



57 The Broadway, Haywards Heath, RH16 3AS
Drainage Strategy

Revision	Status	Description	Issued by	Checked	Date
P01	S2 – For Information	First issue	R White	C Blagbrough	04/12/2025
P02	S2 – For Information	Crates amended to avoid tree roots	R White	A Griffiths	21/04/26

Prepared by:	Signed:	Date
R White		04/12/2025

Approved by:	Signed:	Date
A Griffiths		04/12/2025

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1 Drainage Strategy		
Item	Details	Reference /comment
Method of Foul Water Discharge	Foul water flows are to drain to the existing foul water connection, noted as 0.68m deep on the Topographic Survey. Equating to 2.38m below the upper ground floor level.	The existing connection is to serve the new flats
Foul Water Discharge Volumes	British Water "Flows and load 4" estimates the flows per person to be 150 litres/person/day (higher than the water usage in a new dwelling of 125 litres/person/day required by Building Regulations Part G. For groups of small 1- and 2-bedroom flats, allow 3 people per 1-bedroom flat and 4 people per 2-bedroom flat: 2 x one-bedroom flats and 3x two-bedroom flats : $(2 \times 3) + (3 \times 4) = 18$ People 18 domestic residents can be expected to generate a flow of 2,700 litres per day at 150 l per person (British Water Flows and Loads 4) Building regulations require 110 litres per person per day, reducing this to 1,980 l/day	
Method of Surface Water Discharge	The surface water drainage design proposed for the new dwellings is to follow the drainage hierarchy to ensure the site reflects the natural flows from the site as closely as possible: 1. Rainwater reuse Water butts are provided where landscaping is likely to need irrigation. Internal rainwater recycling is being utilised where practical. However, this cannot be the only surface water solution, as we cannot guarantee that harvested water will be reused. 2. Infiltration There is no space further than >5m from a habitable dwelling, as required by the Soil investigation (see appendix B). 3. Discharge to Surface Water or a Watercourse There are no watercourses close to the site 4. Discharge to a Surface Water sewer or a Highway Drain – Existing surface water connections to the foul system will be broken out, and redirected to the surface water system at a reduced rate of 1l/s (as close as is practical to a greenfield rate). 5. Discharge to a Combined Sewer There are no combined sewers within the locality 6. Discharge to a Foul Sewer Connections to the foul are being removed as part of the works. Surface water falling onto the roof and hardstanding areas is to be pumped to a new S104 connection to the existing surface water drain. The level of the surface water drain is unknown, and unmapped on the Southern Water maps. The pumped option is shown as a worst-	The new connection will be subject to S106 and S104 connection consent from Southern Water.

Our Ref: [Keywords]
 Date: [Publish Date]

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	case scenario. If a gravity connection can be made, this should be carried out. The on-site system will be privately maintained by the freehold owners or their representatives in accordance with the guidance to the rear of this document.	
Local Ground Conditions	Based on other local investigations, the site is expected to be underlain by made ground to depth. This is unsuitable for infiltration because it could affect the stability of the building and its surroundings.	
Infiltration Rate	No infiltration testing has been carried out, as there is insufficient space greater than 5m from the building.	Infiltration was not used for this design.
Surface Water Calculations	The surface water drainage system has been designed for a 1 in 100-year event, plus an allowance of 40% for climate change. Impermeable areas have had an additional 10% added for urban creep in line with Ciria C753. Contributing Areas Roof Areas = 260 m² Footpath Area = 100 m² Total Area = 360 m² Urban creep was not applied as the proposal is for flats.	The total impermeable area for the site is 0.036 ha
Ground Water	Local site investigations and mapping do not indicate that groundwater poses a risk.	
Water Quality	Where flows from the site are exclusively from pedestrian surfaces and roofs. Silt traps will provide sufficient improvements in water quality in line with the guidance in CIRIA C753.	
Exceedance Flows	It is proposed that finished floor levels will be raised by 150mm above the average ground level to mitigate the risk of surface water flooding. Exceedance flows will match the existing flow at a surface level towards the rear. The proposed surface water drainage measures will be designed to contain the peak storm runoff from a 1-in-100-year storm. A 40% allowance has already been applied to the site to account for future climate change, making onsite flooding unlikely.	
Fluvial Flood Risk/ Environment Agency Flood Mapping	The Environment Agency flood map for the development site suggests that the site wholly falls within Flood zone 1, which is defined as land assessed as having a less than 1 in 1000 annual probability of river flooding in any one year.	

	The surface water flooding maps indicate a medium risk of flooding pre-development. However, the attenuation provided for events up to and including the 1 in 100-year-plus climate chance reduces this to low.	
SuDS Maintenance	During construction, the SuDS systems will be maintained by the contractor. Upon sale of the last plot, the SuDS drainage system, inclusive of paving, bio retention and silt traps, is to be maintained by the owner of the freehold or their appointed representative(s).	Refer to Appendix A for the suggested SuDS Maintenance schedule
Other		

Table 1 Drainage Strategy

2 Appendix A – Maintenance manual

Item	Required Maintenance	Frequency
Pipe and chambers	CCTV camera survey, flush, descale, repair as necessary	5 Years or upon poor performance
Rainwater gardens	Litter and debris removal.	Monthly (or as required).
	Grass cutting – to retain grass height within specified design range.	Monthly (during growing season), or as required.
	Manage other vegetation and remove nuisance plants.	Monthly (at start, then as required).
	Check for poor vegetation growth due to lack of sunlight or dropping of leaf litter and cut back adjacent vegetation where possible.	Annually.
	Re-seed areas of poor vegetation growth. Alter plant types to better suit conditions, if required.	Annually, or if bare soil is exposed over 10 % or more of the swale treatment area.
	Repair erosion or other damage by re-turfing or reseeding.	As required.
	Re-level 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 gravel trench, flow spreader or at top of filter strip.	As required.
	Remove and dispose of oils or petrol residues using safe standard practices.	As required.
	Inspect inlets, outlets and overflows for blockages, and clear if required.	Monthly.
	Inspect infiltration surfaces for ponding, compaction, silt accumulation. Record areas where water is ponding for > 48 hours.	Monthly, or when required.
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies	Half yearly.
Silt traps and catchpits	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then six monthly
	Debris removal from catchment surface (where may cause risks to performance)	Monthly
	Inspection of silt traps and catch pits to assess silt accumulation	Monthly (and after large storms)
	Removal of accumulated silt from silt trap and catch pit sumps	Annually, or as required
	Repair/rehabilitation of inlets, outlet, overflows and vents	As required
	Inspect/check all inlets, outlets, and overflows to ensure that they are in good condition and operating as designed	Annually and after large storms
Attenuation Storage Tanks	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/or internal forebays	Annually, or as required
	Repair/rehabilitate inlets, outlet, overflows and vents	As required

	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required
Pumping Stations	Inspection of the tank and pump for debris and sediment buildup, inlets/outlets/withdrawal devices, overflow areas, pumps, filters	Annually (and following poor performance)
	Cleaning of tank., inlets, outlets, gutters, withdrawal devices and roof drain filters of silts and other debris	Annually (and following poor performance)
	Cleaning and/or replacement of any filters	Three monthly (or as required)
	Repair of overflow erosion damage or damage to tank.	As required
	Pump repairs	As required

Table 2 SuDS Maintenance

NOTES

- This drawing shall be read in conjunction with the civil engineering specification, and all relevant Architect's and Engineer's drawings.
- This document must not be altered, reproduced or distributed without prior written consent of the originator.
- Do not scale from this document - use figured dimensions only. All dimensions must be checked on site prior to commencement of any related works.
- Contractor to provide and have an approved method statement prior to works.
- All setting out to be in accordance with the Architects drawings. Any discrepancies between QED Structures and the Architects drawings to be referred to the Architect before proceeding. Dimensions must not be scaled.
- All levels are in metres above ordnance datum.
- The Contractor to be comply full with CDM regulations in the course of constructing the works.
- At the commencement of the works, the Contractor is to carry out trial pits and liaise with utility companies in order to establish the exact position of all existing utility plant in the vicinity of the works and take adequate precautions for their protection.
- The Contractor is to refer to Health and Safety Executive 'Note 47 - Avoiding Danger from Underground Services' and 'Document G56 - Avoiding Danger from Overhead Electric Lines'.
- Works on or adjacent to existing public highway will be executed in accordance with the Traffic Safety Code for Road Works and Traffic Signs Manual: Chapter 8.
- The Contractor will ascertain the CBR value of the subgrade in order to determine the required sub-base / capping thickness. Prior to laying any material, the subgrade must be inspected and any soft spots removed and filled with 6F2 capping material.
- Prior to the construction of any drainage works, the Contractor is to confirm the invert levels of existing manholes, drains and sewers. Any variations from the designed levels shown on the drawings must be reported to the Drainage Engineer in advance of construction works commencing. All new sewers and drains are to be laid in sequence starting from the outfall location.
- All drainage to be installed in accordance with relevant Building Regulation documents and current Sewage Sector Guidance. Connections to public sewers are to be agreed and inspected by the Water Authority.
- All drain and sewer pipes are Ø100mm and laid soffit to soffit, unless shown otherwise.
- Invert to base of soil stack bends to be 450mm below lowest branch connection for up to three storey buildings; for buildings up to five storeys, the invert to the base of soil stack bends should not be less than 750mm. All foul and surface water drainage stacks are to have above ground rodding access. Refer to above ground drainage layout(s) by others.
- All below ground connections are to match above ground outlet size, minimum Ø100mm. SVPs are to project 100mm above finished floor level.
- All internal manholes and inspection chambers to have double sealed recessed covers to suit floor finishes as defined by the Architect.
- All external covers in non-asphalt areas are to have recessed covers to suit the paving material.
- A CCTV survey and report in WINCAN format for all new drainage will be required prior to 'as built' drawing being issued.
- The Contractor is responsible for the traffic safety and management associated with the construction of the works. Works will not commence on the existing highway until their traffic management proposals have been agreed with Highway Authority.
- Where the works involve the obstruction of a footway, the Contractor will provide an alternative safe footway properly signed, guarded and lit.
- Where one-way traffic is unavoidable, traffic will be controlled by a proper system of vehicle-actuated traffic signals or manual stop / go signs and during the hours of darkness, by a proper system of vehicle-actuated traffic signals, all to the approval of Highway Authority.
- 65mm Minimum thickness tactile paving, coloured buff will be incorporated at all pedestrian crossings in accordance with the Department for Transport and Regions document 'Guidance on the Use of Tactile Paving Surfaces,' (DETR No. 1998)
- All signs and road markings will be in accordance with the "Traffic Signs Regulations and General Directions 2016", (TSRGD 2016)
- All excavation and backfilling work in the existing highway to be in accordance with the provisions of the New Street Works Act 1991 or that specified on the working drawings.
- All highways works to be carried out in accordance with Highway Authority's highway standards, to the satisfaction of the Highway Authority Section 278 Inspector and in accordance with the Specification for Highway Works.
- Gullies, gully connections, drains, manholes, catch pit, soakaways, headwalls and other drainage structures intended to convey only highway water are to be constructed in accordance with the specification of Highway Authority and to the satisfaction of the Highway Inspector.
- Where existing junctions and accesses are to remain in operation within the works during the construction process, the Contractor will ensure that access to these units remains available at all times.
- Highways in the vicinity of the works must be kept free from mud, debris and dust falling from vehicles or wheels of vehicles connected with the works. Where the deposits of debris and mud are unavoidable, warning signs must be displayed whilst work is in progress and affected carriageways / footways must be regularly cleaned.

Source:

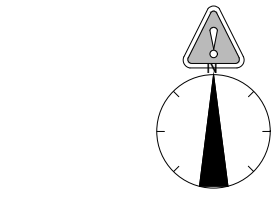
- Topographical survey by: Ross Mason Surveys
Drawing No.: RMS1293-01, dated July: 2025
- Architect's layout by: ECE Architects
Drawing No.: 7625 - SK 02 dated: July 2025



DESIGNER NOTE

Surface Water system designed for a 1 in 100 year event plus an allowance of 40% for climate change.
Impermeable areas have had an additional 10% added for urban creep.
Infiltration not viable due to offsets of buildings.

	CDM RESIDUAL RISK ITEM Overhead cables within site area.
	CDM RESIDUAL RISK ITEM Works within public Highway. Danger to site personnel and general public
	CDM RESIDUAL RISK ITEM Existing services likely within working area. Danger to site personnel and general public
	CDM RESIDUAL RISK ITEM Drainage pipes, manhole rings covers and fittings. Risk of Manual handling injury.
	CDM RESIDUAL RISK ITEM Contact with waste water when making drainage connections. Risk of infection from Weills disease etc.
	CDM RESIDUAL RISK ITEM Above Ground activities. Possibility of objects falling from operations at high level onto persons working or passing below.
	CDM RESIDUAL RISK ITEM Works within confined spaces.



1 0 1 2 3 4 5
SCALE 1:100
m

LOWER GROUND FLOOR

Construction Note

It is essential that new drainage associated with the development is laid from the outfall(s) into the site. This is essential to avoid unforeseen obstructions where encountered (such as services). If the drainage is laid from the site out to the outfall it can result in significant abortive works to relay and overcome such obstructions.

Location of Public Sewers have been taken from record drawings which should be fully substantiated by the contractor prior to commencing works on site

All manholes covers located within carriageways shall have no slip covers to prevent motorcycles/cycles losing control

Manhole schedules - Invert level shown related to the deepest pipe within the chamber

All adoptable drainage works to follow the requirements of Water UK - Design and Construction Guide (DCG).



DESIGN NOTE

M&E to guide above ground drainage routes

Surface Water Pumping Station
1,200 x 2.0m deep
Pump rate = 2.0/s
CL = 46.94

Crate Attenuation
16.5m² x 0.8m
sized based on 360m² impermeable area
Welded seams required due to proximity to building.



DESIGN NOTE

Information regarding existing system to be confirmed.

UPPER GROUND FLOOR

1 0 1 2 3 4 5
SCALE 1:100
m

DESIGNERS CDM NOTE - RESIDUAL RISKS IDENTIFIED

The design Engineer(s) have analysed this design as the scheme has been developed, in order to identify if there are any significant residual risk hazards (i.e. unusual, unexpected, abnormal or difficult).

Residual risks **HAVE** been identified and are therefore shown on this drawing. These risks have not been possible to remove by design.

This statement assumes that a competent Contractor with the appropriate qualified staff will be employed for the works, and that they will be familiar with site wide construction risks and hazards that they can reasonably be expected to encounter as part of their work.

BURIED UTILITIES RISK NOTE

- Buried utilities are present on and in the vicinity of the site.
- The Contractor must satisfy themselves that they have seen utility returns for the area and that appropriate Risk Assessment Method Statement (RAMS) are in place and implemented to ensure that buried and/or overhead services are located prior to any works taking place.
- Any RAMS shall address safe procedures for protection and working in the proximity of services.

Impermeable Area = 340m²
(including 60m² green roof)
2 x 1 bed + 3 x 2 bed
18 Population
2.7m³ daily flow

Level Key

+ [100.00]	Proposed level
+100.00	Existing survey level (by others)
+ [100.00ex]	Existing level

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Drainage Key

Sewers

	Foul water drain (private/non adoptable)
	Surface water drain (private/non adoptable)
	Foul water sewer (Adoptable)
	Surface water sewer (Adoptable)
	Foul rising main
	Surface Water rising main
	Existing foul water sewer (Adopted)
	Existing surface water sewer (Adopted)

Chamber Key

FW/SW

		Mini access chamber (mac) - 300mmØ
		PPIC - 475mmØ*
		P.C.C. units/brick*
		Adoptable demarcation manhole within 1m of boundary
		Pumping Station

* General note
(Refer to standard details & longitudinal sections for chamber sizes.
Size may need to increase dependant on number of incoming pipes/size of incoming pipes)

RE		Surface water rodding eye
		Rain water down pipe (roddable access)
		Soil vent pipe/soil stack
		Silt Trap (ST) with removable silt bucket
S1/F1		Manhole reference number
fg		Floor gully (trapped)
		Cellular storage (refer to drawing for sizes)
FFL		Finished Floor Level (FFL)
		Tree root protection Zone (RPT)

P02	RPT avoided & indicated	21.04.26	RSJ	RJW
REV	DESCRIPTION	DATE	BY	APP

QED
structures

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QED PROJECT No.

25-628

CLIENT

Roblewood Estates

PROJECT

57 The Broadway
Haywards Heath

TITLE

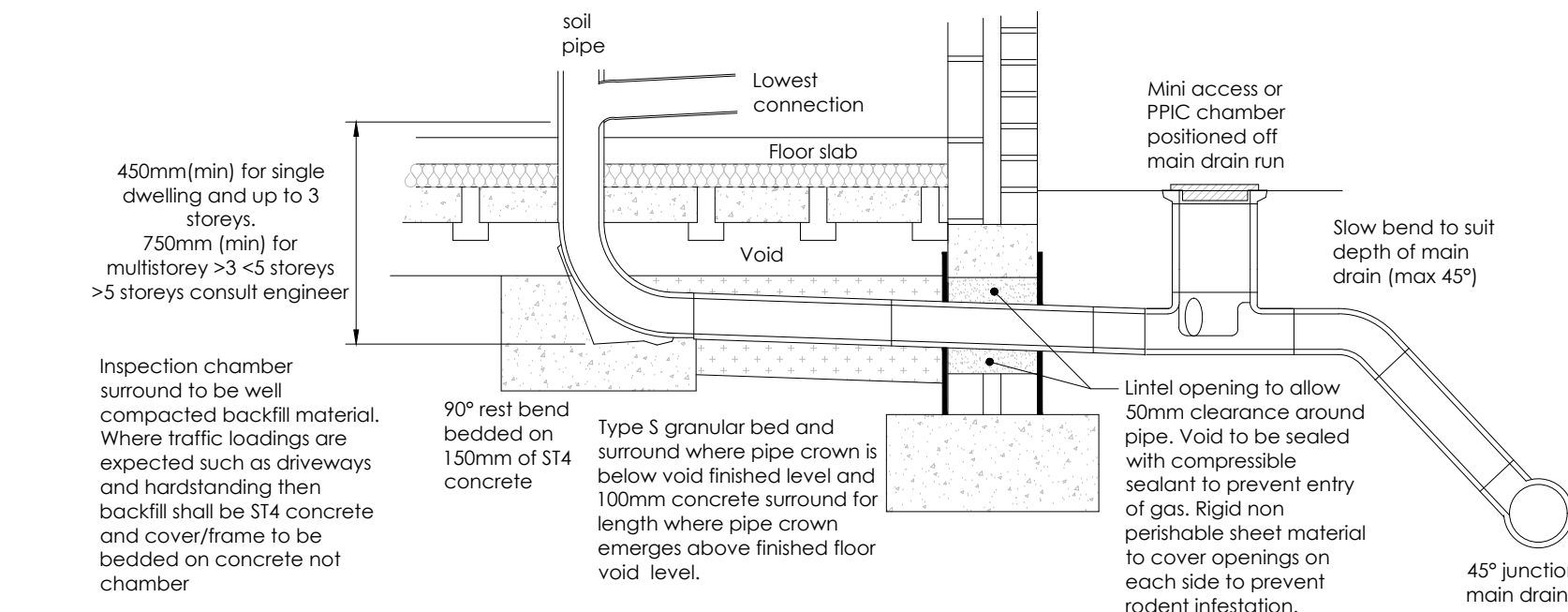
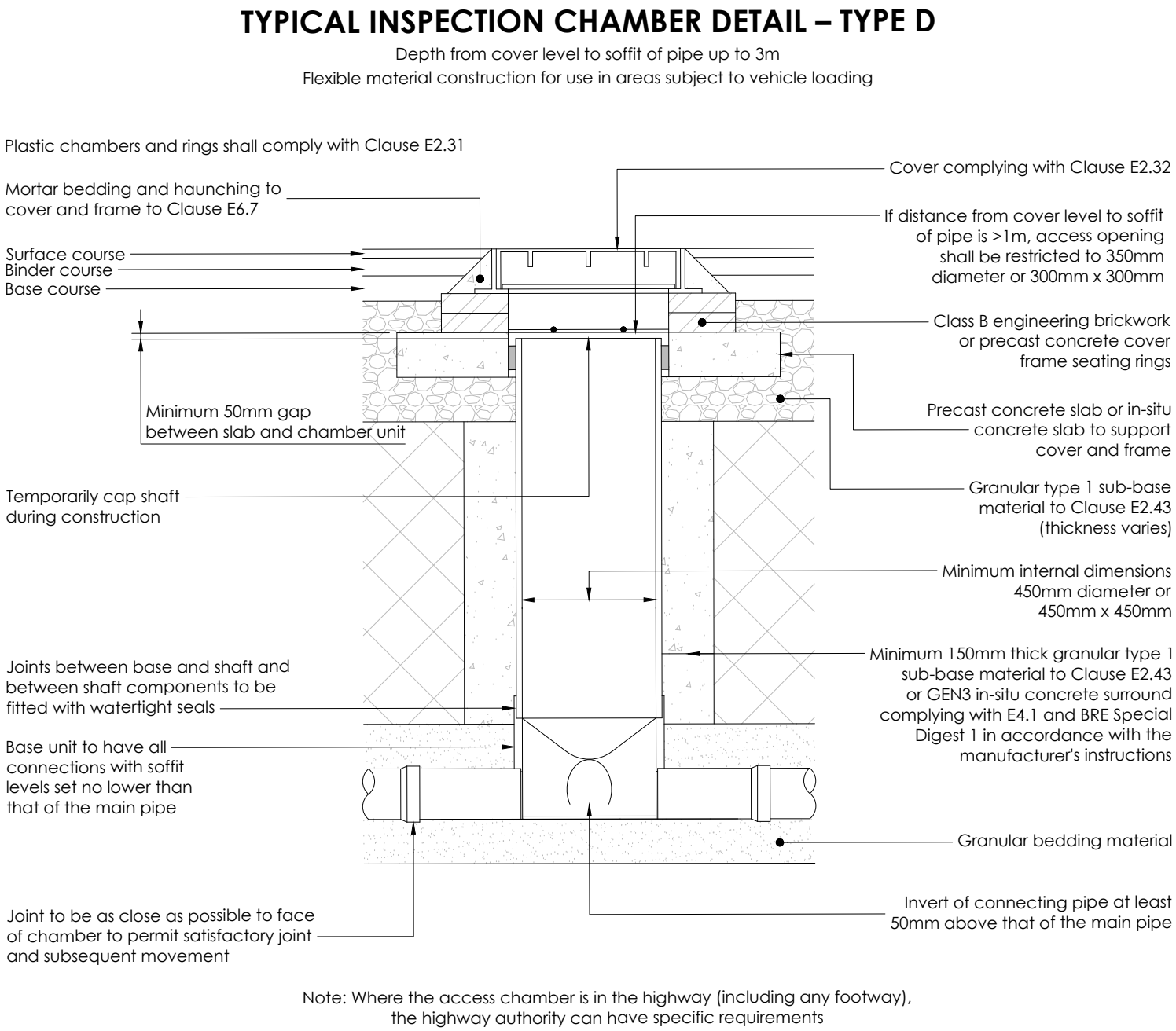
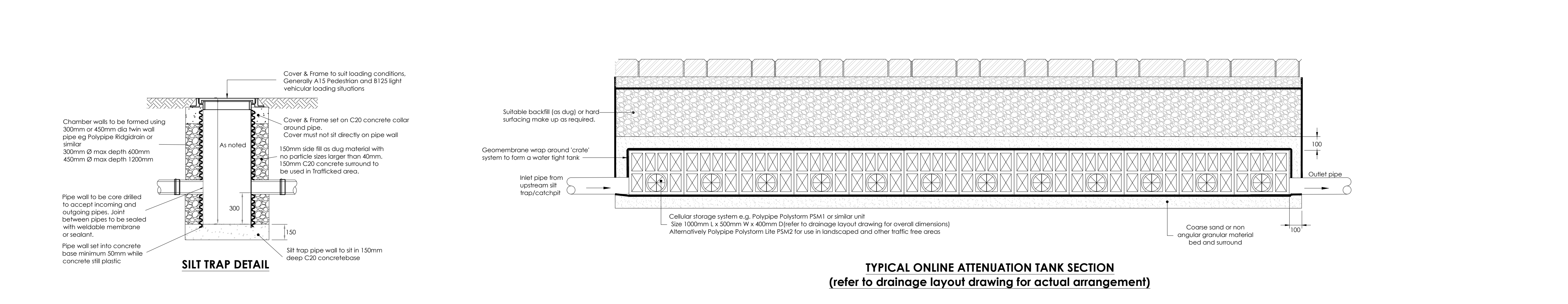
Drainage Design

DRAWN	ENGINEER	CHECKED BY	APPROVED BY
NJ	RJW	MBD	AJG

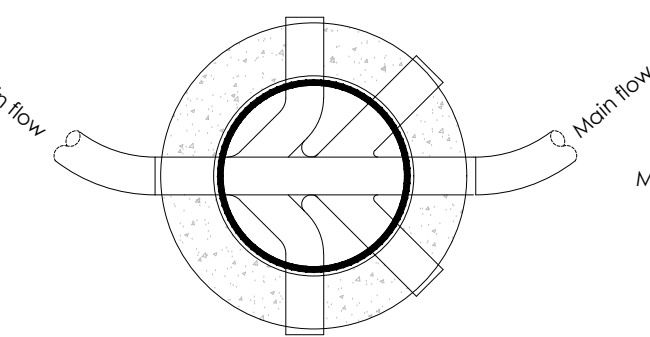
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STATUS S2 - Suitable for Information

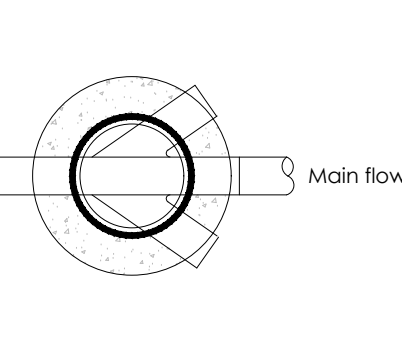
DRAWING No.	25-628-QED-XX-XX-DR-C-1000	REVISION	P02
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POLYPROPYLENE INSPECTION CHAMBER - PPIC



MINI ACCESS CHAMBER



Chamber Type	Internal Diameter (mm)	Max. No. Inlets	Max. Depth (mm)
Polypropylene Mini Access Chamber (mac)	300	3	600
Polypropylene Inspection Chamber (PPIC)	475	5	1200

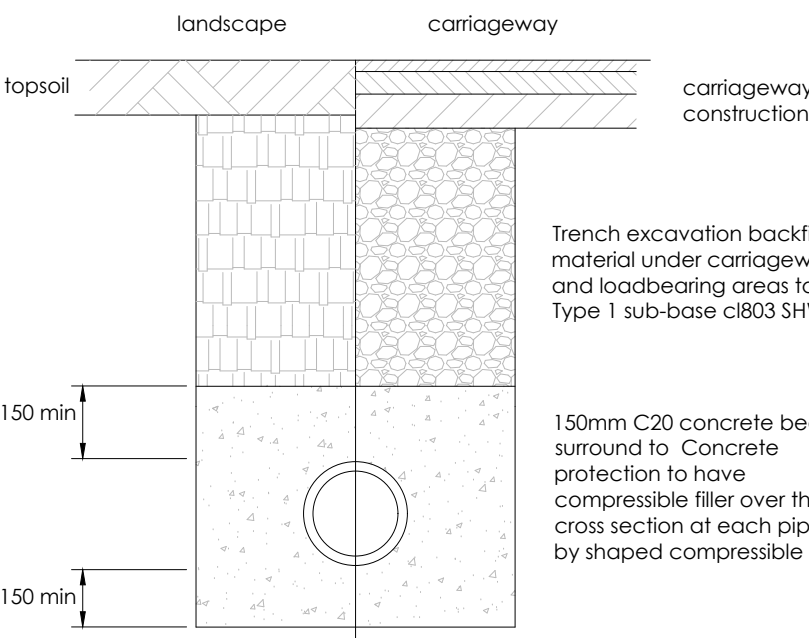
Nominal Bore of Pipe (mm)	Alternative Aggregate Sizes (mm)		CF Value Max
	Single-Sized	Graded	
100-150	10	-	0.2
225-300	10 or 14	14 to 5	0.2
375-525	10, 14 or 20	14 to 5 or 20 to 5	0.2
Exceeding	10, 14 or 20 14 or 20 14, 20 or 40	14 to 5 or 20 to 5 14 to 5, 20 to 5 or 40 to 5	0.15 0.5

PIPE BEDDING TABLE

PIPE DIA.	TRENCH WIDTH	Tw
150	600	
225	700	
300	750	
375	1050	
450	1150	
525	1200	
600	1350	
675	1450	
750	1500	
825	1600	
900	1900	
1050	2050	
1200	2300	

TYPE S GRANULAR SURROUND BED

To be used where cover to pipe soffit is greater than 900mm in vehicular areas and greater than 600mm in non-trafficked areas (ie footpaths, verges, etc)

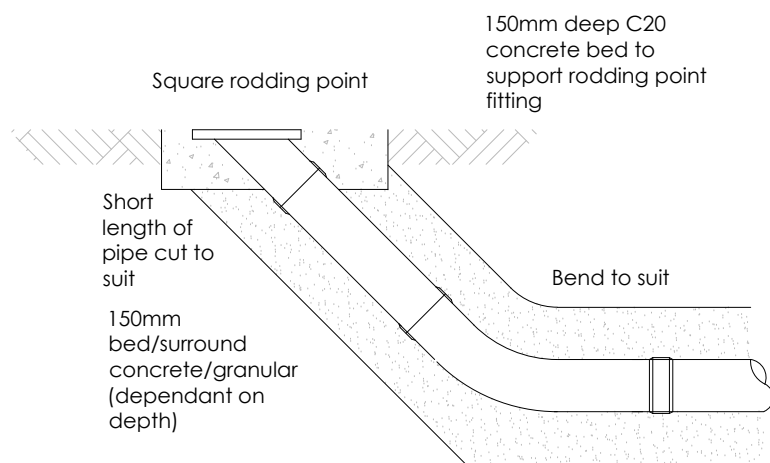


TYPE Z CONCRETE BED AND SURROUND

To be used where cover to pipe soffit is less than 900mm in vehicular areas and 600mm in non-trafficked areas (ie footpaths, verges, etc)

GRANULAR BEDDING AND SIDEFILL MATERIAL GRADINGS

Pipe nominal size (DN)	Pipe Bedding Requirement (mm)
100	10 nominal single size
over 100	10 or 14mm nominal single size or 14mm to 5mm graded
over 150-300	10, 14 or 20mm nominal single-size or 14mm to 5mm graded or 20mm to 5mm graded
over 300 to 550	14, 20 or 40mm nominal single-size crushed rock or 14mm to 5mm graded or 20mm to 5mm graded
over 550	14, 20 or 40mm nominal single-size crushed rock or 14mm to 5mm graded or 20mm to 5mm graded or 40mm to 5mm graded



Rodding Eye Installation

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P01	Issued for information	28.01.26	RSI	RJW
REV	DESCRIPTION	DATE	BY	APP



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Haywards Heath

TITLE

Drainage Details

DRAWN NJ ENGINEER RJW CHECKED BY MBD APPROVED BY AJG

DATE APPROVED SCALE @ A1 1:20

STATUS S2 - Suitable for Information

DRAWING No. 25-628-QED-XX-XX-DR-C-1001 REVISION P01

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 52 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E (l/s)	Max Outflow Volume (m³)	Status
15 min Summer	45.696	0.496	0.0	2.0	2.0	7.8	O K
30 min Summer	45.838	0.638	0.0	2.0	2.0	10.0	O K
60 min Summer	45.922	0.722	0.0	2.0	2.0	11.3	O K
120 min Summer	45.929	0.729	0.0	2.0	2.0	11.4	O K
180 min Summer	45.887	0.687	0.0	2.0	2.0	10.8	O K
240 min Summer	45.832	0.632	0.0	2.0	2.0	9.9	O K
360 min Summer	45.721	0.521	0.0	2.0	2.0	8.2	O K
480 min Summer	45.614	0.414	0.0	2.0	2.0	6.5	O K
600 min Summer	45.516	0.316	0.0	2.0	2.0	5.0	O K
720 min Summer	45.431	0.231	0.0	2.0	2.0	3.6	O K
960 min Summer	45.303	0.103	0.0	2.0	2.0	1.6	O K
1440 min Summer	45.200	0.000	0.0	2.0	2.0	0.0	O K
2160 min Summer	45.200	0.000	0.0	1.4	1.4	0.0	O K
2880 min Summer	45.200	0.000	0.0	1.1	1.1	0.0	O K
4320 min Summer	45.200	0.000	0.0	0.8	0.8	0.0	O K
5760 min Summer	45.200	0.000	0.0	0.7	0.7	0.0	O K
7200 min Summer	45.200	0.000	0.0	0.6	0.6	0.0	O K
8640 min Summer	45.200	0.000	0.0	0.5	0.5	0.0	O K
10080 min Summer	45.200	0.000	0.0	0.4	0.4	0.0	O K
15 min Winter	45.698	0.498	0.0	2.0	2.0	7.8	O K
30 min Winter	45.843	0.643	0.0	2.0	2.0	10.1	O K
60 min Winter	45.928	0.728	0.0	2.0	2.0	11.4	O K
120 min Winter	45.916	0.716	0.0	2.0	2.0	11.2	O K
180 min Winter	45.850	0.650	0.0	2.0	2.0	10.2	O K
240 min Winter	45.760	0.560	0.0	2.0	2.0	8.8	O K
360 min Winter	45.585	0.385	0.0	2.0	2.0	6.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	131.587	0.0	11.0	18
30 min Summer	88.475	0.0	14.9	32
60 min Summer	56.713	0.0	19.1	60
120 min Summer	35.036	0.0	23.6	94
180 min Summer	26.008	0.0	26.2	128
240 min Summer	20.913	0.0	28.2	160
360 min Summer	15.400	0.0	31.3	226
480 min Summer	12.373	0.0	33.5	290
600 min Summer	10.432	0.0	35.4	352
720 min Summer	9.069	0.0	36.9	410
960 min Summer	7.265	0.0	39.3	520
1440 min Summer	5.304	0.0	43.0	0
2160 min Summer	3.864	0.0	47.0	0
2880 min Summer	3.082	0.0	49.9	0
4320 min Summer	2.237	0.0	54.2	0
5760 min Summer	1.779	0.0	57.4	0
7200 min Summer	1.491	0.0	60.0	0
8640 min Summer	1.292	0.0	62.2	0
10080 min Summer	1.144	0.0	64.1	0
15 min Winter	131.587	0.0	11.0	18
30 min Winter	88.475	0.0	14.8	32
60 min Winter	56.713	0.0	19.1	60
120 min Winter	35.036	0.0	23.7	98
180 min Winter	26.008	0.0	26.3	134
240 min Winter	20.913	0.0	28.3	170
360 min Winter	15.400	0.0	31.2	238

Infrastruct CS Ltd		Page 2
The Stables High Cogges, Witney Oxfordshire, OX29 6UN	57 Broadway	
Date 02/02/2026	Designed by RJW	
File 6816-57BR-MD-001QSE.SRCX	Checked by QED	
Innovyze		Source Control 2020.1.3

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
480 min Winter	45.430	0.230	0.0	2.0	2.0	3.6	O K
600 min Winter	45.307	0.107	0.0	2.0	2.0	1.7	O K
720 min Winter	45.224	0.024	0.0	2.0	2.0	0.4	O K
960 min Winter	45.200	0.000	0.0	1.7	1.7	0.0	O K
1440 min Winter	45.200	0.000	0.0	1.3	1.3	0.0	O K
2160 min Winter	45.200	0.000	0.0	0.9	0.9	0.0	O K
2880 min Winter	45.200	0.000	0.0	0.7	0.7	0.0	O K
4320 min Winter	45.200	0.000	0.0	0.5	0.5	0.0	O K
5760 min Winter	45.200	0.000	0.0	0.4	0.4	0.0	O K
7200 min Winter	45.200	0.000	0.0	0.4	0.4	0.0	O K
8640 min Winter	45.200	0.000	0.0	0.3	0.3	0.0	O K
10080 min Winter	45.200	0.000	0.0	0.3	0.3	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
480 min Winter	12.373	0.0	33.5	298
600 min Winter	10.432	0.0	35.2	352
720 min Winter	9.069	0.0	36.8	396
960 min Winter	7.265	0.0	39.3	0
1440 min Winter	5.304	0.0	43.0	0
2160 min Winter	3.864	0.0	47.0	0
2880 min Winter	3.082	0.0	49.9	0
4320 min Winter	2.237	0.0	54.2	0
5760 min Winter	1.779	0.0	57.4	0
7200 min Winter	1.491	0.0	60.0	0
8640 min Winter	1.292	0.0	62.2	0
10080 min Winter	1.144	0.0	64.2	0

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.950
Region	England and Wales	Cv (Winter)	0.950
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.348	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Green Roof

Area (m³)	60	Evaporation (mm/day)	3
Depression Storage (mm)	5	Decay Coefficient	0.050

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)	From: To:	(ha)	From: To:	(ha)	From: To:	(ha)
0	4 0.001090	24	28 0.000328	48	52 0.000099	72	76 0.000030	96	100 0.000009
4	8 0.000893	28	32 0.000269	52	56 0.000081	76	80 0.000024	100	104 0.000007
8	12 0.000731	32	36 0.000220	56	60 0.000066	80	84 0.000020	104	108 0.000006
12	16 0.000598	36	40 0.000180	60	64 0.000054	84	88 0.000016	108	112 0.000005
16	20 0.000490	40	44 0.000148	64	68 0.000044	88	92 0.000013	112	116 0.000004
20	24 0.000401	44	48 0.000121	68	72 0.000036	92	96 0.000011	116	120 0.000003

Time Area Diagram

Total Area (ha) 0.030

Time	(mins)	Area
From:	To:	(ha)
0	4	0.030

Model Details

Storage is Online Cover Level (m) 46.700

Cellular Storage Structure

Invert Level (m) 45.200 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	16.5	16.5	0.800	16.5	36.5	0.900	0.0	36.5

Pump Outflow Control

Invert Level (m) 40.000

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.001	2.0000	2.000	2.0000