

Mr Billy Clements
Devine Homes PLC
133 Church Hill Road
Sutton
Surrey
SM3 8NE

Our Ref: 132/2026/01/PC4/P1/ARC - Please quote in all correspondence.

29 July 2026

Dear Mr Clements,

Re: Land North of Cowfold Road, Coolham, Horsham RH13 8QJ.
Planning Permission Ref. APP/Z3825/W/25/3375975.
Application for Discharge of Planning Condition 4 (Surface Water Drainage).

Thank you for your request to prepare a report and design information to address Planning Condition 4 of the above Planning Consent. Please find attached to this report enclosures supporting the design for the respective planning condition, which is reproduced in italics below.

PLANNING CONDITION 4 - SURFACE WATER DRAINAGE STRATEGY

No development shall commence until a drainage strategy detailing the proposed means of surface water disposal has been submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved scheme.

Surface Water Drainage Strategy

Please find attached GHB Drawings 132/2026/010-P1, 011-P1, 012-P1, and 013-P1 (**Appendices A, B, C, and D**, respectively). The drawings demonstrate the proposed development surface water drainage strategy and relevant details. In addition, please find below further supplementary information. Please note that this drainage strategy has been completed with reference to the approved Flood Risk Assessment and Drainage Strategy (FRADS) undertaken by Motion, reference 1dhcoo/2410016, dated 18/11/2024.

The Surface Water Drainage Hierarchy has been considered for the disposal of surface water for the proposed installations, as per the CIRIA SuDS Manual (C753) and UK National Standards for SuDS. It has been demonstrated that:

- 1) Infiltration is unviable for the use of soakaways and/or permeable paving, due to the site geology and soil data. In addition to the data within the FRADS, **Appendix E** provides information from the British Geological Survey (BGS) Geology Viewer and Borehole Records, as well as the Land Information System Soilscales regarding the site geology and superficial deposits and bedrock geology. The BGS geology viewer mapping identifies the site as having superficial deposits comprising of River Terrace Deposits (sand and gravels) and bedrock geology of Weald Clay Formation – Mudstone. Soilscales data illustrates the presence of base-rich loamy and clayey soils with impeded drainage. In addition, and as per the FRADS, the presence of nearby surface water features and boreholes also infer very limited infiltration potential. Consequently, infiltration solutions are considered to be unviable, particularly at deeper depth.

- 2) There is an ordinary watercourse located along the northern boundary of the site, which runs south-eastwards for circa 285m before entering a water body upstream of the Rive Adur. The River Adur is approximately 500 m east of the site.

Consequently, the drainage strategy for the site is proposed to discharge directly into the ordinary watercourse to the north. This was also the agreed strategy within the approved FRADS. The surface water runoff from the site will be attenuated and discharged at a reduced rate, with a design that is in accordance with the approved FRADS and relevant design standards.

In accordance with the FRADS, a maximum discharge rate of 2.0 l/s has been used for the surface water proposal. With this rate, the proposed design utilises a combination of various attenuation features, including cellular crate storage, permeable sub-base storage and two attenuation basins. An intermittent flow control (27 mm orifice chamber) is designed downstream of the highest basin to restrict flows into the downstream section of the network to retain water within the southern part of the development as much as practicable.

Due to WSCC's preference to have all cellular storage located out of private driveway areas, the design uses heavy-duty crates within the shared surface areas to attenuate surface water runoff. The crates are design with a minimum cover of 400 mm, assuming a maximum loading of 60000 kg, based upon the specification of a Permavoid. Where applicable, the Type 3 sub-base above the crates in each segregated areas are proposed to be locally deepened to allow for the flow of water through the sub-base into the crates, before flowing down the network. The shared surface areas are split into respective sections, which are to be separated by geotextile check dams, to allow for incoming pipe connections and allow for maintenance chambers to be placed along the network.

In addition, two basins are used in the areas of open space to the north and southeast to allow for additional runoff storage. The depths and geometry of the basins have been designed in accordance with the approved FRADS, with 1 in 3 side slopes and 150 mm minimum of freeboard. The cover and invert levels have been adjusted accordingly to the levels of the access road and paving depths, such that the maximum water depth corresponds to both the top of paving sub-base and freeboard level. For example, Attenuation Basin B has a freeboard level equal to 16.550 maOD, which ties in with Driveway 7's bottom of paving level of 16.550 mAOD (Cover Level of 17.600 – 150mm paving depth).

As well as providing storage, the inclusion of permeable paving and attenuation basins within the design offers sufficient treatment to the runoff associated with the development, in accordance with the hazard and mitigation indices within Tables 26.2 and 26.3 of the CIRA SuDS Manual. The extents and details of the proposed paving is given within **Appendices A to D**.

Surface Water Drainage Calculations

The drainage system has been modelled to manage the 1% AEP + 45% climate change critical event without flooding. GHB Drawing 132/2026/010-P1 (**Appendix A**) illustrates the impermeable area for the surface water network. This is evidenced within the provided hydraulic calculations, given in **Appendix F**. Current design expectations of have been incorporated into the design, including a runoff coefficient value (Cv) for both summer and winter of 1.0, and a climate change allowance of 45% for the 1% AEP rainfall. Modelling of the surface water network for the 50% AEP, and the 3.33% AEP rainfall event plus 40% climate change allowance scenarios are also provided to show no above-ground flooding.

It has been highlighted previously by the LLFA that an allowance for surcharging within the receiving watercourse must be incorporated within the surface water design for the development. This is demonstrated with the revised drainage strategy drawings and FRADS submission. It is now recognised that the existing watercourse has been surveyed and proves that a connection is achievable. As opposed to using the estimated surcharged level from the FRADS, the topographic survey now shows a cover level equal to 17.02 mAOD near to the existing 400 mm diameter culvert. The design has therefore incorporated this cover level into the surcharge calculations.



It has been demonstrated that the proposal has sufficient capacity for the critical 1% AEP + 405% climate change event with the watercourse being surcharged to a level of 17.02 mAOD.

Surface Water Drainage Maintenance

A surface water drainage maintenance schedule is provided within **Appendix G**. This provides details the various systems used as part of the proposal, and the suggested maintenance activities along with their frequencies. The responsibility of each activity is also stated.

I trust the information provided above is adequate to satisfy the requirements of the Local Planning Authority and their consultees in regard to the planning conditions concerned. I have no objection to any queries being directed back to me as necessary.

Kind regards,



Adam Carter
Senior Engineer
For and on behalf of G H Bullard & Associates LLP

Enc.

Attachments:

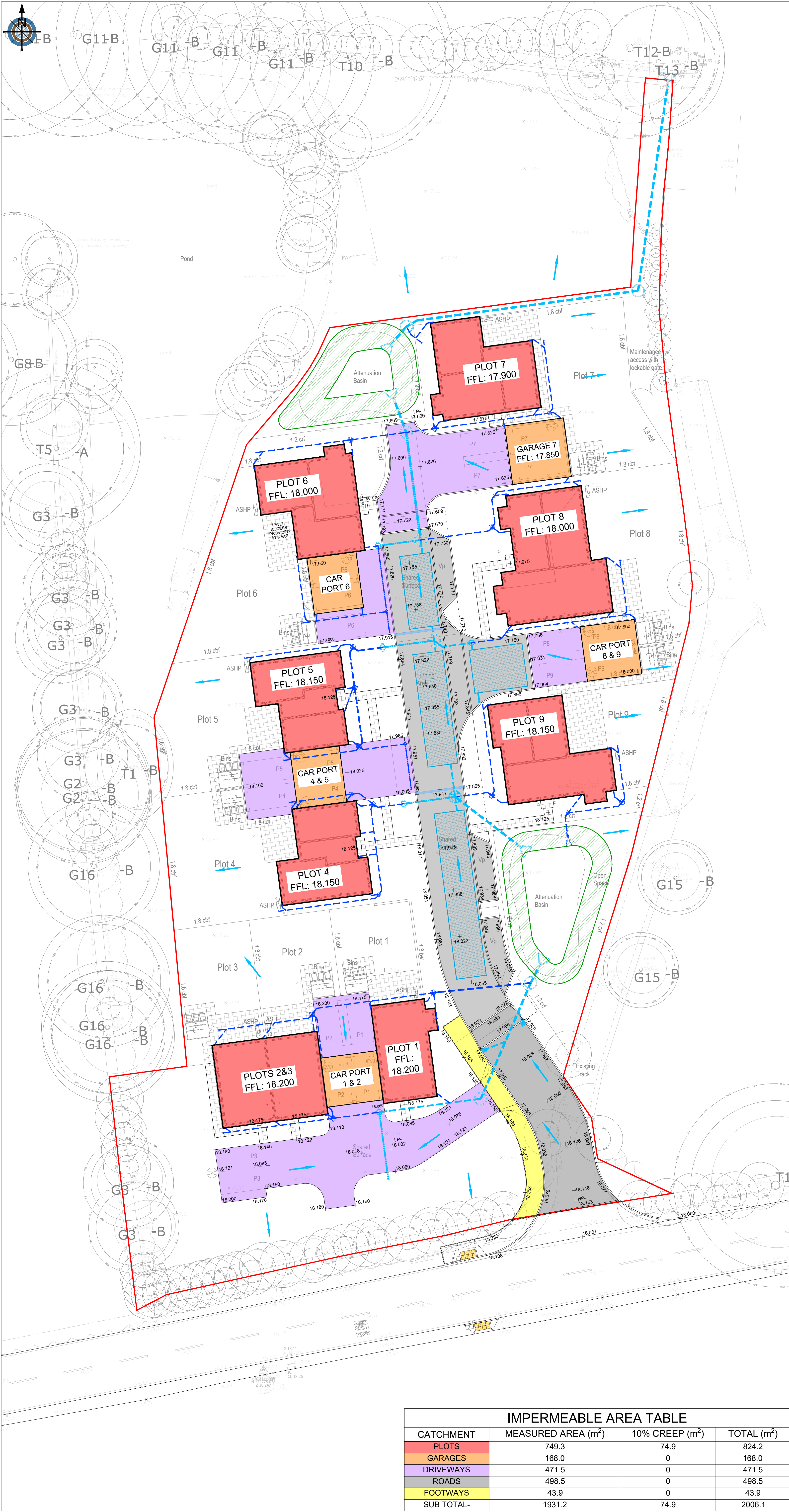
- **Appendix A:** *GHB Drawing No. 132/2026/010-P1*
- **Appendix B:** *GHB Drawing No. 132/2026/011-P1*
- **Appendix C:** *GHB Drawing No. 132/2026/012-P1*
- **Appendix D:** *GHB Drawing No. 132/2026/013-P1*
- **Appendix E:** *British Geological Society and Land Information System Soilscales Mapping*
- **Appendix F:** *Hydraulic Calculations*
- **Appendix G:** *Surface Water Drainage Maintenance Schedule*



APPENDIX A

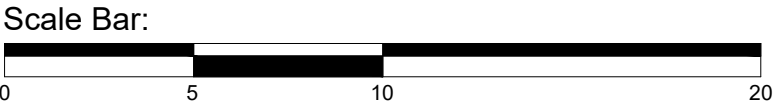
GHB Drawing No. 132/2026/010-P1





LEGEND:

- PRIVATE SURFACE WATER DRAINAGE
Colour Denotes Private / Shared Ownership and Maintenance
- CELLULAR STORAGE ATTENUATION CRATES
95% Open Void. Pink Hatching Denotes Maintainable Crate for Access.
- IMPERMEABLE CHECK DAM
Geotextile Membrane
- ATTENUATION BASIN
1 in 3 Side Slopes, 150mm Freeboard
- EXCEEDANCE FLOW PATH



- NOTES:
- This drawing is to be read in conjunction with GHB series 132/2026 drawings and documents and any other relevant project team documents.
 - Preliminary Issue - This drawing is not to be used for construction or detailed pricing purposes. Any work undertaken before approvals are received (in writing) are at risk of abortive works.
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Scale 1.0 and translation (0, 0, 0) about point (0, 0, 0).
Architectural Layout by Vision (Ref. 260005-A-P-G7-C_RIBA04 (External Issue_2026.05.07) dated 07/05/2026) subject to transformation of: Scale 0.001 and translation (511667.379, 122652.303, 0) about point (0, 0, 0).
 - All site levels and finished floor levels to remain indicative for planning purposes and are subject to verification following detailed design.
 - This drawing has been prepared solely for the purpose of obtaining a Planning Consent based on information available and planning requirements at the date of issue only.

P1	29/07/26	Initial Issue		ARC	DSH
Rev	Rev Date	Description		Drawn	Check'd

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Partnership No. OC383830, Registered in England and Wales

Client:

DEVINE HOMES PLC

COWFOLD ROAD
COOLHAM
WEST SUSSEX

DISCHARGE OF PC4
IMPERMEABLE AREA
PLAN LAYOUT

FOR PLANNING
1:200 @ A1

Created: JUL 2026
DWG Reference: 132-2026.DWG

Drawn: ARC
Checked: DSH

Drawing Number:
132/2026/010

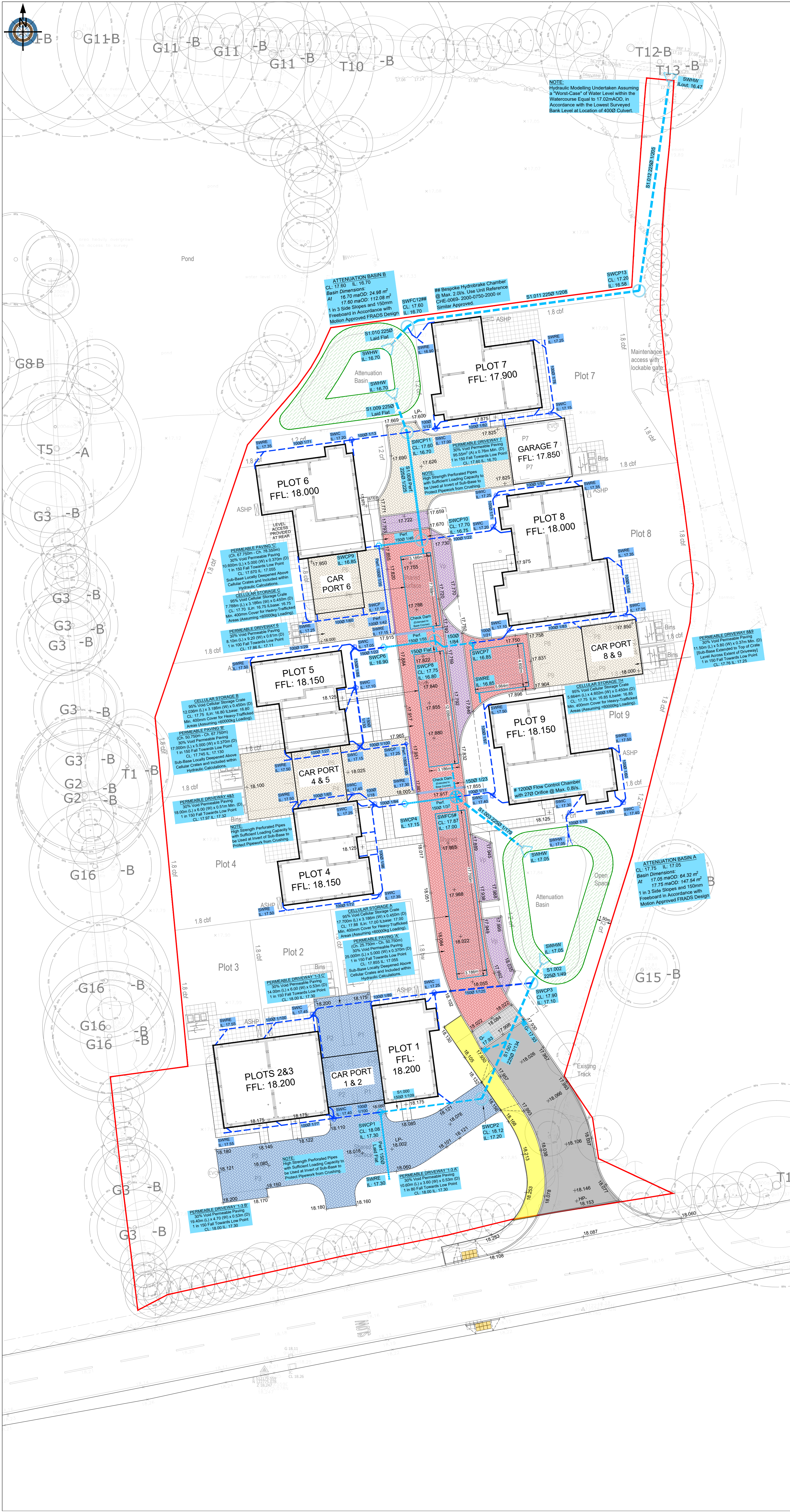
Revision:
P1

IMPERMEABLE AREA TABLE			
CATCHMENT	MEASURED AREA (m ²)	10% CREEP (m ²)	TOTAL (m ²)
LOTS	749.3	74.9	824.2
GARAGES	168.0	0	168.0
DRIVEWAYS	471.5	0	471.5
ROADS	498.5	0	498.5
FOOTWAYS	43.9	0	43.9
SUB TOTAL-	1931.2	74.9	2006.1

APPENDIX B

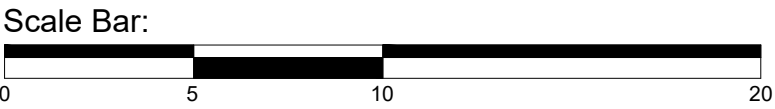
GHB Drawing No. 132/2026/011-P1





LEGEND:

- ACCESS ROAD
SURFACE: Asphalt Concrete
WSCC Access Road Carriageway Specification
- FOOTWAY
SURFACE: Asphalt Concrete
WSCC Footway Adjacent Carriageway Specification
- RAMP FEATURE
SURFACE: 80mm Impermeable Concrete Block Paving
WSCC Ramp Feature Type 5 Specification
- SHARED SURFACE
SURFACE: 80mm Permeable Concrete Block Paving Specification/ Colour To Be Agreed with Architect
WSCC Permeable Carriageway Specification
- SHARED DRIVEWAY
SURFACE: 60mm Permeable Concrete Block Paving Specification/ Colour To Be Agreed with Architect
Assuming BS Category 5 Vehicular Loading Only
- PRIVATE DRIVEWAY
SURFACE: 60mm Permeable Concrete Block Paving Specification/ Colour To Be Agreed with Architect
Assuming BS Category 4 Vehicular Loading Only
- SERVICE CROSSING
SURFACE: 80mm Impermeable Concrete Block Paving
WSCC Service Crossing Specification
- PRIVATE SURFACE WATER DRAINAGE
Colour Denotes Private / Shared Ownership and Maintenance
- CELLULAR STORAGE ATTENUATION CRATES
95% Open Void. Pink Hatching Denotes Maintainable Crate for Access.
- IMPERMEABLE CHECK DAM
Geotextile Membrane (Top) or Concrete Kerb Bedding Extended to Formation (Bottom)
- ATTENUATION BASIN
1 in 3 Side Slopes, 150mm Freeboard



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Rev	Rev Date	Description	Drawn	Chck'd

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Partnership No. OC383830, Registered in England and Wales

Client: **DEVINE HOMES PLC**

Project: **COWFOLD ROAD
COOLHAM
WEST SUSSEX**

Drawing Title: **DISCHARGE OF PC4
PROPOSED SURFACE WATER
DRAINAGE PLAN LAYOUT**

Status: **FOR PLANNING**

Scale: **1:200 @ A1**

Created: **JUL 2026** Drawn: **ARC**

DWG Reference: **132-2026.DWG** Checked: **DSH**

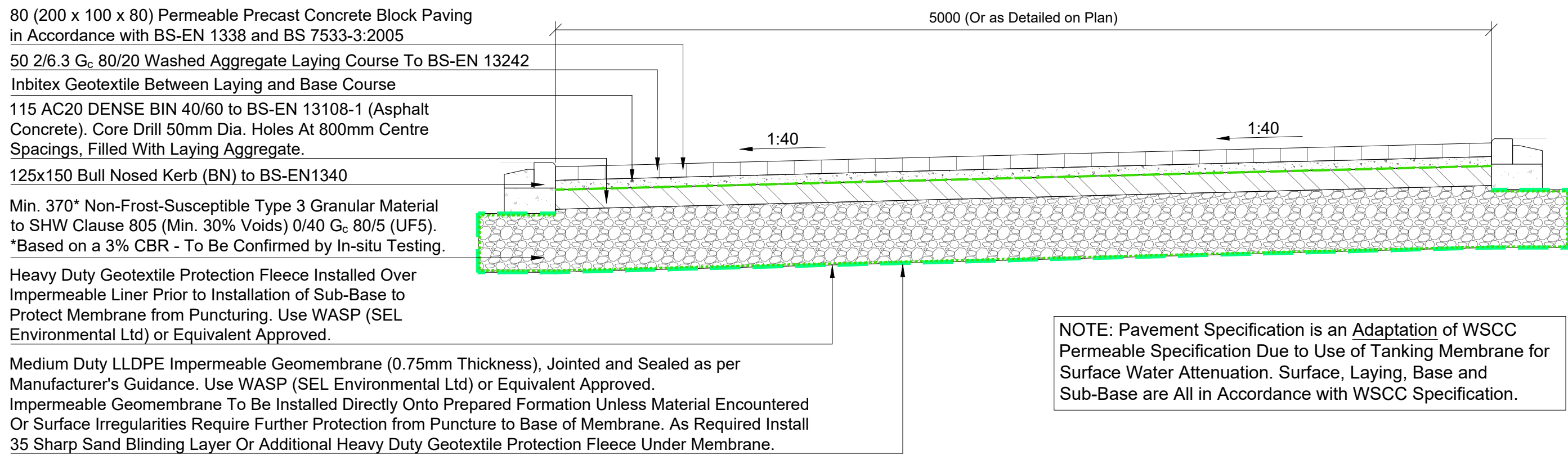
Drawing Number: **132/2026/011** Revision: **P1**

APPENDIX C

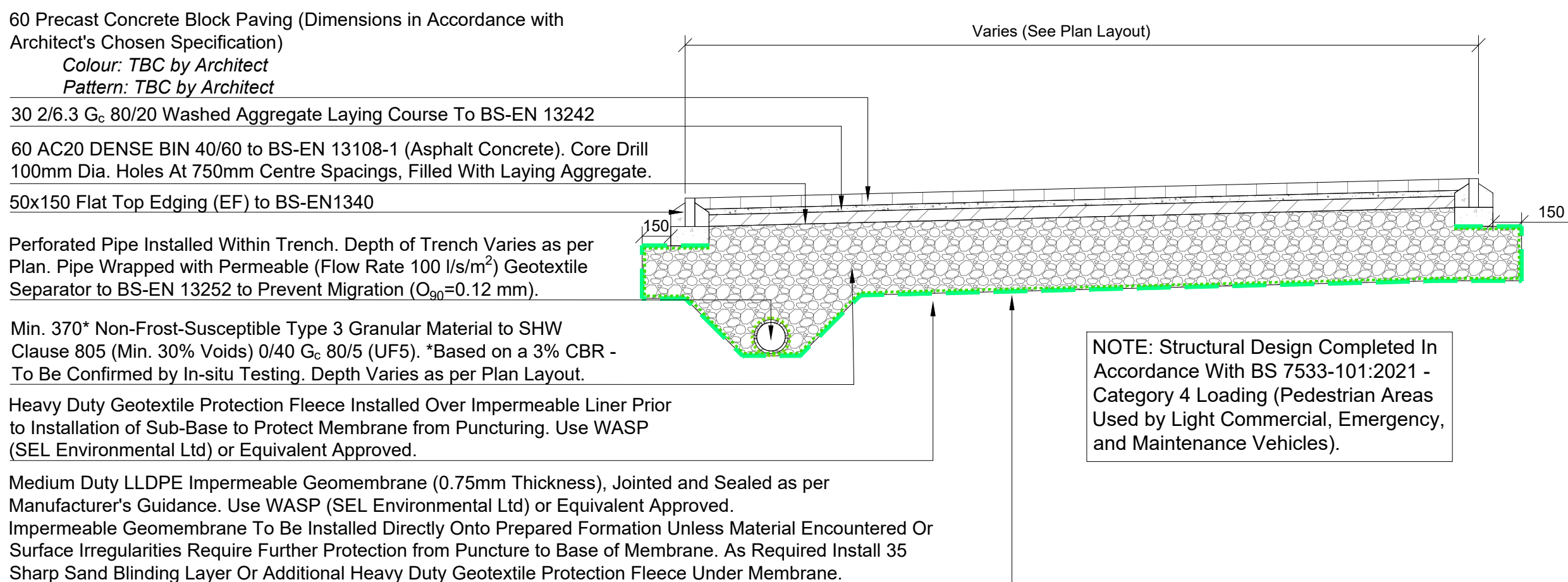
GHB Drawing No. 132/2026/012-P1



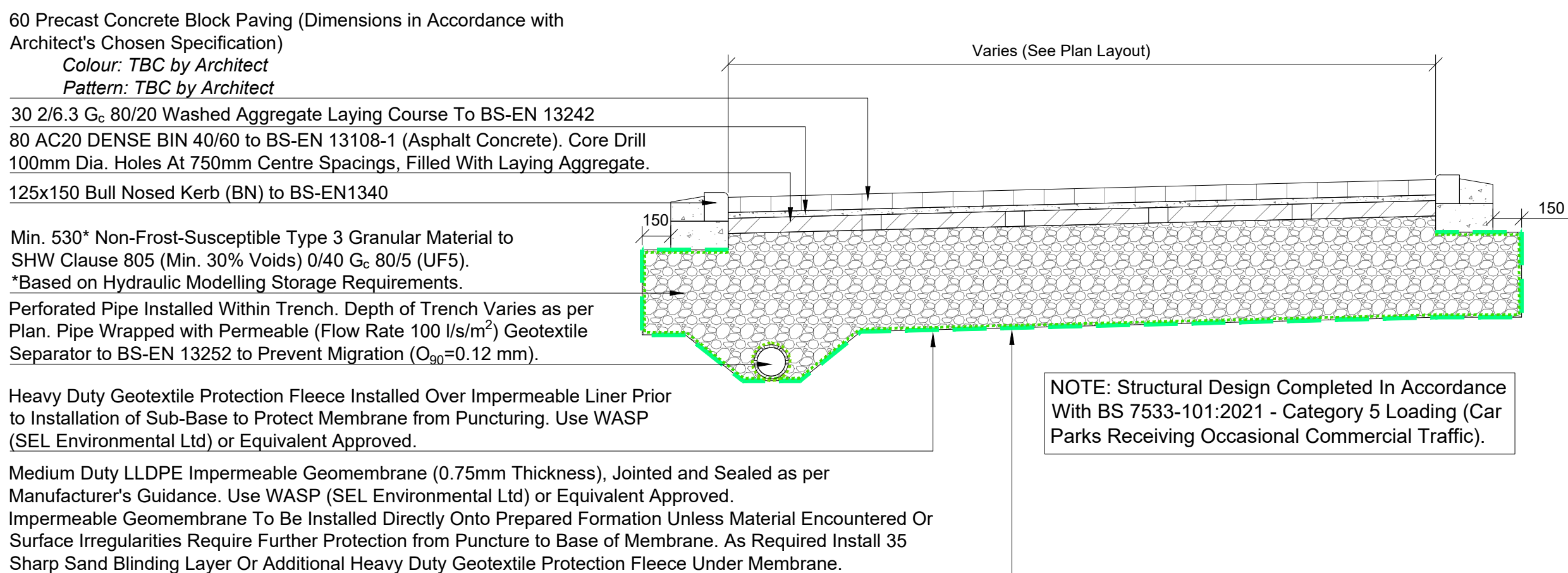
TYPICAL PERMAVOID ATTENUATION CRATES (IN HGV TRAFFICKED AREAS)
CONSTRUCTION DETAIL



TYPICAL WSCC SHARED SURFACED CONSTRUCTION DETAIL
(Adaptation of WSCC Drawing S278/38/30)

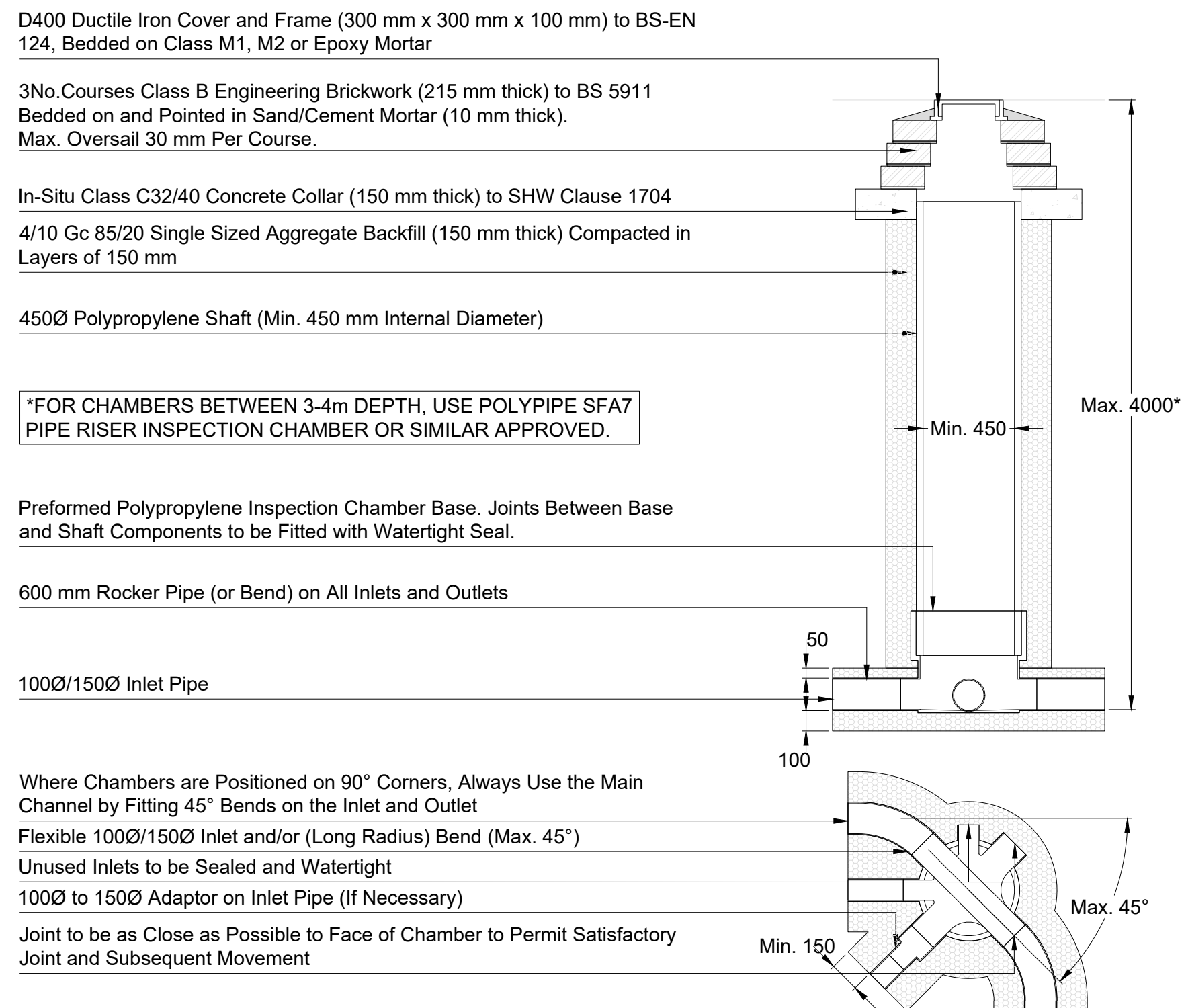
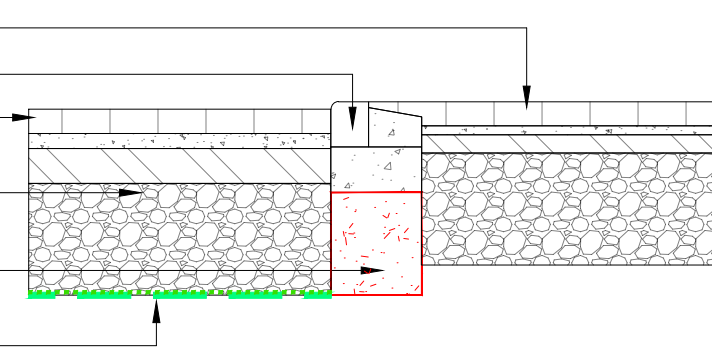


TYPICAL TANKED PERMEABLE PRIVATE DRIVEWAY CONSTRUCTION DETAIL

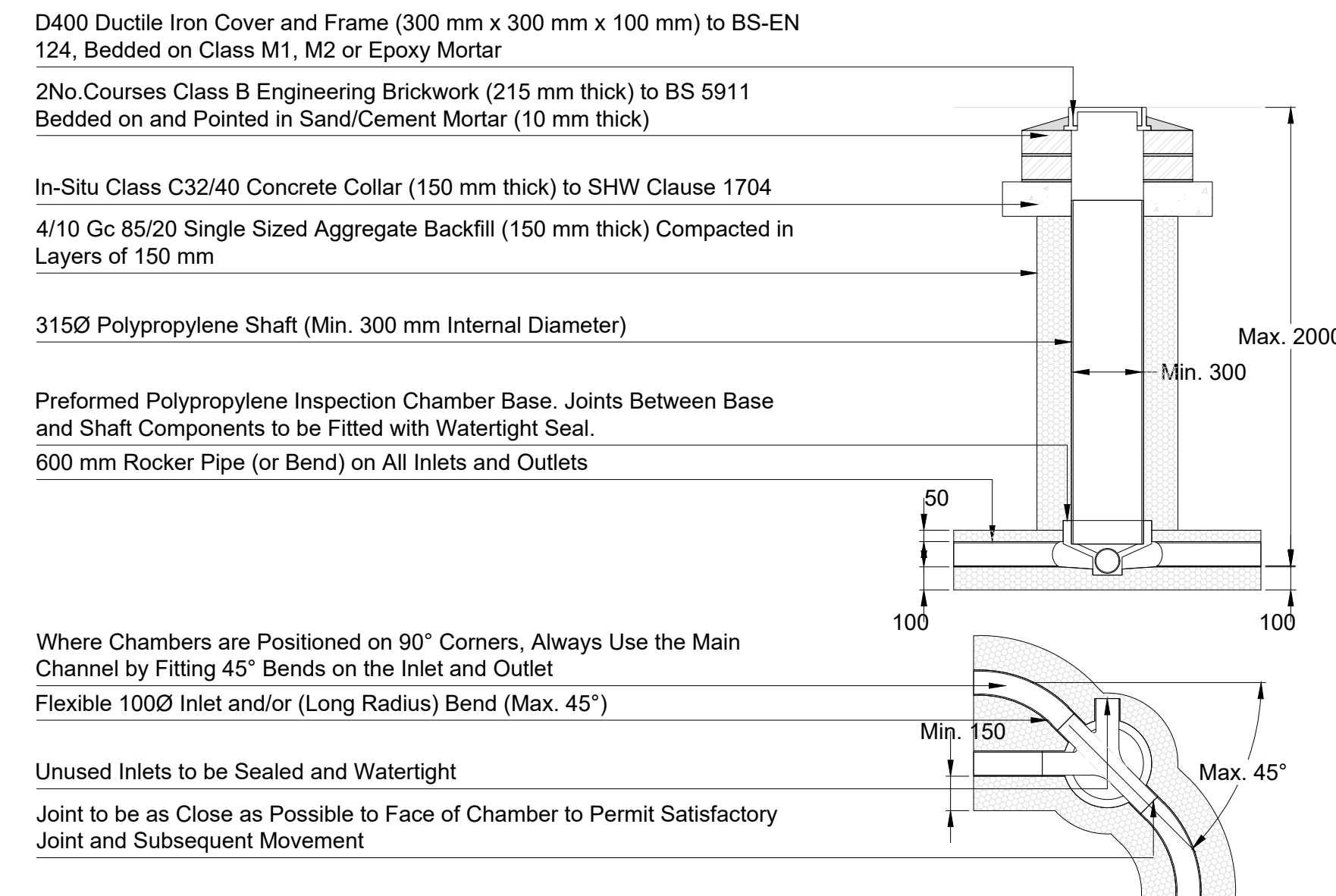


TYPICAL TANKED PERMEABLE SHARED DRIVEWAY CONSTRUCTION DETAIL

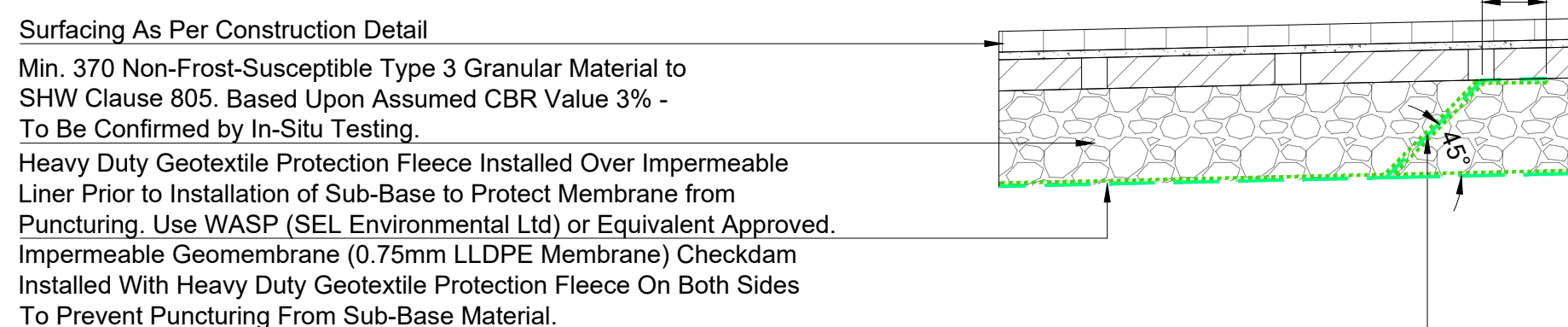
PERMEABLE PAVING CONCRETE KERB BEDDING EXTENSION CHECK DAM CONSTRUCTION DETAIL



TYPICAL TYPE 3 INSPECTION CHAMBER



TYPICAL TYPE 4 INSPECTION CHAMBER



PERMEABLE PAVING GEOMEMBRANE CHECK DAM CONSTRUCTION DETAIL

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4. All site levels and finished floor levels to remain indicative for planning purposes and are subject to verification following detailed design.
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P1	29/07/26	Initial Issue		ARC	DS
Rev	Rev Date	Description		Drawn	Checked



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DEVINE HOMES PLC

Project:

COWFOLD ROAD
COOLHAM
WEST SUSSEX

Drawing Title:

DISCHARGE OF PC4
PROPOSED SURFACE WATER
DRAINAGE CONSTRUCTION DETAILS
(SHEET 1 OF 2)

Status:	FOR PLANNING
Scale:	NOT TO SCALE @ A1

Created:	JUL 2026	Drawn:	ARC
DWG Reference:	132-2026.DWG	Checked:	DSH

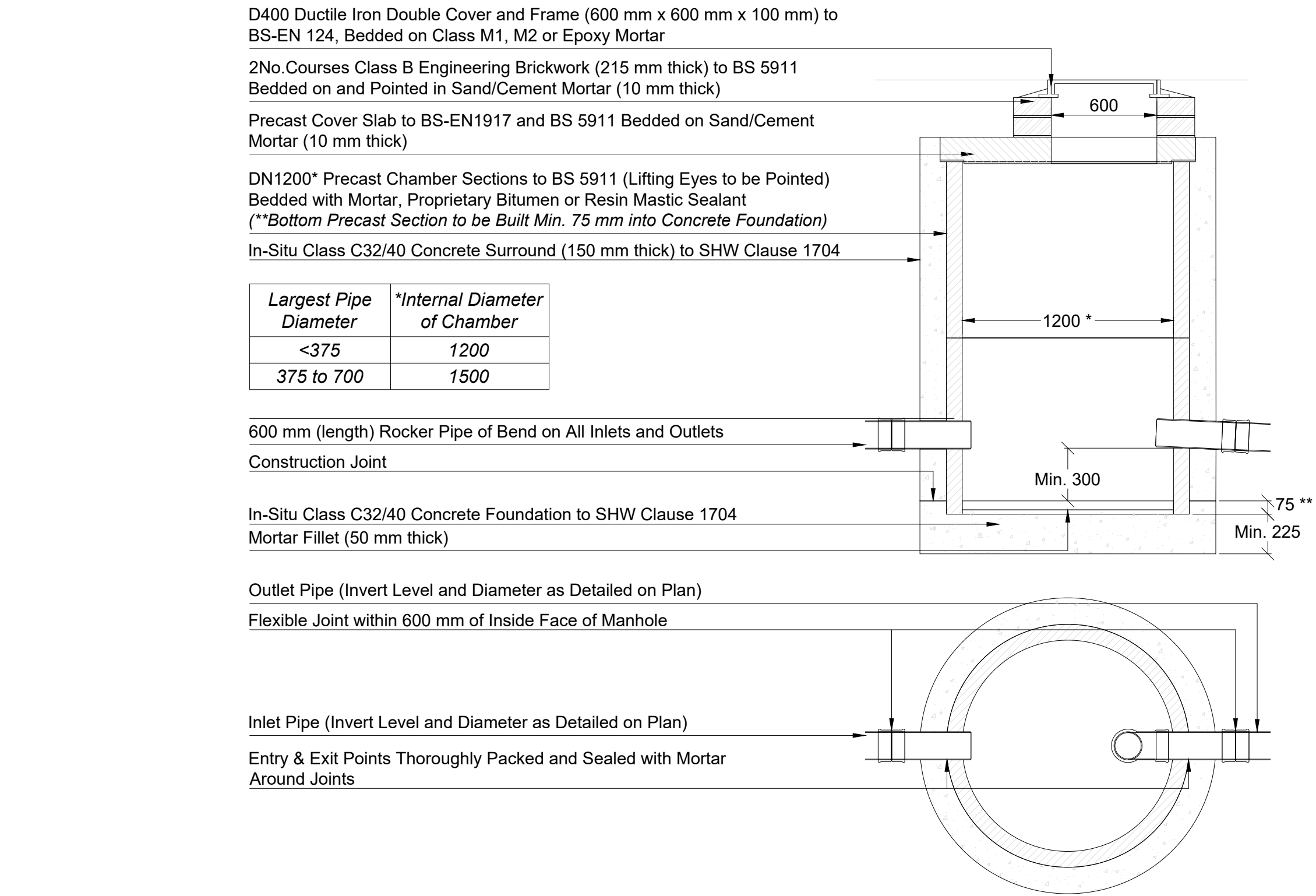
Drawing Number:	Revision:
132/2026/012	P1

P# = Preliminary, C# = Construction, AB# = As Built

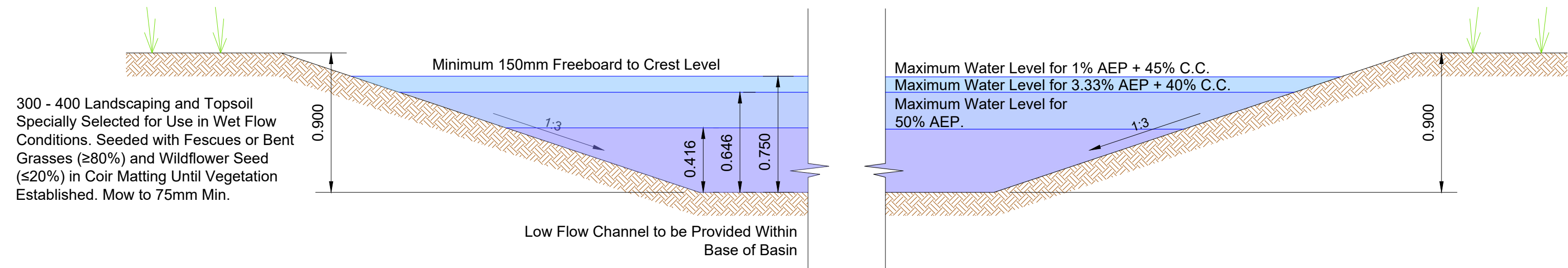
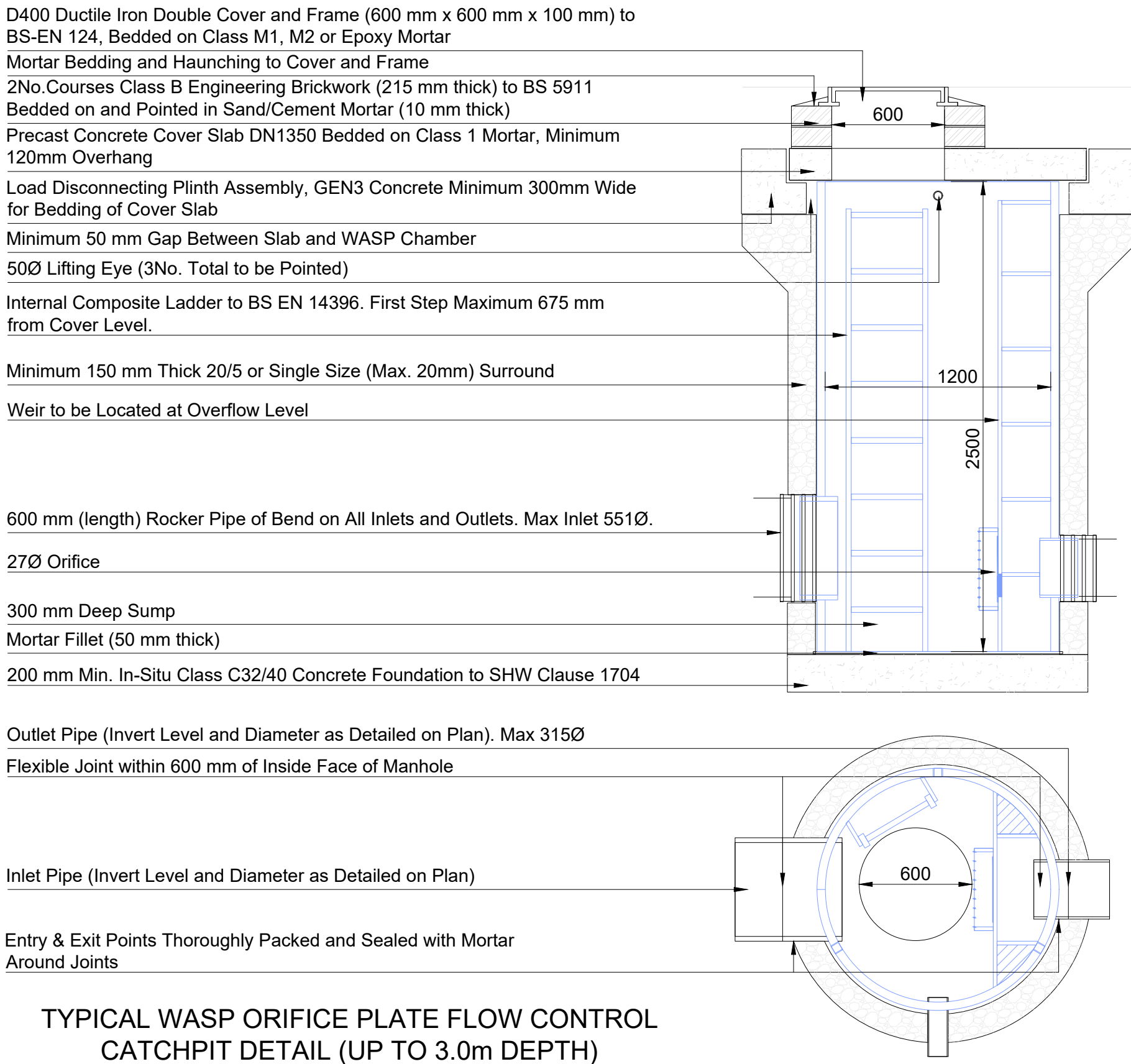
APPENDIX D

GHB Drawing No. 132/2026/013-P1

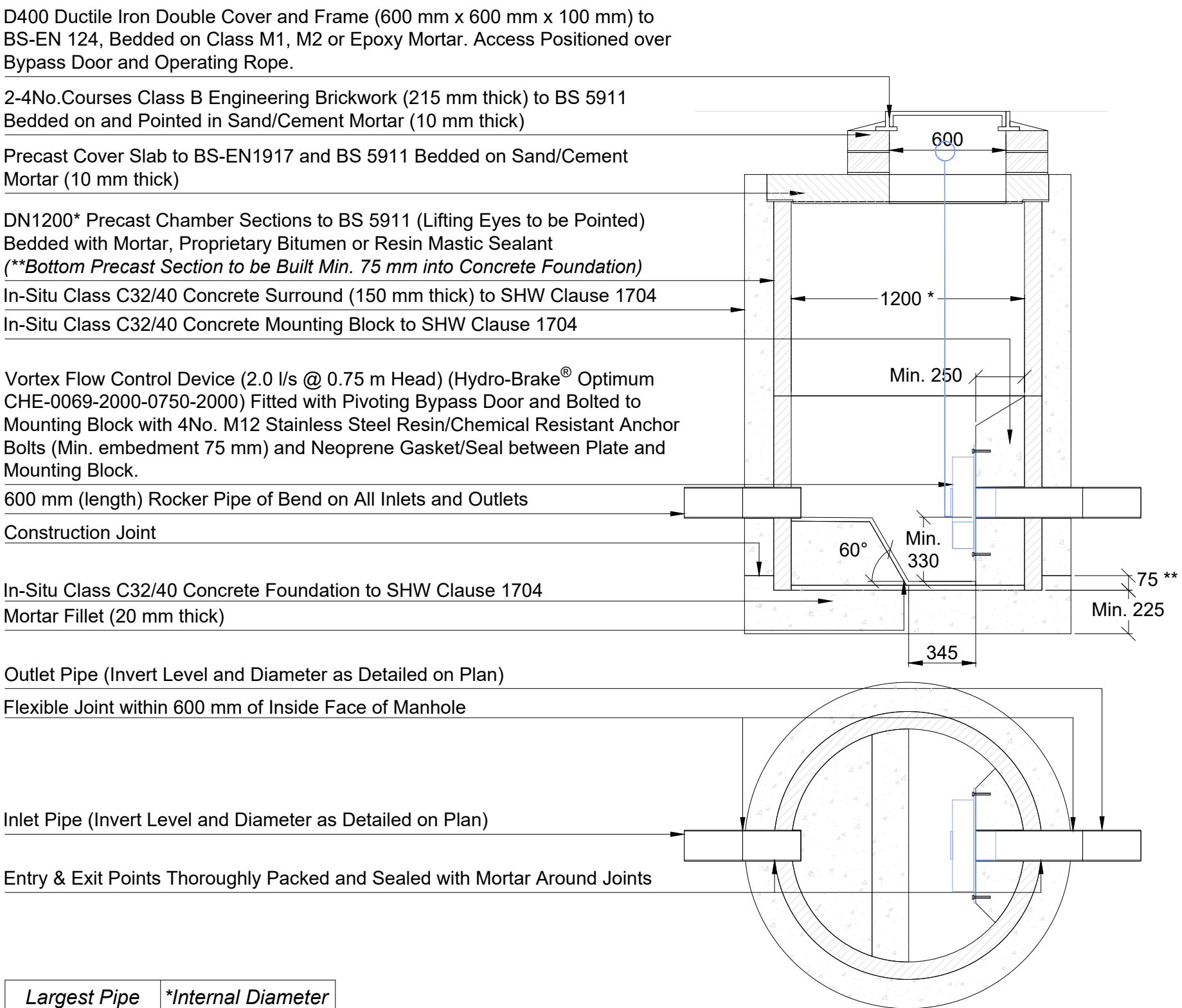




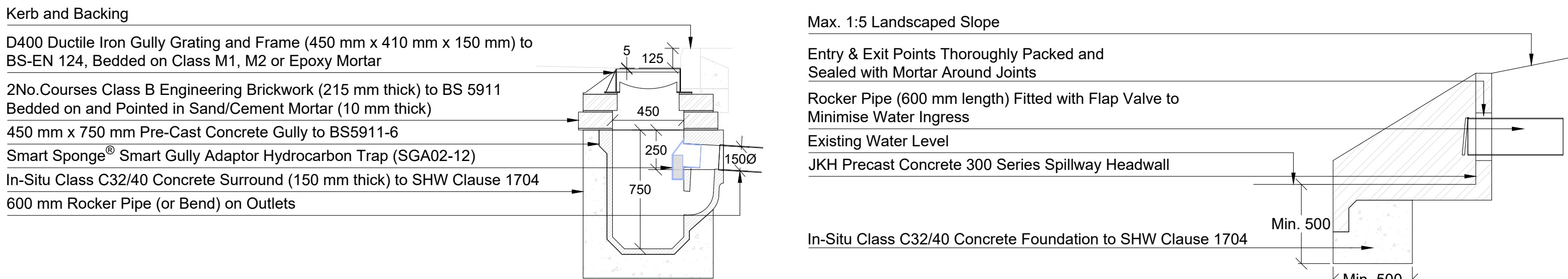
TYPICAL CATCHPIT DETAIL



CROSS-SECTION THROUGH ATTENUATION BASIN B DETAIL

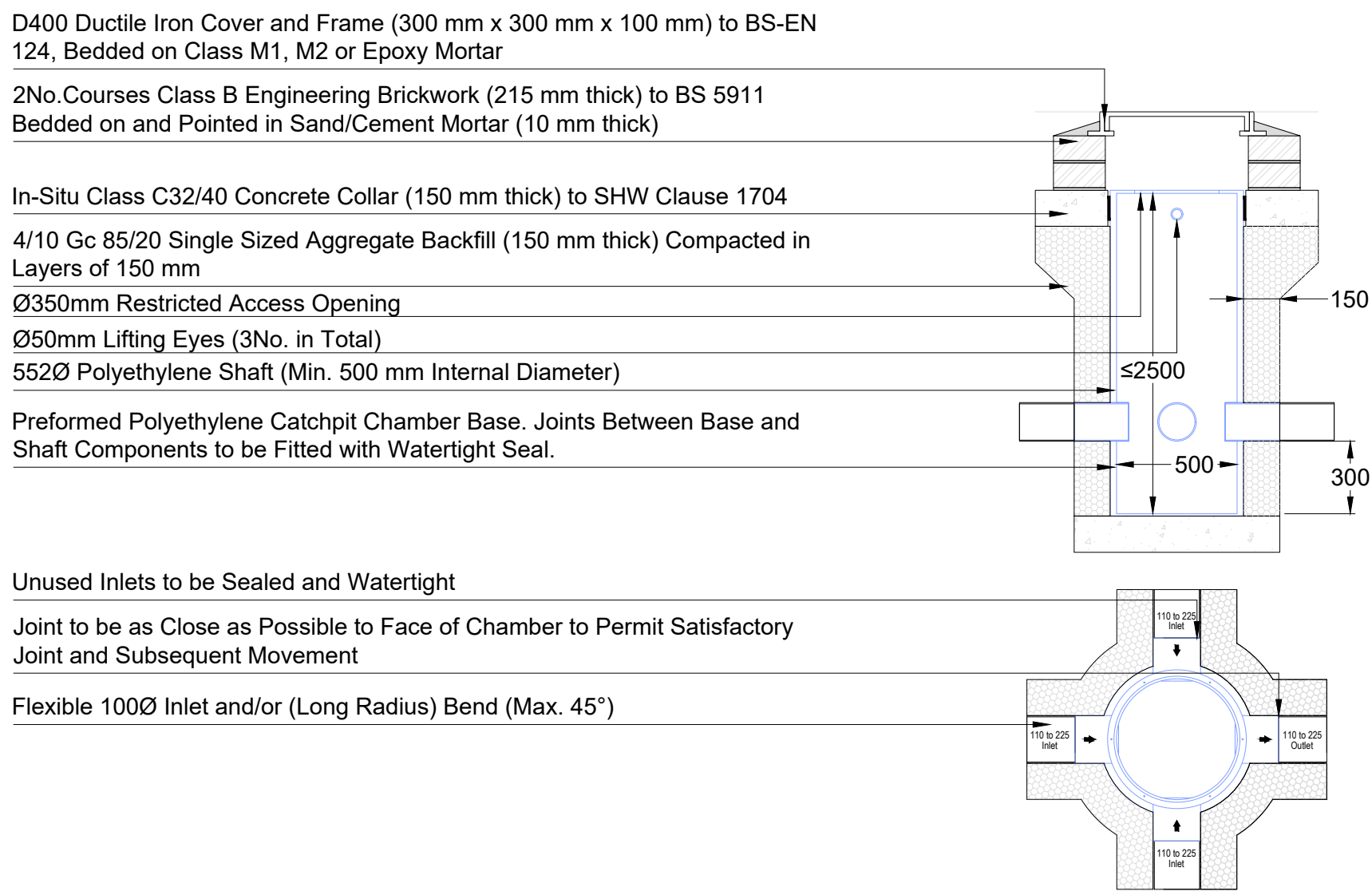


TYPICAL VORTEX FLOW CONTROL CATCHPIT DETAIL



TYPICAL GULLY CONSTRUCTION DETAIL

TYPICAL NON-RETURN HEADWALL (<300Ø) DETAIL



TYPICAL 500mm INSPECTION CATCH PIT CHAMBER

- NOTES:
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P1	29/07/26	Initial Issue		ARC	DS
Rev	Rev Date	Description		Drawn	Chck
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Client:					
DEVINE HOMES PLC					
Project:					
COWFOLD ROAD COOLHAM WEST SUSSEX					
Drawing Title:					
DISCHARGE OF PC4 PROPOSED SURFACE WATER DRAINAGE CONSTRUCTION DETAILS (SHEET 2 OF 2)					
Status:					
FOR PLANNING					
Scale:					
NOT TO SCALE @ A1					
Created:				Drawn:	ARC
JUL 2026				Checked:	DSH
DWG Reference:					
132-2026.DWG					
Drawing Number:					
132/2026/013					Revision:
					P1
P# = Preliminary, C# = Construction, AB# = As Built					

APPENDIX E

British Geological Society and Land Information System Soilscape Mapping

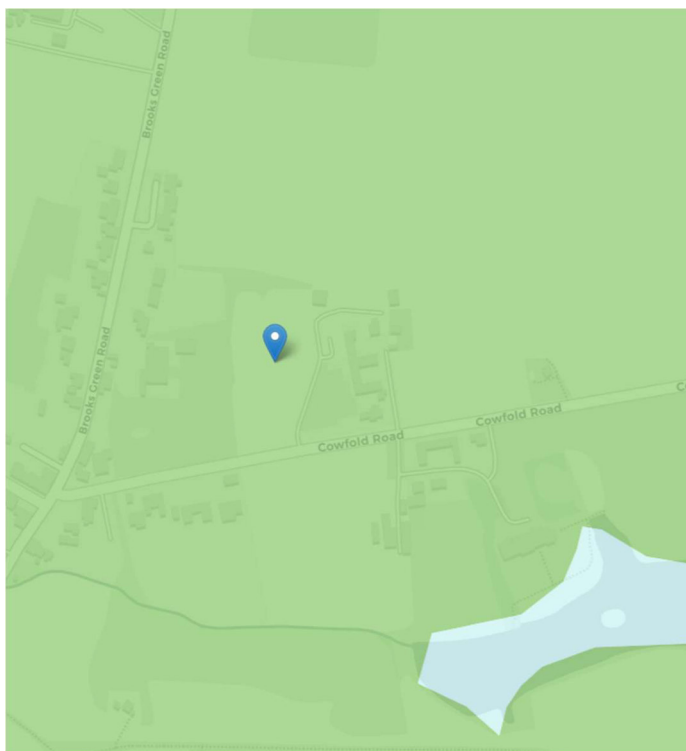


British Geological Society Mapping – Superficial Deposits



British Geological Society Mapping – Bedrock Geology





Soilscape 18:

Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils

Texture:

Loamy and clayey

Coverage:

England: 19.9%, Wales: 2.4%, England & Wales: 17.5%

Drainage:

Impeded drainage



Fertility:

Moderate



Landcover:

Grassland and arable some woodland

Habitats:

Seasonally wet pastures and woodlands

Carbon:

Low

Drains to:

Stream network

Land Information System Soilsapes Mapping



APPENDIX F

Hydraulic Calculations



Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
	Report Details: Type: Junctions Storm Phase: Phase		
Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			

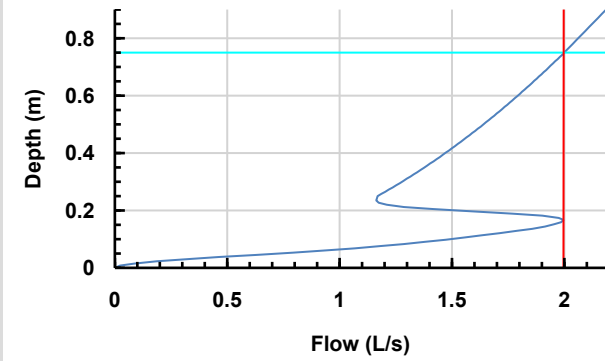


Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
SWCP1	Manhole	512191.867	122802.424	18.080	0.780	17.300	Circular	0.500
SWCP2	Manhole	512201.397	122803.691	18.120	0.920	17.200	Circular	1.200
SWCP3	Manhole	512207.927	122816.146	17.900	0.800	17.100	Circular	1.200
SWCP11	Manhole	512194.652	122874.408	17.600	0.900	16.700	Circular	1.200
SWCP10	Manhole	512196.247	122863.150	17.700	0.950	16.750	Circular	1.200
SWCP9	Manhole	512190.805	122862.419	17.900	1.050	16.850	Circular	0.500
SWCP8	Manhole	512197.680	122852.482	17.750	0.950	16.800	Circular	1.200
SWCP7	Manhole	512201.786	122852.248	17.750	0.900	16.850	Circular	0.500
SWCP6	Manhole	512192.228	122851.757	17.750	0.850	16.900	Circular	0.500
SWFC5	Manhole	512199.908	122835.892	17.870	0.870	17.000	Circular	1.200
SWCP4	Manhole	512194.457	122835.160	17.900	0.750	17.150	Circular	0.500
SWFC12	Manhole	512194.558	122885.574	17.600	0.900	16.700	Circular	1.200
SWCP13	Manhole	512219.331	122889.615	17.200	0.620	16.580	Circular	1.200
Outfall	Manhole	512222.644	122912.678	17.300	0.830	16.470	Circular	0.500

Name	Lock
SWCP1	None
SWCP2	None
SWCP3	None
SWCP11	None
SWCP10	None
SWCP9	None
SWCP8	None
SWCP7	None
SWCP6	None
SWFC5	None
SWCP4	None
SWFC12	None
SWCP13	None
Outfall	None

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge		Date: 28/07/2026			
Report Details: Type: Junctions Storm Phase: Phase		Designed by: ARC	Checked by: DSH		Approved By:
		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SWCP1	Outlet	S1.000	Free Discharge
SWCP2	Outlet	S1.001	Free Discharge
SWCP3	Outlet	S1.002	Free Discharge
SWCP11	Outlet	S1.009	Free Discharge
SWCP10	Outlet	S1.008	Free Discharge
SWCP9	Outlet	Pipe (9)	Free Discharge
SWCP8	Outlet	S1.006	Free Discharge
SWCP7	Outlet	Pipe (7)	Free Discharge
SWCP6	Outlet	Pipe (6)	Free Discharge
SWFC5	Outlet	S1.004	Orifice
	Diameter (m)	0.027	
	Coefficient of Discharge	0.600	
	Invert Level (m)	17.000	
SWCP4	Outlet	Pipe (4)	Free Discharge
SWFC12	Outlet	S1.011	Hydro-Brake®
	Invert Level (m)	16.700	
	Design Depth (m)	0.750	
	Design Flow (L/s)	2.0	
	Objective	Minimise Upstream Storage Requirements	
	Application	Surface Water Only	
	Sump Available	☐	
	Unit Reference	CHE-0069-2000-0750-2000	
			
SWCP13	Outlet	S1.012	Free Discharge

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



Attenuation Basin A

Type : Pond

Dimensions

Exceedance Level (m)	17.750
Depth (m)	0.700
Base Level (m)	17.050
Freeboard (mm)	150
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.326
Total Volume (m³)	51.605

Depth (m)	Area (m²)	Volume (m³)
0.000	64.32	0.000
0.700	147.54	72.164

Outlets

Outlet

Outgoing Connection	S1.003
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	12.873
Friction Scheme	Manning's n
n	0.03



Attenuation Basin B

Type : Pond

Dimensions

Exceedance Level (m)	17.600
Depth (m)	0.900
Base Level (m)	16.700
Freeboard (mm)	150
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.503
Total Volume (m³)	41.616

Depth (m)	Area (m²)	Volume (m³)
0.000	24.98	0.000
0.900	112.08	56.992

Outlets

Outlet

Outgoing Connection	S1.010
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	12.873
Friction Scheme	Manning's n
n	0.03

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge	Date: 28/07/2026		
Report Details: Type: Stormwater Controls Storm Phase: Phase	Designed by: ARC		Checked by: DSH
Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



Permeable Paving + Cellular Storage TH

Type : Tank

Dimensions

Exceedance Level (m)	17.750
Depth (m)	0.900
Base Level (m)	16.850
Freeboard (mm)	245
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	-2.922
Total Volume (m³)	17.864

Depth (m)	Area (m²)	Volume (m³)
0.000	24.77	0.000
0.450	24.77	11.147
0.451	32.79	11.175
0.655	32.79	17.864
0.656	0.10	17.876
0.900	0.10	17.900

Outlets

Outlet

Outgoing Connection	Pipe (16)
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	20.007



Permeable Paving + Cellular Storage A

Type : Tank

Dimensions

Exceedance Level (m)	17.870
Depth (m)	0.870
Base Level (m)	17.000
Freeboard (mm)	245
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	-4.541
Total Volume (m³)	30.652

Depth (m)	Area (m²)	Volume (m³)
0.000	53.57	0.000
0.450	53.57	24.107
0.451	37.50	24.152
0.624	37.50	30.639
0.625	0.10	30.652
0.870	0.10	30.677

Outlets

Outlet

Outgoing Connection	Pipe
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	17.575

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge		Date: 28/07/2026			
Report Details: Type: Stormwater Controls Storm Phase: Phase		Designed by: ARC	Checked by: DSH		Approved By:
		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



Permeable Paving + Cellular Storage B

Type : Tank

Dimensions

Exceedance Level (m)	17.750
Depth (m)	0.950
Base Level (m)	16.800
Freeboard (mm)	245
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	-3.397
Total Volume (m³)	22.885

Depth (m)	Area (m²)	Volume (m³)
0.000	36.43	0.000
0.450	36.43	16.394
0.451	25.50	16.424
0.704	25.50	22.876
0.705	0.10	22.885
0.950	0.10	22.909

Outlets

Outlet

Outgoing Connection	S1.005
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	17.575



Permeable Paving + Cellular Storage C

Type : Tank

Dimensions

Exceedance Level (m)	17.670
Depth (m)	0.920
Base Level (m)	16.750
Freeboard (mm)	245
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	-3.123
Total Volume (m³)	12.598

Depth (m)	Area (m²)	Volume (m³)
0.000	23.57	0.000
0.450	23.57	10.607
0.451	15.90	10.626
0.574	15.90	12.582
0.575	0.10	12.588
0.820	0.10	12.612

Outlets

Outlet

Outgoing Connection	S1.007
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	17.575

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



Permeable Driveway 7

Type : Tank

Dimensions

Exceedance Level (m)	17.600
Depth (m)	0.900
Base Level (m)	16.700
Freeboard (mm)	150
Initial Depth (m)	0.000
Porosity (%)	30
Average Slope (1:X)	0.00
Total Volume (m³)	21.499

Depth (m)	Area (m²)	Volume (m³)
0.000	95.55	0.000
0.900	95.55	25.799

Outlets

Outlet

Outgoing Connection	Pipe (10)
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	8.734

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



Permeable Driveway 1-3 A

Type : Porous Paving

Dimensions

Exceedance Level (m)	18.000
Depth (m)	0.700
Base Level (m)	17.300
Paving Layer Depth (mm)	170
Membrane Percolation (m/hr)	3.0
Porosity (%)	30
Length (m)	10.568
Long. Slope (1:X)	80.00
Width (m)	3.600
Total Volume (m³)	6.180

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	150
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Outlets

Outlet

Outgoing Connection	No Delay
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	500.0
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Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge	Date: 28/07/2026			
Report Details: Type: Stormwater Controls Storm Phase: Phase	Designed by: ARC	Checked by: DSH	Approved By:	
	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



Permeable Driveway 1-3 B

Type : Porous Paving

Dimensions

Exceedance Level (m)	18.000
Depth (m)	0.700
Base Level (m)	17.300
Paving Layer Depth (mm)	170
Membrane Percolation (m/hr)	3.0
Porosity (%)	30
Length (m)	19.400
Long. Slope (1:X)	150.00
Width (m)	4.700
Total Volume (m³)	14.738

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	150
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Outlets

Outlet

Outgoing Connection	No Delay (1)
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	500.0
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Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



Permeable Driveway 1-3 C

Type : Porous Paving

Dimensions

Exceedance Level (m)	18.000
Depth (m)	0.700
Base Level (m)	17.300
Paving Layer Depth (mm)	170
Membrane Percolation (m/hr)	3.0
Porosity (%)	30
Length (m)	14.000
Long. Slope (1:X)	150.00
Width (m)	6.000
Total Volume (m³)	13.529

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	150
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Outlets

Outlet

Outgoing Connection	No Delay (2)
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	500.0
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Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



Permeable Driveway 4&5

Type : Porous Paving

Dimensions

Exceedance Level (m)	17.970
Depth (m)	0.650
Base Level (m)	17.320
Paving Layer Depth (mm)	150
Membrane Percolation (m/hr)	3.0
Porosity (%)	30
Length (m)	18.000
Long. Slope (1:X)	150.00
Width (m)	6.000
Total Volume (m³)	16.299

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Outlets

Outlet

Outgoing Connection	No Delay (4)
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	500.0
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Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
	Report Details: Type: Stormwater Controls Storm Phase: Phase		
Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



Permeable Driveway 6

Type : Porous Paving

Dimensions

Exceedance Level (m)	17.860
Depth (m)	0.750
Base Level (m)	17.110
Paving Layer Depth (mm)	150
Membrane Percolation (m/hr)	3.0
Porosity (%)	30
Length (m)	8.100
Long. Slope (1:X)	100.00
Width (m)	9.200
Total Volume (m³)	13.458

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Outlets

Outlet (1)

Outgoing Connection	No Delay (5)
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	500.0
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Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge	Date: 28/07/2026		
Report Details: Type: Inflow Summary Storm Phase: Phase	Designed by: ARC	Checked by: DSH	Approved By:
	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Access Road Ramp	SWCP3		Time of Concentration	0.001	100	0	100	0.001
Car Port 1-2 (North)	SWCP3		Time of Concentration	0.002	100	0	100	0.002
Car Port 1-2 (South)	SWCP1		Time of Concentration	0.002	100	0	100	0.002
Car Port 8-9	SWCP7		Time of Concentration	0.003	100	0	100	0.003
Driveway 1-3 A	Permeable Driveway 1-3 A		Time of Concentration	0.004	100	0	100	0.004
Driveway 1-3 B	Permeable Driveway 1-3 B		Time of Concentration	0.013	100	0	100	0.013
Driveway 1-3 C	Permeable Driveway 1-3 C		Time of Concentration	0.004	100	0	100	0.004
Driveway 4-5 A	Permeable Driveway 4&5		Time of Concentration	0.004	100	0	100	0.004
Driveway 4-5 B	Permeable Driveway 4&5		Time of Concentration	0.004	100	0	100	0.004
Driveway 6	Permeable Driveway 6		Time of Concentration	0.004	100	0	100	0.004
Driveway 7	Permeable Driveway 7		Time of Concentration	0.010	100	0	100	0.010
Driveway 8-9	Permeable Paving + Cellular Storage TH		Time of Concentration	0.003	100	0	100	0.003
Footway	SWCP2		Time of Concentration	0.004	100	0	100	0.004
Garage 7 (South)	SWCP10		Time of Concentration	0.002	100	0	100	0.002
Garage Plot 7 (North)	SWCP11		Time of Concentration	0.002	100	0	100	0.002
Impermeable Access Road	SWCP3		Time of Concentration	0.012	100	0	100	0.012
Permeable Paving A	Permeable Paving + Cellular Storage A		Time of Concentration	0.015	100	0	100	0.015
Permeable Paving B	Permeable Paving + Cellular Storage B		Time of Concentration	0.010	100	0	100	0.010
Permeable Paving C	Permeable Paving + Cellular Storage C		Time of Concentration	0.007	100	0	100	0.007
Plot 1 (North)	SWCP3		Time of Concentration	0.003	100	10	110	0.004
Plot 1 (South)	SWCP2		Time of Concentration	0.003	100	10	110	0.003
Plot 4	SWCP4		Time of Concentration	0.008	100	10	110	0.009
Plot 4-5 Car Port	Permeable Driveway 4&5		Time of Concentration	0.003	100	0	100	0.003
Plot 5	SWCP6		Time of Concentration	0.008	100	10	110	0.009
Plot 6 (North)	SWCP11		Time of Concentration	0.004	100	10	110	0.005
Plot 6 (South)	SWCP9		Time of Concentration	0.005	100	10	110	0.006
Plot 6 Car Port	Permeable Driveway 6		Time of Concentration	0.003	100	0	100	0.003
Plot 7	SWCP11		Time of Concentration	0.009	100	10	110	0.010
Plot 8	Attenuation Basin A		Time of Concentration	0.010	100	10	110	0.011
Plot 9 (North)	SWCP10		Time of Concentration	0.005	100	10	110	0.006
Plot 9 (South)	SWCP7		Time of Concentration	0.008	100	10	110	0.009
Plots 2-3 (North)	SWCP3		Time of Concentration	0.005	100	10	110	0.005
Plots 2-3 (South)	SWCP1		Time of Concentration	0.005	100	10	110	0.005

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge		Date: 28/07/2026			
Report Details: Type: Inflow Summary Storm Phase: Phase		Designed by: ARC	Checked by: DSH		Approved By:
		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			

Turning Head	Permeable Paving + Cellular Storage TH		Time of Concentration	0.005	100	0	100	0.005
TOTAL		0.0		0.193				0.201

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge	Date: 28/07/2026			
Report Title: Rainfall Analysis Criteria	Designed by: ARC		Checked by: DSH	Approved By:
Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk				

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Shortest
Urban Creep	Use Catchment Values
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall	
FEH	
Type: FEH	
Site Location	GB 512197 122842 TQ 12197 22842
Rainfall Version	2022
Summer	☒
Winter	☒

Return Period	
Return Period (years)	Increase Rainfall (%)
2.0	0.000
30.0	40.000
100.0	45.000

Storm Durations	
Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge		Date: 28/07/2026			
		Designed by: ARC	Checked by: DSH		Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWCP1	FEH: 2 years: +0 %: 30 mins: Summer	18.080	17.300	17.340	0.040	2.7	0.008	0.000	2.7	3.189	OK
SWCP2	FEH: 2 years: +0 %: 30 mins: Summer	18.120	17.200	17.245	0.045	3.8	0.051	0.000	3.8	4.146	OK
SWCP3	FEH: 2 years: +0 %: 480 mins: Summer	17.900	17.100	17.195	0.095	2.7	0.107	0.000	2.7	20.383	OK
SWCP11	FEH: 2 years: +0 %: 360 mins: Summer	17.600	16.700	16.896	0.196	3.6	0.222	0.000	3.0	53.844	OK
SWCP10	FEH: 2 years: +0 %: 360 mins: Summer	17.700	16.750	16.897	0.147	2.8	0.166	0.000	2.7	44.115	OK
SWCP9	FEH: 2 years: +0 %: 360 mins: Summer	17.900	16.850	16.897	0.047	0.7	0.009	0.000	0.7	4.205	OK
SWCP8	FEH: 2 years: +0 %: 360 mins: Summer	17.750	16.800	16.897	0.097	2.4	0.110	0.000	2.4	35.991	OK
SWCP7	FEH: 2 years: +0 %: 360 mins: Summer	17.750	16.850	16.898	0.048	1.1	0.009	0.000	1.1	6.617	OK
SWCP6	FEH: 2 years: +0 %: 15 mins: Summer	17.750	16.900	16.932	0.032	2.3	0.006	0.000	2.2	1.541	OK
SWFC5	FEH: 2 years: +0 %: 480 mins: Summer	17.870	17.000	17.195	0.195	1.4	0.221	0.000	0.6	32.398	Surcharged
SWCP4	FEH: 2 years: +0 %: 480 mins: Summer	17.900	17.150	17.195	0.045	0.4	0.009	0.000	0.4	3.012	OK
SWFC12	FEH: 2 years: +0 %: 360 mins: Summer	17.600	16.700	16.896	0.196	2.0	0.222	0.000	2.0	49.149	OK
SWCP13	FEH: 2 years: +0 %: 360 mins: Summer	17.200	16.580	16.617	0.037	2.0	0.042	0.000	2.0	49.058	OK
Outfall	FEH: 2 years: +0 %: 360 mins: Summer	17.300	16.470	16.506	0.036	2.0	0.000	0.000	2.0	49.058	OK

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWCP1	FEH: 30 years: +40 %: 480 mins: Winter	18.080	17.300	17.454	0.154	2.1	0.030	0.000	2.1	23.647	Surcharged
SWCP2	FEH: 30 years: +40 %: 480 mins: Winter	18.120	17.200	17.454	0.254	2.7	0.287	0.000	2.6	29.932	Surcharged
SWCP3	FEH: 30 years: +40 %: 480 mins: Winter	17.900	17.100	17.454	0.354	4.4	0.400	0.000	4.3	49.876	Surcharged
SWCP11	FEH: 30 years: +40 %: 480 mins: Winter	17.600	16.700	17.199	0.499	4.0	0.564	0.000	3.5	98.517	Surcharged
SWCP10	FEH: 30 years: +40 %: 480 mins: Winter	17.700	16.750	17.199	0.449	2.8	0.508	0.000	2.7	80.950	Surcharged
SWCP9	FEH: 30 years: +40 %: 480 mins: Winter	17.900	16.850	17.199	0.349	1.0	0.068	0.000	0.9	11.271	Surcharged
SWCP8	FEH: 30 years: +40 %: 480 mins: Winter	17.750	16.800	17.200	0.400	1.9	0.452	0.000	1.8	65.836	Surcharged
SWCP7	FEH: 30 years: +40 %: 480 mins: Winter	17.750	16.850	17.200	0.350	0.9	0.069	0.000	0.9	14.707	Surcharged
SWCP6	FEH: 30 years: +40 %: 480 mins: Winter	17.750	16.900	17.200	0.300	1.5	0.059	0.000	1.5	17.438	Surcharged
SWFC5	FEH: 30 years: +40 %: 480 mins: Winter	17.870	17.000	17.454	0.454	2.0	0.513	0.000	0.8	50.100	Surcharged
SWCP4	FEH: 30 years: +40 %: 480 mins: Winter	17.900	17.150	17.454	0.304	0.7	0.060	0.000	0.6	7.533	Surcharged
SWFC12	FEH: 30 years: +40 %: 480 mins: Winter	17.600	16.700	17.199	0.499	2.0	0.564	0.000	2.0	77.252	Surcharged
SWCP13	FEH: 30 years: +40 %: 5760 mins: Summer	17.200	16.580	16.617	0.037	2.0	0.042	0.000	2.0	298.220	OK
Outfall	FEH: 30 years: +40 %: 5760 mins: Summer	17.300	16.470	16.506	0.036	2.0	0.000	0.000	2.0	298.220	OK

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge		Date: 28/07/2026			
		Designed by: ARC	Checked by: DSH		Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWCP1	FEH: 100 years: +45 %: 480 mins: Winter	18.080	17.300	17.566	0.266	2.6	0.052	0.000	2.6	25.509	Surcharged
SWCP2	FEH: 100 years: +45 %: 480 mins: Winter	18.120	17.200	17.566	0.366	3.3	0.414	0.000	3.2	33.580	Surcharged
SWCP3	FEH: 100 years: +45 %: 480 mins: Winter	17.900	17.100	17.566	0.466	5.4	0.527	0.000	5.3	59.350	Surcharged
SWCP11	FEH: 100 years: +45 %: 480 mins: Winter	17.600	16.700	17.315	0.615	5.1	0.696	0.000	4.5	113.899	Flood Risk
SWCP10	FEH: 100 years: +45 %: 480 mins: Winter	17.700	16.750	17.315	0.565	3.5	0.639	0.000	3.5	91.531	Surcharged
SWCP9	FEH: 100 years: +45 %: 480 mins: Winter	17.900	16.850	17.315	0.465	1.3	0.091	0.000	1.2	13.552	Surcharged
SWCP8	FEH: 100 years: +45 %: 480 mins: Winter	17.750	16.800	17.316	0.516	2.5	0.584	0.000	2.3	73.778	Surcharged
SWCP7	FEH: 100 years: +45 %: 480 mins: Winter	17.750	16.850	17.316	0.466	1.2	0.091	0.000	0.9	18.289	Surcharged
SWCP6	FEH: 100 years: +45 %: 480 mins: Winter	17.750	16.900	17.316	0.416	2.0	0.082	0.000	1.9	22.352	Surcharged
SWFC5	FEH: 100 years: +45 %: 480 mins: Winter	17.870	17.000	17.566	0.566	2.3	0.640	0.000	0.8	51.828	Surcharged
SWCP4	FEH: 100 years: +45 %: 480 mins: Winter	17.900	17.150	17.566	0.416	0.9	0.082	0.000	0.8	9.581	Surcharged
SWFC12	FEH: 100 years: +45 %: 480 mins: Winter	17.600	16.700	17.315	0.615	2.0	0.695	0.000	2.0	85.830	Flood Risk
SWCP13	FEH: 100 years: +45 %: 10080 mins: Summer	17.200	16.580	16.617	0.037	2.0	0.042	0.000	2.0	444.725	OK
Outfall	FEH: 100 years: +45 %: 10080 mins: Summer	17.300	16.470	16.506	0.036	2.0	0.000	0.000	2.0	444.725	OK

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge		Date: 28/07/2026			
		Designed by: ARC	Checked by: DSH		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. DS Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Permeable Driveway 1-3 A	FEH: 2 years: +0 %: 30 mins: Summer	17.444	17.341	0.012	0.041	0.6	0.265	0.000	0.000	0.5	0.520	OK
Permeable Driveway 1-3 B	FEH: 2 years: +0 %: 15 mins: Summer	17.450	17.347	0.021	0.047	2.9	0.879	0.000	0.000	1.4	0.908	OK
Permeable Driveway 1-3 C	FEH: 2 years: +0 %: 120 mins: Summer	17.403	17.338	0.010	0.038	0.4	0.519	0.000	0.000	0.4	0.812	OK
Attenuation Basin A	FEH: 2 years: +0 %: 480 mins: Summer	17.195	17.195	0.145	0.145	3.2	10.355	0.000	0.000	1.0	22.539	OK
Permeable Driveway 4&5	FEH: 2 years: +0 %: 60 mins: Summer	17.460	17.354	0.020	0.034	1.5	0.887	0.000	0.000	0.9	1.725	OK
Attenuation Basin B	FEH: 2 years: +0 %: 360 mins: Summer	16.896	16.896	0.196	0.196	3.0	6.198	0.000	0.000	2.0	49.247	OK
Permeable Paving + Cellular Storage TH	FEH: 2 years: +0 %: 360 mins: Summer	16.898	16.898	0.048	0.048	0.5	1.179	0.000	0.000	0.4	2.641	OK
Permeable Paving + Cellular Storage A	FEH: 2 years: +0 %: 480 mins: Summer	17.195	17.195	0.195	0.195	1.6	10.444	0.000	0.000	0.2	7.022	OK
Permeable Paving + Cellular Storage B	FEH: 2 years: +0 %: 360 mins: Summer	16.898	16.898	0.098	0.098	1.2	3.570	0.000	0.000	0.9	23.011	OK
Permeable Driveway 6	FEH: 2 years: +0 %: 60 mins: Summer	17.209	17.137	0.018	0.027	1.0	0.492	0.000	0.000	0.7	1.165	OK
Permeable Paving + Cellular Storage C	FEH: 2 years: +0 %: 360 mins: Summer	16.897	16.897	0.147	0.147	2.8	3.466	0.000	0.000	1.9	37.461	OK
Permeable Driveway 7	FEH: 2 years: +0 %: 360 mins: Summer	16.896	16.896	0.196	0.196	1.2	5.632	0.000	0.000	0.2	4.428	OK

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge		Date: 28/07/2026	
		Designed by: ARC	Checked by: DSH
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk	



FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. DS Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Permeable Driveway 1-3 A	FEH: 30 years: +40 %: 480 mins: Winter	17.454	17.454	0.022	0.154	0.3	0.999	0.000	0.000	0.3	3.734	OK
Permeable Driveway 1-3 B	FEH: 30 years: +40 %: 480 mins: Winter	17.454	17.454	0.025	0.154	1.0	2.433	0.000	0.000	1.0	10.754	OK
Permeable Driveway 1-3 C	FEH: 30 years: +40 %: 720 mins: Summer	17.428	17.428	0.035	0.128	0.3	2.054	0.000	0.000	0.3	3.642	OK
Attenuation Basin A	FEH: 30 years: +40 %: 480 mins: Winter	17.454	17.454	0.404	0.404	5.2	34.422	0.000	0.000	1.3	36.707	OK
Permeable Driveway 4&5	FEH: 30 years: +40 %: 15 mins: Summer	17.481	17.407	0.041	0.087	8.1	2.075	0.000	0.000	3.8	2.907	OK
Attenuation Basin B	FEH: 30 years: +40 %: 480 mins: Winter	17.199	17.199	0.499	0.499	3.5	21.789	0.000	0.000	2.0	77.823	OK
Permeable Paving + Cellular Storage TH	FEH: 30 years: +40 %: 480 mins: Winter	17.200	17.200	0.350	0.350	1.1	8.663	0.000	0.000	0.3	4.081	OK
Permeable Paving + Cellular Storage A	FEH: 30 years: +40 %: 480 mins: Winter	17.454	17.454	0.454	0.454	2.3	24.248	0.000	0.000	0.2	6.552	OK
Permeable Paving + Cellular Storage B	FEH: 30 years: +40 %: 480 mins: Winter	17.200	17.200	0.400	0.400	1.7	14.585	0.000	0.000	0.9	36.857	OK
Permeable Driveway 6	FEH: 30 years: +40 %: 480 mins: Winter	17.206	17.199	0.015	0.089	0.6	1.089	0.000	0.000	0.6	6.542	OK
Permeable Paving + Cellular Storage C	FEH: 30 years: +40 %: 480 mins: Winter	17.199	17.199	0.449	0.449	2.3	10.593	0.000	0.000	1.5	63.514	OK
Permeable Driveway 7	FEH: 30 years: +40 %: 480 mins: Winter	17.199	17.199	0.499	0.499	1.3	14.306	0.000	0.000	0.1	3.424	OK

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Free Discharge		Date: 28/07/2026			
		Designed by: ARC	Checked by: DSH		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. DS Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Permeable Driveway 1-3 A	FEH: 100 years: +45 %: 480 mins: Winter	17.566	17.566	0.134	0.266	0.4	2.285	0.000	0.000	0.4	4.035	OK
Permeable Driveway 1-3 B	FEH: 100 years: +45 %: 480 mins: Winter	17.567	17.566	0.137	0.266	1.3	5.515	0.000	0.000	1.2	11.891	OK
Permeable Driveway 1-3 C	FEH: 100 years: +45 %: 1440 mins: Winter	17.482	17.482	0.089	0.182	0.1	3.401	0.000	0.000	0.5	5.453	OK
Attenuation Basin A	FEH: 100 years: +45 %: 480 mins: Winter	17.566	17.566	0.516	0.516	6.4	47.405	0.000	0.000	1.5	37.750	OK
Permeable Driveway 4&5	FEH: 100 years: +45 %: 30 mins: Summer	17.494	17.425	0.054	0.105	7.1	2.635	0.000	0.000	4.9	5.852	OK
Attenuation Basin B	FEH: 100 years: +45 %: 480 mins: Winter	17.315	17.315	0.615	0.615	4.5	30.096	0.000	0.000	2.0	86.516	OK
Permeable Paving + Cellular Storage TH	FEH: 100 years: +45 %: 480 mins: Winter	17.316	17.316	0.466	0.466	1.4	11.666	0.000	0.000	0.3	4.663	OK
Permeable Paving + Cellular Storage A	FEH: 100 years: +45 %: 480 mins: Winter	17.566	17.566	0.566	0.566	2.9	28.475	0.000	0.000	0.2	5.320	OK
Permeable Paving + Cellular Storage B	FEH: 100 years: +45 %: 480 mins: Winter	17.317	17.317	0.517	0.517	2.1	18.097	0.000	0.000	0.9	37.336	OK
Permeable Driveway 6	FEH: 100 years: +45 %: 600 mins: Winter	17.314	17.314	0.123	0.204	0.6	3.646	0.000	0.000	0.6	8.225	OK
Permeable Paving + Cellular Storage C	FEH: 100 years: +45 %: 480 mins: Winter	17.316	17.316	0.566	0.566	2.9	12.448	0.000	0.000	2.1	70.001	OK
Permeable Driveway 7	FEH: 100 years: +45 %: 480 mins: Winter	17.315	17.315	0.615	0.615	1.6	17.634	0.000	0.000	0.1	4.078	OK

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
	Report Details: Type: Junctions Storm Phase: Phase		
Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			

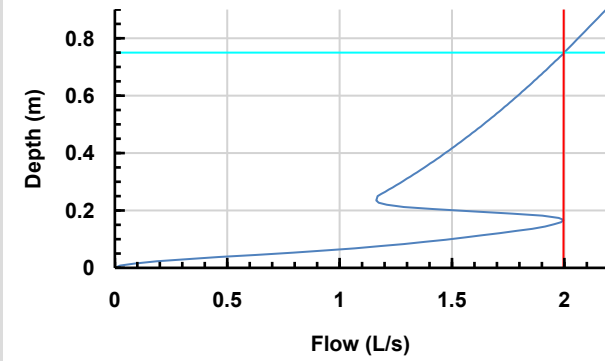


Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
SWCP1	Manhole	512191.867	122802.424	18.080	0.780	17.300	Circular	0.500
SWCP2	Manhole	512201.397	122803.691	18.120	0.920	17.200	Circular	1.200
SWCP3	Manhole	512207.927	122816.146	17.900	0.800	17.100	Circular	1.200
SWCP11	Manhole	512194.652	122874.408	17.600	0.900	16.700	Circular	1.200
SWCP10	Manhole	512196.247	122863.150	17.700	0.950	16.750	Circular	1.200
SWCP9	Manhole	512190.805	122862.419	17.900	1.050	16.850	Circular	0.500
SWCP8	Manhole	512197.680	122852.482	17.750	0.950	16.800	Circular	1.200
SWCP7	Manhole	512201.786	122852.248	17.750	0.900	16.850	Circular	0.500
SWCP6	Manhole	512192.228	122851.757	17.750	0.850	16.900	Circular	0.500
SWFC5	Manhole	512199.908	122835.892	17.870	0.870	17.000	Circular	1.200
SWCP4	Manhole	512194.457	122835.160	17.900	0.750	17.150	Circular	0.500
SWFC12	Manhole	512194.558	122885.574	17.600	0.900	16.700	Circular	1.200
SWCP13	Manhole	512219.331	122889.615	17.200	0.620	16.580	Circular	1.200
Outfall	Manhole	512222.644	122912.678	17.300	0.830	16.470	Circular	0.500

Name	Lock
SWCP1	None
SWCP2	None
SWCP3	None
SWCP11	None
SWCP10	None
SWCP9	None
SWCP8	None
SWCP7	None
SWCP6	None
SWFC5	None
SWCP4	None
SWFC12	None
SWCP13	None
Outfall	None

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall		Date: 28/07/2026			
Report Details: Type: Junctions Storm Phase: Phase		Designed by: ARC	Checked by: DSH		Approved By:
		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SWCP1	Outlet	S1.000	Free Discharge
SWCP2	Outlet	S1.001	Free Discharge
SWCP3	Outlet	S1.002	Free Discharge
SWCP11	Outlet	S1.009	Free Discharge
SWCP10	Outlet	S1.008	Free Discharge
SWCP9	Outlet	Pipe (9)	Free Discharge
SWCP8	Outlet	S1.006	Free Discharge
SWCP7	Outlet	Pipe (7)	Free Discharge
SWCP6	Outlet	Pipe (6)	Free Discharge
SWFC5	Outlet	S1.004	Orifice
	Diameter (m)	0.027	
	Coefficient of Discharge	0.600	
	Invert Level (m)	17.000	
SWCP4	Outlet	Pipe (4)	Free Discharge
SWFC12	Outlet	S1.011	Hydro-Brake®
	Invert Level (m)	16.700	
	Design Depth (m)	0.750	
	Design Flow (L/s)	2.0	
	Objective	Minimise Upstream Storage Requirements	
	Application	Surface Water Only	
	Sump Available	☐	
	Unit Reference	CHE-0069-2000-0750-2000	
			
SWCP13	Outlet	S1.012	Free Discharge

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



Attenuation Basin A

Type : Pond

Dimensions

Exceedance Level (m)	17.750
Depth (m)	0.700
Base Level (m)	17.050
Freeboard (mm)	150
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.326
Total Volume (m³)	51.605

Depth (m)	Area (m²)	Volume (m³)
0.000	64.32	0.000
0.700	147.54	72.164

Outlets

Outlet

Outgoing Connection	S1.003
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	12.873
Friction Scheme	Manning's n
n	0.03



Attenuation Basin B

Type : Pond

Dimensions

Exceedance Level (m)	17.600
Depth (m)	0.900
Base Level (m)	16.700
Freeboard (mm)	150
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.503
Total Volume (m³)	41.616

Depth (m)	Area (m²)	Volume (m³)
0.000	24.98	0.000
0.900	112.08	56.992

Outlets

Outlet

Outgoing Connection	S1.010
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	12.873
Friction Scheme	Manning's n
n	0.03

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



Permeable Paving + Cellular Storage TH

Type : Tank

Dimensions

Exceedance Level (m)	17.750
Depth (m)	0.900
Base Level (m)	16.850
Freeboard (mm)	245
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	-2.922
Total Volume (m³)	17.864

Depth (m)	Area (m²)	Volume (m³)
0.000	24.77	0.000
0.450	24.77	11.147
0.451	32.79	11.175
0.655	32.79	17.864
0.656	0.10	17.876
0.900	0.10	17.900

Outlets

Outlet

Outgoing Connection	Pipe (16)
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	20.007



Permeable Paving + Cellular Storage A

Type : Tank

Dimensions

Exceedance Level (m)	17.870
Depth (m)	0.870
Base Level (m)	17.000
Freeboard (mm)	245
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	-4.541
Total Volume (m³)	30.652

Depth (m)	Area (m²)	Volume (m³)
0.000	53.57	0.000
0.450	53.57	24.107
0.451	37.50	24.152
0.624	37.50	30.639
0.625	0.10	30.652
0.870	0.10	30.677

Outlets

Outlet

Outgoing Connection	Pipe
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	17.575

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



Permeable Paving + Cellular Storage B

Type : Tank

Dimensions

Exceedance Level (m)	17.750
Depth (m)	0.950
Base Level (m)	16.800
Freeboard (mm)	245
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	-3.397
Total Volume (m³)	22.885

Depth (m)	Area (m²)	Volume (m³)
0.000	36.43	0.000
0.450	36.43	16.394
0.451	25.50	16.424
0.704	25.50	22.876
0.705	0.10	22.885
0.950	0.10	22.909

Outlets

Outlet

Outgoing Connection	S1.005
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	17.575



Permeable Paving + Cellular Storage C

Type : Tank

Dimensions

Exceedance Level (m)	17.670
Depth (m)	0.920
Base Level (m)	16.750
Freeboard (mm)	245
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	-3.123
Total Volume (m³)	12.598

Depth (m)	Area (m²)	Volume (m³)
0.000	23.57	0.000
0.450	23.57	10.607
0.451	15.90	10.626
0.574	15.90	12.582
0.575	0.10	12.588
0.820	0.10	12.612

Outlets

Outlet

Outgoing Connection	S1.007
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	17.575

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
	Report Details: Type: Stormwater Controls Storm Phase: Phase		
Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



Permeable Driveway 7

Type : Tank

Dimensions

Exceedance Level (m)	17.600
Depth (m)	0.900
Base Level (m)	16.700
Freeboard (mm)	150
Initial Depth (m)	0.000
Porosity (%)	30
Average Slope (1:X)	0.00
Total Volume (m³)	21.499

Depth (m)	Area (m²)	Volume (m³)
0.000	95.55	0.000
0.900	95.55	25.799

Outlets

Outlet

Outgoing Connection	Pipe (10)
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	8.734

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
	Report Details: Type: Stormwater Controls Storm Phase: Phase		
Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



Permeable Driveway 1-3 A

Type : Porous Paving

Dimensions

Exceedance Level (m)	18.000
Depth (m)	0.700
Base Level (m)	17.300
Paving Layer Depth (mm)	170
Membrane Percolation (m/hr)	3.0
Porosity (%)	30
Length (m)	10.568
Long. Slope (1:X)	80.00
Width (m)	3.600
Total Volume (m³)	6.180

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	150
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Outlets

Outlet

Outgoing Connection	No Delay
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	500.0
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Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



Permeable Driveway 1-3 B

Type : Porous Paving

Dimensions

Exceedance Level (m)	18.000
Depth (m)	0.700
Base Level (m)	17.300
Paving Layer Depth (mm)	170
Membrane Percolation (m/hr)	3.0
Porosity (%)	30
Length (m)	19.400
Long. Slope (1:X)	150.00
Width (m)	4.700
Total Volume (m³)	14.738

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	150
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Outlets

Outlet

Outgoing Connection	No Delay (1)
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	500.0
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Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



Permeable Driveway 1-3 C

Type : Porous Paving

Dimensions

Exceedance Level (m)	18.000
Depth (m)	0.700
Base Level (m)	17.300
Paving Layer Depth (mm)	170
Membrane Percolation (m/hr)	3.0
Porosity (%)	30
Length (m)	14.000
Long. Slope (1:X)	150.00
Width (m)	6.000
Total Volume (m³)	13.529

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	150
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Outlets

Outlet

Outgoing Connection	No Delay (2)
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	500.0
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Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk		



Permeable Driveway 4&5

Type : Porous Paving

Dimensions

Exceedance Level (m)	17.970
Depth (m)	0.650
Base Level (m)	17.320
Paving Layer Depth (mm)	150
Membrane Percolation (m/hr)	3.0
Porosity (%)	30
Length (m)	18.000
Long. Slope (1:X)	150.00
Width (m)	6.000
Total Volume (m³)	16.299

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Outlets

Outlet

Outgoing Connection	No Delay (4)
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	500.0
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Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
	Report Details: Type: Stormwater Controls Storm Phase: Phase		
Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



Permeable Driveway 6

Type : Porous Paving

Dimensions

Exceedance Level (m)	17.860
Depth (m)	0.750
Base Level (m)	17.110
Paving Layer Depth (mm)	150
Membrane Percolation (m/hr)	3.0
Porosity (%)	30
Length (m)	8.100
Long. Slope (1:X)	100.00
Width (m)	9.200
Total Volume (m³)	13.458

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Outlets

Outlet (1)

Outgoing Connection	No Delay (5)
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	500.0
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Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall		Date: 28/07/2026			
Report Details: Type: Inflow Summary Storm Phase: Phase		Designed by: ARC	Checked by: DSH		Approved By:
		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Access Road Ramp	SWCP3		Time of Concentration	0.001	100	0	100	0.001
Car Port 1-2 (North)	SWCP3		Time of Concentration	0.002	100	0	100	0.002
Car Port 1-2 (South)	SWCP1		Time of Concentration	0.002	100	0	100	0.002
Car Port 8-9	SWCP7		Time of Concentration	0.003	100	0	100	0.003
Driveway 1-3 A	Permeable Driveway 1-3 A		Time of Concentration	0.004	100	0	100	0.004
Driveway 1-3 B	Permeable Driveway 1-3 B		Time of Concentration	0.013	100	0	100	0.013
Driveway 1-3 C	Permeable Driveway 1-3 C		Time of Concentration	0.004	100	0	100	0.004
Driveway 4-5 A	Permeable Driveway 4&5		Time of Concentration	0.004	100	0	100	0.004
Driveway 4-5 B	Permeable Driveway 4&5		Time of Concentration	0.004	100	0	100	0.004
Driveway 6	Permeable Driveway 6		Time of Concentration	0.004	100	0	100	0.004
Driveway 7	Permeable Driveway 7		Time of Concentration	0.010	100	0	100	0.010
Driveway 8-9	Permeable Paving + Cellular Storage TH		Time of Concentration	0.003	100	0	100	0.003
Footway	SWCP2		Time of Concentration	0.004	100	0	100	0.004
Garage 7 (South)	SWCP10		Time of Concentration	0.002	100	0	100	0.002
Garage Plot 7 (North)	SWCP11		Time of Concentration	0.002	100	0	100	0.002
Impermeable Access Road	SWCP3		Time of Concentration	0.012	100	0	100	0.012
Permeable Paving A	Permeable Paving + Cellular Storage A		Time of Concentration	0.015	100	0	100	0.015
Permeable Paving B	Permeable Paving + Cellular Storage B		Time of Concentration	0.010	100	0	100	0.010
Permeable Paving C	Permeable Paving + Cellular Storage C		Time of Concentration	0.007	100	0	100	0.007
Plot 1 (North)	SWCP3		Time of Concentration	0.003	100	10	110	0.004
Plot 1 (South)	SWCP2		Time of Concentration	0.003	100	10	110	0.003
Plot 4	SWCP4		Time of Concentration	0.008	100	10	110	0.009
Plot 4-5 Car Port	Permeable Driveway 4&5		Time of Concentration	0.003	100	0	100	0.003
Plot 5	SWCP6		Time of Concentration	0.008	100	10	110	0.009
Plot 6 (North)	SWCP11		Time of Concentration	0.004	100	10	110	0.005
Plot 6 (South)	SWCP9		Time of Concentration	0.005	100	10	110	0.006
Plot 6 Car Port	Permeable Driveway 6		Time of Concentration	0.003	100	0	100	0.003
Plot 7	SWCP11		Time of Concentration	0.009	100	10	110	0.010
Plot 8	Attenuation Basin A		Time of Concentration	0.010	100	10	110	0.011
Plot 9 (North)	SWCP10		Time of Concentration	0.005	100	10	110	0.006
Plot 9 (South)	SWCP7		Time of Concentration	0.008	100	10	110	0.009
Plots 2-3 (North)	SWCP3		Time of Concentration	0.005	100	10	110	0.005
Plots 2-3 (South)	SWCP1		Time of Concentration	0.005	100	10	110	0.005

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall		Date: 28/07/2026			
Report Details: Type: Inflow Summary Storm Phase: Phase		Designed by: ARC	Checked by: DSH		Approved By:
		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			

Turning Head	Permeable Paving + Cellular Storage TH		Time of Concentration	0.005	100	0	100	0.005
TOTAL		0.0		0.193				0.201

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026			
Report Title: Rainfall Analysis Criteria	Designed by: ARC		Checked by: DSH	Approved By:
Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk				

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Shortest
Urban Creep	Use Catchment Values
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall	
FEH	
Type: FEH	
Site Location	GB 512197 122842 TQ 12197 22842
Rainfall Version	2022
Summer	☒
Winter	☒

Return Period	
Return Period (years)	Increase Rainfall (%)
2.0	0.000
30.0	40.000
100.0	45.000

Storm Durations	
Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall		Date: 28/07/2026			
		Designed by: ARC	Checked by: DSH		Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWCP1	FEH: 2 years: +0 %: 30 mins: Summer	18.080	17.300	17.340	0.040	2.7	0.008	0.000	2.7	3.189	OK
SWCP2	FEH: 2 years: +0 %: 30 mins: Summer	18.120	17.200	17.245	0.045	3.8	0.051	0.000	3.8	4.146	OK
SWCP3	FEH: 2 years: +0 %: 720 mins: Summer	17.900	17.100	17.203	0.103	2.0	0.116	0.000	1.9	22.214	OK
SWCP11	FEH: 2 years: +0 %: 1440 mins: Summer	17.600	16.700	17.116	0.416	1.6	0.470	0.000	1.6	95.269	Surcharged
SWCP10	FEH: 2 years: +0 %: 1440 mins: Summer	17.700	16.750	17.116	0.366	1.3	0.414	0.000	1.3	76.993	Surcharged
SWCP9	FEH: 2 years: +0 %: 1440 mins: Summer	17.900	16.850	17.116	0.266	0.3	0.052	0.000	0.2	5.701	Surcharged
SWCP8	FEH: 2 years: +0 %: 1440 mins: Summer	17.750	16.800	17.116	0.316	0.9	0.358	0.000	0.9	63.064	Surcharged
SWCP7	FEH: 2 years: +0 %: 1440 mins: Summer	17.750	16.850	17.116	0.266	0.6	0.052	0.000	0.2	11.882	Surcharged
SWCP6	FEH: 2 years: +0 %: 1440 mins: Summer	17.750	16.900	17.116	0.216	0.4	0.042	0.000	0.4	8.963	Surcharged
SWFC5	FEH: 2 years: +0 %: 720 mins: Summer	17.870	17.000	17.203	0.203	1.1	0.229	0.000	0.5	36.240	Surcharged
SWCP4	FEH: 2 years: +0 %: 720 mins: Summer	17.900	17.150	17.203	0.053	0.3	0.010	0.000	0.3	3.330	OK
SWFC12	FEH: 2 years: +0 %: 1440 mins: Summer	17.600	16.700	17.116	0.416	2.0	0.470	0.000	1.4	103.736	Surcharged
SWCP13	FEH: 2 years: +0 %: 15 mins: Summer	17.200	16.580	17.026	0.446	4.1	0.505	0.000	0.0	3.978	Flood Risk
Outfall	FEH: 2 years: +0 %: 15 mins: Summer	17.300	16.470	17.020	0.550	4.1	0.000	0.000	4.2	5.796	Flood Risk

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWCP1	FEH: 30 years: +40 %: 720 mins: Winter	18.080	17.300	17.472	0.172	1.5	0.034	0.000	1.5	25.501	Surcharged
SWCP2	FEH: 30 years: +40 %: 720 mins: Winter	18.120	17.200	17.472	0.272	2.0	0.308	0.000	1.9	32.266	Surcharged
SWCP3	FEH: 30 years: +40 %: 720 mins: Winter	17.900	17.100	17.472	0.372	3.2	0.421	0.000	3.1	53.752	Surcharged
SWCP11	FEH: 30 years: +40 %: 960 mins: Summer	17.600	16.700	17.344	0.644	4.1	0.728	0.000	3.9	148.984	Flood Risk
SWCP10	FEH: 30 years: +40 %: 960 mins: Summer	17.700	16.750	17.344	0.594	2.9	0.672	0.000	2.9	120.266	Surcharged
SWCP9	FEH: 30 years: +40 %: 960 mins: Summer	17.900	16.850	17.344	0.494	0.7	0.097	0.000	0.5	12.795	Surcharged
SWCP8	FEH: 30 years: +40 %: 960 mins: Summer	17.750	16.800	17.344	0.544	2.1	0.616	0.000	2.0	97.092	Surcharged
SWCP7	FEH: 30 years: +40 %: 960 mins: Summer	17.750	16.850	17.344	0.494	0.8	0.097	0.000	0.7	21.309	Surcharged
SWCP6	FEH: 30 years: +40 %: 960 mins: Summer	17.750	16.900	17.344	0.444	1.3	0.087	0.000	1.3	19.740	Surcharged
SWFC5	FEH: 30 years: +40 %: 720 mins: Winter	17.870	17.000	17.472	0.472	1.4	0.534	0.000	0.6	55.787	Surcharged
SWCP4	FEH: 30 years: +40 %: 720 mins: Winter	17.900	17.150	17.472	0.322	0.5	0.063	0.000	0.5	8.135	Surcharged
SWFC12	FEH: 30 years: +40 %: 960 mins: Summer	17.600	16.700	17.344	0.644	2.0	0.728	0.000	2.0	149.630	Flood Risk
SWCP13	FEH: 30 years: +40 %: 2160 mins: Winter	17.200	16.580	17.040	0.460	4.3	0.520	0.000	5.8	248.655	Flood Risk
Outfall	FEH: 30 years: +40 %: 15 mins: Summer	17.300	16.470	17.020	0.550	4.1	0.000	0.000	4.2	5.248	Flood Risk

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall	Date: 28/07/2026		
	Designed by: ARC	Checked by: DSH	Approved By:
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWCP1	FEH: 100 years: +45 %: 960 mins: Winter	18.080	17.300	17.591	0.291	1.5	0.057	0.000	1.5	31.997	Surcharged
SWCP2	FEH: 100 years: +45 %: 960 mins: Winter	18.120	17.200	17.591	0.391	1.9	0.443	0.000	1.8	41.148	Surcharged
SWCP3	FEH: 100 years: +45 %: 960 mins: Winter	17.900	17.100	17.591	0.491	3.0	0.556	0.000	2.9	70.532	Surcharged
SWCP11	FEH: 100 years: +45 %: 960 mins: Summer	17.600	16.700	17.448	0.748	4.9	0.846	0.000	4.5	159.883	Flood Risk
SWCP10	FEH: 100 years: +45 %: 960 mins: Summer	17.700	16.750	17.448	0.698	3.4	0.790	0.000	3.4	127.942	Flood Risk
SWCP9	FEH: 100 years: +45 %: 960 mins: Summer	17.900	16.850	17.448	0.598	0.6	0.117	0.000	0.6	14.089	Surcharged
SWCP8	FEH: 100 years: +45 %: 960 mins: Summer	17.750	16.800	17.449	0.649	2.5	0.734	0.000	2.4	103.788	Surcharged
SWCP7	FEH: 100 years: +45 %: 960 mins: Summer	17.750	16.850	17.449	0.599	1.1	0.117	0.000	0.7	24.605	Surcharged
SWCP6	FEH: 100 years: +45 %: 960 mins: Summer	17.750	16.900	17.449	0.549	1.7	0.108	0.000	1.7	25.343	Surcharged
SWFC5	FEH: 100 years: +45 %: 960 mins: Winter	17.870	17.000	17.591	0.591	1.3	0.669	0.000	0.6	73.278	Flood Risk
SWCP4	FEH: 100 years: +45 %: 960 mins: Winter	17.900	17.150	17.591	0.441	0.5	0.087	0.000	0.5	11.014	Surcharged
SWFC12	FEH: 100 years: +45 %: 960 mins: Summer	17.600	16.700	17.448	0.748	2.0	0.846	0.000	2.0	149.630	Flood Risk
SWCP13	FEH: 100 years: +45 %: 4320 mins: Winter	17.200	16.580	17.040	0.460	4.3	0.521	0.000	5.9	400.301	Flood Risk
Outfall	FEH: 100 years: +45 %: 15 mins: Summer	17.300	16.470	17.020	0.550	4.1	0.000	0.000	4.3	4.514	Flood Risk

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall		Date: 28/07/2026			
		Designed by: ARC	Checked by: DSH		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. DS Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Permeable Driveway 1-3 A	FEH: 2 years: +0 %: 30 mins: Summer	17.444	17.341	0.012	0.041	0.6	0.265	0.000	0.000	0.5	0.520	OK
Permeable Driveway 1-3 B	FEH: 2 years: +0 %: 15 mins: Summer	17.450	17.347	0.021	0.047	2.9	0.879	0.000	0.000	1.4	0.908	OK
Permeable Driveway 1-3 C	FEH: 2 years: +0 %: 120 mins: Summer	17.403	17.338	0.010	0.038	0.4	0.519	0.000	0.000	0.4	0.812	OK
Attenuation Basin A	FEH: 2 years: +0 %: 720 mins: Summer	17.203	17.203	0.153	0.153	2.2	10.977	0.000	0.000	0.8	25.195	OK
Permeable Driveway 4&5	FEH: 2 years: +0 %: 60 mins: Summer	17.460	17.354	0.020	0.034	1.5	0.887	0.000	0.000	0.9	1.725	OK
Attenuation Basin B	FEH: 2 years: +0 %: 1440 mins: Summer	17.116	17.116	0.416	0.416	2.0	16.679	0.000	0.000	1.4	92.891	OK
Permeable Paving + Cellular Storage TH	FEH: 2 years: +0 %: 1440 mins: Summer	17.116	17.116	0.266	0.266	0.6	6.598	0.000	0.000	0.1	3.485	OK
Permeable Paving + Cellular Storage A	FEH: 2 years: +0 %: 720 mins: Summer	17.203	17.203	0.203	0.203	1.1	10.866	0.000	0.000	0.2	7.872	OK
Permeable Paving + Cellular Storage B	FEH: 2 years: +0 %: 1440 mins: Summer	17.117	17.117	0.317	0.317	1.0	11.534	0.000	0.000	0.6	40.083	OK
Permeable Driveway 6	FEH: 2 years: +0 %: 60 mins: Summer	17.209	17.137	0.018	0.027	1.0	0.492	0.000	0.000	0.7	1.165	OK
Permeable Paving + Cellular Storage C	FEH: 2 years: +0 %: 1440 mins: Summer	17.116	17.116	0.366	0.366	1.2	8.631	0.000	0.000	1.0	63.767	OK
Permeable Driveway 7	FEH: 2 years: +0 %: 1440 mins: Summer	17.116	17.116	0.416	0.416	1.2	11.922	0.000	0.000	0.1	4.112	OK

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall		Date: 28/07/2026	
		Designed by: ARC	Checked by: DSH
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk	



FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. DS Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Permeable Driveway 1-3 A	FEH: 30 years: +40 %: 720 mins: Winter	17.472	17.472	0.040	0.172	0.2	1.214	0.000	0.000	0.4	4.010	OK
Permeable Driveway 1-3 B	FEH: 30 years: +40 %: 720 mins: Winter	17.473	17.472	0.043	0.172	0.7	2.948	0.000	0.000	0.8	11.559	OK
Permeable Driveway 1-3 C	FEH: 30 years: +40 %: 1440 mins: Summer	17.443	17.443	0.050	0.143	0.2	2.427	0.000	0.000	0.3	4.267	OK
Attenuation Basin A	FEH: 30 years: +40 %: 720 mins: Winter	17.472	17.472	0.422	0.422	3.7	36.478	0.000	0.000	0.9	40.989	OK
Permeable Driveway 4&5	FEH: 30 years: +40 %: 15 mins: Summer	17.481	17.407	0.041	0.087	8.1	2.075	0.000	0.000	3.8	2.907	OK
Attenuation Basin B	FEH: 30 years: +40 %: 960 mins: Summer	17.344	17.344	0.644	0.644	3.9	32.381	0.000	0.000	2.0	139.379	OK
Permeable Paving + Cellular Storage TH	FEH: 30 years: +40 %: 960 mins: Summer	17.344	17.344	0.494	0.494	0.7	12.597	0.000	0.000	0.2	7.360	OK
Permeable Paving + Cellular Storage A	FEH: 30 years: +40 %: 720 mins: Winter	17.472	17.472	0.472	0.472	1.7	24.954	0.000	0.000	0.2	7.360	OK
Permeable Paving + Cellular Storage B	FEH: 30 years: +40 %: 960 mins: Summer	17.345	17.345	0.545	0.545	1.1	18.813	0.000	0.000	0.9	59.052	OK
Permeable Driveway 6	FEH: 30 years: +40 %: 960 mins: Summer	17.342	17.343	0.151	0.233	0.5	4.293	0.000	0.000	0.3	7.424	OK
Permeable Paving + Cellular Storage C	FEH: 30 years: +40 %: 960 mins: Summer	17.344	17.344	0.594	0.594	2.5	12.589	0.000	0.000	2.0	97.912	OK
Permeable Driveway 7	FEH: 30 years: +40 %: 960 mins: Summer	17.344	17.344	0.644	0.644	1.3	18.458	0.000	0.000	0.3	8.270	OK

Project: 132-2026 Cowfold Road, Coolham NetworkP2 - Surcharged Outfall		Date: 28/07/2026			
		Designed by: ARC	Checked by: DSH		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Company Address: 27 Barton Road, Thurston Bury St Edmunds Suffolk			



FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. DS Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Permeable Driveway 1 -3 A	FEH: 100 years: +45 %: 960 mins: Winter	17.592	17.591	0.159	0.291	0.2	2.573	0.000	0.000	0.3	5.077	OK
Permeable Driveway 1 -3 B	FEH: 100 years: +45 %: 960 mins: Winter	17.592	17.591	0.162	0.291	0.7	6.204	0.000	0.000	0.7	14.718	OK
Permeable Driveway 1 -3 C	FEH: 100 years: +45 %: 2160 mins: Summer	17.500	17.500	0.107	0.200	0.2	3.860	0.000	0.000	0.4	5.907	OK
Attenuation Basin A	FEH: 100 years: +45 %: 960 mins: Winter	17.591	17.591	0.541	0.541	3.5	50.530	0.000	0.000	0.9	54.299	OK
Permeable Driveway 4&5	FEH: 100 years: +45 %: 960 mins: Summer	17.459	17.449	0.019	0.129	1.0	2.235	0.000	0.000	1.0	14.472	OK
Attenuation Basin B	FEH: 100 years: +45 %: 960 mins: Summer	17.448	17.448	0.748	0.748	4.5	41.456	0.000	0.000	2.0	139.641	OK
Permeable Paving + Cellular Storage TH	FEH: 100 years: +45 %: 960 mins: Summer	17.449	17.449	0.599	0.599	1.2	16.025	0.000	0.000	0.1	7.466	OK
Permeable Paving + Cellular Storage A	FEH: 100 years: +45 %: 960 mins: Winter	17.591	17.591	0.591	0.591	1.5	29.420	0.000	0.000	0.2	8.747	OK
Permeable Paving + Cellular Storage B	FEH: 100 years: +45 %: 960 mins: Summer	17.449	17.449	0.649	0.649	1.5	21.480	0.000	0.000	0.7	59.003	OK
Permeable Driveway 6	FEH: 100 years: +45 %: 960 mins: Summer	17.445	17.445	0.254	0.335	0.6	6.578	0.000	0.000	0.3	7.249	OK
Permeable Paving + Cellular Storage C	FEH: 100 years: +45 %: 960 mins: Summer	17.449	17.449	0.699	0.699	3.0	12.600	0.000	0.000	2.3	102.766	Flood Risk
Permeable Driveway 7	FEH: 100 years: +45 %: 960 mins: Summer	17.448	17.448	0.748	0.748	1.3	21.452	0.000	0.000	0.1	7.498	OK

APPENDIX G

Surface Water Drainage Maintenance Schedule



Maintenance Plan for Drainage Systems

Site: 132/2026 – Land North of Cowfold Road, Coolham, Horsham RH13 8QJ.

Date: 28/07/2026

Regular inspection and maintenance are required to ensure the effective long-term operation of drainage infrastructure. Maintenance responsibility for systems should be placed with a suitable organisation or individual. The schedules below provide guidance on the type of operational and maintenance requirements that may be appropriate for each asset type employed on this project and indicative regularity of this maintenance. The list of actions is not exhaustive, and the frequencies suggested may alter depending on a number of variables.

CDM 2015 requires designers to ensure that all maintenance risks have been identified, eliminated, reduced and/or controlled where appropriate. This information will be required as part of the health and safety file.

1. Surface Water Systems

Inspection Chambers and Piped Networks: Operation and Maintenance Requirements

To service the surface water drainage system, it is suggested that inspection, silt removal and, if necessary, rodding of any blockages and jetting through of any blocked pipework on a minimum of two occasions per year is undertaken. It would be advisable that this maintenance occurs prior to and following the winter months such as in September and March. If further maintenance is required, it would be expected that this would also be required in the winter as this is the predominant raining season.

SuDS Element	Chambers and Piped Networks		
Maintenance Issues	Build-up of silt/debris		
Schedule	Action	Frequency	Responsibility
Regular	Remove silts and other debris from chamber/ gully	Annually (in autumn, after leaf fall)	Maintenance Company / Private Homeowner
	Check for evidence of poor operation	Three-monthly (or 48 hrs after large storms)	Maintenance Company / Private Homeowner
	Check (inlet) inspection chambers and pipework.	Annually	Maintenance Company / Private Homeowner
	Inspect silt accumulation rates and adjust cleaning frequencies accordingly.	Annually	Maintenance Company / Private Homeowner
Occasional	Remove sediment, oil, grease and floatables	As Required	Maintenance Company / Private Homeowner
Remedial	Replace malfunctioning parts or structures	As Required	Maintenance Company / Private Homeowner

Permeable Pavements: Operation and Maintenance Requirements

Regular inspection and maintenance are important for the effective operation of pervious pavements. Before handing over the facility to the Client, the surface should be inspected for clogging, litter, weeds and water ponding and all failures should be rectified. After handover, the facility should be inspected regularly, preferably during and after heavy rainfall to check effective operation and to identify any areas of ponding.

SuDS Element	Permeable Paving		
Maintenance Issues	Pervious surfaces are susceptible to silt blockage		
Schedule	Action	Frequency	Responsibility
Regular	Localised surface brushing to reduce silt accumulation.	Monthly	Maintenance Company / Private Homeowner
	Brushing and suction sweep or jet wash and suction sweep. Replace lost jointing material.	Annually (in autumn, after leaf fall)	Maintenance Company / Private Homeowner
	Check for evidence of poor operation and/or weed growth	Three-monthly (or 48 hrs after large storms)	Maintenance Company / Private Homeowner
	Check outlets and control structures.	Annually	Maintenance Company / Private Homeowner
	Inspect silt accumulation rates and adjust brushing frequencies accordingly.	Annually	Maintenance Company / Private Homeowner
Occasional	Jetting and suction where silt has accumulated in joints or voids. Replace lost jointing material and vibrate surface to lock.	As Required	Maintenance Company / Private Homeowner
	Stabilise and mow grass edges to paving at 35-50 mm and remove weeds and leaves.	As required	Maintenance Company / Private Homeowner
Remedial	Where shrinkage or surface damage occurs, uplift blocks, remove grit bedding layer and geotextile if present and reinstate to design profile.	As Required	Maintenance Company / Private Homeowner
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users and replace lost jointing material.	As Required	Maintenance Company / Private Homeowner
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 -15 years (or as required)	Maintenance Company / Private Homeowner

Note 1:

Pervious surfaces need to be regularly cleaned of silt and other sediments to preserve their infiltration capability. As suggested a minimum of three surface sweepings per year is relevant although Manufacturers' recommendations should always be followed. A brush and suction cleaner, which can be a lorry-mounted device or a smaller precinct sweeper, should be used and the sweeping regime should be as follows:

1. End of winter (April) – to collect winter debris.
2. Mid-summer (July/August) – to collect dust, flower and grass-type deposits.
3. After autumn leaf fall (November).

Materials removed from the voids or the layers below the surface may contain heavy metals and hydrocarbons and may need to be disposed of as a controlled waste. Sediment testing should be carried out before disposal to confirm its classification and appropriate disposal methods.

Note 2:

Permeable Block Pavings should be checked and cleared 48-hours after a large rainfall event.

Flow Control Chambers: Operation and Maintenance Requirements

For controlling discharge from the attenuation systems, the strategy for this development utilises 1no. of orifice plate and 1no. of Hydrobrake vortex flow control. The specified Controflow chambers are installed with a specifically designed orifice plate, protected by an in-built filter and overflow weir, and therefore require some additional maintenance. The Hydrobrake requires very little in terms of extra maintenance from what is already stated above within *Inspection Chambers and Piped Networks*.

SuDS Element	Flow Control Chambers (Orifice and Hydrobrake)		
Maintenance Issues	Build-up of silt/debris		
Schedule	Action	Frequency	Responsibility
Regular	Remove silts and other debris from chamber/ gully	Annually (in autumn, after leaf fall)	Maintenance Company
	Check for evidence of poor operation	Three-monthly (or 48 hrs after large storms)	Maintenance Company
	Check (inlet) inspection chambers and pipework.	Annually	Maintenance Company
	Inspect silt accumulation rates and adjust cleaning frequencies accordingly.	Annually	Maintenance Company
Occasional	Remove sediment, oil, grease and floatables	As Required	Maintenance Company
Remedial	Replace malfunctioning parts or structures	As Required	Maintenance Company

Above Ground Attenuation Basin

Soft landscaped open channels and basins are elements which serve a functional purpose for the conveyance and storage of surface water runoff. These are generally planted with grass and allowance for this is made within the hydraulic modelling. To ensure correct flow behaviours, this vegetation must be maintained the channel sections maintained as per the accepted design.

SuDS Element	Above Ground Basin and/or Open Channels		
Maintenance Issues	Overgrown vegetation, Blockages, Siltation		
Schedule	Action	Frequency	Responsibility
Regular	Remove litter and debris	Monthly	Maintenance Company
	Cut grass- for spillways and access routes	Monthly (during growing season), or as required	Maintenance Company
	Cut grass- meadow in and around basin.	Half yearly (Spring- before nesting season, and Autumn – prior to winter rainfall)	Maintenance Company
	Manage other vegetation and remove nuisance plants.	Monthly (at start, then as required)	Maintenance Company
	Inspect inlets, outlets and overflow for blockages and clear if required.	Monthly	Maintenance Company
	Inspect banksides, structures, pipework etc for evidence of physical damage.	Monthly	Maintenance Company
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	Monthly (for first year), then Annually (or as required)	Maintenance Company
	Check any penstock and other mechanical devices.	Annually	Maintenance Company
	Tidy all dead growth before start of growing season.	Annually	Maintenance Company
	Remove sediment from inlets, outlet and forebays (as appropriate)	Annually (or as required)	Maintenance Company
	Manage wetland plants in outlet pool- where provided.	Annually (or as required)	Maintenance Company
Occasional	Re-seed areas of poor vegetation growth.	As required	Maintenance Company
	Prune and trim any trees and remove cuttings	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided)	Maintenance Company
	Remove sediment from inlets, outlets, forebay and channels when required.	As required	Maintenance Company
Remedial	Repair erosion or other damage by reseeded or re-turfing channels/ bases.	As required	Maintenance Company
	Realignment of rip-rap/ erosion protection.	As required	Maintenance Company

SuDS Element	Above Ground Basin and/or Open Channels		
Maintenance Issues	Overgrown vegetation, Blockages, Siltation		
Schedule	Action	Frequency	Responsibility
	Repair/rehabilitation of inlets, outlets, and overflows.	As required	Maintenance Company
	Relevel uneven surfaces and reinstate design levels.	As required	Maintenance Company

Attenuation Structures: Operation and Maintenance Requirements

Attenuation systems are provided (in tandem with a flow control chamber) to control flows from the development.

SuDS Element	Underground Attenuation Structures (Cellular Storage)		
Maintenance Issues	Build-up of silt/debris		
Schedule	Action	Frequency	Responsibility
Regular	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months. Then annually	Maintenance Company
	Remove debris from the catchment (where it may cause risks to performance.	Monthly	Maintenance Company
	Remove sediment from pre-treatment structures and/or internal forebays.	Annually, or as required	Maintenance Company
Remedial	Repair/rehabilitate inlets, outlet, overflows and vents.	As required	Maintenance Company
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed.	Annually	Maintenance Company
	Survey inside of tank for sediment build-up and remove if necessary.	Every 5 years or as required	Maintenance Company

Note 1:

Regular inspection and maintenance is required to ensure the effective long-term operation of below-ground storage systems. Maintenance responsibility for systems should be placed with a responsible organisation. The above provides guidance on the type of operational and maintenance requirements that may be appropriate. The list of actions is not exhaustive and some actions may not always be required.

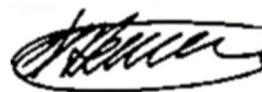
CDM 2015 requires designers to ensure that all maintenance risks have been identified, eliminated, reduced and/or controlled where appropriate. This information will be required as part of the health and safety file.

Prepared by:



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For and on behalf of G H Bullard & Associates LLP