4 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	8.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	28.200	Length (m)	48.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	86	Slope (1:X)	200.0		

Node Access Road C5 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	8.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	27.200	Length (m)	60.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	272	Slope (1:X)	100.0		

Node Access Road D1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	8.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	28.600	Length (m)	20.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	102	Slope (1:X)	100.0		

Node Access Road D4 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	8.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	26.800	Length (m)	30.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	59	Slope (1:X)	200.0		

Node Access Road D3 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	8.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	27.300	Length (m)	34.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	10	Slope (1:X)	100.0		

Node Access Road D2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	8.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	27.700	Length (m)	34.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	236	Slope (1:X)	100.0		

Node Access Road E1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	7.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	27.500	Length (m)	45.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	162	Slope (1:X)	100.0		

Node Access Road E2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	6.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	27.400	Length (m)	10.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	37	Slope (1:X)	200.0		

Node Access Road E3 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	4.500	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	26.800	Length (m)	20.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	67	Slope (1:X)	200.0		

Node Access Road E4 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	4.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	26.700	Length (m)	20.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	52	Slope (1:X)	100.0		

Node Access Road F1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	8.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	26.600	Length (m)	35.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	78	Slope (1:X)	200.0		

Node Car Park Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	12.000	Depth (m)	0.300
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	26.050	Length (m)	35.000	Inf Depth (m)	
Safety Factor	2.0	Time to half empty (mins)	6	Slope (1:X)	250.0		

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	11	26.371	0.021	3.6	0.0000	0.0000	OK
15 minute summer	2	12	26.133	0.031	7.0	0.0000	0.0000	OK
15 minute summer	3	11	26.368	0.018	3.0	0.0000	0.0000	OK
240 minute summer	J3	184	25.865	0.165	13.9	72.7706	0.0000	SURCHARGED
240 minute summer	5	144	25.827	0.444	10.3	0.5022	0.0000	SURCHARGED
960 minute summer	6	660	25.234	0.094	14.2	0.1067	0.0000	OK
960 minute summer	Outfall	660	25.190	0.090	14.2	0.0000	0.0000	OK
240 minute summer	8	144	25.825	0.562	12.0	0.9933	0.0000	SURCHARGED
180 minute summer	9	108	25.828	0.078	4.8	0.0000	0.0000	OK
240 minute summer	10	144	25.828	0.298	8.9	0.3365	0.0000	OK
15 minute summer	11	11	26.816	0.017	3.3	0.0000	0.0000	OK
15 minute summer	J1	1	26.450	0.000	0.0	0.0000	0.0000	OK
15 minute summer	J2	1	26.450	0.000	0.0	0.0000	0.0000	OK
15 minute summer	J5	11	25.969	0.077	13.9	0.0000	0.0000	OK
15 minute summer	J6	11	26.778	0.028	2.8	0.0000	0.0000	OK
15 minute summer	J7	10	26.867	0.017	2.3	0.0000	0.0000	OK
15 minute summer	J8	11	26.309	0.009	0.4	0.0000	0.0000	OK
15 minute summer	J9	11	26.145	0.045	6.3	0.0000	0.0000	OK
15 minute summer	J10	11	26.739	0.020	4.4	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	15.001	2	3.4	0.359	0.024	0.4864	
15 minute summer	2	15.002	9	6.4	0.538	0.046	0.4172	
15 minute summer	3	16.001	9	2.6	0.399	0.018	0.3169	
180 minute winter	J3	18.000	16	10.8	1.013	0.763	0.1996	
15 minute summer	5	15.006	14	15.2	0.519	0.268	1.8239	
960 minute summer	6	1.011	Outfall	14.2	0.775	0.206	0.1883	473.5
60 minute summer	8	1.010	6	11.0	0.791	0.107	0.2042	
15 minute summer	9	3.003	18	9.0	0.878	0.089	0.0675	
15 minute summer	10	1.006	5	18.7	0.720	0.289	2.4641	
15 minute summer	11	27.001	J10	3.3	0.494	0.038	0.0529	
15 minute summer	J1	16.000	3	0.0	0.000	0.000	0.0586	
15 minute summer	J2	15.000	1	0.0	0.000	0.000	0.0644	
15 minute summer	J5	24.005	4	13.9	0.760	0.139	0.2253	
15 minute summer	J6	24.001	71	2.7	0.313	0.039	0.0739	
15 minute summer	J7	24.000	J6	2.3	0.280	0.017	0.1850	
15 minute summer	J8	28.002	J5	0.4	1.047	0.017	0.0006	
15 minute summer	J9	27.003	J5	6.3	0.620	0.050	0.1694	
15 minute summer	J10	27.002	J9	4.4	0.600	0.051	0.1242	

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	J11	10	26.917	0.017	2.3	0.0000	0.0000	OK
15 minute summer	4	11	25.900	0.107	15.9	0.1207	0.0000	OK
15 minute summer	12	11	26.093	0.074	7.4	0.0840	0.0000	OK
15 minute summer	13	11	26.183	0.054	5.8	0.0607	0.0000	OK
240 minute summer	14	144	25.826	0.512	11.4	0.5794	0.0000	SURCHARGED
240 minute summer	15	144	25.825	0.554	11.4	0.6271	0.0000	SURCHARGED
240 minute summer	16	156	25.839	0.212	10.8	0.2393	0.0000	SURCHARGED
15 minute summer	Block A Car Park	13	26.017	0.017	2.2	0.4948	0.0000	OK
360 minute summer	Block B Car Park	240	26.742	0.042	1.0	2.8522	0.0000	OK
120 minute summer	Access Road A1	74	26.441	0.041	2.1	1.5110	0.0000	OK
240 minute summer	Access Road A2	160	26.356	0.056	1.3	2.5672	0.0000	OK
15 minute summer	J4	10	26.483	0.198	7.1	0.0000	0.0000	SURCHARGED
240 minute summer	18	144	25.828	0.208	9.0	0.2357	0.0000	OK
120 minute summer	Access Road A3	78	26.151	0.051	2.8	2.5495	0.0000	OK
30 minute summer	Block C Car Park	22	26.225	0.025	1.3	0.2314	0.0000	OK
15 minute winter	19	10	26.038	0.076	10.9	0.0000	0.0000	OK
15 minute summer	J12	11	26.372	0.128	4.0	0.0000	0.0000	SURCHARGED
15 minute summer	J13	10	26.235	0.268	8.1	0.0000	0.0000	SURCHARGED
15 minute summer	J14	10	26.752	0.084	4.0	0.0000	0.0000	OK
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	J11	27.000	11	2.3	0.382	0.038	0.1206	
15 minute summer	4	24.006	J29	15.8	0.760	0.276	0.3092	
15 minute summer	12	24.004	J5	7.3	0.671	0.230	0.1495	
15 minute summer	13	24.003	12	5.8	0.630	0.125	0.1258	
120 minute summer	14	15.007	15	14.3	0.272	0.249	1.1288	
120 minute summer	15	15.008	8	14.2	0.249	0.245	0.2038	
180 minute winter	16	18.001	8	10.8	1.111	0.444	0.2004	
15 minute summer	Block A Car Park	17.000	19	-2.2	-0.666	-0.318	0.0102	
15 minute summer	Block B Car Park	28.000	J14	-3.6	-0.912	-0.532	0.0101	
15 minute summer	Access Road A1	25.000	J4	-4.8	-0.833	-0.757	0.0322	
15 minute summer	Access Road A2	26.000_1	J12	-3.5	-0.607	-0.550	0.0272	
15 minute summer	J4	25.001	71	2.2	0.591	0.158	0.0165	
15 minute summer	18	15.004	10	17.7	0.845	0.212	0.4598	
15 minute summer	Access Road A3	29.000	J13	-5.9	-1.015	-0.939	0.0425	
15 minute summer	Block C Car Park	19.000	J15	-1.6	0.406	-0.239	0.0275	
15 minute winter	19	17.001	18	9.5	1.092	0.475	0.0891	
15 minute summer	J12	26.001_1	12	0.5	0.468	0.074	0.0092	
15 minute summer	J13	29.001	4	2.0	0.562	0.141	0.0132	
15 minute summer	J14	28.001	J8	0.4	0.467	0.053	0.0011	

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	J15	11	26.237	0.437	2.7	0.0000	0.0000	SURCHARGED
15 minute summer	7	1	29.260	0.000	0.0	0.0000	0.0000	OK
15 minute summer	17	11	29.116	0.016	2.4	0.0000	0.0000	OK
15 minute summer	20	11	29.032	0.012	3.1	0.0000	0.0000	OK
15 minute summer	21	11	28.915	0.035	4.9	0.0000	0.0000	OK
15 minute summer	22	11	28.668	0.038	20.6	0.0000	0.0000	OK
15 minute summer	23	12	28.408	0.028	20.4	0.0000	0.0000	OK
15 minute summer	24	12	27.887	0.027	20.6	0.0000	0.0000	OK
15 minute summer	25	12	26.983	0.033	20.7	0.0000	0.0000	OK
15 minute summer	26	12	26.767	0.027	20.7	0.0000	0.0000	OK
15 minute summer	27	12	26.438	0.038	20.6	0.0000	0.0000	OK
15 minute summer	28	12	26.222	0.122	23.4	0.0000	0.0000	OK
15 minute summer	29	12	26.123	0.081	38.7	0.0000	0.0000	OK
15 minute summer	30	12	26.030	0.059	40.0	0.0000	0.0000	OK
15 minute summer	31	12	25.881	0.031	41.5	0.0000	0.0000	OK
15 minute summer	32	12	25.666	0.091	65.2	0.0000	0.0000	OK
15 minute summer	33	12	25.536	0.086	69.8	0.0000	0.0000	OK
960 minute summer	34	615	25.440	0.090	18.1	0.0000	0.0000	OK
960 minute summer	35	660	25.416	0.116	8.0	151.1646	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	J15	19.001	16	0.9	0.764	0.094	0.0215	
15 minute summer	7	1.000	17	0.0	0.000	0.000	0.1381	
15 minute summer	17	1.001	20	2.1	0.292	0.038	0.2201	
15 minute summer	20	1.002	21	3.1	0.238	0.026	0.1603	
15 minute summer	21	1.003	22	4.8	0.985	0.030	0.0576	
15 minute summer	22	1.004	23	20.4	1.091	0.175	0.4121	
15 minute summer	23	1.005	24	20.6	1.332	0.110	0.2771	
15 minute summer	24	1.006_1	25	20.7	1.222	0.107	0.4899	
15 minute summer	25	1.008	26	20.7	1.235	0.139	0.1908	
15 minute summer	26	1.009	27	20.6	1.121	0.103	0.1880	
15 minute summer	27	1.010_1	28	20.5	0.934	0.187	0.2168	
15 minute summer	28	1.011_1	29	23.3	1.121	0.412	0.4663	
15 minute summer	29	1.012	30	39.1	0.873	0.352	1.3546	
15 minute summer	30	1.013_1	31	40.1	1.504	0.179	0.3435	
15 minute summer	31	1.014	32	41.5	1.089	0.064	0.1379	
15 minute summer	32	1.015	33	65.4	1.090	0.410	1.5527	
15 minute summer	33	1.016	34	69.7	1.264	0.372	0.8275	
15 minute summer	34	1.017	57	69.7	2.543	0.322	0.1695	
960 minute summer	35	26.000	36	3.3	0.629	0.081	0.0517	

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute summer	36	660	25.280	0.040	3.3	0.0455	0.0000	OK
15 minute summer	37	11	26.755	0.055	18.9	0.0000	0.0000	OK
15 minute summer	38	11	26.651	0.057	20.5	0.0000	0.0000	OK
15 minute summer	39	11	26.553	0.060	22.6	0.0000	0.0000	OK
15 minute summer	40	12	26.290	0.078	23.8	0.0000	0.0000	OK
240 minute summer	41	152	28.457	0.230	2.1	0.0000	0.0000	SURCHARGED
240 minute summer	42	156	28.146	0.006	0.7	0.0000	0.0000	OK
15 minute summer	43	10	27.942	0.042	16.8	0.0000	0.0000	OK
15 minute summer	44	11	27.289	0.048	20.6	0.0000	0.0000	OK
30 minute summer	45	21	27.125	0.156	19.8	6.3838	0.0000	SURCHARGED
15 minute summer	46	12	26.914	0.103	22.1	0.0291	0.0000	OK
15 minute summer	47	12	26.754	0.120	26.5	0.1354	0.0000	OK
15 minute summer	48	10	27.724	0.071	12.7	0.0807	0.0000	OK
15 minute summer	49	11	27.474	0.058	14.9	0.0654	0.0000	OK
15 minute summer	50	12	26.622	0.147	26.6	0.1668	0.0000	OK
15 minute summer	51	12	26.500	0.125	28.3	0.1411	0.0000	OK
240 minute summer	52	184	25.870	0.120	19.4	0.0000	0.0000	OK
30 minute summer	53	21	27.137	0.167	18.9	0.0000	0.0000	OK
15 minute summer	54	10	28.489	0.039	2.2	0.0110	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute summer	36	26.001	6	3.3	0.643	0.070	0.0813	
15 minute summer	37	8.005	38	18.9	0.721	0.314	0.5561	
15 minute summer	38	8.006	39	20.6	0.736	0.341	0.5637	
15 minute summer	39	8.007	69	22.5	0.781	0.373	0.5629	
15 minute summer	40	8.009	32	23.7	1.780	0.258	0.2781	
240 minute summer	41	31.001	42	0.7	0.323	0.008	0.0177	
240 minute summer	42	31.002	43	0.7	0.301	0.006	0.0990	
15 minute summer	43	30.002	44	16.6	0.920	0.192	0.3523	
15 minute summer	44	30.003	53	20.7	0.975	0.242	0.3080	
30 minute summer	45	22.002	46	15.4	0.926	1.089	0.2086	
15 minute summer	46	21.004	47	22.1	1.161	0.380	0.2774	
15 minute summer	47	21.005	50	26.6	1.083	0.470	0.3288	
15 minute summer	48	8.003	49	12.5	1.133	0.113	0.2639	
15 minute summer	49	8.004	37	15.0	1.636	0.079	0.2286	
15 minute summer	50	21.006	51	26.5	1.057	0.729	0.5080	
15 minute summer	51	21.007	52	27.9	1.281	0.552	0.6350	
15 minute summer	54	30.000	55	2.2	0.505	0.148	0.1262	

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	55	11	28.299	0.049	4.6	0.0139	0.0000	OK
15 minute summer	56	11	27.324	0.049	7.7	0.0560	0.0000	OK
960 minute summer	57	660	25.419	0.119	29.5	0.0000	0.0000	OK
15 minute summer	58	10	29.682	0.066	5.9	0.0746	0.0000	OK
15 minute summer	59	11	29.511	0.093	10.7	0.1049	0.0000	OK
15 minute summer	60	11	29.157	0.082	12.7	0.0931	0.0000	OK
15 minute summer	61	11	29.062	0.087	16.0	0.0987	0.0000	OK
15 minute summer	62	10	28.097	0.047	5.5	0.0526	0.0000	OK
15 minute summer	63	11	28.442	0.040	4.0	0.0454	0.0000	OK
15 minute summer	64	10	27.999	0.049	4.5	0.0559	0.0000	OK
15 minute summer	65	10	26.043	0.054	5.3	0.0153	0.0000	OK
15 minute summer	66	10	27.560	0.029	1.8	0.0331	0.0000	OK
15 minute summer	67	11	27.252	0.063	9.9	0.0711	0.0000	OK
15 minute summer	68	11	26.648	0.073	13.0	0.0828	0.0000	OK
240 minute summer	Access Road B1	152	28.457	0.157	1.5	2.7712	0.0000	SURCHARGED
120 minute summer	Access Road B2	78	27.413	0.113	1.0	1.0273	0.0000	SURCHARGED
15 minute summer	Access Road B3	13	27.231	0.031	0.9	0.1638	0.0000	OK
120 minute summer	J16	78	27.413	0.133	1.5	0.0000	0.0000	SURCHARGED
15 minute summer	J17	12	27.231	0.131	2.3	0.0000	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	55	30.001	43	4.5	0.907	0.226	0.0859	
15 minute summer	56	21.003	46	7.6	0.785	0.107	0.2930	
15 minute summer	58	1.001_1	59	5.8	0.647	0.403	0.2848	
15 minute summer	59	1.002_1	60	10.4	0.923	0.675	0.4015	
15 minute summer	60	1.003_1	61	12.6	0.923	0.251	0.1458	
15 minute summer	61	1.004_1	22	15.7	1.123	0.311	0.4076	
15 minute summer	62	21.002	56	5.4	1.175	0.202	0.1437	
15 minute summer	63	8.002	48	4.0	1.061	0.153	0.1145	
15 minute summer	64	9.000	48	4.4	0.892	0.222	0.0878	
15 minute summer	65	14.001	33	5.3	0.938	0.264	0.0571	
15 minute summer	66	4.002	67	1.7	0.534	0.083	0.1172	
15 minute summer	67	4.003	68	9.8	1.439	0.346	0.1449	
15 minute summer	68	4.004	29	13.0	1.179	0.224	0.2632	
15 minute summer	Access Road B1	31.000	41	-4.4	-0.308	-0.220	0.0938	
15 minute summer	Access Road B2	22.000	J16	-2.1	-0.345	-0.326	0.0141	
15 minute summer	Access Road B3	22.000_1	J17	-0.9	-0.163	-0.100	0.0235	
120 minute summer	J16	32.001	44	0.5	0.619	0.075	0.0062	
15 minute summer	J17	22.001	45	1.3	0.615	0.212	0.0368	

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	Access Road C1	1	29.700	0.000	0.0	0.0000	0.0000	OK
15 minute summer	Access Road C2	12	29.530	0.030	1.1	0.2431	0.0000	OK
15 minute summer	J18	10	29.535	0.050	3.6	0.0000	0.0000	OK
120 minute summer	Access Road C4	76	28.277	0.077	1.6	1.4260	0.0000	OK
15 minute summer	J19	11	28.281	0.124	5.1	0.0000	0.0000	SURCHARGED
240 minute summer	Access Road C5	156	27.447	0.247	1.8	3.6763	0.0000	SURCHARGED
240 minute summer	J20	156	27.447	0.276	2.5	0.0000	0.0000	SURCHARGED
120 minute summer	Access Road D1	76	28.670	0.070	0.8	0.6021	0.0000	OK
120 minute summer	J25	74	26.840	0.070	0.6	0.0000	0.0000	OK
120 minute summer	J21	76	28.670	0.183	1.4	0.0000	0.0000	SURCHARGED
240 minute summer	J22	156	27.851	0.197	1.8	0.0000	0.0000	SURCHARGED
15 minute summer	J23	11	27.319	0.056	3.7	0.0000	0.0000	OK
15 minute summer	J24	11	26.857	0.092	3.3	0.0000	0.0000	OK
120 minute summer	Access Road D4	72	26.852	0.052	0.9	0.6486	0.0000	OK
15 minute summer	Access Road D3	11	27.319	0.019	0.3	0.0419	0.0000	OK
240 minute summer	Access Road D2	156	27.852	0.152	1.2	2.4424	0.0000	SURCHARGED
180 minute summer	Access Road E1	112	27.634	0.134	1.1	1.2745	0.0000	OK
15 minute summer	Access Road E2	1	27.400	0.000	0.0	0.0000	0.0000	OK
120 minute summer	Access Road E3	74	26.840	0.040	0.3	0.2197	0.0000	OK
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	Access Road C1	1.000_1	58	0.0	0.000	0.000	0.0012	
15 minute summer	Access Road C2	2.000	J18	-1.1	-0.521	-0.173	0.0039	
15 minute summer	J18	2.001	59	2.7	0.738	0.435	0.0058	
15 minute summer	Access Road C4	21.000	J19	-3.7	-0.554	-0.584	0.0268	
15 minute summer	J19	21.001	62	1.3	0.837	0.137	0.0035	
15 minute summer	Access Road C5	23.000	J20	-5.1	-0.646	-0.795	0.0205	
240 minute summer	J20	23.001	46	0.7	0.968	0.048	0.0029	
15 minute summer	Access Road D1	8.000	J21	-1.7	-0.276	-0.274	0.0670	
120 minute summer	J25	12.001	38	0.3	0.449	0.049	0.0025	
120 minute summer	J21	8.001	63	0.6	0.516	0.091	0.0128	
240 minute summer	J22	4.001	66	0.6	0.503	0.094	0.0079	
15 minute summer	J23	5.001	67	3.4	0.796	0.538	0.0093	
15 minute summer	J24	6.001	68	1.1	0.959	0.088	0.0017	
15 minute summer	Access Road D4	6.000	J24	-2.1	-0.411	-0.333	0.0175	
15 minute summer	Access Road D3	5.000	J23	0.4	0.151	0.061	0.0095	
15 minute summer	Access Road D2	4.000	J22	-3.8	-0.501	-0.603	0.0327	
15 minute summer	Access Road E1	10.000	70	-3.2	-0.219	-0.092	0.1011	
15 minute summer	Access Road E2	11.000	J28	0.0	0.000	0.000	0.0151	
30 minute summer	Access Road E3	12.000	J25	0.9	0.312	0.133	0.0104	

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	Access Road E4	22	26.740	0.040	0.3	0.1012	0.0000	OK
120 minute summer	Access Road F1	74	26.662	0.062	1.2	0.9284	0.0000	OK
15 minute summer	Car Park	1	26.050	0.000	0.0	0.0000	0.0000	OK
180 minute summer	70	112	27.634	0.384	2.0	0.0000	0.0000	SURCHARGED
30 minute summer	J26	22	26.740	0.067	0.7	0.0000	0.0000	OK
15 minute summer	J27	11	26.676	0.151	4.6	0.0000	0.0000	SURCHARGED
15 minute summer	J28	13	27.375	0.125	0.8	0.0000	0.0000	SURCHARGED
15 minute summer	69	11	26.455	0.060	22.5	0.0000	0.0000	OK
15 minute summer	71	11	26.242	0.060	4.9	0.0000	0.0000	OK
240 minute summer	J29	184	25.869	0.119	8.9	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	Access Road E4	13.000	J26	0.7	0.282	0.098	0.0093	
15 minute summer	Access Road F1	7.000	J27	-3.0	-0.481	-0.451	0.0383	
15 minute summer	Car Park	14.000	65	0.0	0.000	0.000	0.0271	
180 minute summer	70	10.001	37	0.8	0.506	0.050	0.0274	
30 minute summer	J26	13.001	39	0.3	0.446	0.048	0.0020	
15 minute summer	J27	7.001	31	1.5	0.690	0.216	0.0154	
15 minute summer	J28	11.001	37	0.5	0.679	0.044	0.0034	
15 minute summer	69	8.008	40	22.3	0.779	0.370	0.3328	
15 minute summer	71	24.002	13	4.9	0.629	0.154	0.1081	

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.78%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	11	26.408	0.058	21.7	0.0000	0.0000	OK
30 minute summer	2	23	26.390	0.288	55.7	0.0000	0.0000	SURCHARGED
15 minute summer	3	11	26.402	0.052	17.9	0.0000	0.0000	OK
480 minute winter	J3	480	26.394	0.694	18.2	444.9279	0.0000	SURCHARGED
30 minute summer	5	22	26.355	0.972	27.2	1.0991	0.0000	FLOOD RISK
480 minute winter	6	472	25.259	0.119	22.0	0.1346	0.0000	OK
480 minute winter	Outfall	472	25.213	0.113	22.0	0.0000	0.0000	OK
480 minute winter	8	472	26.329	1.066	14.2	1.8829	0.0000	SURCHARGED
30 minute summer	9	22	26.388	0.638	64.6	0.0000	0.0000	FLOOD RISK
30 minute summer	10	22	26.378	0.848	24.3	0.9588	0.0000	FLOOD RISK
15 minute summer	11	10	26.846	0.047	19.8	0.0000	0.0000	OK
15 minute summer	J1	1	26.450	0.000	0.0	0.0000	0.0000	OK
15 minute summer	J2	1	26.450	0.000	0.0	0.0000	0.0000	OK
480 minute winter	J5	480	26.399	0.507	10.7	0.0000	0.0000	SURCHARGED
15 minute summer	J6	10	26.816	0.066	16.6	0.0000	0.0000	OK
15 minute summer	J7	10	26.897	0.047	13.6	0.0000	0.0000	OK
480 minute winter	J8	480	26.399	0.099	2.7	0.0000	0.0000	OK
480 minute winter	J9	480	26.399	0.299	4.2	0.0000	0.0000	OK
15 minute summer	J10	10	26.773	0.054	26.3	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	15.001	2	21.1	0.587	0.150	7.1817	
15 minute summer	2	15.002	9	54.7	0.737	0.391	16.1183	
15 minute summer	3	16.001	9	17.3	0.658	0.123	7.2158	
15 minute summer	J3	18.000	16	-23.4	-1.398	-1.649	0.1996	
15 minute winter	5	15.006	14	29.4	0.615	0.516	1.8239	
480 minute winter	6	1.011	Outfall	22.0	0.876	0.318	0.2572	1607.8
30 minute summer	8	1.010	6	11.0	0.794	0.107	0.2298	
15 minute summer	9	3.003	18	-41.2	1.022	-0.405	0.4623	
15 minute winter	10	1.006	5	41.4	0.799	0.639	3.0113	
15 minute summer	11	27.001	J10	19.7	0.864	0.230	0.1822	
15 minute summer	J1	16.000	3	0.0	0.000	0.000	0.2181	
15 minute summer	J2	15.000	1	0.0	0.000	0.000	0.2271	
15 minute summer	J5	24.005	4	75.2	1.149	0.753	0.8024	
15 minute summer	J6	24.001	71	16.3	0.559	0.237	0.2481	
15 minute summer	J7	24.000	J6	13.5	0.508	0.101	0.5941	
360 minute winter	J8	28.002	J5	4.0	1.176	0.184	0.0125	
15 minute summer	J9	27.003	J5	38.1	0.961	0.302	0.6860	
15 minute summer	J10	27.002	J9	26.1	1.043	0.306	0.4289	

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.78%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	J11	10	26.947	0.047	13.9	0.0000	0.0000	OK
480 minute winter	4	480	26.399	0.606	12.1	0.6850	0.0000	SURCHARGED
480 minute winter	12	480	26.399	0.380	6.3	0.4297	0.0000	SURCHARGED
480 minute winter	13	480	26.399	0.270	4.9	0.3054	0.0000	SURCHARGED
60 minute summer	14	38	26.338	1.024	32.0	1.1582	0.0000	FLOOD RISK
480 minute winter	15	472	26.329	1.058	14.3	1.1962	0.0000	SURCHARGED
480 minute winter	16	472	26.363	0.736	10.8	0.8329	0.0000	SURCHARGED
480 minute winter	Block A Car Park	472	26.329	0.329	8.5	71.0138	0.0000	FLOOD RISK
240 minute winter	Block B Car Park	228	26.922	0.222	4.0	19.0727	0.0000	SURCHARGED
120 minute winter	Access Road A1	98	26.573	0.173	10.1	21.8429	0.0000	SURCHARGED
240 minute winter	Access Road A2	236	26.487	0.187	4.0	19.3525	0.0000	SURCHARGED
15 minute summer	J4	9	27.300	1.015	43.0	0.0000	0.0000	FLOOD RISK
30 minute summer	18	22	26.385	0.765	36.2	0.8653	0.0000	FLOOD RISK
480 minute winter	Access Road A3	528	26.387	0.287	3.8	45.8027	0.0000	SURCHARGED
180 minute winter	Block C Car Park	176	26.397	0.197	3.1	9.4189	0.0000	SURCHARGED
15 minute summer	19	9	26.600	0.638	69.8	0.0000	0.0000	FLOOD RISK
15 minute summer	J12	11	26.988	0.744	24.4	0.0000	0.0000	FLOOD RISK
15 minute summer	J13	8	27.100	1.133	48.6	0.0000	0.0000	FLOOD RISK
15 minute summer	J14	10	27.109	0.441	24.1	0.0000	0.0000	FLOOD RISK
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	J11	27.000	11	13.8	0.674	0.229	0.4145	
15 minute summer	4	24.006	J29	81.3	1.266	1.421	1.0221	
15 minute summer	12	24.004	J5	37.0	1.083	1.161	0.4755	
15 minute summer	13	24.003	12	29.4	0.893	0.627	0.4407	
15 minute winter	14	15.007	15	37.9	0.538	0.664	1.1288	
15 minute winter	15	15.008	8	34.6	0.491	0.597	0.2038	
15 minute summer	16	18.001	8	-22.7	-1.289	-0.929	0.2004	
15 minute summer	Block A Car Park	17.000	19	-31.0	-4.468	-4.560	0.0234	
15 minute summer	Block B Car Park	28.000	J14	-23.1	-3.259	-3.404	0.0199	
15 minute summer	Access Road A1	25.000	J4	-31.7	-4.111	-5.039	0.0470	
15 minute summer	Access Road A2	26.000_1	J12	-22.2	-2.948	-3.537	0.0405	
15 minute summer	J4	25.001	71	7.4	0.821	0.523	0.0395	
15 minute winter	18	15.004	10	41.5	1.008	0.498	1.0455	
15 minute summer	Access Road A3	29.000	J13	-34.6	-4.491	-5.490	0.0595	
15 minute summer	Block C Car Park	19.000	J15	-14.3	-1.877	-2.111	0.0467	
15 minute summer	19	17.001	18	38.0	2.160	1.909	0.1810	
15 minute summer	J12	26.001_1	12	1.2	0.551	0.190	0.0390	
15 minute summer	J13	29.001	4	7.2	0.732	0.505	0.0602	
15 minute summer	J14	28.001	J8	0.9	0.610	0.132	0.0021	

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.78%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	J15	11	26.598	0.798	16.1	0.0000	0.0000	FLOOD RISK
15 minute summer	7	1	29.260	0.000	0.0	0.0000	0.0000	OK
15 minute summer	17	10	29.145	0.045	14.2	0.0000	0.0000	OK
15 minute summer	20	11	29.056	0.036	20.2	0.0000	0.0000	OK
15 minute summer	21	11	28.969	0.089	31.3	0.0000	0.0000	OK
15 minute summer	22	11	28.716	0.086	87.3	0.0000	0.0000	OK
15 minute summer	23	11	28.445	0.065	87.2	0.0000	0.0000	OK
15 minute summer	24	11	27.923	0.063	87.1	0.0000	0.0000	OK
15 minute summer	25	11	27.024	0.074	87.0	0.0000	0.0000	OK
15 minute summer	26	11	26.802	0.062	86.9	0.0000	0.0000	OK
15 minute summer	27	11	26.496	0.096	86.8	0.0000	0.0000	OK
15 minute summer	28	11	26.456	0.356	107.7	0.0000	0.0000	SURCHARGED
15 minute summer	29	11	26.226	0.184	177.6	0.0000	0.0000	SURCHARGED
15 minute summer	30	12	26.103	0.132	184.3	0.0000	0.0000	OK
15 minute summer	31	12	25.925	0.075	186.3	0.0000	0.0000	OK
15 minute summer	32	12	25.777	0.202	297.6	0.0000	0.0000	SURCHARGED
15 minute summer	33	12	25.642	0.192	317.1	0.0000	0.0000	SURCHARGED
480 minute winter	34	344	25.716	0.366	252.5	0.0000	0.0000	SURCHARGED
480 minute winter	35	448	25.622	0.322	35.9	485.2548	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	J15	19.001	16	-1.2	0.789	-0.124	0.0375	
15 minute summer	7	1.000	17	0.0	0.000	0.000	0.4320	
15 minute summer	17	1.001	20	13.9	0.590	0.249	0.7060	
15 minute summer	20	1.002	21	20.2	0.517	0.172	0.4900	
15 minute summer	21	1.003	22	31.4	1.841	0.193	0.1997	
15 minute summer	22	1.004	23	87.2	1.773	0.750	1.0859	
15 minute summer	23	1.005	24	87.1	2.165	0.468	0.7223	
15 minute summer	24	1.006_1	25	87.0	1.983	0.449	1.2727	
15 minute summer	25	1.008	26	86.9	2.002	0.586	0.4952	
15 minute summer	26	1.009	27	86.8	1.756	0.434	0.5359	
15 minute summer	27	1.010_1	28	87.4	1.350	0.796	0.9547	
15 minute summer	28	1.011_1	29	105.4	1.650	1.862	1.2744	
15 minute summer	29	1.012	30	177.3	1.377	1.597	3.9157	
15 minute summer	30	1.013_1	31	182.2	2.497	0.812	0.9481	
15 minute summer	31	1.014	32	186.4	1.749	0.286	0.4004	
15 minute summer	32	1.015	33	296.6	1.679	1.861	4.5740	
15 minute summer	33	1.016	34	315.7	1.952	1.683	2.4259	
15 minute summer	34	1.017	57	315.3	3.804	1.456	0.6252	
480 minute winter	35	26.000	36	12.0	0.841	0.298	0.1419	

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.78%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	36	525	25.325	0.085	12.0	0.0961	0.0000	OK
15 minute summer	37	10	26.830	0.130	105.0	0.0000	0.0000	SURCHARGED
15 minute summer	38	11	26.730	0.136	114.2	0.0000	0.0000	SURCHARGED
15 minute summer	39	12	26.641	0.148	126.2	0.0000	0.0000	SURCHARGED
15 minute summer	40	12	26.715	0.503	327.1	0.0000	0.0000	SURCHARGED
180 minute winter	41	172	28.748	0.521	7.2	0.0000	0.0000	FLOOD RISK
180 minute winter	42	176	28.148	0.008	1.0	0.0000	0.0000	OK
15 minute summer	43	10	28.004	0.104	97.1	0.0000	0.0000	SURCHARGED
30 minute summer	44	25	27.716	0.475	114.1	0.0000	0.0000	SURCHARGED
30 minute summer	45	25	27.689	0.720	59.5	53.3170	0.0000	SURCHARGED
30 minute summer	46	20	27.594	0.783	44.0	0.2217	0.0000	SURCHARGED
30 minute summer	47	20	27.492	0.858	59.6	0.9705	0.0000	SURCHARGED
15 minute summer	48	10	27.845	0.192	73.2	0.2169	0.0000	OK
15 minute summer	49	11	27.565	0.149	87.0	0.1684	0.0000	OK
30 minute summer	50	19	27.249	0.774	59.8	0.8754	0.0000	FLOOD RISK
15 minute summer	51	11	26.922	0.547	70.8	0.6190	0.0000	SURCHARGED
480 minute winter	52	472	26.402	0.652	31.7	0.0000	0.0000	OK
30 minute summer	53	25	27.713	0.743	128.1	0.0000	0.0000	OK
15 minute summer	54	11	28.751	0.301	13.4	0.0853	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	36	26.001	6	12.0	0.790	0.258	0.1530	
15 minute summer	37	8.005	38	105.7	1.139	1.754	1.9661	
15 minute summer	38	8.006	39	115.2	1.140	1.913	2.0384	
15 minute summer	39	8.007	69	133.2	1.164	2.210	3.9645	
15 minute summer	40	8.009	32	111.2	2.799	1.209	0.7933	
180 minute winter	41	31.001	42	1.0	0.378	0.012	0.0232	
180 minute winter	42	31.002	43	1.0	0.380	0.010	0.2133	
15 minute summer	43	30.002	44	95.9	1.507	1.110	1.2513	
30 minute summer	44	30.003	53	128.1	1.020	1.498	15.5951	
30 minute summer	45	22.002	46	35.4	2.009	2.500	0.2288	
15 minute summer	46	21.004	47	45.6	1.343	0.784	0.5643	
30 minute summer	47	21.005	50	59.8	1.504	1.056	0.5334	
15 minute summer	48	8.003	49	72.9	1.772	0.657	0.9773	
15 minute summer	49	8.004	37	87.0	2.720	0.461	0.8005	
30 minute summer	50	21.006	51	60.3	1.515	1.657	0.8056	
15 minute summer	51	21.007	52	70.4	1.769	1.392	1.1375	
15 minute summer	54	30.000	55	12.4	0.743	0.850	0.5178	

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.78%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	55	11	28.583	0.333	26.3	0.0943	0.0000	SURCHARGED
30 minute summer	56	20	27.705	0.430	38.0	0.4863	0.0000	SURCHARGED
480 minute winter	57	448	25.630	0.330	297.3	0.0000	0.0000	OK
15 minute summer	58	11	30.150	0.534	35.6	0.6037	0.0000	SURCHARGED
15 minute summer	59	11	29.918	0.500	28.1	0.5653	0.0000	SURCHARGED
15 minute summer	60	11	29.306	0.231	37.0	0.2611	0.0000	SURCHARGED
15 minute summer	61	11	29.234	0.259	57.1	0.2930	0.0000	SURCHARGED
15 minute summer	62	12	28.385	0.335	27.4	0.3789	0.0000	SURCHARGED
15 minute summer	63	10	28.513	0.111	22.5	0.1260	0.0000	OK
15 minute summer	64	11	28.312	0.362	26.9	0.4091	0.0000	SURCHARGED
15 minute summer	65	10	26.172	0.183	32.1	0.0517	0.0000	SURCHARGED
15 minute summer	66	12	27.833	0.302	8.4	0.3413	0.0000	SURCHARGED
15 minute summer	67	11	27.783	0.594	37.5	0.6718	0.0000	SURCHARGED
15 minute summer	68	11	26.743	0.168	50.8	0.1903	0.0000	OK
180 minute winter	Access Road B1	172	28.748	0.448	6.2	22.3422	0.0000	FLOOD RISK
120 minute summer	Access Road B2	110	27.667	0.367	6.5	10.6517	0.0000	SURCHARGED
120 minute summer	Access Road B3	100	27.497	0.297	7.2	11.0176	0.0000	SURCHARGED
120 minute summer	J16	110	27.667	0.387	7.1	0.0000	0.0000	SURCHARGED
30 minute summer	J17	19	27.544	0.444	12.7	0.0000	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	55	30.001	43	26.1	1.481	1.311	0.3010	
15 minute summer	56	21.003	46	36.3	0.968	0.508	0.9851	
15 minute summer	58	1.001_1	59	15.0	0.849	1.044	0.5329	
15 minute summer	59	1.002_1	60	22.5	1.278	1.466	0.6299	
15 minute summer	60	1.003_1	61	36.0	1.079	0.715	0.4240	
15 minute summer	61	1.004_1	22	55.9	1.469	1.106	1.1090	
30 minute summer	62	21.002	56	25.5	1.643	0.956	0.5512	
15 minute summer	63	8.002	48	22.0	1.619	0.846	0.4165	
15 minute summer	64	9.000	48	26.0	1.478	1.309	0.3078	
15 minute summer	65	14.001	33	22.0	1.251	1.107	0.1742	
15 minute summer	66	4.002	67	10.9	0.619	0.523	0.4389	
15 minute summer	67	4.003	68	35.9	2.040	1.262	0.3724	
15 minute summer	68	4.004	29	50.7	1.631	0.872	0.7408	
15 minute summer	Access Road B1	31.000	41	-29.0	-1.647	-1.459	0.1028	
15 minute summer	Access Road B2	22.000	J16	-14.2	-1.821	-2.254	0.0143	
15 minute summer	Access Road B3	22.000_1	J17	-12.1	-1.551	-1.377	0.0371	
15 minute summer	J16	32.001	44	-6.2	-0.798	-0.980	0.0275	
120 minute summer	J17	22.001	45	2.6	0.727	0.406	0.0582	

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.78%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	Access Road C1	23	29.828	0.128	17.8	5.8030	0.0000	SURCHARGED
30 minute summer	Access Road C2	24	29.691	0.191	22.7	9.4569	0.0000	SURCHARGED
15 minute summer	J18	11	29.902	0.417	25.7	0.0000	0.0000	SURCHARGED
120 minute winter	Access Road C4	96	28.460	0.260	7.4	16.0980	0.0000	SURCHARGED
15 minute summer	J19	11	29.100	0.943	30.7	0.0000	0.0000	FLOOD RISK
180 minute winter	Access Road C5	176	27.869	0.669	7.3	26.5728	0.0000	FLOOD RISK
15 minute summer	J20	10	28.100	0.929	36.1	0.0000	0.0000	FLOOD RISK
120 minute winter	Access Road D1	102	28.867	0.267	3.7	8.0200	0.0000	SURCHARGED
120 minute summer	J25	86	26.965	0.195	3.0	0.0000	0.0000	SURCHARGED
15 minute summer	J21	11	29.212	0.725	14.5	0.0000	0.0000	FLOOD RISK
15 minute summer	J22	11	28.600	0.946	26.9	0.0000	0.0000	FLOOD RISK
15 minute summer	J23	11	27.789	0.526	22.0	0.0000	0.0000	SURCHARGED
15 minute summer	J24	11	27.179	0.414	19.7	0.0000	0.0000	SURCHARGED
120 minute summer	Access Road D4	84	26.999	0.199	7.0	8.9093	0.0000	SURCHARGED
30 minute summer	Access Road D3	22	27.524	0.224	15.6	5.3338	0.0000	SURCHARGED
180 minute winter	Access Road D2	172	28.135	0.434	5.4	19.0607	0.0000	SURCHARGED
120 minute winter	Access Road E1	116	27.975	0.475	6.9	15.7723	0.0000	FLOOD RISK
60 minute summer	Access Road E2	44	27.506	0.106	2.4	1.4599	0.0000	SURCHARGED
120 minute summer	Access Road E3	86	26.965	0.165	2.4	3.1002	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	Access Road C1	1.000_1	58	-19.4	-2.626	-3.043	0.0239	
15 minute summer	Access Road C2	2.000	J18	-25.2	-3.223	-3.994	0.0108	
30 minute winter	J18	2.001	59	9.5	1.210	1.505	0.0123	
15 minute summer	Access Road C4	21.000	J19	-25.4	-3.246	-4.026	0.0309	
15 minute summer	J19	21.001	62	6.3	0.988	0.648	0.0176	
15 minute summer	Access Road C5	23.000	J20	-32.7	-4.177	-5.140	0.0205	
15 minute summer	J20	23.001	46	3.5	1.060	0.237	0.0308	
15 minute summer	Access Road D1	8.000	J21	-12.2	-1.558	-1.938	0.0816	
120 minute summer	J25	12.001	38	0.6	0.533	0.087	0.0038	
15 minute summer	J21	8.001	63	1.2	0.627	0.186	0.0382	
15 minute summer	J22	4.001	66	3.8	0.604	0.599	0.0522	
30 minute summer	J23	5.001	67	12.8	1.640	2.006	0.0168	
15 minute summer	J24	6.001	68	2.6	1.136	0.205	0.0041	
15 minute summer	Access Road D4	6.000	J24	-16.3	-2.078	-2.565	0.0249	
15 minute summer	Access Road D3	5.000	J23	-17.8	-2.269	-2.811	0.0265	
15 minute summer	Access Road D2	4.000	J22	-24.0	-3.068	-3.786	0.0327	
15 minute summer	Access Road E1	10.000	70	-23.7	-1.347	-0.674	0.1133	
15 minute summer	Access Road E2	11.000	J28	-3.8	-0.553	-0.317	0.0296	
15 minute summer	Access Road E3	12.000	J25	-5.8	-0.748	-0.865	0.0190	

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.78%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	Access Road E4	48	26.880	0.180	1.8	1.9433	0.0000	SURCHARGED
120 minute summer	Access Road F1	88	26.845	0.245	10.0	13.2377	0.0000	SURCHARGED
15 minute summer	Car Park	13	26.121	0.071	9.9	2.2451	0.0000	OK
120 minute winter	70	116	27.975	0.725	8.1	0.0000	0.0000	FLOOD RISK
60 minute winter	J26	49	26.880	0.207	2.5	0.0000	0.0000	SURCHARGED
15 minute summer	J27	9	27.100	0.575	27.7	0.0000	0.0000	FLOOD RISK
60 minute summer	J28	44	27.506	0.256	3.2	0.0000	0.0000	SURCHARGED
15 minute summer	69	14	26.675	0.280	133.2	0.0000	0.0000	SURCHARGED
480 minute winter	71	480	26.399	0.217	4.2	0.0000	0.0000	OK
480 minute winter	J29	480	26.399	0.649	14.6	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	Access Road E4	13.000	J26	-4.2	-0.531	-0.614	0.0172	
15 minute summer	Access Road F1	7.000	J27	-21.7	-2.779	-3.215	0.0471	
15 minute summer	Car Park	14.000	65	-9.9	-0.732	-0.698	0.1211	
120 minute winter	70	10.001	37	1.2	0.557	0.069	0.0345	
60 minute winter	J26	13.001	39	0.6	0.538	0.090	0.0031	
15 minute summer	J27	7.001	31	4.2	0.913	0.626	0.0337	
60 minute summer	J28	11.001	37	0.7	0.761	0.065	0.0045	
15 minute summer	69	8.008	40	322.0	1.124	5.344	4.4690	
15 minute summer	71	24.002	13	23.7	0.852	0.741	0.3839	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.66%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	1	585	26.493	0.143	2.5	0.0000	0.0000	OK
600 minute winter	2	585	26.493	0.391	7.6	0.0000	0.0000	SURCHARGED
600 minute winter	3	585	26.493	0.143	2.1	0.0000	0.0000	OK
480 minute winter	J3	480	26.568	0.868	22.1	582.9952	0.0000	SURCHARGED
600 minute winter	5	585	26.493	1.110	11.6	1.2551	0.0000	FLOOD RISK
720 minute winter	6	720	25.261	0.121	22.5	0.1364	0.0000	OK
720 minute winter	Outfall	720	25.214	0.114	22.5	0.0000	0.0000	OK
600 minute winter	8	585	26.493	1.230	12.9	2.1726	0.0000	SURCHARGED
600 minute winter	9	585	26.493	0.743	6.8	0.0000	0.0000	FLOOD RISK
600 minute winter	10	585	26.493	0.963	10.3	1.0889	0.0000	FLOOD RISK
15 minute summer	11	10	26.853	0.054	25.7	0.0000	0.0000	OK
600 minute winter	J1	585	26.493	0.043	0.1	0.0000	0.0000	OK
600 minute winter	J2	585	26.493	0.043	0.1	0.0000	0.0000	OK
480 minute winter	J5	480	26.572	0.680	12.9	0.0000	0.0000	SURCHARGED
15 minute summer	J6	10	26.825	0.075	21.5	0.0000	0.0000	OK
15 minute summer	J7	10	26.904	0.054	17.7	0.0000	0.0000	OK
480 minute winter	J8	480	26.572	0.272	2.0	0.0000	0.0000	SURCHARGED
480 minute winter	J9	480	26.572	0.472	5.5	0.0000	0.0000	SURCHARGED
15 minute summer	J10	10	26.781	0.062	34.2	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	15.001	2	27.3	0.625	0.195	11.1795	
15 minute summer	2	15.002	9	77.6	0.697	0.554	22.5562	
30 minute summer	3	16.001	9	27.1	0.527	0.194	13.6617	
15 minute summer	J3	18.000	16	-24.3	-1.473	-1.711	0.1996	
15 minute summer	5	15.006	14	32.3	0.655	0.567	1.8239	
720 minute winter	6	1.011	Outfall	22.5	0.882	0.326	0.2619	2227.5
15 minute summer	8	1.010	6	11.0	0.821	0.107	0.2293	
15 minute summer	9	3.003	18	-63.2	0.998	-0.622	0.4623	
15 minute winter	10	1.006	5	34.2	0.835	0.528	3.0113	
15 minute summer	11	27.001	J10	25.5	0.929	0.299	0.2202	
60 minute summer	J1	16.000	3	-3.6	-0.105	-0.024	0.7753	
60 minute summer	J2	15.000	1	2.5	0.073	0.016	0.6779	
15 minute summer	J5	24.005	4	91.3	1.297	0.915	0.8628	
15 minute summer	J6	24.001	71	21.2	0.602	0.309	0.2994	
15 minute summer	J7	24.000	J6	17.5	0.551	0.132	0.7131	
60 minute winter	J8	28.002	J5	4.1	1.321	0.187	0.0096	
15 minute summer	J9	27.003	J5	49.5	0.995	0.393	0.8544	
15 minute summer	J10	27.002	J9	34.0	1.124	0.398	0.5173	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.66%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	J11	10	26.954	0.054	18.1	0.0000	0.0000	OK
480 minute winter	4	480	26.572	0.779	14.1	0.8808	0.0000	SURCHARGED
480 minute winter	12	480	26.572	0.553	7.3	0.6253	0.0000	SURCHARGED
480 minute winter	13	480	26.572	0.443	5.7	0.5009	0.0000	SURCHARGED
600 minute winter	14	585	26.493	1.179	13.0	1.3330	0.0000	FLOOD RISK
600 minute winter	15	585	26.493	1.222	13.0	1.3816	0.0000	SURCHARGED
480 minute winter	16	480	26.532	0.905	10.8	1.0237	0.0000	SURCHARGED
600 minute winter	Block A Car Park	585	26.493	0.493	9.9	71.0138	0.0000	FLOOD RISK
240 minute winter	Block B Car Park	232	26.994	0.293	5.2	25.5159	0.0000	SURCHARGED
120 minute winter	Access Road A1	114	26.623	0.223	13.3	30.6657	0.0000	SURCHARGED
600 minute winter	Access Road A2	630	26.566	0.266	2.2	29.8363	0.0000	SURCHARGED
15 minute summer	J4	8	27.300	1.015	55.8	0.0000	0.0000	FLOOD RISK
600 minute winter	18	585	26.493	0.873	9.6	0.9871	0.0000	FLOOD RISK
240 minute winter	Access Road A3	228	26.708	0.608	9.4	48.4768	0.0000	FLOOD RISK
480 minute winter	Block C Car Park	456	26.586	0.386	1.8	15.6340	0.0000	FLOOD RISK
15 minute summer	19	8	26.600	0.638	90.5	0.0000	0.0000	FLOOD RISK
15 minute summer	J12	10	27.200	0.956	31.6	0.0000	0.0000	FLOOD RISK
15 minute summer	J13	8	27.100	1.133	63.1	0.0000	0.0000	FLOOD RISK
15 minute summer	J14	11	27.337	0.669	31.3	0.0000	0.0000	FLOOD RISK
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	J11	27.000	11	17.9	0.725	0.298	0.5009	
15 minute summer	4	24.006	J29	100.3	1.444	1.752	1.0464	
15 minute summer	12	24.004	J5	45.7	1.149	1.434	0.5444	
15 minute summer	13	24.003	12	36.1	0.907	0.769	0.5365	
15 minute winter	14	15.007	15	40.3	0.572	0.705	1.1288	
15 minute summer	15	15.008	8	35.9	0.529	0.620	0.2038	
15 minute summer	16	18.001	8	-24.7	-1.402	-1.010	0.2004	
15 minute summer	Block A Car Park	17.000	19	-40.3	-5.578	-5.930	0.0234	
15 minute summer	Block B Car Park	28.000	J14	-29.6	-3.929	-4.372	0.0199	
15 minute summer	Access Road A1	25.000	J4	-39.3	-5.020	-6.249	0.0470	
15 minute summer	Access Road A2	26.000_1	J12	-27.6	-3.588	-4.389	0.0405	
15 minute summer	J4	25.001	71	11.1	0.805	0.781	0.0768	
15 minute winter	18	15.004	10	54.0	0.979	0.648	1.0455	
15 minute summer	Access Road A3	29.000	J13	-43.2	-5.527	-6.854	0.0595	
15 minute summer	Block C Car Park	19.000	J15	-17.9	-2.284	-2.634	0.0467	
15 minute summer	19	17.001	18	49.3	2.802	2.477	0.1810	
15 minute summer	J12	26.001_1	12	3.3	0.544	0.524	0.0721	
15 minute summer	J13	29.001	4	9.0	0.739	0.628	0.0649	
30 minute summer	J14	28.001	J8	1.1	0.650	0.165	0.0024	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.66%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	J15	10	26.700	0.900	20.9	0.0000	0.0000	FLOOD RISK
15 minute summer	7	1	29.260	0.000	0.0	0.0000	0.0000	OK
15 minute summer	17	10	29.152	0.052	18.4	0.0000	0.0000	OK
15 minute summer	20	11	29.062	0.042	26.2	0.0000	0.0000	OK
15 minute summer	21	10	28.982	0.102	40.8	0.0000	0.0000	OK
15 minute summer	22	11	28.727	0.097	108.3	0.0000	0.0000	OK
15 minute summer	23	11	28.453	0.073	108.4	0.0000	0.0000	OK
15 minute summer	24	11	27.932	0.072	108.5	0.0000	0.0000	OK
15 minute summer	25	11	27.034	0.084	108.4	0.0000	0.0000	OK
15 minute summer	26	11	26.810	0.070	108.4	0.0000	0.0000	OK
15 minute summer	27	12	26.564	0.164	108.3	0.0000	0.0000	SURCHARGED
15 minute summer	28	13	26.581	0.481	131.9	0.0000	0.0000	SURCHARGED
15 minute summer	29	11	26.246	0.204	215.0	0.0000	0.0000	SURCHARGED
15 minute summer	30	11	26.118	0.147	224.1	0.0000	0.0000	OK
15 minute summer	31	11	25.933	0.083	227.6	0.0000	0.0000	OK
15 minute summer	32	12	25.791	0.216	341.3	0.0000	0.0000	SURCHARGED
480 minute summer	33	480	25.748	0.298	132.4	0.0000	0.0000	SURCHARGED
600 minute winter	34	390	25.804	0.454	413.9	0.0000	0.0000	SURCHARGED
480 minute winter	35	472	25.705	0.405	46.5	639.9703	0.0000	FLOOD RISK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	J15	19.001	16	1.2	0.792	0.128	0.0375	
15 minute summer	7	1.000	17	0.0	0.000	0.000	0.5117	
15 minute summer	17	1.001	20	18.0	0.645	0.322	0.8355	
15 minute summer	20	1.002	21	26.2	0.565	0.223	0.5822	
15 minute summer	21	1.003	22	40.7	2.003	0.250	0.2379	
15 minute summer	22	1.004	23	108.4	1.900	0.932	1.2599	
15 minute summer	23	1.005	24	108.5	2.319	0.583	0.8394	
15 minute summer	24	1.006_1	25	108.4	2.126	0.559	1.4791	
15 minute summer	25	1.008	26	108.4	2.147	0.730	0.5757	
15 minute summer	26	1.009	27	108.3	1.859	0.541	0.9145	
15 minute summer	27	1.010_1	28	105.5	1.303	0.961	1.9199	
15 minute summer	28	1.011_1	29	128.8	1.974	2.276	1.3377	
15 minute summer	29	1.012	30	216.5	1.453	1.951	4.5358	
15 minute summer	30	1.013_1	31	222.4	2.649	0.991	1.0920	
15 minute summer	31	1.014	32	227.6	1.903	0.349	0.4441	
15 minute summer	32	1.015	33	337.3	1.735	2.116	5.0339	
15 minute summer	33	1.016	34	360.8	2.021	1.923	2.6763	
480 minute summer	34	1.017	57	475.2	1.176	2.195	3.1003	
120 minute winter	35	26.000	36	12.0	0.841	0.298	0.1419	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.66%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	36	810	25.325	0.085	12.0	0.0962	0.0000	OK
15 minute summer	37	10	26.846	0.146	133.8	0.0000	0.0000	SURCHARGED
15 minute summer	38	13	26.750	0.156	144.7	0.0000	0.0000	SURCHARGED
30 minute summer	39	20	26.748	0.255	152.3	0.0000	0.0000	SURCHARGED
30 minute summer	40	21	26.908	0.696	537.2	0.0000	0.0000	FLOOD RISK
15 minute summer	41	11	28.866	0.639	40.0	0.0000	0.0000	FLOOD RISK
30 minute summer	42	19	28.148	0.008	1.1	0.0000	0.0000	OK
15 minute summer	43	10	28.018	0.118	125.1	0.0000	0.0000	SURCHARGED
60 minute summer	44	44	27.888	0.647	111.4	0.0000	0.0000	SURCHARGED
60 minute summer	45	44	27.862	0.893	53.7	75.0968	0.0000	FLOOD RISK
15 minute summer	46	12	27.802	0.991	46.9	0.2805	0.0000	FLOOD RISK
15 minute summer	47	12	27.739	1.105	65.1	1.2500	0.0000	FLOOD RISK
15 minute summer	48	11	27.879	0.226	91.9	0.2558	0.0000	OK
15 minute summer	49	10	27.589	0.173	110.4	0.1957	0.0000	OK
15 minute summer	50	12	27.464	0.989	63.6	1.1185	0.0000	FLOOD RISK
15 minute summer	51	11	27.077	0.702	79.3	0.7937	0.0000	SURCHARGED
480 minute winter	52	480	26.576	0.826	38.2	0.0000	0.0000	OK
60 minute summer	53	44	27.888	0.918	96.1	0.0000	0.0000	OK
15 minute summer	54	11	29.110	0.660	17.4	0.1867	0.0000	FLOOD RISK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute summer	36	26.001	6	12.0	0.789	0.258	0.1529	
15 minute summer	37	8.005	38	133.2	1.198	2.212	2.3600	
15 minute summer	38	8.006	39	143.2	1.176	2.377	3.7344	
30 minute summer	39	8.007	69	170.1	1.132	2.824	5.9888	
30 minute summer	40	8.009	32	120.5	3.030	1.309	0.8079	
15 minute summer	41	31.001	42	1.1	0.393	0.013	0.0248	
30 minute summer	42	31.002	43	1.1	0.379	0.011	0.6293	
15 minute summer	43	30.002	44	123.6	1.612	1.430	1.5091	
15 minute winter	44	30.003	53	179.0	1.239	2.094	20.3905	
30 minute winter	45	22.002	46	39.2	2.229	2.774	0.2288	
15 minute winter	46	21.004	47	48.4	1.352	0.833	0.5643	
30 minute summer	47	21.005	50	63.9	1.606	1.128	0.5334	
15 minute summer	48	8.003	49	92.0	1.849	0.828	1.1758	
15 minute summer	49	8.004	37	109.9	2.905	0.583	0.9508	
30 minute summer	50	21.006	51	64.3	1.617	1.768	0.8056	
15 minute summer	51	21.007	52	78.7	1.978	1.556	1.1437	
15 minute summer	54	30.000	55	15.8	0.898	1.083	0.5178	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.66%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	55	11	28.840	0.590	33.7	0.1670	0.0000	SURCHARGED
15 minute summer	56	12	28.010	0.735	44.9	0.8315	0.0000	FLOOD RISK
480 minute summer	57	488	25.712	0.412	475.2	0.0000	0.0000	OK
15 minute summer	58	11	30.578	0.962	46.1	1.0876	0.0000	FLOOD RISK
15 minute summer	59	11	30.247	0.829	33.5	0.9380	0.0000	FLOOD RISK
15 minute summer	60	11	29.531	0.456	41.6	0.5159	0.0000	SURCHARGED
15 minute summer	61	11	29.433	0.458	67.7	0.5177	0.0000	SURCHARGED
15 minute summer	62	12	28.966	0.916	32.7	1.0358	0.0000	FLOOD RISK
15 minute summer	63	11	28.631	0.229	28.1	0.2590	0.0000	SURCHARGED
15 minute summer	64	11	28.629	0.679	34.9	0.7682	0.0000	FLOOD RISK
15 minute summer	65	10	26.227	0.238	41.6	0.0673	0.0000	SURCHARGED
15 minute summer	66	12	28.230	0.699	9.9	0.7902	0.0000	SURCHARGED
15 minute summer	67	11	28.144	0.955	43.6	1.0799	0.0000	FLOOD RISK
15 minute summer	68	11	26.784	0.209	61.1	0.2365	0.0000	OK
180 minute winter	Access Road B1	176	28.839	0.539	8.3	30.5679	0.0000	FLOOD RISK
120 minute summer	Access Road B2	122	27.766	0.466	8.8	16.0249	0.0000	SURCHARGED
120 minute winter	Access Road B3	88	27.991	0.791	6.9	11.1698	0.0000	FLOOD RISK
120 minute summer	J16	122	27.766	0.486	9.2	0.0000	0.0000	SURCHARGED
120 minute winter	J17	88	27.991	0.891	7.0	0.0000	0.0000	FLOOD RISK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	55	30.001	43	33.2	1.885	1.669	0.3023	
15 minute summer	56	21.003	46	43.2	1.086	0.605	0.9851	
15 minute summer	58	1.001_1	59	17.2	0.978	1.202	0.5329	
15 minute summer	59	1.002_1	60	23.5	1.337	1.535	0.6299	
15 minute summer	60	1.003_1	61	41.3	1.098	0.821	0.4240	
15 minute summer	61	1.004_1	22	67.7	1.701	1.338	1.1349	
15 minute summer	62	21.002	56	28.8	1.646	1.081	0.5512	
30 minute summer	63	8.002	48	26.5	1.629	1.017	0.5168	
15 minute summer	64	9.000	48	33.6	1.909	1.691	0.3122	
15 minute summer	65	14.001	33	24.5	1.394	1.234	0.1763	
15 minute summer	66	4.002	67	14.0	0.793	0.670	0.4389	
15 minute summer	67	4.003	68	41.9	2.383	1.473	0.3699	
15 minute summer	68	4.004	29	60.5	1.655	1.040	0.9040	
15 minute summer	Access Road B1	31.000	41	-37.8	-2.147	-1.901	0.1028	
15 minute summer	Access Road B2	22.000	J16	-18.7	-2.386	-2.953	0.0143	
15 minute summer	Access Road B3	22.000_1	J17	-15.7	-2.002	-1.778	0.0371	
15 minute summer	J16	32.001	44	-5.7	0.811	-0.902	0.0275	
30 minute winter	J17	22.001	45	2.6	0.727	0.406	0.0582	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.66%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	Access Road C1	23	29.887	0.187	24.0	9.3024	0.0000	SURCHARGED
30 minute summer	Access Road C2	25	29.746	0.246	32.6	14.2553	0.0000	SURCHARGED
15 minute summer	J18	11	30.187	0.702	36.2	0.0000	0.0000	FLOOD RISK
120 minute winter	Access Road C4	90	28.963	0.763	9.9	20.8056	0.0000	FLOOD RISK
15 minute summer	J19	9	29.100	0.943	39.9	0.0000	0.0000	FLOOD RISK
240 minute winter	Access Road C5	232	28.001	0.801	7.6	36.1198	0.0000	FLOOD RISK
15 minute summer	J20	9	28.100	0.929	46.8	0.0000	0.0000	FLOOD RISK
120 minute winter	Access Road D1	94	29.476	0.876	4.9	9.6340	0.0000	FLOOD RISK
60 minute winter	J25	58	27.012	0.242	4.3	0.0000	0.0000	SURCHARGED
15 minute summer	J21	10	29.400	0.913	18.8	0.0000	0.0000	FLOOD RISK
15 minute summer	J22	9	28.600	0.946	34.9	0.0000	0.0000	FLOOD RISK
15 minute summer	J23	11	28.144	0.881	28.6	0.0000	0.0000	FLOOD RISK
15 minute summer	J24	11	27.374	0.609	25.5	0.0000	0.0000	SURCHARGED
60 minute winter	Access Road D4	58	27.050	0.250	10.6	12.6298	0.0000	SURCHARGED
30 minute summer	Access Road D3	23	27.592	0.292	23.2	9.0358	0.0000	SURCHARGED
180 minute winter	Access Road D2	176	28.230	0.530	7.1	25.9572	0.0000	SURCHARGED
120 minute winter	Access Road E1	118	28.075	0.575	9.2	22.0511	0.0000	FLOOD RISK
60 minute winter	Access Road E2	49	27.549	0.149	2.3	2.2362	0.0000	SURCHARGED
60 minute winter	Access Road E3	58	27.012	0.212	3.6	4.3899	0.0000	SURCHARGED

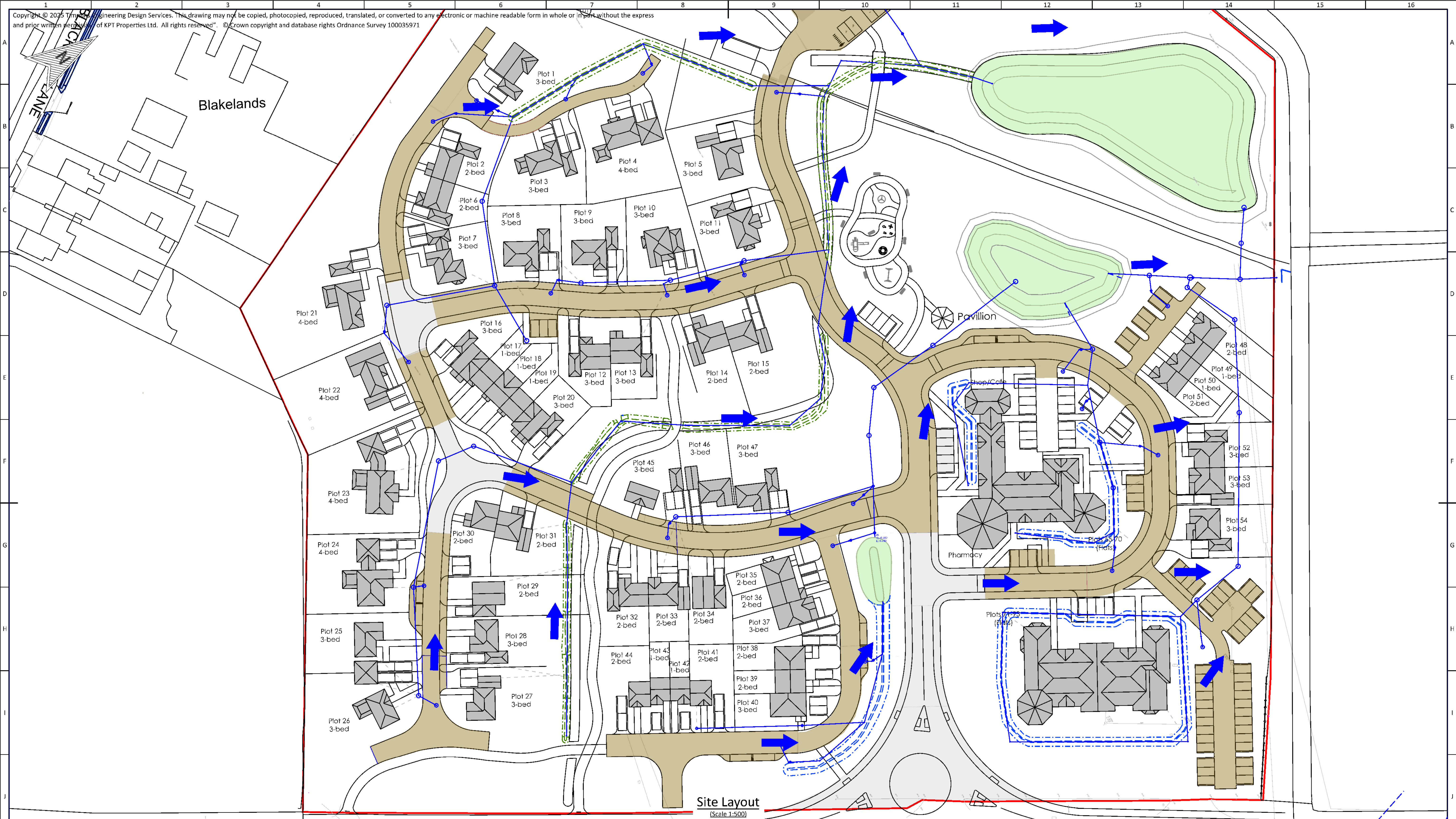
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	Access Road C1	1.000_1	58	-26.2	-3.344	-4.106	0.0239	
15 minute summer	Access Road C2	2.000	J18	-35.7	-4.559	-5.650	0.0108	
60 minute winter	J18	2.001	59	10.2	1.300	1.617	0.0123	
15 minute summer	Access Road C4	21.000	J19	-33.2	-4.245	-5.265	0.0309	
15 minute summer	J19	21.001	62	7.9	1.009	0.815	0.0176	
15 minute summer	Access Road C5	23.000	J20	-42.1	-5.383	-6.625	0.0205	
15 minute summer	J20	23.001	46	-4.2	1.078	-0.285	0.0308	
15 minute summer	Access Road D1	8.000	J21	-15.6	-1.997	-2.485	0.0816	
60 minute winter	J25	12.001	38	0.7	0.551	0.098	0.0041	
15 minute summer	J21	8.001	63	2.5	0.638	0.390	0.0615	
15 minute summer	J22	4.001	66	5.6	0.712	0.881	0.0522	
30 minute summer	J23	5.001	67	14.3	1.824	2.232	0.0168	
15 minute summer	J24	6.001	68	3.3	1.131	0.257	0.0072	
15 minute summer	Access Road D4	6.000	J24	-21.2	-2.715	-3.352	0.0249	
15 minute summer	Access Road D3	5.000	J23	-25.2	-3.216	-3.984	0.0265	
15 minute summer	Access Road D2	4.000	J22	-30.9	-3.951	-4.876	0.0327	
15 minute summer	Access Road E1	10.000	70	-31.0	-1.760	-0.880	0.1133	
15 minute summer	Access Road E2	11.000	J28	-5.1	-0.697	-0.425	0.0302	
15 minute summer	Access Road E3	12.000	J25	-7.7	-0.980	-1.133	0.0190	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.66%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	Access Road E4	49	26.918	0.218	3.8	2.8535	0.0000	SURCHARGED
120 minute winter	Access Road F1	92	27.142	0.542	8.6	17.9008	0.0000	FLOOD RISK
15 minute summer	Car Park	13	26.147	0.097	16.8	4.2338	0.0000	OK
120 minute winter	70	118	28.075	0.825	10.5	0.0000	0.0000	FLOOD RISK
60 minute summer	J26	49	26.919	0.246	4.6	0.0000	0.0000	SURCHARGED
15 minute summer	J27	8	27.100	0.575	35.9	0.0000	0.0000	FLOOD RISK
60 minute winter	J28	48	27.549	0.299	3.1	0.0000	0.0000	SURCHARGED
15 minute winter	69	14	26.780	0.385	339.9	0.0000	0.0000	SURCHARGED
480 minute winter	71	480	26.572	0.390	5.0	0.0000	0.0000	SURCHARGED
480 minute winter	J29	480	26.572	0.822	16.9	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	Access Road E4	13.000	J26	-5.5	-0.709	-0.820	0.0172	
15 minute summer	Access Road F1	7.000	J27	-27.8	-3.557	-4.116	0.0471	
15 minute summer	Car Park	14.000	65	-16.8	-1.139	-1.184	0.1399	
120 minute winter	70	10.001	37	1.3	0.568	0.074	0.0362	
15 minute summer	J26	13.001	39	5.7	1.026	0.845	0.0185	
15 minute summer	J27	7.001	31	5.3	0.956	0.777	0.0399	
60 minute winter	J28	11.001	37	0.7	0.779	0.071	0.0047	
15 minute summer	69	8.008	40	592.1	1.057	9.828	7.8919	
15 minute summer	71	24.002	13	29.4	0.855	0.917	0.5472	

Appendix F - Exceedance mapping



NOTES:

KEY:

Overland Exceedance Route

CONSTRUCTION RISKS

MAINTENANCE/CLEANING RISKS

DEMOLITION/ADAPTATION RISKS

In addition to the hazard/risks normally associated with the type of works detailed on this drawing take note of the above. It is assumed that all works on this drawing will be carried out by a competent contractor working where appropriate, to an appropriate method statement.

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION BOX

PRELIMINARY - ISSUED FOR COMMENT

SI PARHAM 25/03/25

PURPOSE

CREATED BY DATE APPROVED BY DATE AUTHORISED BY DATE

PROJECT
TOTE CAFE
PULBOROUGH

CLIENT
ANTONIO AVENUE LTD

CLIENT ADDRESS
Netherton Farm
Le Chemin Du Moulin
St Quen
Jersey
JE3 2FL

DRAWING CLASSIFICATION
ISSUED FOR PLANNING

TITLE
EXCEEDANCE PLAN

TIMMINS ENGINEERING
DESIGN SERVICES
Telephone: 07900 404760
<http://www.timminsconsulting.co.uk>
Registered in England and Wales No. 06950986

DRAWING NUMBER
TCP0130

REV.
P01

Appendix G - Maintenance Schedules

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris	Monthly
	Cut grass	Monthly - during growing season, or as required
	Manage other vegetation and remove nuisance plants	Annually
	Inspect inlets and outlets for silt accumulation	Annually
	Remove sediment from inlets and outlets	Annually
Occasional Maintenance	Reseed areas with poor vegetation growth	As required
Remedial Actions	Repair / rehabilitate inlets and outlets	As required
	Relevel uneven surfaces and reinstate design levels	As required

Table G1: Maintenance activities for detention basins

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect for sediment and debris in the flow control chambers	Every three months in the first year and then annually
	Inspect for debris which may affect the performance of the flow control unit	Every three months in the first year and then annually
	Check the operation of any moving parts	Annually
Occasional Maintenance	Monitor the operation of the flow control device during or immediately after a heavy rainfall event	Annually
Remedial Actions	Remove and replace the flow control device if performance deteriorates or failure occurs	As required
Monitoring	Inspect the flow control chamber sump and the flow control unit noting the volume of sediment accumulation	Annually

Table G2: Maintenance activities for a flow control device

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations - pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional Maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosphate applied directly into the weeds by an applicator rather than spraying	As required - once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving	As required
	Remedial work to any depression, rutting, and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth - if required, take remedial action	Three monthly, 48 h after large storms in first six months
	Inspect all silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Table G3: Maintenance activities for permeable pavements

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris	Monthly, or as required
	Cut grass to defined range	Monthly - during growing season, or as required
	Manage other vegetation and remove nuisance plants	Monthly at start and then as required
	Inspect inlets and outlets for silt accumulation	Monthly
	Inspect vegetation coverage	Monthly for 6 months, quarterly for two years and then half yearly
	Inspect inlets and outlets for all accumulation	Half yearly
Occasional Maintenance	Reseed areas with poor vegetation growth, alter plant types to better suit conditions, if required	As required, or if bare soil is exposed over 10% or more of the swale treatment area
Remedial Actions	Repair erosion or other damage by re-turfing or re-seeding	As required
	Relevel uneven surfaces and reinstate design levels	As required
	Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of the soil surface	As required
	Remove build-up of sediment on upstream grave trench, flow spreader or at top of filter strip	As required
	Remove and dispose of oils or petrol residue using safe standard practices	As required

Table G4: Maintenance activities for swales

Appendix H - WSCC Surface Water Drainage Proforma

Surface Water Drainage Proforma

West Sussex County Council (WSCC) as Lead Local Flood Authority recommends this proforma is completed and submitted to support any planning application for a major development. The information contained in this form will be used by WSCC officers in their role as 'statutory consultee' on surface water drainage. The proforma should accompany the site-specific Flood Risk Assessment and Drainage Strategy submitted as part of the planning application.

1. Site Details

No.	Requirement	Answer	Application Type
1.1	Address including postcode	Toat Cafe, Pulborough, RH20 1DN	Outline & Full
1.2	OS grid reference (easting and northing)	506117mE, 121005mN	Outline & Full
1.3	Planning application reference		Outline & Full
1.4	Total site area (hectares)	6.25 ha	Outline & Full
1.5	Pre-development use	Predominantly undeveloped land with some buildings and hardstanding	Outline & Full
1.6	Proposed design life	80 years	Outline & Full
1.7	Have agreements in principle for discharge been provided (where applicable)? (YES/NO)	n/a	Outline & Full
1.8	Topographic Survey Plan showing existing site layout, site levels and drainage system	Appendix A	Outline & Full

2. Discharge Hierarchy/Methods of Discharge¹

No.	Requirement	Answer	Application Type
2.1	Store rainwater for later use (reuse) (YES/NO)		Full
2.2	Infiltration techniques such as soakaways, permeable paving, etc (YES/NO)	No	Outline & Full
2.3	Hybrid (YES/NO)	Yes, Type B permeable pavements	Outline & Full

¹ Runoff may be discharged via one or multiple methods.

No.	Requirement	Answer	Application Type
2.4	Attenuation with restricted discharge to watercourse (YES/NO)	Yes	Outline & Full
2.5	Attenuation with restricted discharge to surface water sewer (YES/NO)	No	Outline & Full
2.6	Attenuation with restricted discharge to combined sewer (YES/NO)	No	Outline & Full

3. Calculation Inputs

No.	Requirement	Answer	Application Type
3.1	Area within site which is drained by SuDS ² (hectares)	0 ha (Pre-development)	Outline & Full
3.2	Impermeable area drained pre-development ³ (hectares)	0.6 ha (site assumed to be greenfield at outline app stage)	Outline & Full
3.3	Impermeable area drained post-development ³ (hectares)	1.732ha	Outline & Full
3.4	Urban Creep (hectares)	0.044ha	Outline & Full
3.5	Climate change factor applied (1 in 30 and 1 in 100) (percentage)	1 in 30 - 40% / 1 in 100 - 45%	Outline & Full

4. Infiltration Feasibility/Ground Investigations

No.	Requirement	Answer	Application Type
4.1	Has winter groundwater monitoring and infiltration been undertaken? (YES/NO)	No	Outline & Full
4.2	Period of winter groundwater monitoring (from/to)	n/a	Outline & Full
4.3	Depth to highest recorded groundwater level (mAOD)		Full
4.4	Infiltration rate	n/a	Outline & Full

² Impermeable area should be measured pre and post development. Impermeable surfaces include roofs, pavements, driveways and paths, where runoff is conveyed to the drainage system.

³ 10% Urban Creep should be added to the volumes required for storage and not increase discharge rates.

No.	Requirement	Answer	Application Type
4.5	Depth of infiltration structure (mAOD)		Full
4.6	Safety factor used for sizing infiltration storage	n/a	Outline & Full

5. Calculation Outputs: Greenfield Runoff Rates⁴

No.	Requirement	Answer	Application Type
5.1	Q _{bar} (l/s)	75	Outline & Full
5.2	1 in 1 year rainfall (l/s)	63.7	Outline & Full
5.3	1 in 30 year rainfall (l/s)	172.4	Outline & Full
5.4	1 in 100 year rainfall (l/s)	239.1	Outline & Full

6. Calculation Outputs: Brownfield Runoff Rates (including Urban Creep) (if applicable)

No.	Requirement	Answer	Application Type
6.1	1 in 1 year rainfall (l/s)	n/a	Outline & Full
6.2	1 in 30 year rainfall (l/s)	n/a	Outline & Full
6.3	1 in 100 year rainfall (l/s)	n/a	Outline & Full

7. Calculation Outputs: Volume Control/Infiltration Provision

No.	Requirement	Answer	Application Type
7.1	Infiltration (m ³)		Outline & Full
7.2	Attenuation (m ³)	1333	Outline & Full
7.3	Separate volume designated as long-term storage ⁵ (m ³)		Full
7.4	Total volume control (sum of inputs for 7.1 to 7.3) (m ³)		Full

⁴ Flows within long term storage areas should be infiltrated to the ground or discharged at low flow rate of maximum 2 litres per second per hectare (l/s/ha).

⁵ In calculations and for the avoidance of doubt FEH shall be used FSR is not acceptable, and CV values must equal 1.

8. Calculation Outputs: Attenuation/Restricted Discharge

No.	Requirement	Answer	Application Type
8.1	Proposed discharge rate (critical storm)	1 in 1 (100%) AEP (m/s)	14.2 l/s
		1 in 30 (3.33%) AEP (m/s)	
		1 in 30 (3.33%) AEP plus climate change (m/s)	22.0 l/s (inc. Urban Creep)
		1 in 100 (1%) AEP (m/s)	
		1 in 100 (1%) AEP plus climate change (m/s)	22.5 l/s (inc. Urban Creep)
8.2	Calculations show critical storm durations (both by max height and max discharge) for 1 in 1, 1 in 30, 1 in 30 plus climate change, 1 in 100 and 1 in 100 year plus climate change allowance can be accommodated on site (YES/NO)	Yes	Outline & Full
8.3	Has treatment of potential contaminants been considered? (YES/NO)	Yes	Outline & Full
8.4	Demonstration of source control features with substantive evidence why these cannot be used if not (YES/NO)		Full
8.5	If discharging into a watercourse, piped system or the sea, has the proposed drainage network been modelled against predicted top water levels for the 1 in 100 year storm event plus climate change allowance, within the existing system? (YES/NO)		Full

9. Other Supporting Details

No.	Requirement	Answer	Application Type
9.1	Plan detailing location of groundwater monitoring and infiltration testing	n/a	Outline & Full
9.2	Detailed drainage design layout		Full
9.3	Maintenance strategy		Full

No.	Requirement	Answer	Application Type
9.4	Detailed development layout		Full
9.5	Impermeable area plan		Full
9.6	Phasing plan?		Full
9.7	If ground levels are being raised over 300mm above existing levels and is unavoidable, have detailed plans been provided, together with drainage proposals, to address any potential drainage related issues?		Full

The above form should be completed using evidence from information which should be appended to this form. The information being submitted should be proportionate to the site conditions, flood risks and magnitude of development. It should serve as a summary of the drainage proposals and should clearly show that the proposed discharge rate and volume as a result of development will not be increasing. Where there is an increase in discharge rate or volume, then the relevant section of this form must be completed with clear evidence demonstrating how the requirements will be met.

This form is completed using factual information and can be used as a summary of the surface water drainage strategy on this site.

Form completed by	Paul Timmins
Qualification of person responsible for signing off this proforma	BEng(Hons) MICE
Company	KPT Properties Ltd
On behalf of (client's details)	Antonio Avenue Ltd.
Date	05/03/2026

Appendix I - Southern Water sewer asset map



(c) Crown copyright and database rights 2025 Ordnance Survey AC0000808122
Data updated: 24/11/25

Scale: 1:1250
Map Centre: 505954.120775

Date: 09/12/25
Our Ref: 1964958 - 1

Wastewater Plan A2
Powered by digdat

paul@timminsconsulting.co.uk	
Toat Cafe	



The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2025 Ordnance Survey AC0000808122. This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

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

