

Technical Note – Drainage and SuDs

SITE: I Sovereign Drive, Hedge End

DATE: 16/04/2026

REFERENCE: IEP/021/106/077

- I.1. This technical note has been produced in support of the discharge of the planning condition 5 of the planning permission F/23/94675.
- I.2. Condition 5 notes the following: *“No development shall commence until details for the sustainable disposal of surface water and the disposal of foul sewerage from the development hereby permitted have been submitted to and approved in writing by the Local Planning Authority. The development shall then accord with the approved details. Reason: To ensure satisfactory provision of foul and surface water drainage”*
- I.3. Previous proposals indicate the potential use of an onsite soakaway to accommodate the surface water drainage however, upon further onsite investigation and infiltration testing, soakaways or other infiltration drainage techniques are deemed unsuitable on the site due to the very low permeability of the in-situ ground. Details of the onsite infiltration testing is provided within Appendix A of this technical note.
- I.4. As such a surface water drainage strategy has been proposed making use of lined permeable paving which will also accommodate the surface water from the roof areas, prior to discharging to the existing Southern Water public surface water sewer within Sovereign Drive and a peak restricted discharge rate.
- I.5. The proposed surface water drainage is to be restricted using a vortex flow control on the final manhole within the site and reducing the peak flow leaving the site in accordance with the National standards for sustainable drainage systems (SuDS), July 2025.
- I.6. Based on a site area of 0.0435ha, the proposed discharge from the site is to restricted to 0.2 l/s, per the greenfield calculations presented in Appendix B of this technical note.
- I.7. Attenuation is providing within the permeable sub-base within the permeable parking bays and will contain surface water up to and including the peak design storm of the 1 in 100 year plus 45% (climate change allowance). Proposed hydraulic calculations are provided within Appendix C.
- I.8. The foul water will be collected via a separate below ground drainage network and will connect to the existing southern water foul water manhole within Sovereign Drive.



I.9. The proposed connections to the Southern Water manhole will be subject to a Section 106 consent with Southern Water.

I.10.A proposed drainage plan as well as supporting drainage details are presented within Appendix D

Appendix A: Infiltration Testing to BRE 365

Date of Test:

Test Pit Dimensions: 940mm (L) x (840mm (w) x 1000mm (d)

Time of test start: 10:45

Depth of water

Time	Depth of water (mm)
9:30	440
9:45	440
10:00	440
10:15	440
10:30	440

Water levels did not drop within 1st hour of test – TEST FAILED – as such no further tests carried out.

Photos:



Start of test



End of test



Appendix B: Greenfield Run-off Assessment

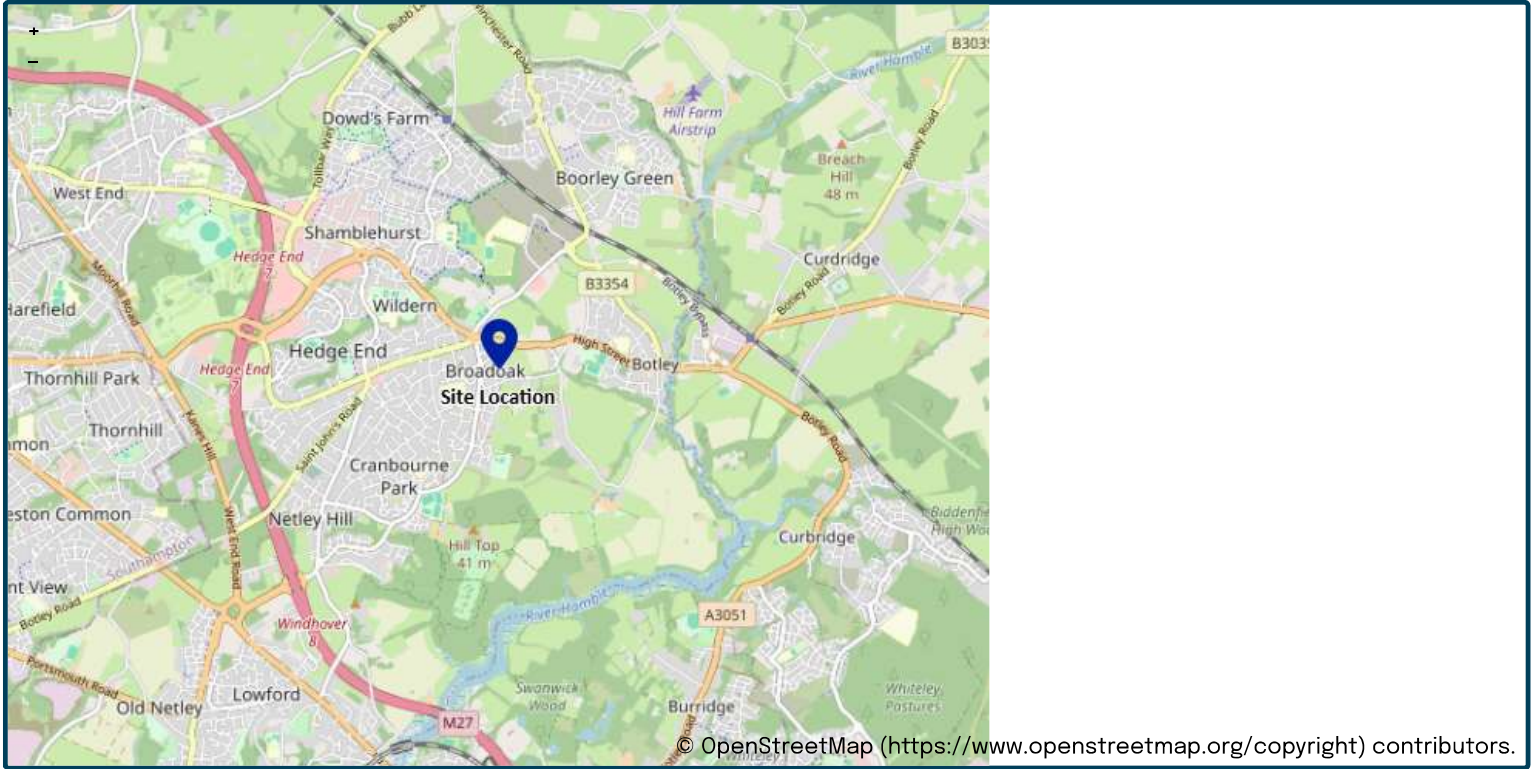
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015).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

Project details

Date	16/04/2026
Calculated by	
Reference	
Model version	2.2.3

Location

Site name	1 Sovereign Drive
Site location	



Site easting (British National Grid)	450118
Site northing (British National Grid)	112805

Site details

Total site area (ha)	0.0435	ha
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Greenfield runoff

Method

Method	IH124
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IH124

	<u>My value</u>		<u>Map value</u>
SAAR (mm)	795 mm		795
How should SPR be derived?	WRAP soil type		
WRAP soil type	4		4
SPR	0.47		
QBar (IH124) (l/s)	0.2 l/s		

Growth curve factors

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

Results

Method	IH124
Flow rate 1 year (l/s)	0.2 l/s
Flow rate 2 year (l/s)	0.2 l/s
Flow rate 10 years (l/s)	0.4 l/s
Flow rate 30 years (l/s)	0.6 l/s
Flow rate 100 years (l/s)	0.8 l/s
Flow rate 200 years (l/s)	0.9 l/s

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

Disclaimer

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



Appendix C: Proposed Hydraulic Calculations

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S1	0.010	1350	Type C	20.000	18.950	0.900	450112.894	112807.387
S2	0.000	1350	Type C	20.000	18.650	1.200	450107.935	112809.399

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S1	18.950	S2	18.650	Circ	150	5.352	18	0.600	0.900	1.200

Permeable Paving Schedule

Permeable Paving	Assigned Manhole	Effective Storage Volume (m3)	CL (m)	IL (m)	Storage Infil Rate (m/hr)	Safety Factor	Easting (m)	Northing (m)
Permeable Paving 1	S1	9.005	20.000	19.270	0.00000000	2.00	450115.373	112809.705

Outfall Details

Outfall Manhole S2 : Free Discharge

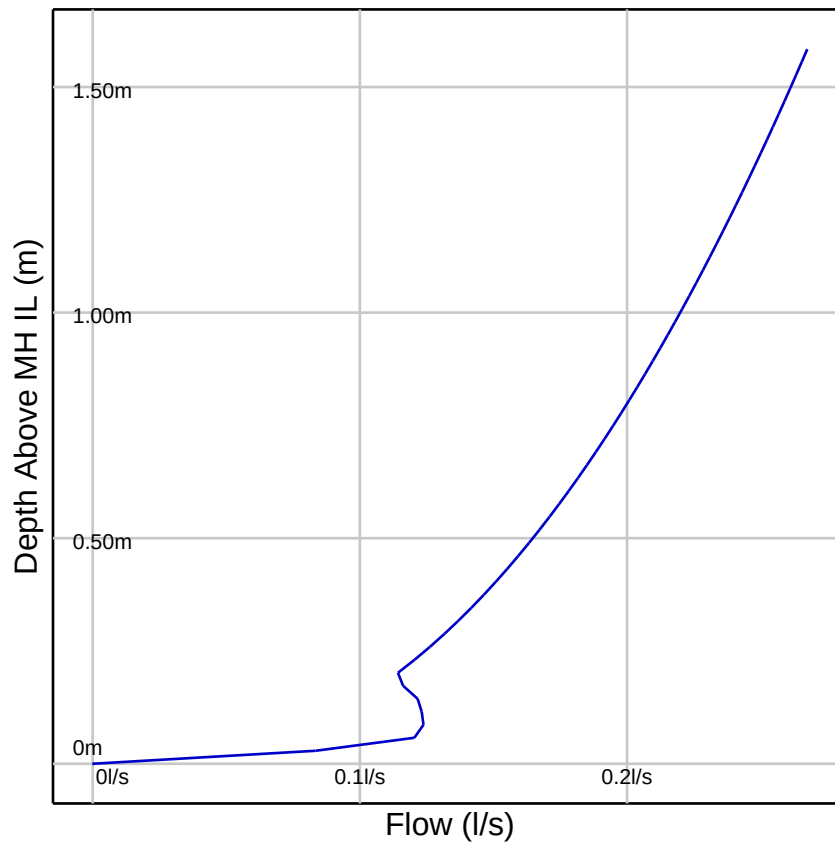
Flow Control Details

Controls within Manhole S1

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0021-2000-0800-2000	0.800	0.200	0.000	0.090	0.124	0.185	0.110

Hydro-Brake® Optimum Control from S1 to S2



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_450121_112802_v5_1_0.xml

Summer (Cv min: 0.75, max: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Periods (yrs) + Climate Change: (2, +0%), (30, +40%), (100, +45%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
2Yr 15Min Summer	32.689	0.00	0.00	30Yr+40% 960Min Summer	5.069	0.00	0.00
2Yr 30Min Summer	21.400	0.00	0.00	30Yr+40% 1440Min Summer	3.714	0.00	0.00
2Yr 60Min Summer	13.572	0.00	0.00	30Yr+40% 2160Min Summer	2.749	0.00	0.00
2Yr 120Min Summer	8.836	0.00	0.00	30Yr+40% 2880Min Summer	2.234	0.00	0.00
2Yr 180Min Summer	6.796	0.00	0.00	30Yr+40% 4320Min Summer	1.690	0.00	0.00
2Yr 240Min Summer	5.562	0.00	0.00	30Yr+40% 5760Min Summer	1.402	0.00	0.00
2Yr 360Min Summer	4.191	0.00	0.00	30Yr+40% 7200Min Summer	1.224	0.00	0.00
2Yr 480Min Summer	3.428	0.00	0.00	30Yr+40% 8640Min Summer	1.102	0.00	0.00
2Yr 600Min Summer	2.926	0.00	0.00	30Yr+40% 10080Min Summer	1.014	0.00	0.00
2Yr 720Min Summer	2.567	0.00	0.00	100Yr+45% 15Min Summer	139.931	0.00	0.00
2Yr 960Min Summer	2.093	0.00	0.00	100Yr+45% 30Min Summer	93.741	0.00	0.00
2Yr 1440Min Summer	1.578	0.00	0.00	100Yr+45% 60Min Summer	60.210	0.00	0.00
2Yr 2160Min Summer	1.200	0.00	0.00	100Yr+45% 120Min Summer	34.226	0.00	0.00
2Yr 2880Min Summer	0.992	0.00	0.00	100Yr+45% 180Min Summer	24.298	0.00	0.00
2Yr 4320Min Summer	0.769	0.00	0.00	100Yr+45% 240Min Summer	19.403	0.00	0.00
2Yr 5760Min Summer	0.648	0.00	0.00	100Yr+45% 360Min Summer	13.948	0.00	0.00
2Yr 7200Min Summer	0.573	0.00	0.00	100Yr+45% 480Min Summer	11.030	0.00	0.00
2Yr 8640Min Summer	0.520	0.00	0.00	100Yr+45% 600Min Summer	9.233	0.00	0.00
2Yr 10080Min Summer	0.482	0.00	0.00	100Yr+45% 720Min Summer	7.996	0.00	0.00
30Yr+40% 15Min Summer	108.497	0.00	0.00	100Yr+45% 960Min Summer	6.373	0.00	0.00
30Yr+40% 30Min Summer	72.252	0.00	0.00	100Yr+45% 1440Min Summer	4.651	0.00	0.00
30Yr+40% 60Min Summer	45.851	0.00	0.00	100Yr+45% 2160Min Summer	3.419	0.00	0.00
30Yr+40% 120Min Summer	26.518	0.00	0.00	100Yr+45% 2880Min Summer	2.756	0.00	0.00
30Yr+40% 180Min Summer	19.054	0.00	0.00	100Yr+45% 4320Min Summer	2.057	0.00	0.00
30Yr+40% 240Min Summer	15.238	0.00	0.00	100Yr+45% 5760Min Summer	1.689	0.00	0.00
30Yr+40% 360Min Summer	11.002	0.00	0.00	100Yr+45% 7200Min Summer	1.463	0.00	0.00
30Yr+40% 480Min Summer	8.728	0.00	0.00	100Yr+45% 8640Min Summer	1.310	0.00	0.00
30Yr+40% 600Min Summer	7.316	0.00	0.00	100Yr+45% 10080Min Summer	1.200	0.00	0.00
30Yr+40% 720Min Summer	6.341	0.00	0.00				

Simulation Results

Return Period (yrs) + Climate Change (%):

2yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	180 min Summer	120	19.289	0.339	0.140		Surcharged
S2	180 min Summer	121	18.656	0.006	0.140		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	180 min Summer	121	S1	S2	0.006	0.607	0.140	0.003	OK

Permeable Paving Storage

Permeable Paving	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Surface Runoff (m3)	Status
Permeable Paving 1	180 min Summer	121	19.289	0.019	0.062			OK

Return Period (yrs) + Climate Change (%):

30yr+40%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	120 min Summer	118	19.450	0.500	0.115		Surcharged
S2	120 min Summer	120	18.656	0.006	0.164		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	120 min Summer	120	S1	S2	0.006	0.634	0.164	0.004	OK

Permeable Paving Storage

Permeable Paving	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Surface Runoff (m3)	Status
Permeable Paving 1	120 min Summer	120	19.450	0.180	0.107			OK

Return Period (yrs) + Climate Change (%):

100yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	120 min Summer	121	19.526	0.576	0.107		Surcharged
S2	120 min Summer	121	18.656	0.006	0.174		Outfall

Conduits

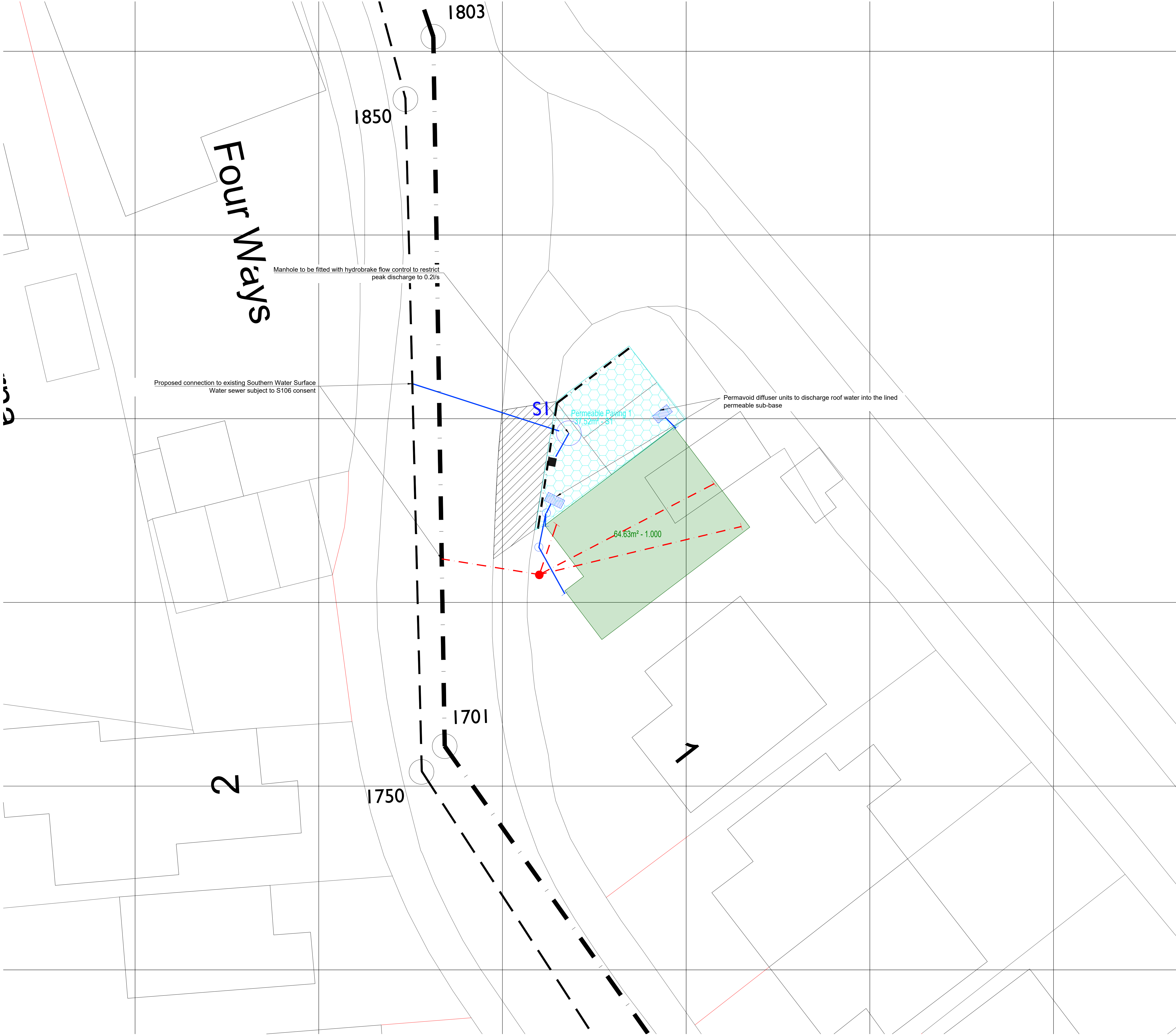
Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	120 min Summer	121	S1	S2	0.007	0.645	0.174	0.004	OK

Permeable Paving Storage

Permeable Paving	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Surface Runoff (m3)	Status
Permeable Paving 1	120 min Summer	121	19.526	0.256	0.107			OK



Appendix D: Proposed Drainage Layouts and Details



NOTES

- All dimensions are in metres unless stated otherwise.
- Do not scale from this drawing. Only written dimensions are to be used.
- PW & SW house drainage is to be constructed in accordance with the Building Regulations & BS8301 & Sewerage Sector Guidance Appendix C Design and Construction Guidance v2.3 dated November 2023.
- Drains are to be constructed using flexibly jointed vitrified clay pipes to BS EN 295-1991 "Super Strength" specification (e.g. Hepworth Supersieve or similar) or uPVC drainage pipework to BS4660 & BS2494, bedded & backfilled in accordance with manufacturers instructions.
- Location of sewers & lateral drains to be in accordance with the Sewerage Sector Guidance Appendix C Design and Construction Guidance v2.3 dated November 2023.
- Backfilling of drain trenches adjacent to dwelling or other structure to be in accordance with BS8301-Fig. 9.
- Cover levels indicated on the Drainage Schedules are nominal & may be adjusted to suit finished ground levels as necessary.
- Generally Inspection chamber covers should be Grade D400 in trafficked areas Grade B125 in parking areas and occasional traffic and A15 in pedestrian only areas.
- Rainwater downpipes to be connected direct to drain using an appropriate adaptor & removable section of downpipe to permit rodding access.
- The positions of SVP's, stub stacks, WC outlets, Back inlet gullies etc. & rainwater downpipes are to be accurately located from the house type working drawings.
- Generally FW drains are to be laid to falls of 1 in 40, SW drains are to be laid to falls of 1 in 60, both in 100mm diameter.
- SW pipes are to be 150mm diameter when serving 2 dwellings or 2 RWP connections. FW pipes are to be 150mm diameter when serving 10 dwellings or more unless stated otherwise, or where a schedule is provided.
- 100mmØ FW Drains are to be laid to minimum fall of 1 in 80 and 150mmØ FW Drains are to be laid to minimum fall of 1 in 150.
- Gullies situated in areas accessible to wheeled vehicles to be of suitable construction for trafficked areas.
- Where land drain is identified on the Architect's details, connect into nearest SW system.
- Where catchpits have been shown in rear gardens connecting to land drains, 600mm PPIC catchpit to be used.
- This drawing should be read in conjunction with the Architect's and Structural Engineer's design drawings and specification.
- Where backdrop is less than 1.0m for domestic drainage, backdrop to be accommodated with internal benching.
- All SVP and highflow connections are to connect to the main flow channel of the respective Inspection/Access Chamber in accordance with NHBC guidance.
- All footpath slabs shall have a crossfall to drain surface water into adjoining gardens.
- Drainage Design subject to further design development and confirmation of existing survey levels and existing sewer levels.
- ANY POTSMANHOLES SITUATED WITHIN PAVED AREAS TO HAVE RECESSED LIDS.
- ANY VARIANCE OR DISCREPANCY MUST BE REPORTED BACK TO IEP BEFORE WORK COMMENCES.

TYPE	DEPTH RANGE	DESCRIPTION	LOCATION	CODE	COVER GRADE
D	Depth from cover level to soffit of pipe up to 2m	Min. 450mm diameter Flexible or Rigid access chamber (Non Entry in areas subject to traffic loading. If distance from cover level to soffit of pipe is > 1m, access opening shall be restricted to 300mm Ø or 300mm x 300mm.	Road Driveway Garden	R D O	D400 B125 A15
RE					Rodding point at head of drain

KEY

- Site Boundary
- Indicative Southern Water Surface Water Sewer (from records)
- Indicative Southern Water Foul Water Sewer (from records)
- Private Surface Water Domestic Drainage
- Private Foul Water Domestic Drainage
- House connection via 300mm dia. shallow access chamber not more than 600mm deep (Based on floor make up of 300mm Jetfloor including insulation, 75mm screed and 225mm void)
In the event that conditions on-site result in maximum depth of 600mm being exceeded, then Type D chambers to be used.
- Fin Drain
- Lined Permeable Paving - min sub-base storage depth of 600mm
- Contributing roof area into the lined permeable paving

CDM NOTES

- EXISTING SERVICES: Depth of existing services must be determined prior to works commencing. The contractor is responsible for establishing underground services in accordance with HSE Guidance note HS (G) 47. Any services which would be within the proposed construction layers must be lowered to below the sub-base.

FOR INFORMATION ONLY

Scale @ A1:



Scale 1:100

Project: 1 Sovereign Drive Hedge End

Title: Domestic Drainage Layout & Area Catchment Plan

Client:

Date: April 2026

Drawn by: TRS

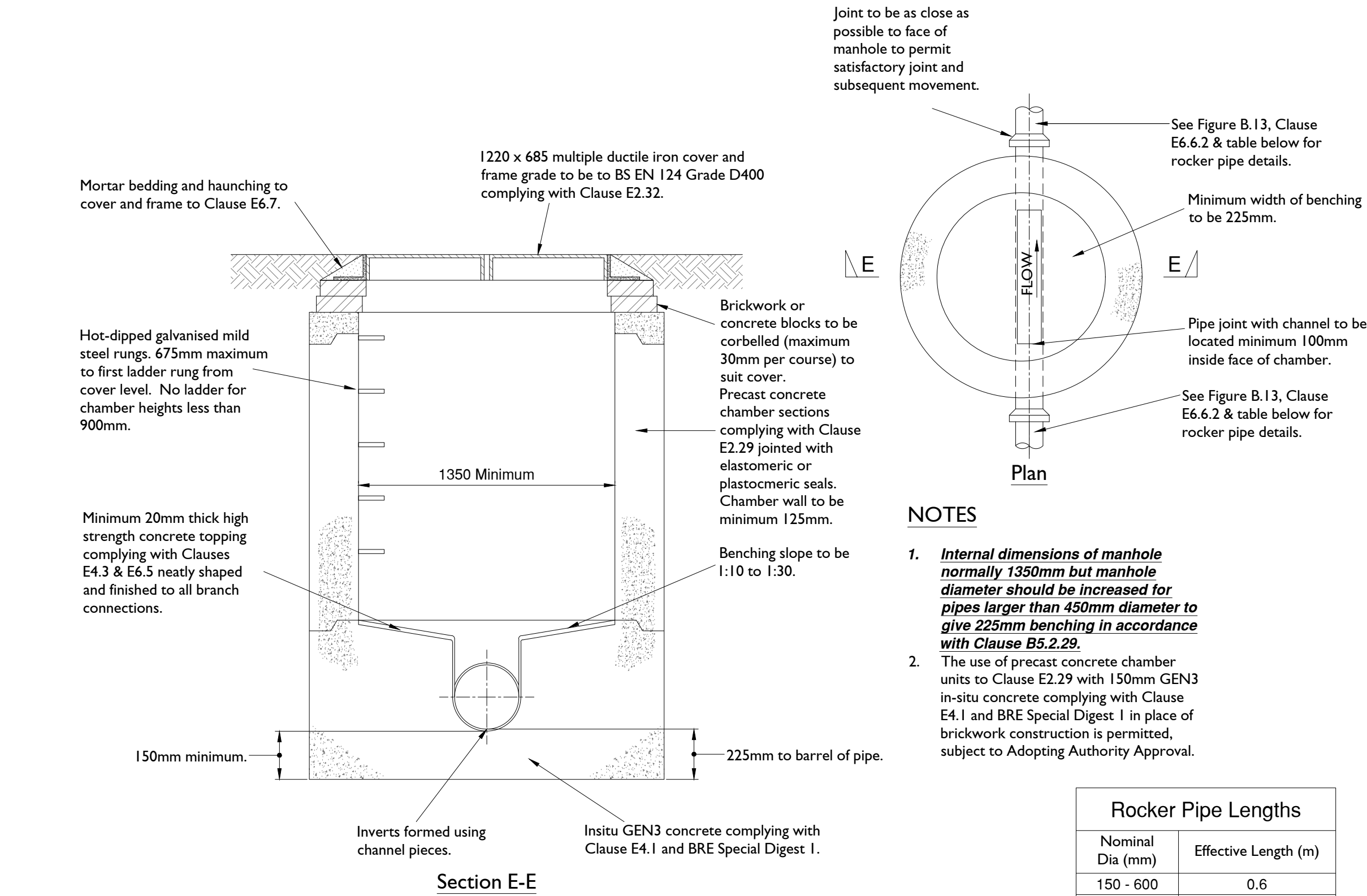
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Authorised by: TRS

Dwg No: IEP_021_0106_451

Rev:

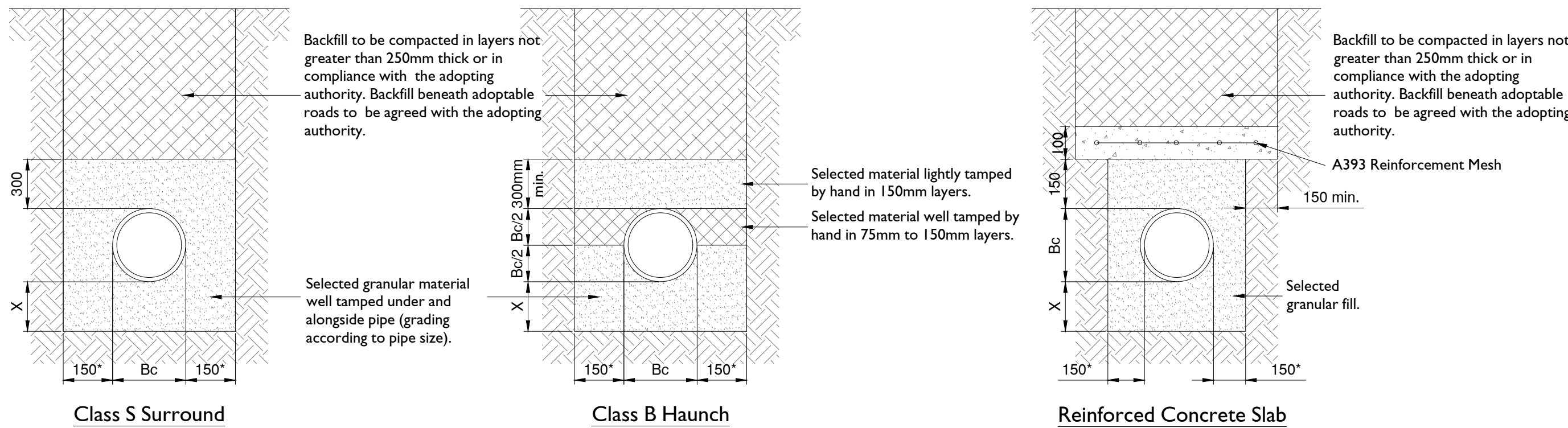




Type C Manhole

Depth from cover level to soffit of pipe less than 1.5m

Based on Figure B15 - SSG Appendix C Design and Construction Guidance v2.3 (Maximum sewer diameter of 450mm)



* = 150mm for pipe diameters up to 300mmØ and 200mm for larger pipes.

Bc = outside dia. of pipe X= 100mm min. for pipes 100mmØ or less, 150mm min for larger pipes or 200mm for trenches in rock.

Concrete to be Grade C16/20 placed in one operation. Where pipes with flexible joints are used, concrete protection shall be interrupted over its full cross section at each joint by a shaped compressible filler.

Concrete to sulphate resisting class DS-I of Table C2 of BRE Special Digest 1:SD1 Part C (2005) ACEC class AC-1s

To be provided where the minimum depth of pipe cover to the crown of gravity pipes is less than:

- domestic driveways, parking areas and yards with height restrictions to prevent entry by vehicles with a gross weight in excess of 7.5 tonnes, 0.5m;
- domestic driveways, parking areas and narrow streets without footways (e.g., mews developments) with limited access for vehicles with a gross weight in excess of 7.5 tonnes, 0.9m;
- other highways and parking areas with unrestricted access to vehicles with a gross vehicle weight in excess of 7.5 tonnes, 1.2m.

CHAMBER DIAMETERS		CRITICAL PIPE LENGTHS		BEDDING MATERIAL SIZE		
PIPE SIZE mm	CHAMBER DIAMETER mm	(for entering and leaving manholes) First joint as close as practicable		NOMINAL DIAMETER mm	SINGLE SIZE mm	GRADED mm
< 375	1200	NOMINAL DIAMETER mm	EFFECTIVE LENGTH m	100 to 125	10	-
375-450	1350			150 to 200	10 or 14	14 to 5
500-700	1500	150 to 600	0.6	225 to 300	10,14 or 20	14 to 5 or 20 to 5
750-900	1800	601 to 750	1.00	375 to 500	14 or 20	14 to 5 or 20 to 5
> 900	Pipe Diameter + 900	750 and over	1.25	>500	14,20 or 40	14 to 5 or 20 to 5 or 40 to 5
VITRIFIED CLAY PIPES to be to extra strength to BS EN 295 or BS65 size as shown on section drawing. Refer also to Clauses E2.18.1 & E2.18.2.						
CONCRETE PIPES to be to BS5911 Class of pipe and size as shown on section drawing. Refer also to Clauses E2.9.2, E2.29, E2.19.1 & E2.19.3.						

Pipe Bedding Details

- This drawing should be read in conjunction with other Domestic Drainage Construction Details, Highways and Drainage Longitudinal Sections , Domestic Drainage Layouts) and Manhole Schedules.
- All dimensions are in millimetres unless stated otherwise.
- Do not scale from this drawing. Only written dimensions are to be used.
- 150mm diameter pipework to be extra strength vitrified clay to BS EN 295 or BS 65 on Class S bed & surround.
- 225mm diameter pipework to be extra strength vitrified clay to BS EN 295 or BS 65 or concrete Class M to BS5911 on Class S bed & surround.
- 300mm diameter and greater pipework to be concrete Class M to BS5911 on Class B bed.
- All construction to be in accordance with SSG Appendix C Design and Construction Guidance Approved Version 2.3 dated November 2023
- Where insufficient cover is available to pipes, Reinforced Concrete Slab Protection should be used. Where pipes with flexible joints are used the concrete protection shall be interrupted across its full cross-section with a compressible filler.
- Stopped connection end of pipe to have suitable stopper applied and connected to wire which is to be connected to a stake marking the end of the pipe at ground level if laterals are to be buried during construction phase.
- Refer to geotechnical report for sulphate resisting class and ACEC class.
- Where manhole is located within soft landscaping or private drives, B125 covers may be used.
- Where catchpits are indicated, base of chamber is to be formed with a 600mm sump and not branched with chamber.
- Outgoing pipes greater than 600mm diameter should be fitted with guard bars, safety chains [to BS EN 818-3] or other safety devices in accordance with the AWIN safety policy.
- In the event that the on-site contractor have a preference as a business to use plastic pipes instead, then confirmation from the supplier should be obtained that the guarantee of the product is not affected considering the ground reports. They must comply with the following requirements for plastic pipes:
 - SSG Appendix C Design and Construction Guidance Approved Version 2.3 dated November 2023 Clauses E2.21, E2.22 & SN8;
 - Solid Wall PVC-U to BS EN 1401;
 - Spiral Wound Welded HDPE to EN 13476 Parts 1 & 2;
 - Structure-wall Thermoplastic to EN 13476 Parts 1 & 3;
 - Polypropylene to BS EN 1852.

**SUBJECT TO ADOPTING
AUTHORITY APPROVAL**

CDM NOTES

- EXISTING SERVICES.** Depth of existing services must be determined prior to works commencing. The contractor is responsible for establishing underground services in accordance with HSE Guidance note HS (G) 47. Any services which would be within the proposed construction layers must be lowered to below the sub-base.

Rev Note

PRELIMINARY ISSUE

Scale @ A1:

Not to scale

Project:

I Sovereign Drive
Hedge End

Title:

S104 Drainage Construction Details
Sheet 1

Client:

Date: April 2026

Drawn by: TRS

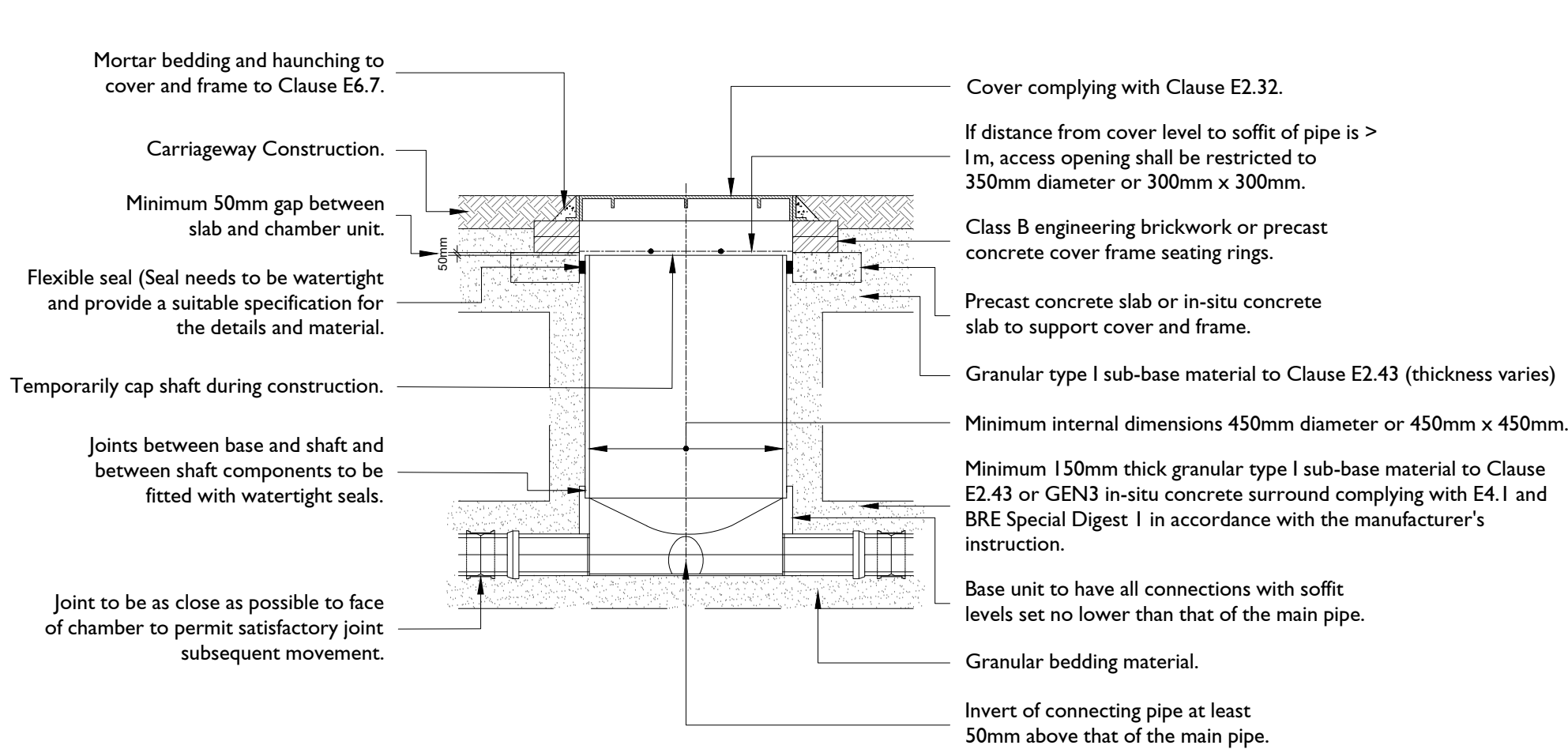
Checked by: LAD

Authorised by: TRS

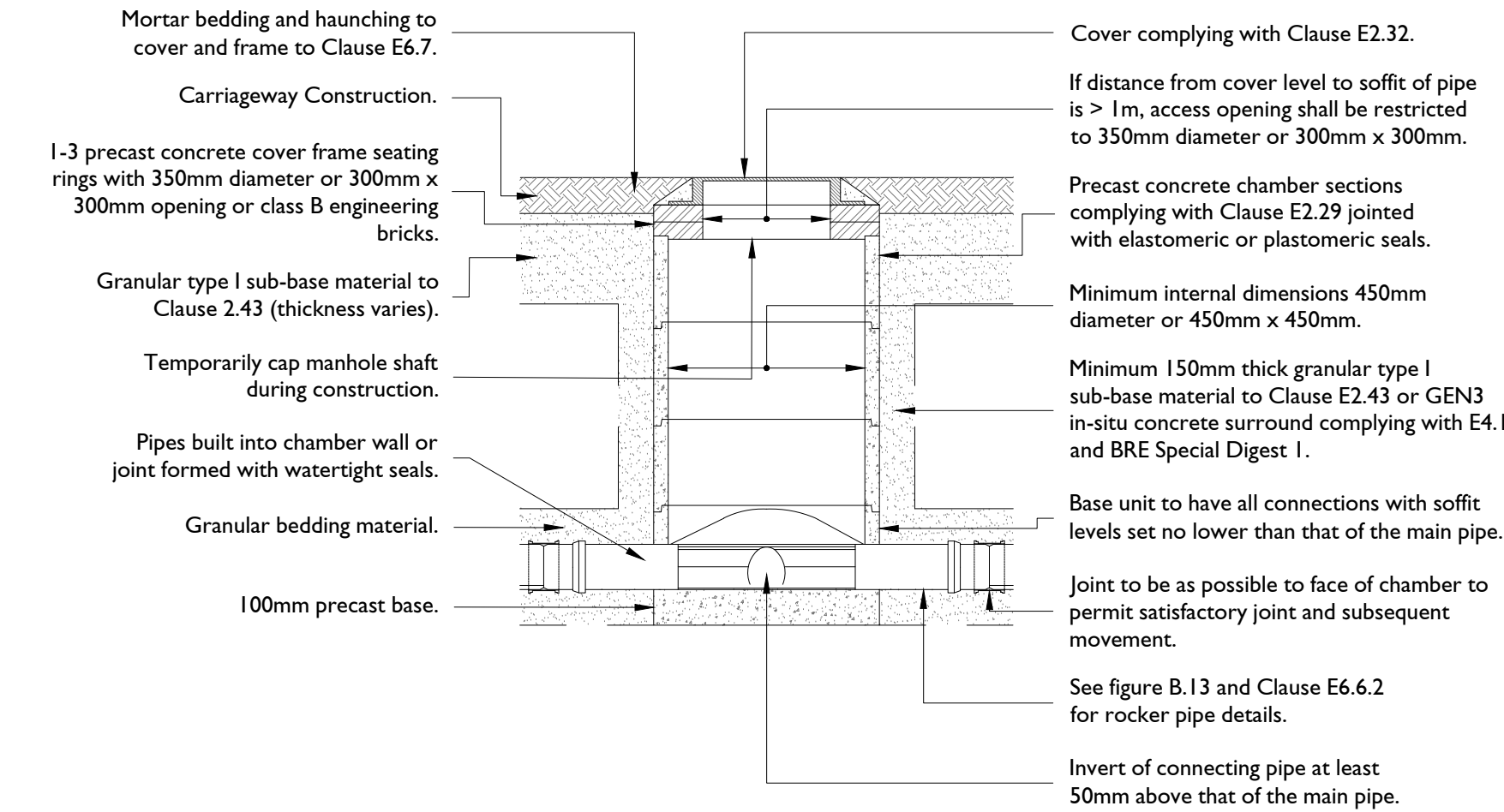
Org No: IEP_021_0106_10

Rev:

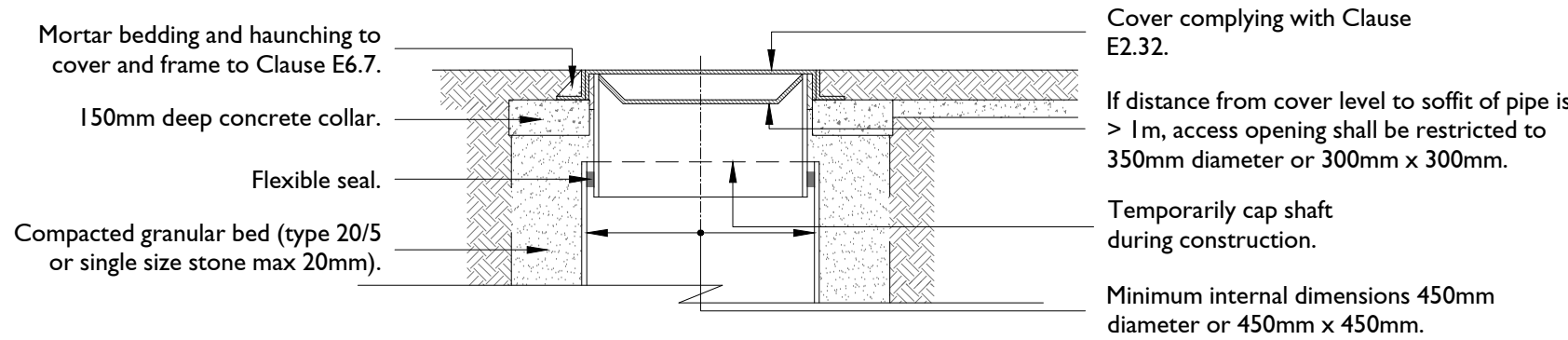




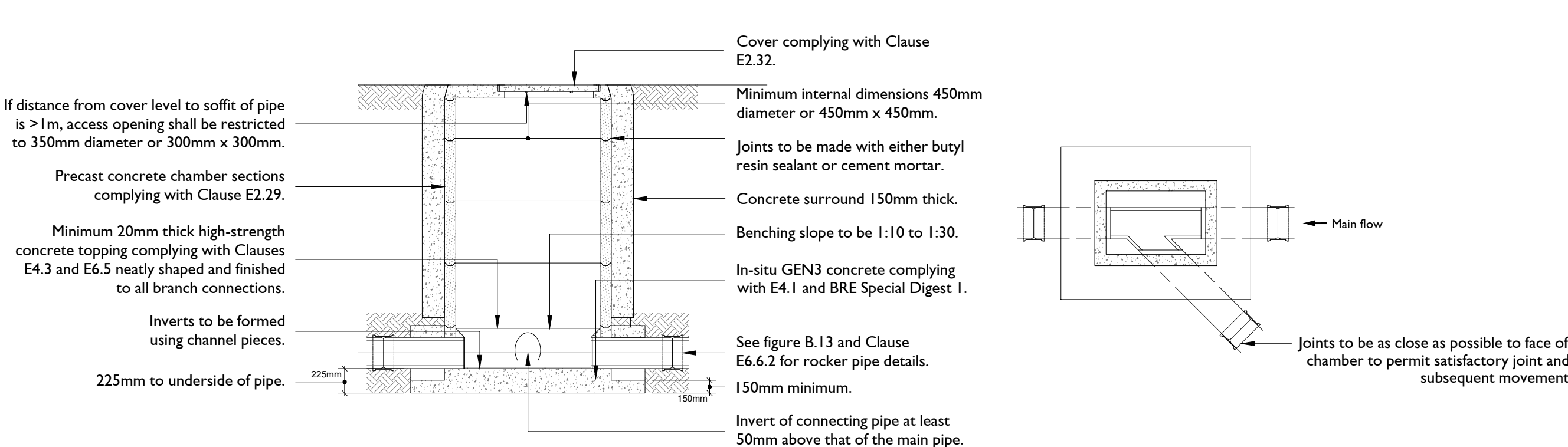
Typical Inspection Chamber Detail - Type D
Based on Figure B18 - SSG Appendix C Design and Construction Guidance v2.3
Depth from cover level to soffit of pipe up to 3m
Flexible material construction for use in areas subject to vehicle loading



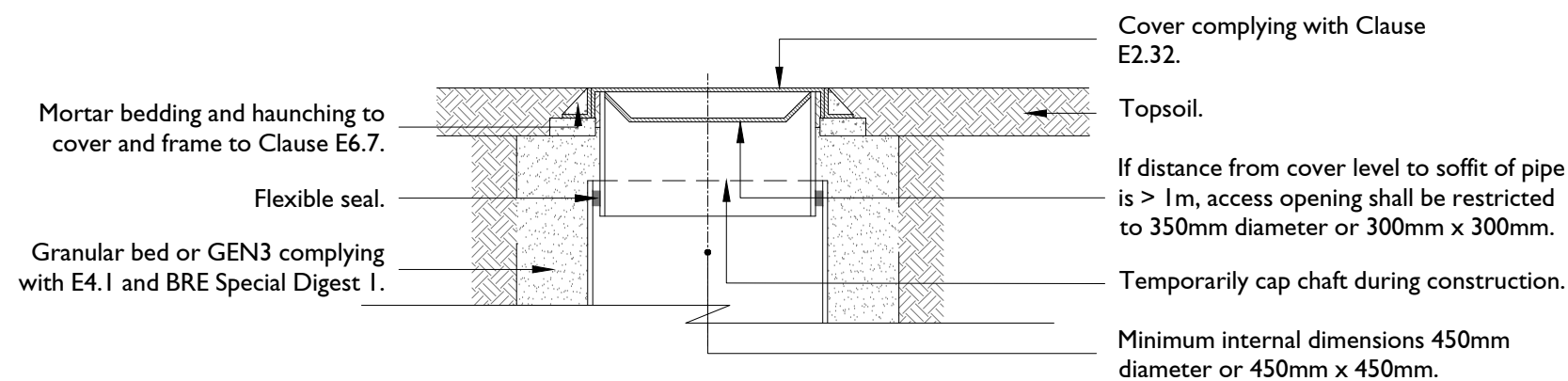
Typical Inspection Chamber Detail - Type D
Based on Figure B20 - SSG Appendix C Design and Construction Guidance v2.3
Depth from cover level to soffit of pipe up to 3m
Rigid material construction for use in areas subject to vehicle loading



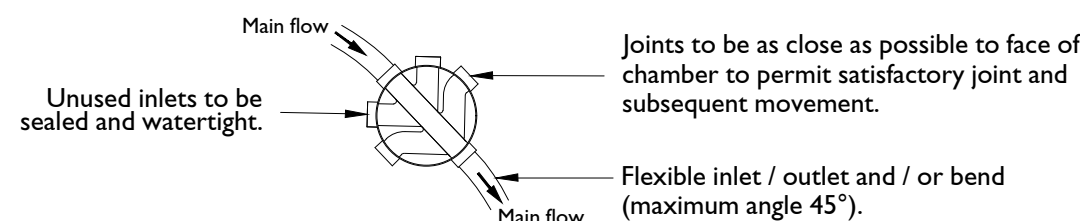
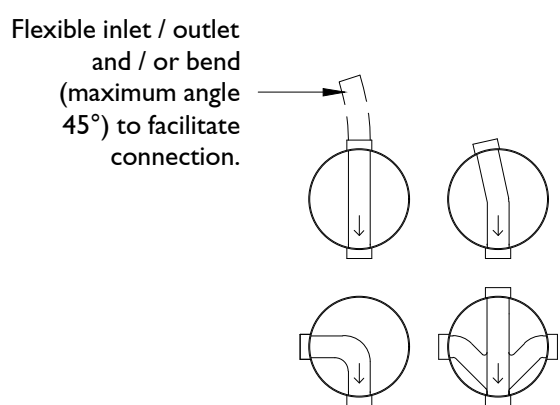
Sited In Domestic Driveways Or Footways
Based on Figure B19 - SSG Appendix C Design and Construction Guidance v2.3



Typical Inspection Chamber Detail - Type D
Based on Figure B21 - SSG Appendix C Design and Construction Guidance v2.3
Depth from cover level to soffit of pipe up to 3m
Rigid material construction for use in areas subject to vehicle loading or landscaped areas



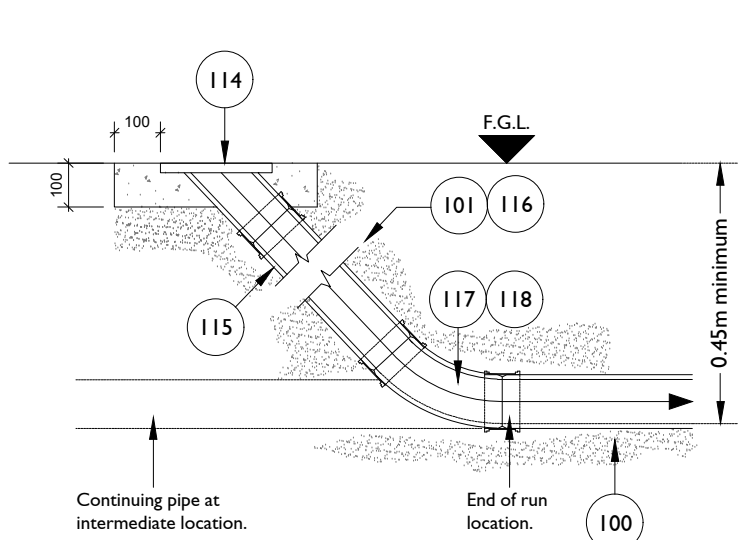
Sited In Domestic Gardens
Based on Figure B19 - SSG Appendix C Design and Construction Guidance v2.3



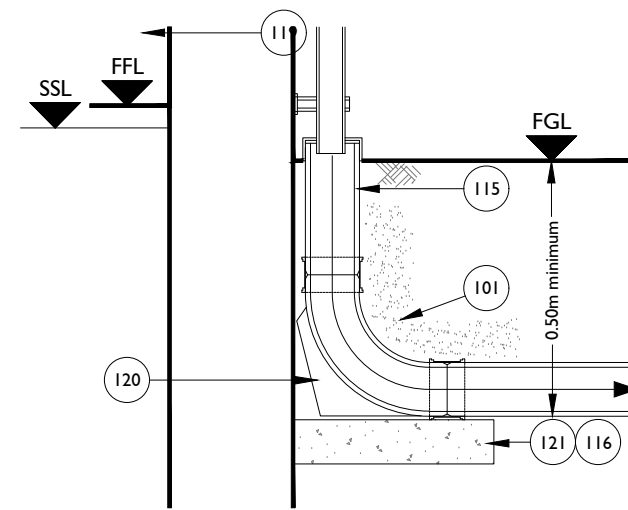
Where chambers are positioned on 90° corners, always use the main channel by fitting a 45° bend on the inlet and outlet.

Typical Base Layouts For Type D Chambers
Based on Figure B22 - SSG Appendix C Design and Construction Guidance v2.3

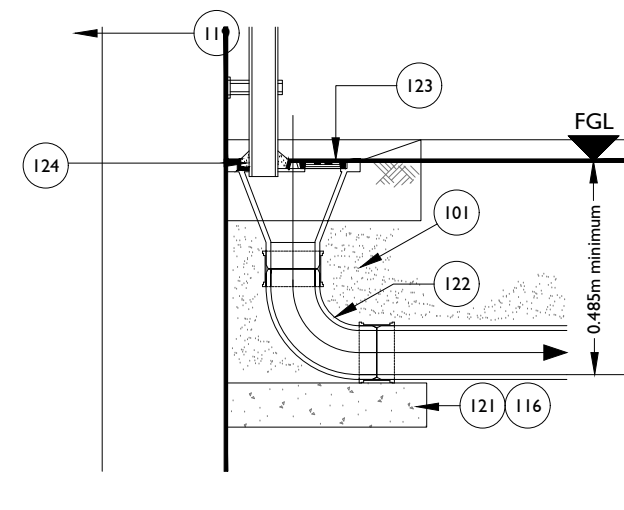
- | | | | |
|-----|--|-----|---|
| 100 | Granular bedding material | 121 | 100mm bed of selected as dug or granular material: if ground conditions unstable (Site Control to confirm) use 100mm bed of GEN 4 Designated Mix in situ concrete. |
| 101 | Compacted backfill - As-dug or granular bedding material | 122 | Short radius 90 degree bend. |
| 108 | Class B engineering brickwork, concrete blocks 4 courses maximum or 2 courses minimum, or precast concrete cover frame seating rings | 123 | Square hopper with back inlet and alloy grid or sealing plate. |
| 114 | Grade C light duty oval cover, sealing ring and rodding eye in 100mm in situ concrete surround set level with finished ground level. Where located in areas subjected to vehicle loading, cover to be Hepworth square rodding point product code SRPSI/, concrete surround to be increased to 150mm and laid below surface course. | 124 | Cement mortar joint/infill. |
| 115 | Pipe cut to required length. | 125 | Minimum 150mm thick GEN 4 concrete surround. |
| 116 | Concrete bed and surround will be required where inspection chambers are installed in soft landscaped areas subjected to heavy construction traffic. | 126 | Rubber plug. |
| 117 | 45 degree bend. | 127 | Catchment bucket. |
| 118 | Oblique 45 degree junction. | 128 | Round or square road gully with grating and frame to BS EN 124, Grade B as detailed on drainage layout and schedules, set in 1:3 cement and sand mortar centrally over gully chamber. |
| 119 | PVCu rainwater down pipe, (CS) | 129 | Round or square gully grid; black cast iron to drives with a bituminous surface and alloy finish elsewhere. |
| 120 | Rest bend, for use up to two storey only. | 130 | Minimum 100mm thick GEN4 concrete surround. |



Rodding Point
100 or 150mm dia. connections.



Direct Rainwater Connection



Direct Rainwater Connection through Gully

CDM NOTES

- I. **EXISTING SERVICES.** Depth of existing services must be determined prior to works commencing. The contractor is responsible for establishing underground services in accordance with HSE Guidance note HS (G) 47. Any services which would be within the proposed construction layers must be lowered to below the sub-base.

Rev Note

FOR INFORMATION ONLY

Scale @ A1:

Not to Scale

Rev Date Drawn Checked Authorised

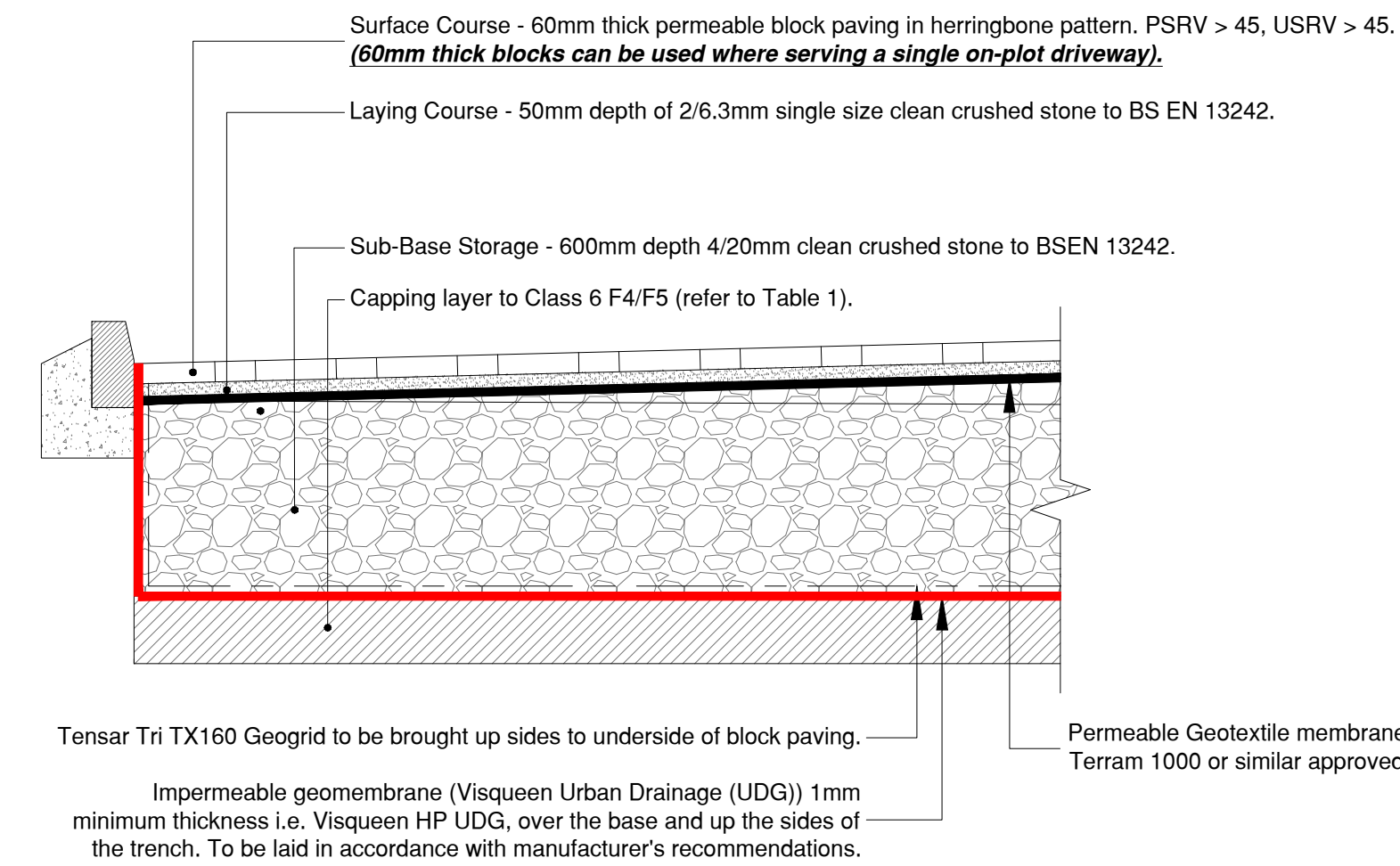
Project: I Sovereign Drive Hedge End

Title: Domestic Drainage Construction Details Sheet 1

Client:

Date: April 2026 Drawn by: TRS
Checked by: LAD Authorised by: TRS
Org No: IEP_021_106_460 Rev:





Typical Lined Permeable Block Paving Private Driveway Construction

Table 1	
CBR value (%)	Capping Layer Thickness
1%	320
2%	200
3%-4%	100

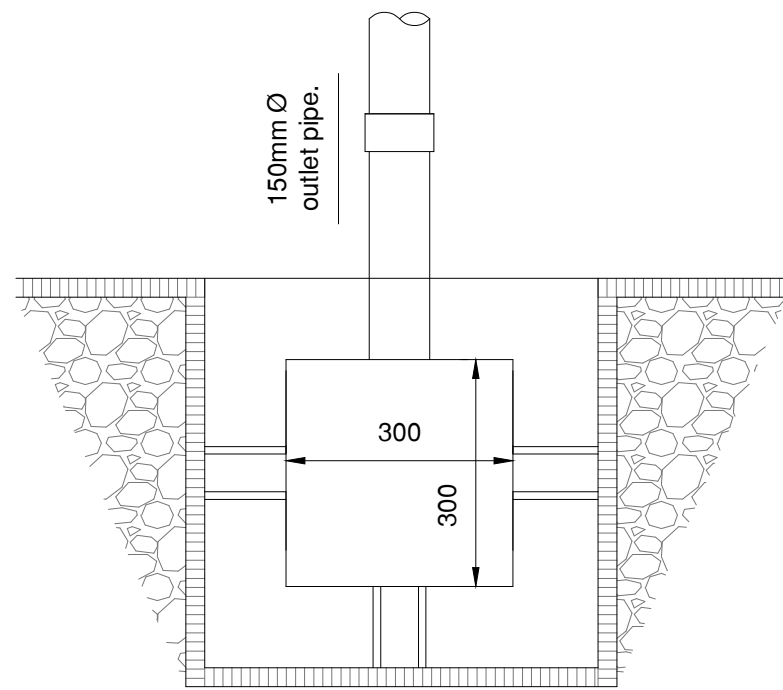
CBR values to be confirmed on site with further testing.

Typical Particle Size Distribution Limits for Laying Course Material	
Sieve Size	% Passing
14mm	100
10mm	98-100
6.3mm	80-99
2.0mm	0-20
1.0mm	0-5

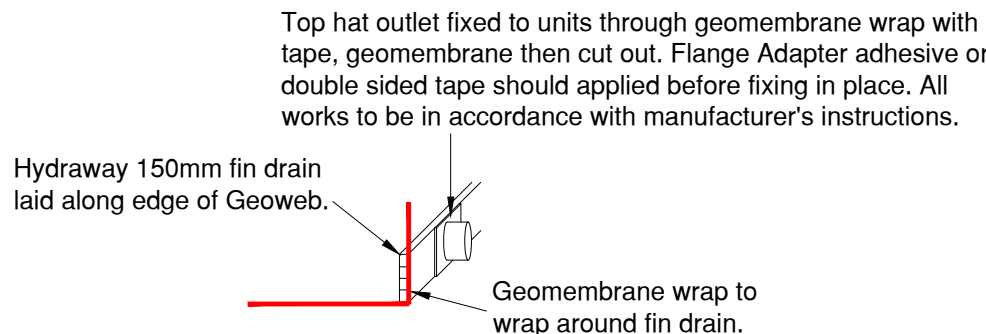
Typical Particle Size Distribution Limits for Type 4/20 coarse graded material

Sieve Size	% Passing
40mm	100
31.5mm	98-100
20mm	90-99
10mm	25-70
4mm	0-15
2mm	0-5

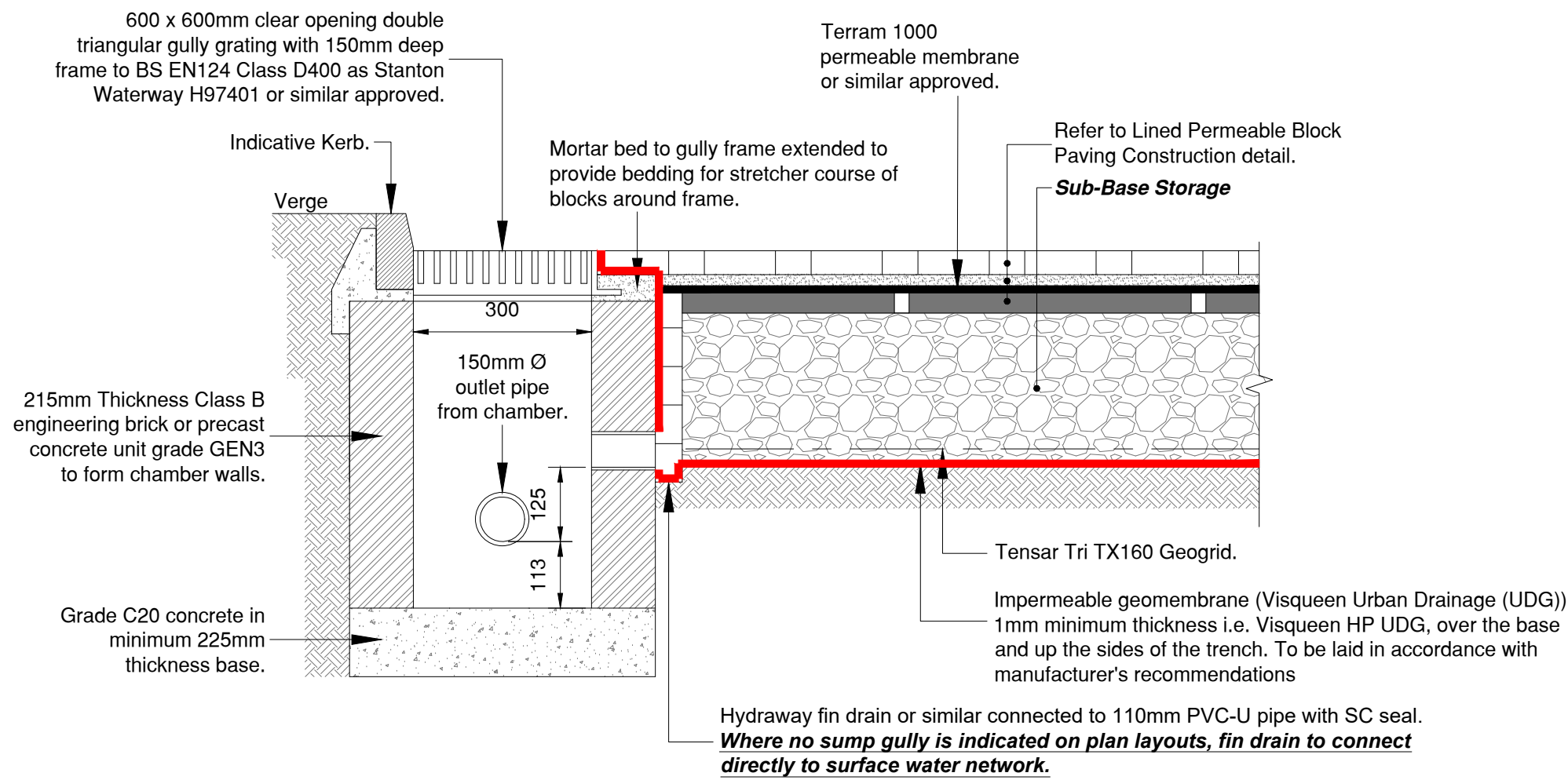
* Specification for sub-base and laying course:- the crushed stone must possess well defined edges and have a minimum 10% fines value of 150kN when tested in accordance with BS812 Part iii.



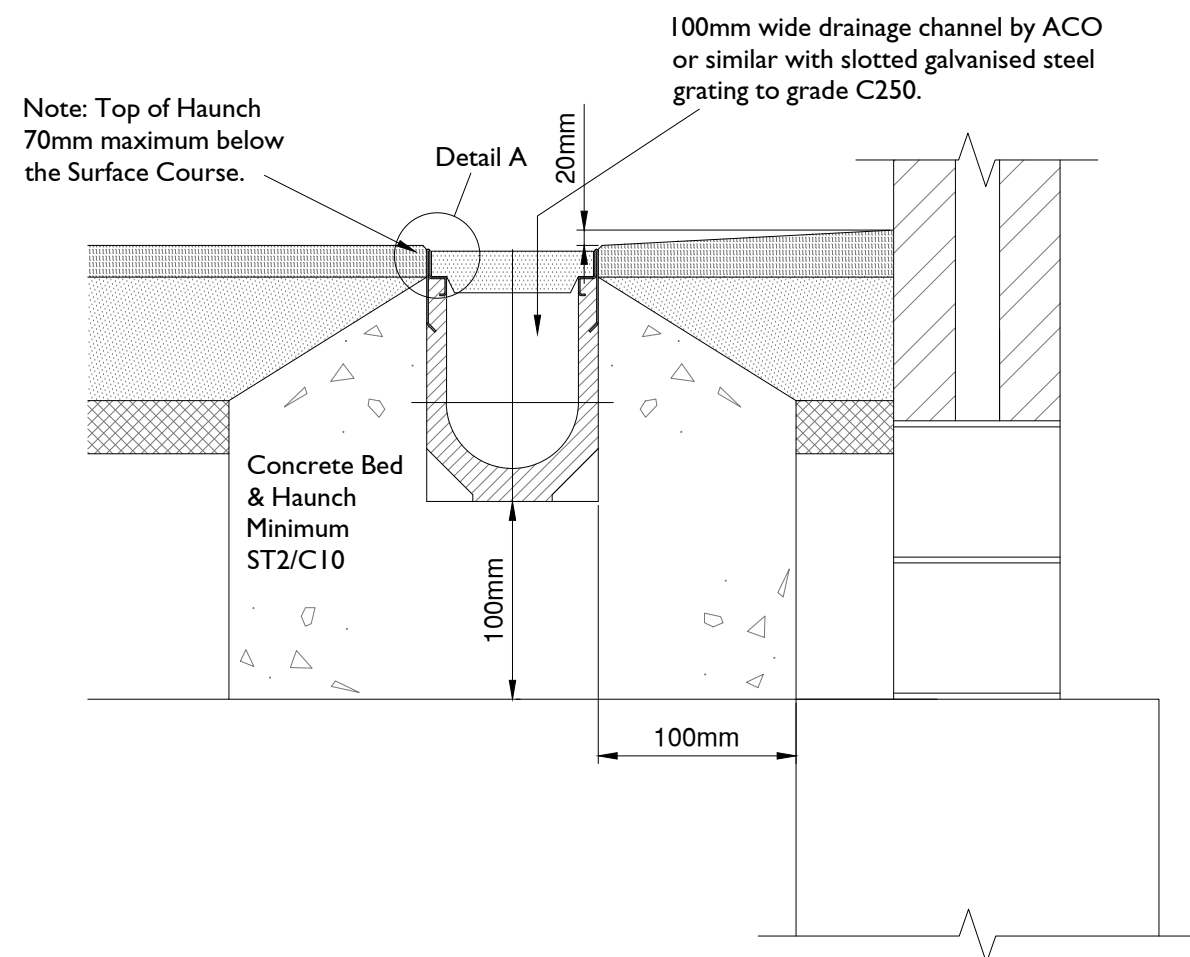
Typical Sump Gully Plan



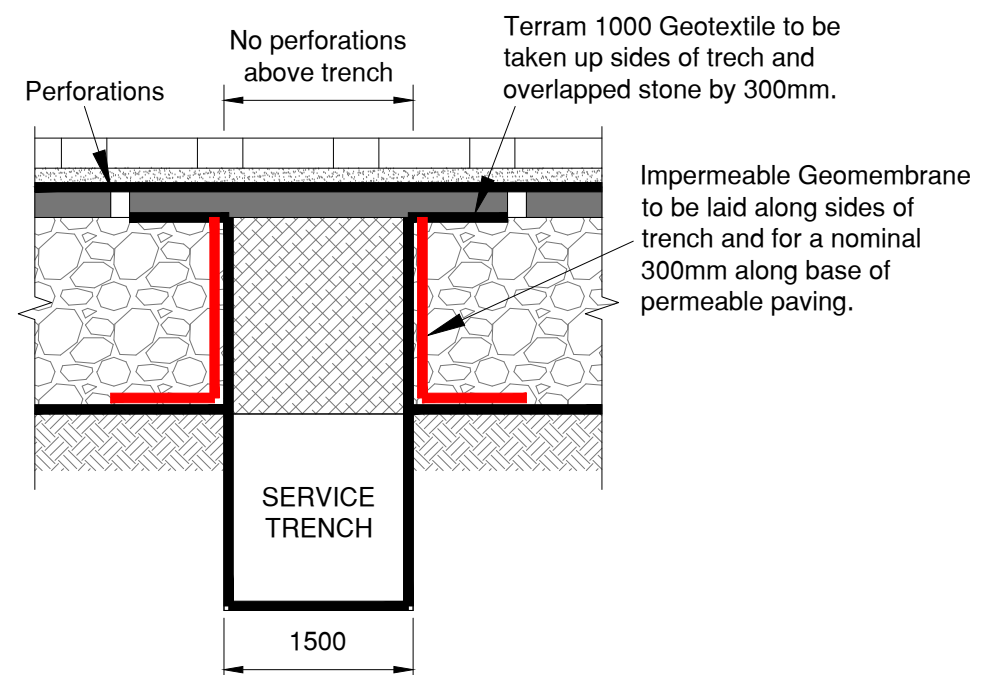
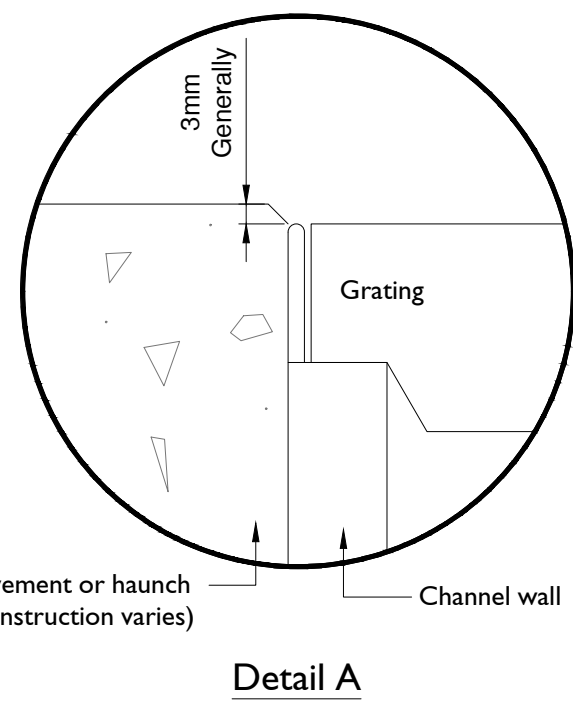
Typical Fin Drain Detail



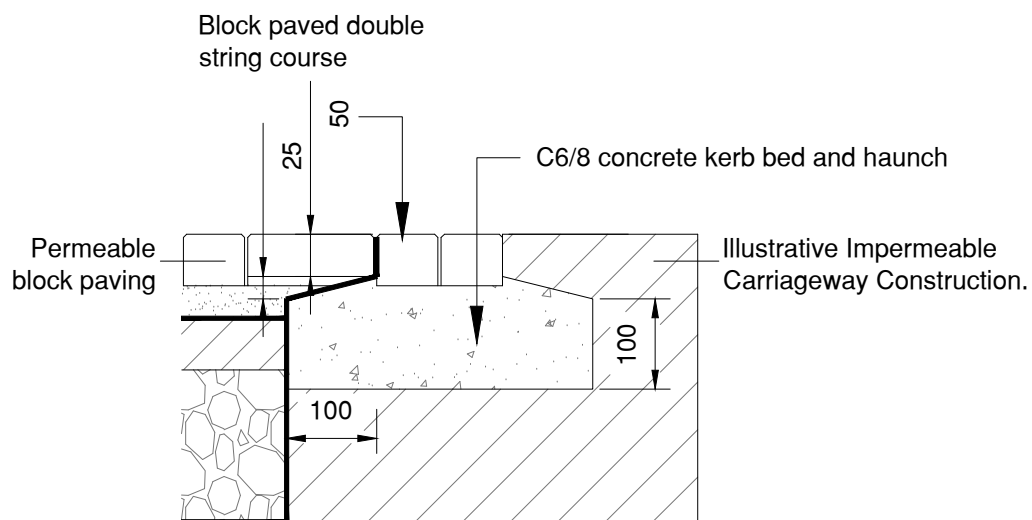
Typical Section Through Permeable Block Paving With Sump Gully



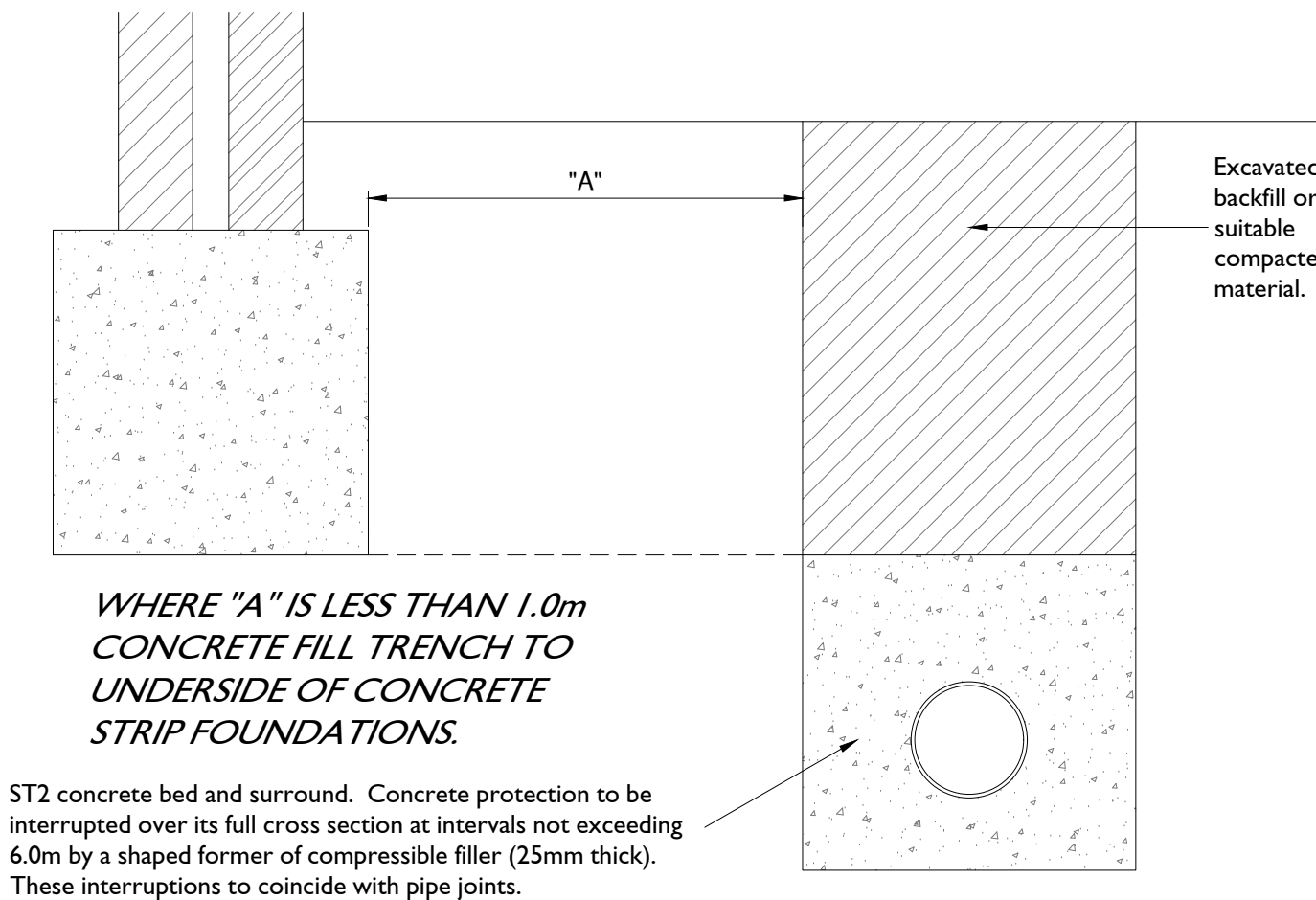
Channel Drainage Construction Typical Detail



Typical Section Through Service Trench Where Located in Permeable Block Paving

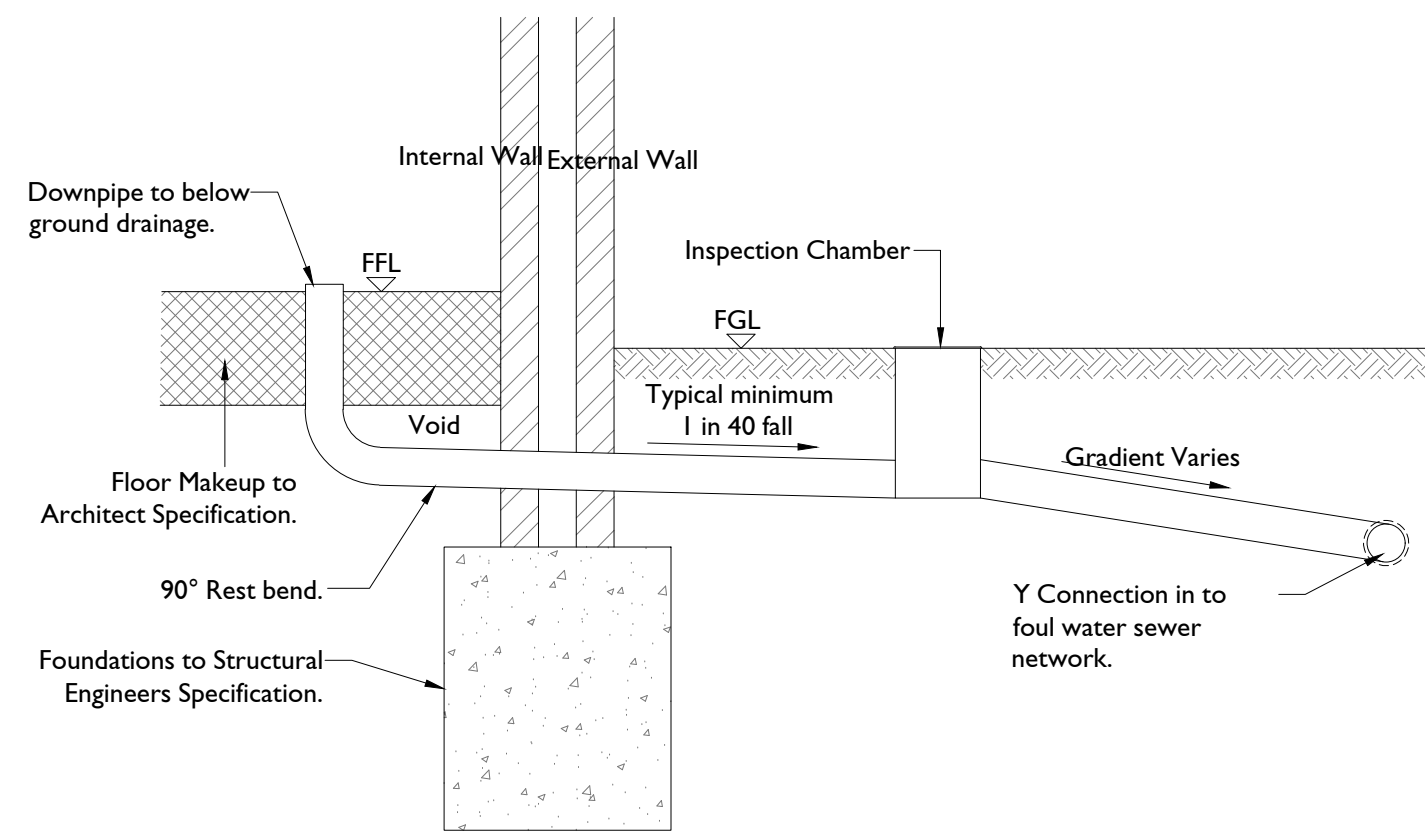
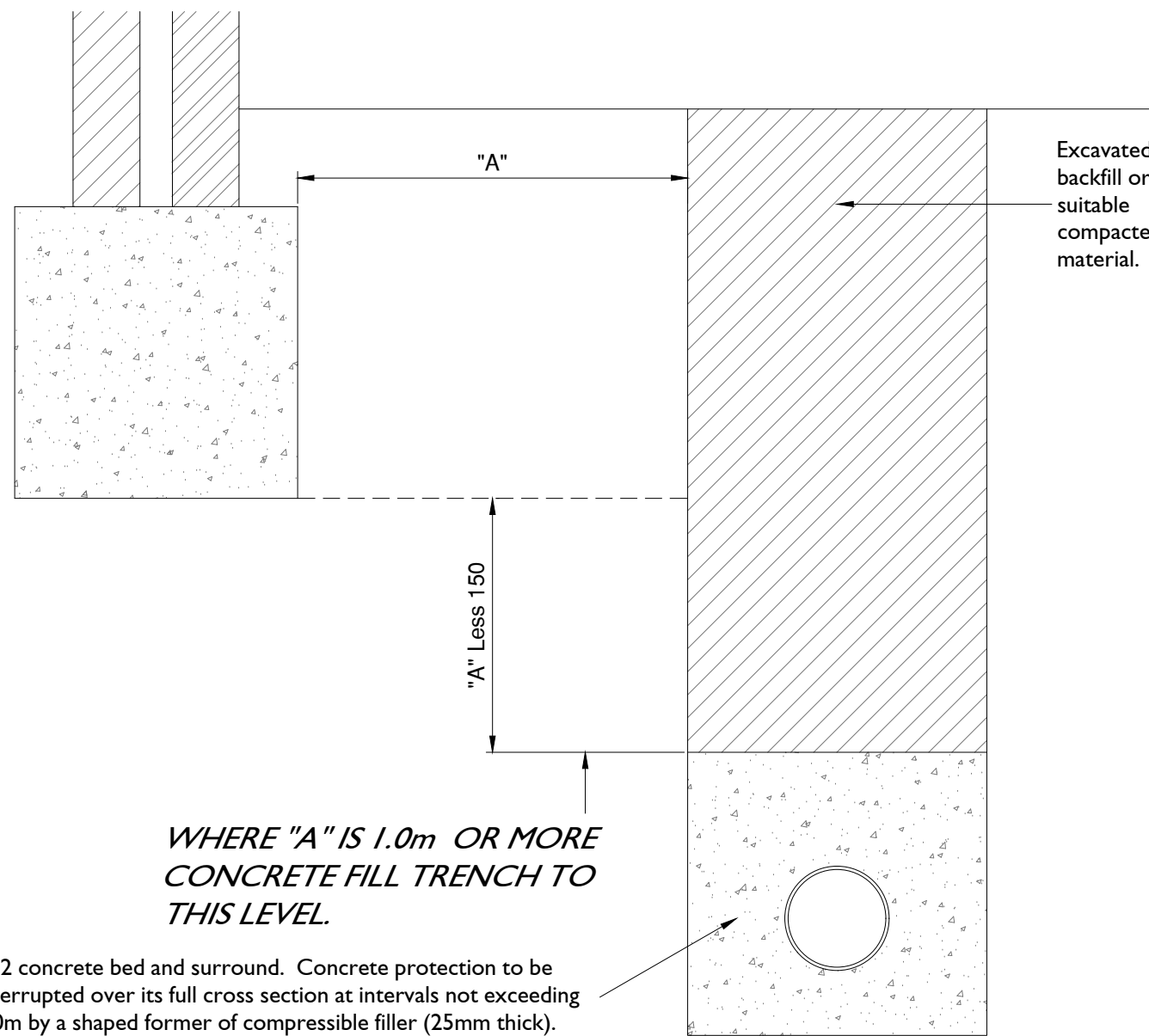


Typical Permeable Block Paving to Impermeable Carriageway Transition Detail



Pipe Runs Near Buildings

NOTE: THIS DETAIL IS NOT APPLICABLE WHERE BUILDINGS HAVE PILED FOUNDATIONS.



Typical Foul Water Sewer Plot Connection

NOTES

- This drawing should be read in conjunction with other Domestic Drainage Construction Details, Highways and Drainage Longitudinal Sections, Domestic Drainage Layouts) and Manhole Schedules.
- All dimensions are in millimetres unless stated otherwise.
- Do not scale from this drawing. Only written dimensions are to be used.
- All construction to be in accordance with Part H of the Building Regulations
- Refer to geotechnical report for sulphate resisting class and ACEC class.
- Insitu concrete generally to be GEN 4 Designated Mix.
- Insitu reinforced concrete to be RC 35 Designated Mix only when specified.
- All insitu concrete to be thoroughly compacted.
- All covers to be stamped "FW" or "SW". as appropriate.
- For Manufacturer and specification of pipes and fittings refer to drainage layout and schedule.
- Drainage pipes and fittings to be Hepworth vitrified clay and PVCu or Wavin Osma PVCu or other equal approved. Refer to drainage layout and schedules for details of manufacturer and specification.
- Outgoing pipes greater than 600mm diameter should be fitted with guard bars, safety chains [to BS EN 818-3] or other safety devices in accordance with the AWIN safety policy.

DEPTH OF PIPE COVER

The minimum depth of pipe cover to the crown of gravity pipes without protection should be as follows:

- domestic gardens and pathways without any possibility of vehicular access, 0.35m;
- domestic driveways, parking areas and yards with height restrictions to prevent entry by vehicles with a gross weight in excess of 7.5 tonnes, 0.5m;
- domestic driveways, parking areas and narrow streets without footways (e.g. mews developments) with limited access for vehicles with a gross weight in excess of 7.5 tonnes, 0.9m;
- agricultural land and public open space, 0.9m;
- other highways and parking areas with unrestricted access to vehicles with a gross vehicle weight in excess of 7.5 tonnes, 1.2m.

CDM NOTES

- EXISTING SERVICES. Depth of existing services must be determined prior to works commencing. The contractor is responsible for establishing underground services in accordance with HSE Guidance note HS (G) 47. Any services which would be within the proposed construction layers must be lowered to below the sub-base.

Rev	Note
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Not to scale	
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Checked by: LAD	Authorised by: TRS
Org No: IEP_021_106_461	Rev:
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Title: Domestic Drainage Construction Details Sheet 2	
Client:	
Date: April 2026	
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Checked by: LAD	
Authorised by: TRS	
Org No: IEP_021_106_461	
Rev:	

