



DRAINAGE STATEMENT

LAND EAST OF NORTHFIELDS LANE, WESTERGATE PO20 3UH

Residential Development

2025-C109-DS02

October 2025

Prepared on Behalf of Domusea Northfields Limited

Harbourstone Design Limited

Civil Engineering Consultants – harbourstonedesign.co.uk

Registered in England No: 16608131

DOCUMENT CONTROL

Project Name:	Land East of Northfields Lane, Westergate PO20 3UH
Development Type:	Residential Development
Report Type:	Drainage Statement
Client Name:	Domusea Northfields Limited
Document Reference:	2025-C109-DS02
Prepared by:	Dan Lytton

REVISIONS:

Issue	Date	Status	Issued by
01	22/10/2025	Initial Issue for Review	DJL
02	26/10/2025	Issue for Submission	DJL

DRAWINGS

2025-C109-001	Engineering GA - Below Ground Drainage
2025-C109-002	Engineering GA – Levels Design
2025-C109-003	Construction Details Sht 1 of 2
2025-C109-004	Construction Details Sht 2 of 2
2025-C109-005	Manhole Schedule & Impermeable Areas Schedule

APPENDICES

Appendix A	Greenfield Runoff Calculation
Appendix B	Groundwater Flotation Calculations (Tank)
Appendix C	Hydraulic Modelling Calculations
Appendix D	Maintenance Schedule



FLOOD AND DRAINAGE STATEMENT

Harbourstone Design Limited is instructed by Domusea Northfields Limited to prepare a Drainage Statement to support a Discharge of Condition Application for a Residential Development at Land East of Northfields Lane, Westergate PO20 3UH. This report is for the benefit of the Client only.

The below sets out information about the drainage design for the benefit of the application.

Existing Site Information	
Location:	Land East of Northfields Lane, Westergate PO20 3UH
Area:	0.39 Ha.
Existing Topography:	Fairly flat, with fall towards boundary watercourses. Site levels vary from 12.05m to 12.69m AOD.
Existing Site Use:	Greenfield
Proposed Development Type:	Single residential dwelling

Existing Geology	
Geology:	Superficial Deposits: Head – Clay, silt, sand and gravel Bedrock: London Clay Formation – Clay, silt and sand
Hydrogeology:	Superficial Drift Aquifer: 'Secondary A / Undifferentiated' Bedrock Aquifer: 'Unproductive Strata' - Potential for some/limited shallow infiltration, above bedrock only. Groundwater Vulnerability: Low - Low vulnerability to groundwater from pollutants
Groundwater Depth:	Peak winter groundwater levels assumed at 0.8mbgl. ADC Comments (SB, Dec 2021, neighbouring site): - "groundwater should be assumed at 0.8mbgl" - "testing not necessary due to wealth of data from neighbouring sites" - expectation for attenuated discharge to watercourse – recommendation for attenuated feature discharge to watercourse, and infiltration where possible (permeable liner) Neighbouring Development (Taylor Wimpey, major development, north and east of site):



	- peak groundwater levels at 0.70mbgl in 2013 - peak groundwater levels at 0.67mbgl in 2018 re-testing Strategic Flood Risk Assessment: - Groundwater affected Northfields Lane in 2014, shallow groundwater levels expected at site
Other Ground Conditions:	Neighbouring Development (Taylor Wimpey, major development, north and east of site): - Clay from 0.10mbgl to full depth, minimal gravel - failed tests, or very slow infiltration across site

Existing Drainage	
Nearest Watercourse:	East, north, and west boundaries. Watercourses flow north to south.
Nearest Surface Water Sewer:	Approx.. 200 metres to south of site
Nearest Foul Sewer:	Adjacent site, along Northfields Lane on west boundary of site. Nearest manhole 8801, recorded depth 1.40mbgl.
Existing Site Drainage:	Overland runoff to boundary watercourses
Highway Drainage:	Over-the-edge runoff to adjacent ditches, either side of private highway.
Other Drainage Conditions:	At neighbouring sites, shallow groundwater, Clay strata & failed infiltration tests, or very slow infiltration across site. Full reliance on infiltration not viable.



Surface Water Drainage Solution	
Drainage Hierarchy:	In accordance with findings & previous ADC guidance, proposal is an attenuation system with controlled discharge to boundary watercourses. However, as permeable pavement invert levels sit at shallow depths and will be raised above existing levels due to (future fluvial/tidal) flood risk constraints, pavement base liner will be permeable, to allow infiltration where possible. As the proposed attenuation tank will not have at least 0.5m clearance from peak groundwater levels, this will be lined with an impermeable liner. The tank will also be designed with mitigation against groundwater flotation.
Viable SuDS:	Rainwater harvesting, permeable pavement, shallow attenuation storage tank
Surface Water Storage:	29.5m ³ (9.5m ³ attenuation tank (95% voids) & 20.0m ³ permeable pavement (30% voids)
Surface Water Discharge:	1.0 l/s restricted discharge at each outfall (2.0 l/s total) to watercourse via flow control
Design Standards:	1 in 100 year storm, 45% climate change, 10% urban creep
Further Comments:	Proposal to tier landscape northwest boundary to provide increased watercourse network capacity, as well as managed wetland for ecological benefits.
Surface Water Treatment: (Pollution Hazard Indices / Pollution Treatment Indices)	Residential Parking: Low, TSS = 0.5, M = 0.4, H = 0.4 Permeable Pavement: TSS = 0.7, M = 0.6, H = 0.7
Mitigation against flood risk:	Proposed development is raised above flood risk including with an allowance for climate change, in accordance with the approved planning application. Proposals in the NW corner of the site provide further mitigation by providing an increase in watercourse capacity. Drainage design has included allowance for surcharged outfalls to the top of bank of the receiving ditches.



Foul Drainage Solution	
Drainage Hierarchy:	Public foul sewer on Northfields Lane (private highway), west boundary of site
Foul Proposals:	Private foul run from proposed residential building to public sewer, by gravity
Discharge:	Discharge to public foul sewer with direct connection to existing public foul manhole.
Further Comments:	Expected peak foul discharge 0.05 l/s (in accordance with Water UK Design & Construction Guidance).

Adherence to ADC Comments, March 2025	
Drainage Hierarchy:	1. Reuse 2. Infiltration 3. Hybrid infiltration/discharge 4. Restricted discharge to watercourse In accordance with National Standards for SuDS Policy (July '25), domestic rainwater harvesting is proposed, to capture runoff at source for reuse. Although shallow groundwater and slow infiltration rates will limit full reliance on infiltration, allowance for shallow infiltration where possible whilst designing and modelling a drainage system that fully relies on controlled discharge to watercourse has been proposed.
Pre-development discharge rates (based on drained area only):	0.16 l/s (based on rate for 0.1 Ha. using HR Wallingford online estimation tool, as seen in Appendix A)
Drainage Plans (inc. areas, full drainage details, specification, details, water quality):	Detailed drainage plan provided, and accompanying construction details and flow control specification. Water quality treatment is covered on the previous page.
Biodiversity & Amenity Benefits:	The proposals for an expanded bank with a softly sloped area, approximately 400mm above the watercourse invert, allows for an area to be landscaped with water compatible planting, developed into an attractive feature that provides ecological benefits – as well as increasing watercourse capacity.
Arboricultural Constraints:	Root protections are shown. No excavation is proposed within the root protection zones, other than at the edge of one area for a shallow 100mm diameter foul run, which is to be hand excavated.

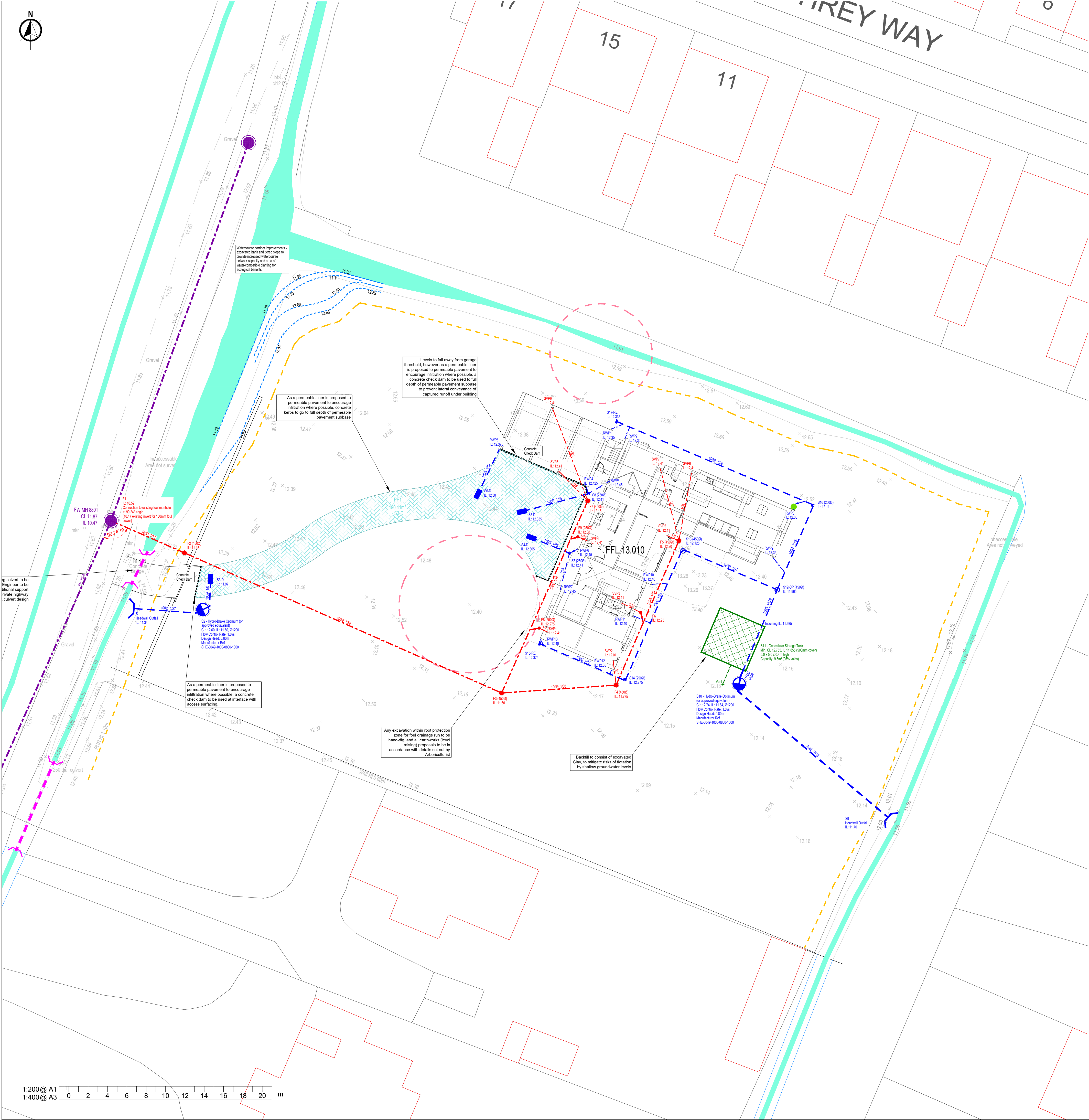


	Some minor earthworks (fill only) at a 1:3 slope will also encroach the edge of the root protection zone where returning levels to tie-in with existing levels. This is to be unloaded landscaping only, however the Arboricultural consultant will be engaged on final earthworks design, and any mitigation, if required.
Hydraulic Modelling:	Modelling includes allowance for a surcharged outfall to the top of bank of the watercourse at the outfall point. Modelling results are provided for 1yr, 10yr + 35%CC (climate change), 30yr + 35%CC, 100yr + 45%CC & 10%UC (urban creep) Modelling results show no flooding up to the design event.
Riparian Maintenance Responsibilities:	1.5m riparian maintenance buffer shown on drainage plan.
Discharge Consents:	As confirmed by Paul Cann (23/10/25), an 'Arun Drainage Byelaws Consent' still applies even where headwall does not protrude into watercourse profile (and therefore WSCC don't require a OWC for a headwall outfall). To be submitted simultaneously as this Discharge of Condition package.



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Drawing No.	Rev.
2025-C109-001	-



-LEVELS KEY-

- Ex 134.11 Existing Spot Level
- +134.11 Proposed Spot Level
- #### FFL Proposed Finished Floor Level
- Level/Stepped Threshold/Access
- Proposed Contour (Primary)
- Proposed Contour (Secondary)
- Ex. / Pr. Landscape Contour (Primary)
- Ex. / Pr. Landscape Contour (Secondary)
- 1:40 Landscape Gradient Arrow/Fall Direction
- 1:40 Proposed Gradient Arrow/Fall Direction
- Proposed Bank Batter, and tie-in line (to existing levels)
- 20 Raised DPC & number of courses
- Existing Watercourse

Refer to structural drawings for further information on structural slab levels.

Topographical information shown is based on site survey undertaken by others as part of site-wide development.

Contours are only as accurate as initial land survey information. Contours are approximate, and spot levels may vary slightly on site.

THRESHOLD PLATFORM SUMMARY:

L = Level Threshold
R = Ramped (Part M)
S = Stepped Approach

-ARBORICULTURAL KEY-

- Proposed Root Protection Area (Provided by Architect)

LEVELS DESIGN NOTE:

ALL FLUSH THRESHOLD ACCESS POINTS WITH 1:60 FALL FROM BUILDING. FOR MINIMUM 900mm FROM FRONT / MAIN ACCESS & FOR PATIO DISTANCE SHOWN TO SPOT LEVEL.

GENERAL

- The main contractor is responsible for the design of all temporary works, and is also responsible for the safe maintenance and stability of existing buildings at all times.
- The main contractor is responsible for dealing with all occurrences of ground water during the construction period.
- The contractor must comply with all current legislation relating to health & safety.
- All products specified shall be installed in strict accordance with the manufacturers recommendations and instructions. If there are discrepancies between that information and the details on any Harbournstone Design drawings, the manufacturers instructions must be used.
- All concrete and cement mortar to be in accordance with BS8500, BSEN206 and BSEN998.
- The contractor is responsible for managing surface water run off during construction.

- A1
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 - Any information given regarding existing underground services is given in good faith after consultation with the relevant authority, however accuracy is not certain. The main contractor is responsible for checking all information on site prior to work commencing and taking due care whilst undertaking the works.
 - All dimensions to be checked on site. All details and dimensions relating to sub-contractors work must be checked and agreed between the sub-contractor or supplier and the general contractor.
 - The electronic information from this drawing can not be guaranteed as dimensionally drawn exact. Figured dimensions must be used for setting out and detailing. Harbournstone Design logos and company information must be removed from copies if information is re-used.
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RESIDUAL HAZARDS

- In addition to the hazards/risks normally associated with the type of work detailed on this drawing, note the following:
- Buried services. Contractor to refer to locate existing services and undertake necessary precautions and investigation prior to excavating.
 - Excavations close to existing root protection zones. Arboriculturalist to be engaged with regard to civils proposals and appropriate mitigation measures. Contractor to prepare method statement to ensure protection of existing tree roots, in accordance with root protection proposals.
 - Connection of existing private drainage. Contractor to ensure drains are shut off during works and ensure operatives are familiar and competent with procedure.
 - Excavations close to existing structures. Contractor to prepare method statement to ensure stability of existing structure.
 - Working in vicinity of Waterbodies with variable surface water flows & debris. Contractor to provide method statement and ensure operatives have appropriate safeguarding equipment.
- It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved risk assessment and method statement.



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Drawing Status FOR SUBMISSION

Client Domusea Northfields Limited

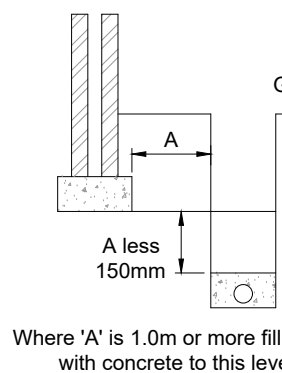
Project Land East of Northfields Lane, Westergate PO20 3UH

Drawing Title Engineering GA - Levels Design

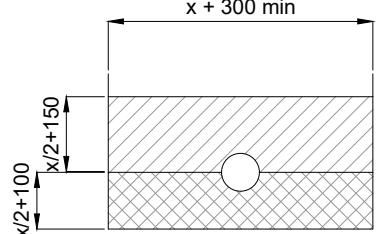
Scale	Date	Drawn By	Checked By
1:200	Oct '2025	DJL	CT
Drawing No.	2025-C109-002	Rev.	-

Minimum Dimensions for Access Fittings and Inspection Chambers					
Type	Min Internal Sizes			Cover Sizes	
	Depth to invert (m)	Size of largest pipe (DN)	Length x Width (mm)	Circular (mm)	Length x Width (mm)
Rodding Eye			As Drain but Minimum 100mm ^a		
Access Fitting	0.6 or less				
Small	except where situated in a chamber		150x100	150	150x100 ^a
Large			225x100	225	225x100 ^a
Inspection Chamber					
Shallow	0.6 or less			190 ^b	190 ^b
	1.2 or less		450x450	450	450x450
				430 ^c	430 ^c
Deep	1.2 - 3.0		450x450	450	Max 300x300 ^c to Max 350

- Notes:
- the clear opening may be reduced by 20mm in order to provide proper support for the cover and frame
 - Drains up to 150mm
 - A larger clear opening cover may be used in conjunction with a restricted access. the size is restricted for health a safety reasons to deter entry,



Where 'A' is 1.0m or more fill trench with concrete to this level.



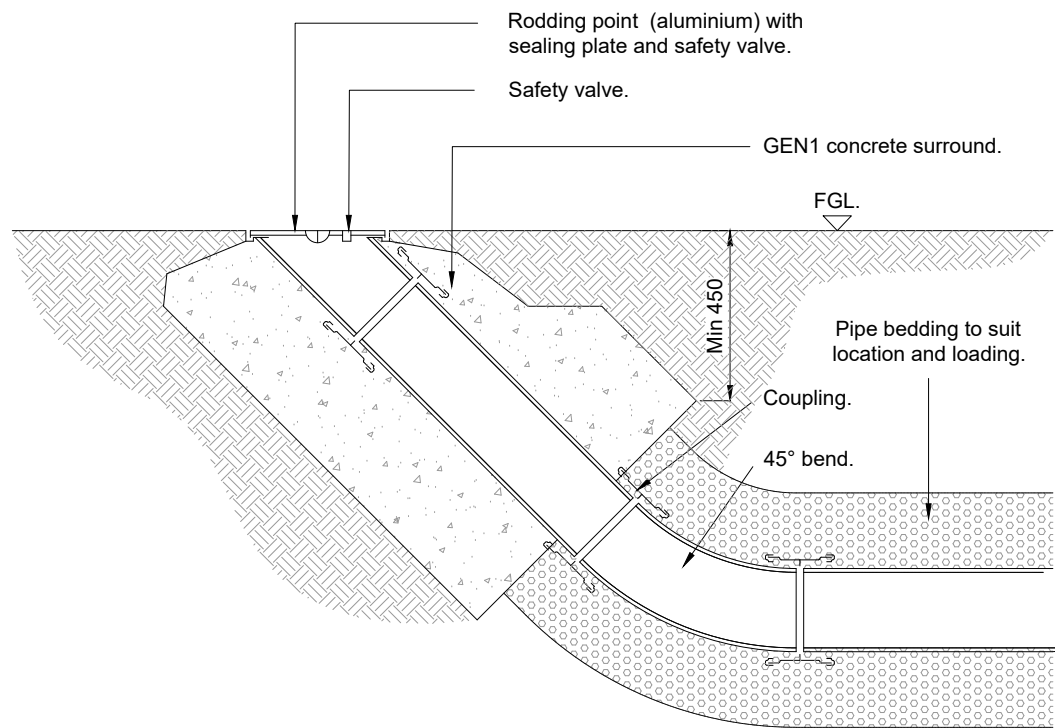
PIPE BEDDING DETAIL UNDER DRIVES AND GARDENS

Min depth of cover 0.35m under private gardens and 0.5m under private drives

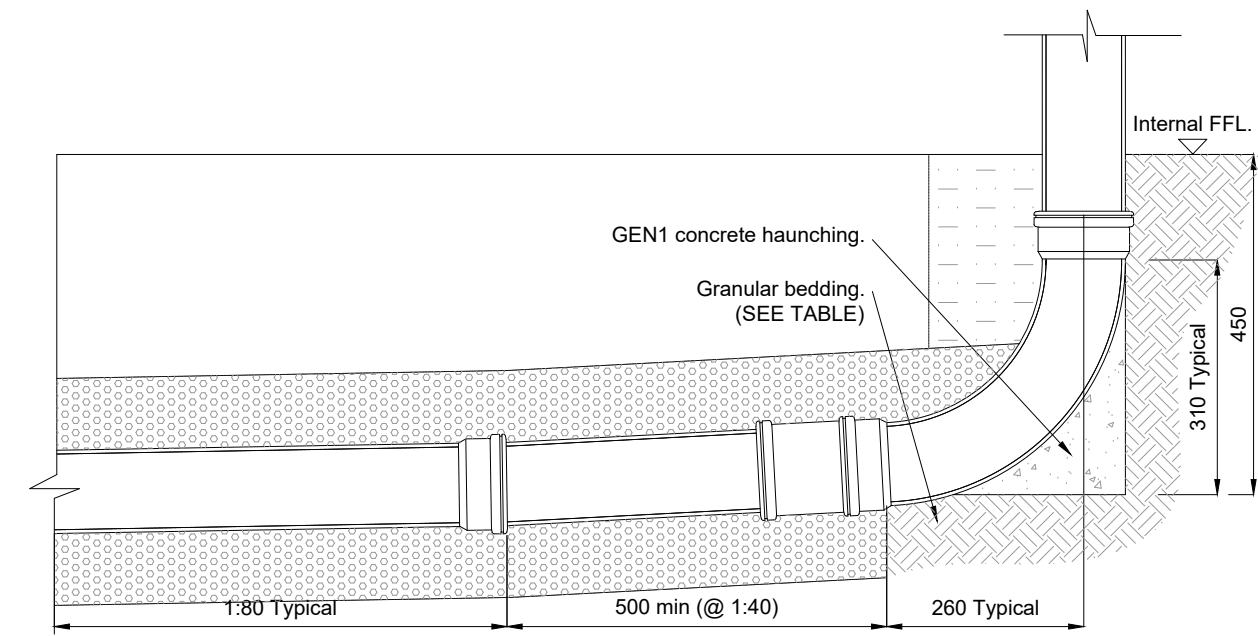
LEGEND:

- Selected fill: free from stones larger than 40mm, lumps of clay over 100mm, timber frozen material and vegetable matter.
- Granular material: should conform to BS 882:1983 table 4 or BS8301:1985 Appendix D. Compaction fraction > 0.3 for class N > 0.2 for class F and B.

'X' - Denotes external pipe diameter.



DETAIL OF RODDING EYE



DETAIL OF FOUL REST BEND

(Scale 1:20)

DRAINAGE NOTES:

- All drainage works to be constructed in strict accordance with specification of the Local Authority, Building Regulations, Design and Construction Guidance (published by Water UK & BSEN 752).
- Any existing drainage found crossing the site is to be investigated, and if found to be 'live', it should be diverted in consultation with Harbournstone Design.
- For location and setting out of building drainage points refer to architects drawings.
- All pipe runs near buildings to comply with the Building Regulations 2015 part H1. Where a pipe is within 1m of a foundation the trench shall be filled with class GEN3 concrete up to the lowest level of the foundation. Where the trench is further than 1m from the foundation, the trench shall be filled with class GEN3 concrete to a level below the lowest level for the foundation equal to the distance from the foundation less 150mm. In both cases the pipe shall be bedded and surrounded in 150mm thick class GEN3 concrete.
- Where pipes, external to the structures, have a depth to soffit from ground level of less than 450mm they shall have a class GEN3 concrete encasement (150mm thick).
- Where a pipe, under a carriageway, has a depth of cover of less than 1.2m the pipe shall be laid in a concrete bed and surround.
- Where a pipe, under a vehicular area other than a carriageway has a depth of cover if less than 0.9m the pipe shall be protected with a concrete slab set above it.
- In any circumstances where pipes are bedded and surrounded in concrete flexible joints should be provided. compressible boards (fibreboard or polystyrene) shall be provided at a maximum of 8m centres (coinciding with pipe joints). the boards shall be pre-cut to pipe diameter and to a height and width equal to the concrete cross section, a board thickness of 18mm for pipes up to 450mm nominal diameter and 36mm for pipes over 450mm nominal diameter.
- All private building drainage shall be constructed in strict accordance with BS EN 752. Foul drainage beneath the floor slab shall be laid, shall be laid no flatter than 1:40. Unless otherwise specified below ground building drainage external to the building shall be 100mm diameter and shall be laid at a minimum gradient of 1:100 = 1 in 400/11s = 1 in 80 for foul drains and 1 in 80 for surface water drains.
- All building drains shall be laid in conjunction with 'non adoptive bedding details' (class d, n or b) unless otherwise specified.
- All pipes, bends and junction for private building drainage shall be UPVC conforming to BS4660, BSEN13598 and BSEN1401 as appropriate and shall be laid in accordance with the manufacturer's specification.
- All pipes, bends and junction materials for adoptable drainage shall be vitrified clay, extra strength or super strength to BSEN295, with flexible joints and kitemark certified.
- All back inlet gullies to be roddable or connected to inspection chambers.
- All gully connections other than at manholes to be 'Y' junctions.
- All road gully connections to be 150mm diameter.
- All stub stacks to be fitted with air admittance valves where branch drain exceeds 12m except at the head of the run. Soil vent pipes located at the head of a run to terminate to fresh air.
- No low point shall be without a method of drainage.
- All connections to be soffit to soffit unless otherwise noted.
- All concrete and concrete products to be in accordance with BRE 363 for sulphates.
- The locations of all building drainage points shall be cross referenced against the architects drawings during setting out and any discrepancies reported immediately.
- Before connections are made to existing public sewers an application under S106 must be made to relevant sewerage undertaker.
- The precise depth and location and size of existing pipes, watercourses or manholes where connections or diversion are proposed must be confirmed and reported to the engineer before works commence on site.
- Any existing drains to be abandoned to be decommissioned in accordance with the Building Regulations by either grubbing, infilling or sealing.
- Should groundwater be encountered on site during construction Harbournstone Design shall be informed to determine if additional measures are required. **This includes design against flotation.**
- The drainage system shall be fully cleansed on completion of the project using methods that ensure pollution off site does not occur.
- Any existing land drains severed during construction shall be reinstated.

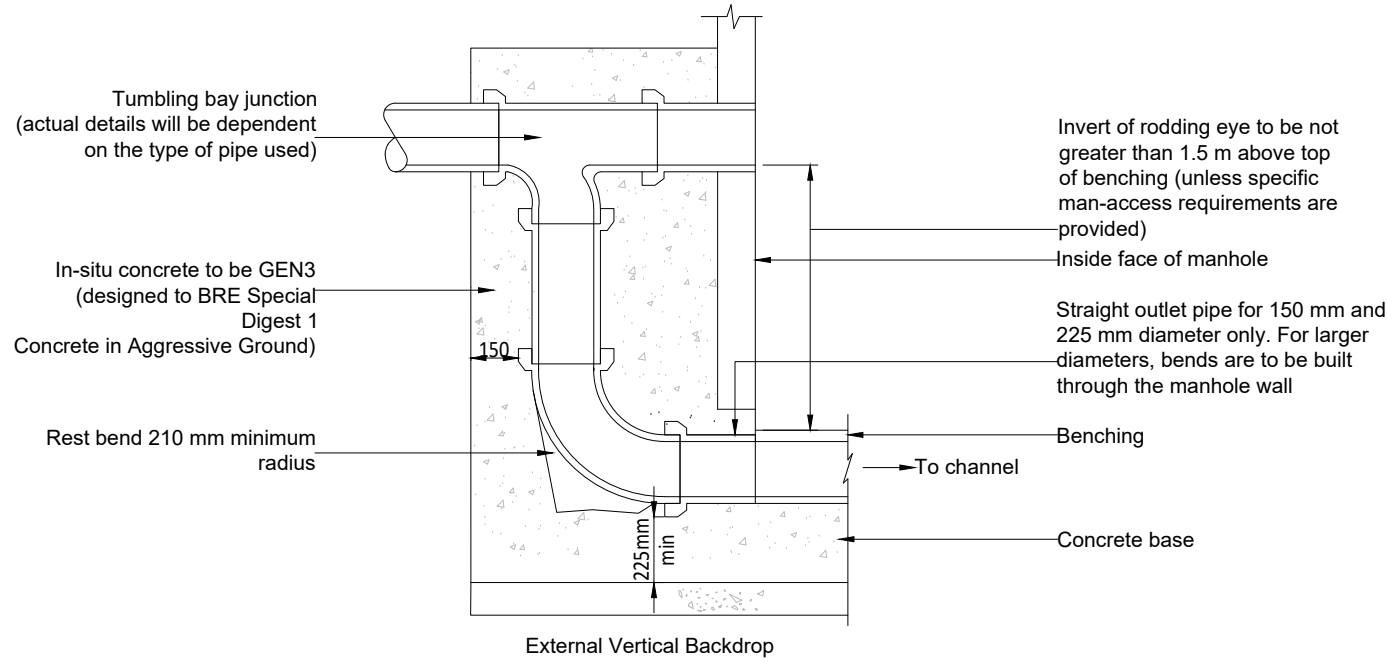
BUILDING REGULATIONS MINIMUM DIMENSIONS FOR CHAMBERS

(Not to Scale)

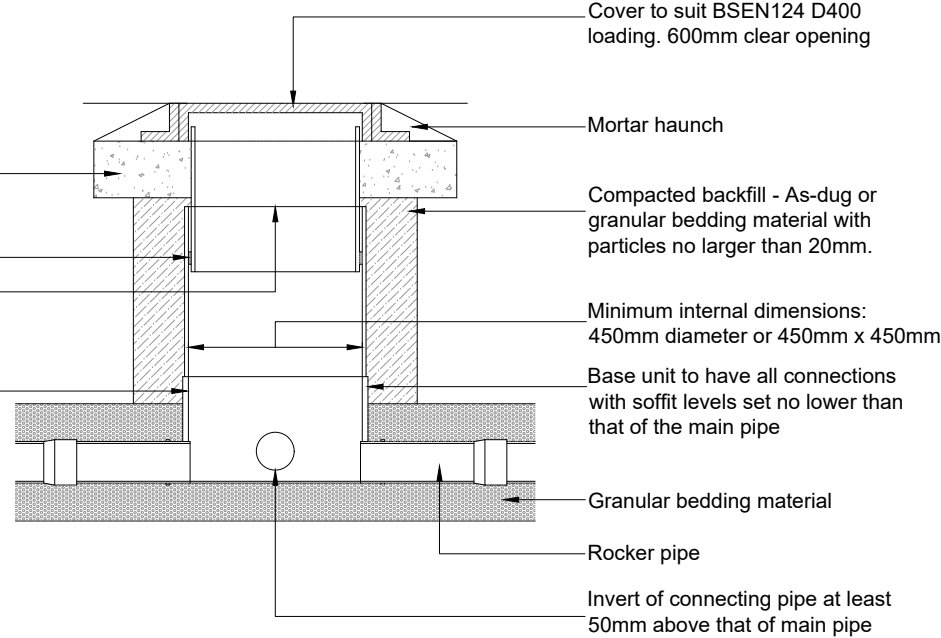
This table complies with the Building Regulations 2015 Section 'H' - Drainage & Waste Disposal.

DETAIL OF PIPE RUNS NEAR BUILDINGS

(Not to Scale)



Plastic chambers and rings shall comply with BSEN 13598-1 and BSEN13598-2 or have equivalent independent approval



Cover to suit BSEN124 D400 loading. 600mm clear opening

Mortar haunch

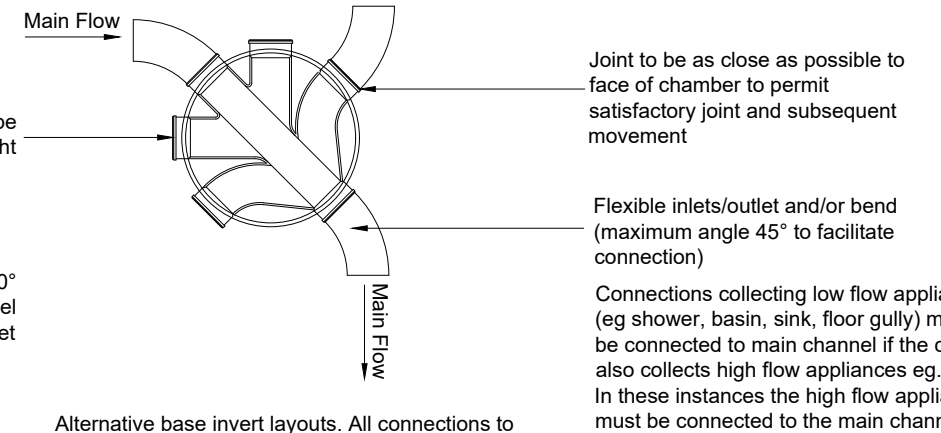
Compacted backfill - As-dug or granular bedding material with particles no larger than 20mm.

Minimum internal dimensions: 450mm diameter or 450mm x 450mm
Base unit to have all connections with soffit levels set no lower than that of the main pipe

Granular bedding material

Rocker pipe

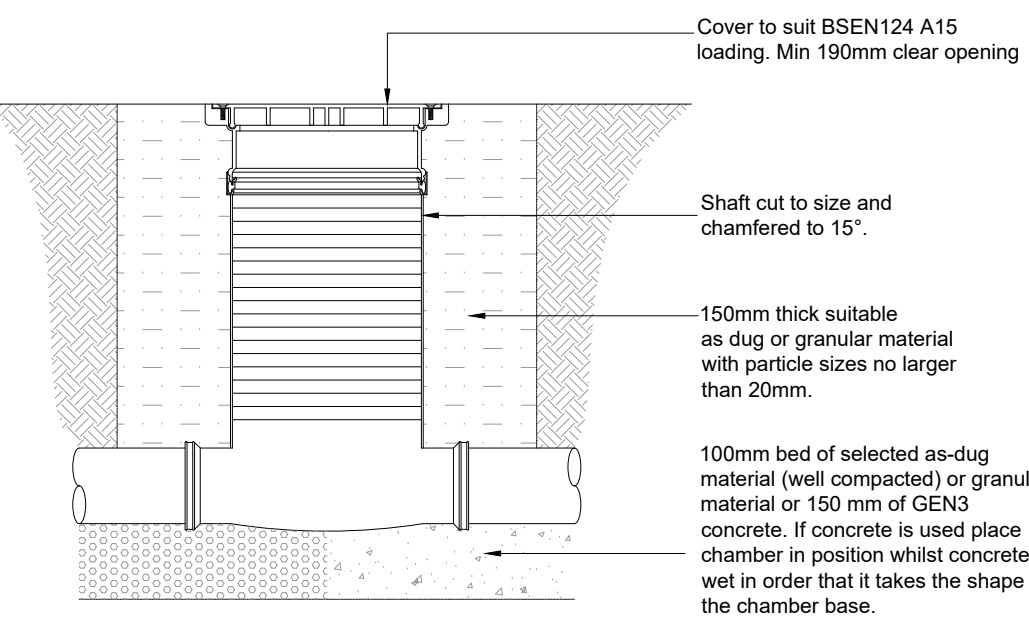
Invert of connecting pipe at least 50mm above that of main pipe



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

TYPICAL ACCESS CHAMBER DETAIL - 450Ø (FOOTPATHS AND PRIVATE DRIVES)

1.2m MAXIMUM DEPTH TO FROM COVER TO PIPE INVERT (OR ACCESS RESTRICTED TO MAX 300 X 300 / 350Ø). LOCATED IN AREAS SUBJECT TO LIGHT VEHICLES AND FOOTPATHS

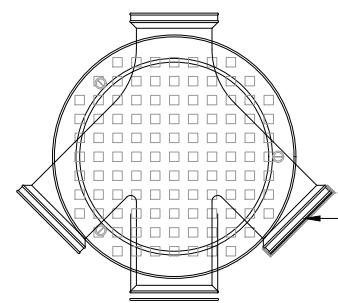


Cover to suit BSEN124 A15 loading. Min 190mm clear opening

Shaft cut to size and chamfered to 15°.

150mm thick suitable as dug or granular material with particle sizes no larger than 20mm.

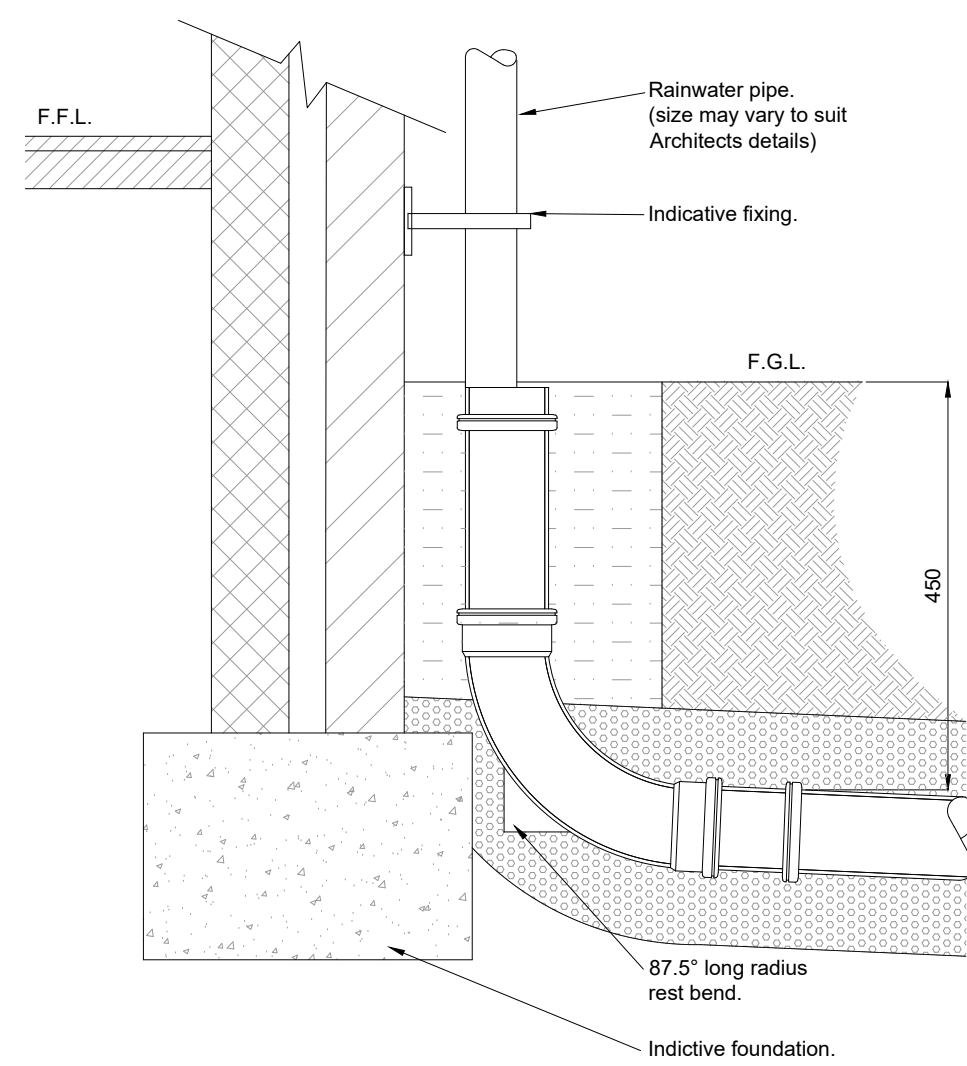
100mm bed of selected as-dug material (well compacted) or granular material or 150 mm of GEN3 concrete. If concrete is used place chamber in position whilst concrete is wet in order that it takes the shape of the chamber base.



Inlets that are not required are to be blanked with stoppers.

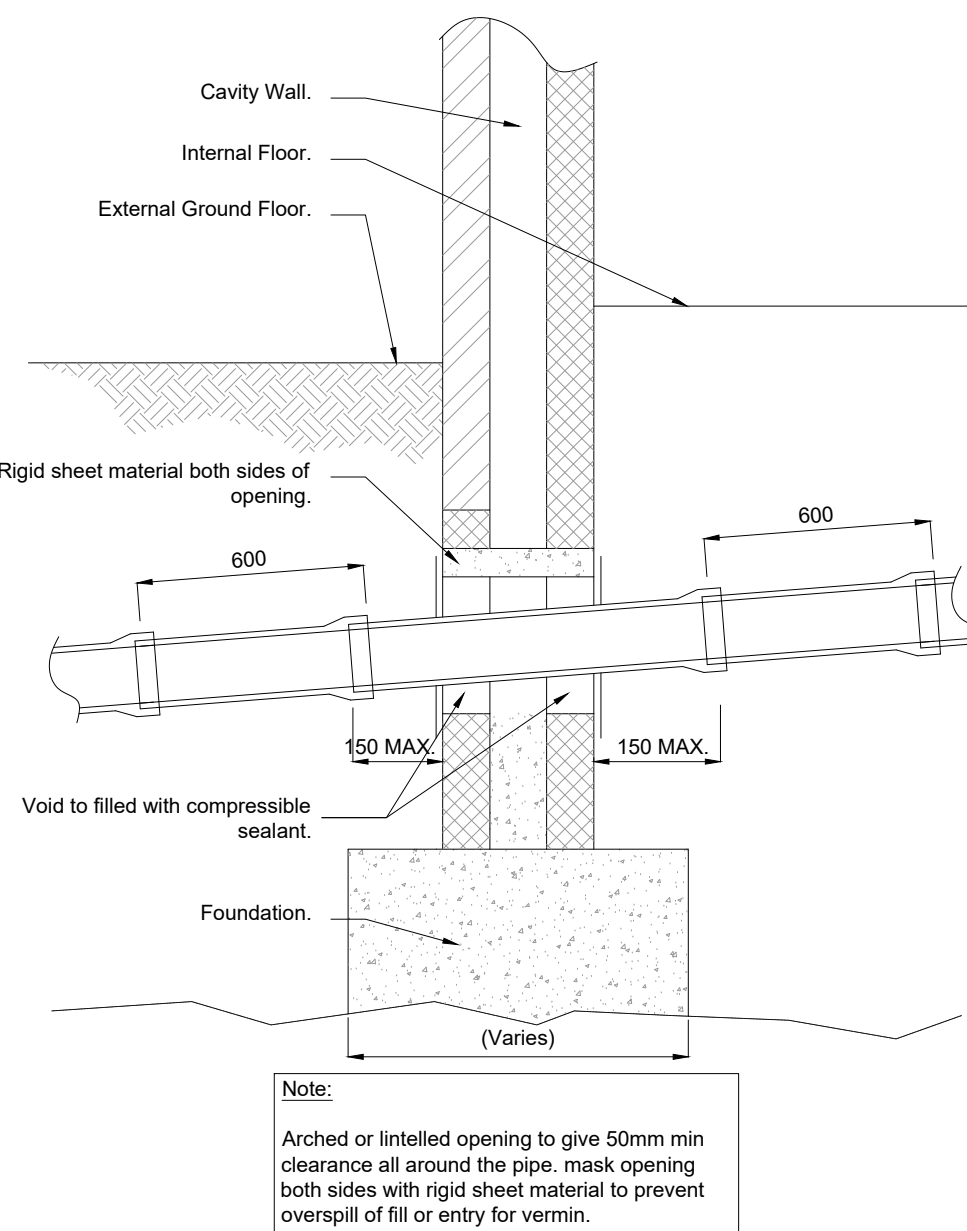
TYPICAL SHALLOW ACCESS CHAMBER DETAIL - 250Ø

0.6m MAXIMUM DEPTH TO FROM COVER TO PIPE INVERT.



DETAIL OF RAINWATER PIPE

(Scale 1:20)



Note:
Arched or lintelled opening to give 50mm min clearance all around the pipe, mask opening both sides with rigid sheet material to prevent overspill of fill or entry for vermin.

TYPICAL SECTION PIPE PASSING THROUGH WALL PIPE THROUGH LITTELLED OPENING

(Scale 1:20)

GENERAL

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A1

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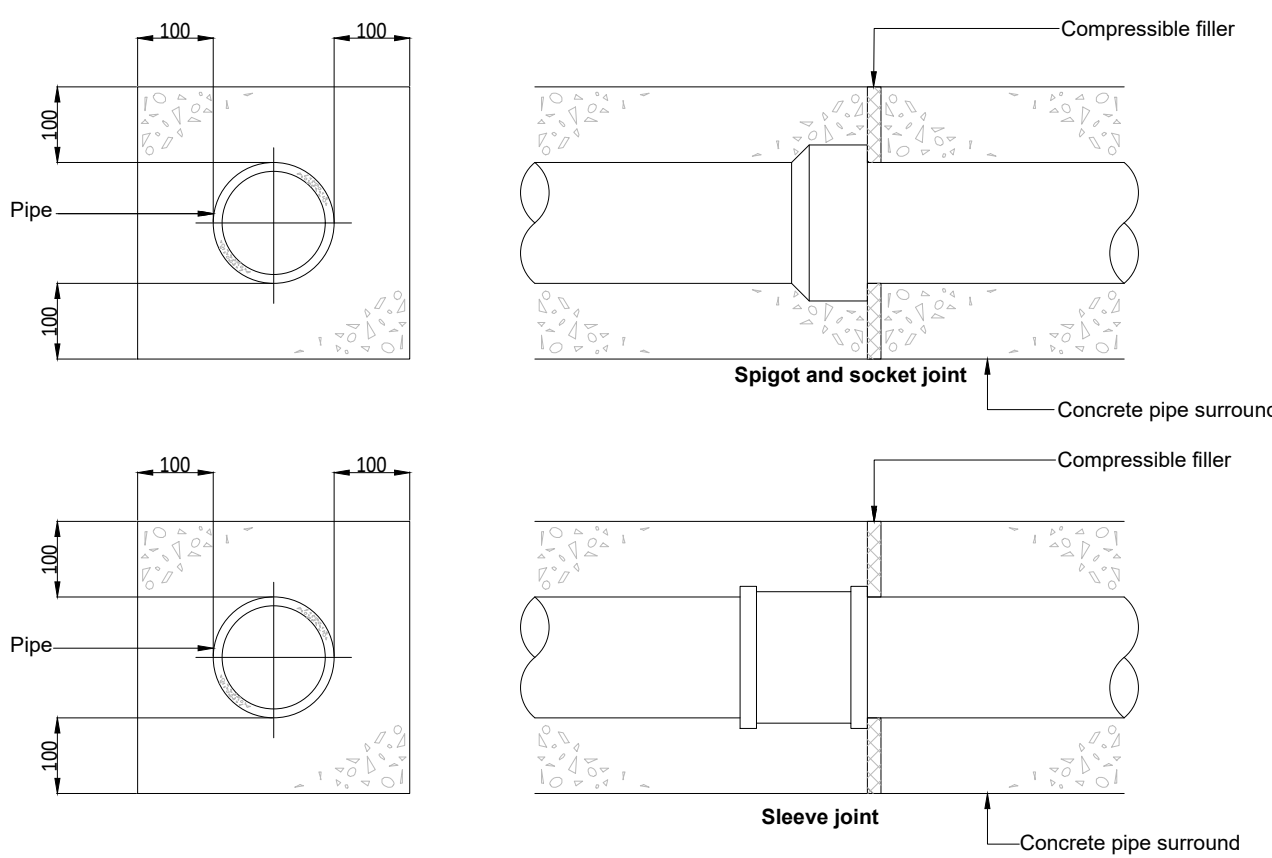
RESIDUAL HAZARDS

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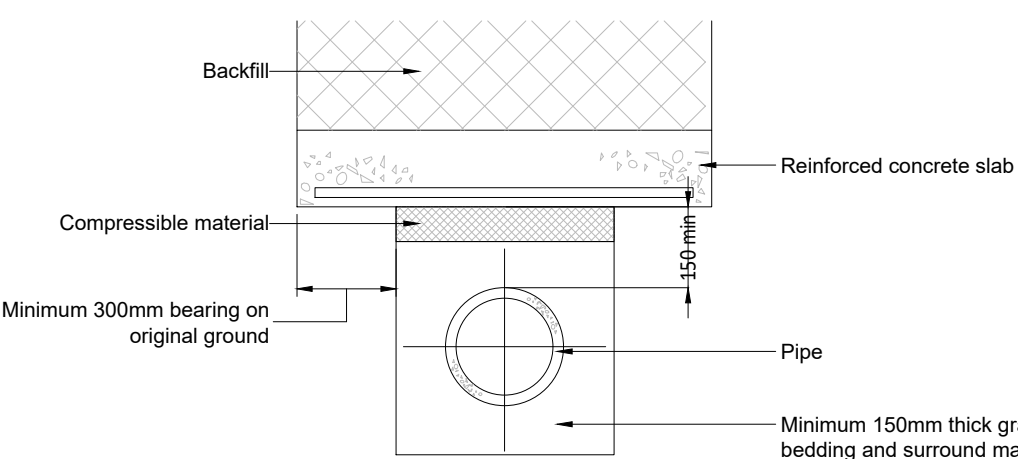
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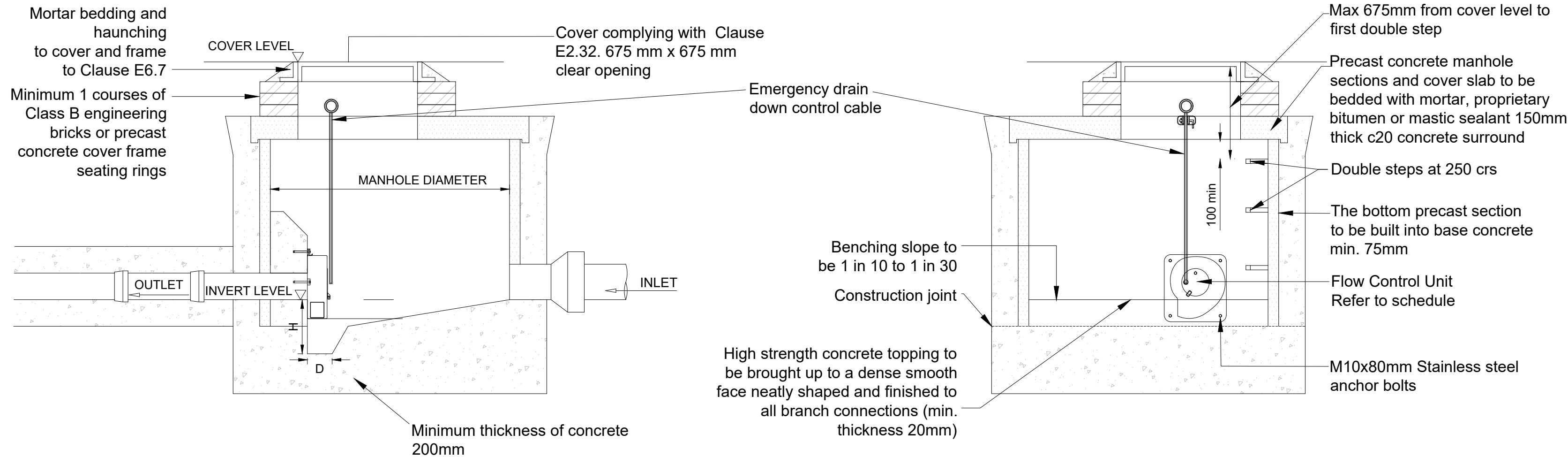
FIGURE B16 TYPICAL VERTICAL AND RAMPED BACKDROP DETAIL (RIGID MATERIALS)



JOINTS FOR ENCASED PIPES



PROTECTION OF PIPES AT SHALLOW DEPTH



FLOW CONTROL CHAMBER

(Scale 1:20)

The details shown above are indicative only and should not be used as a scaled drawing. Please refer to manufacturers installation.

FLOW CONTROL CHAMBER S2

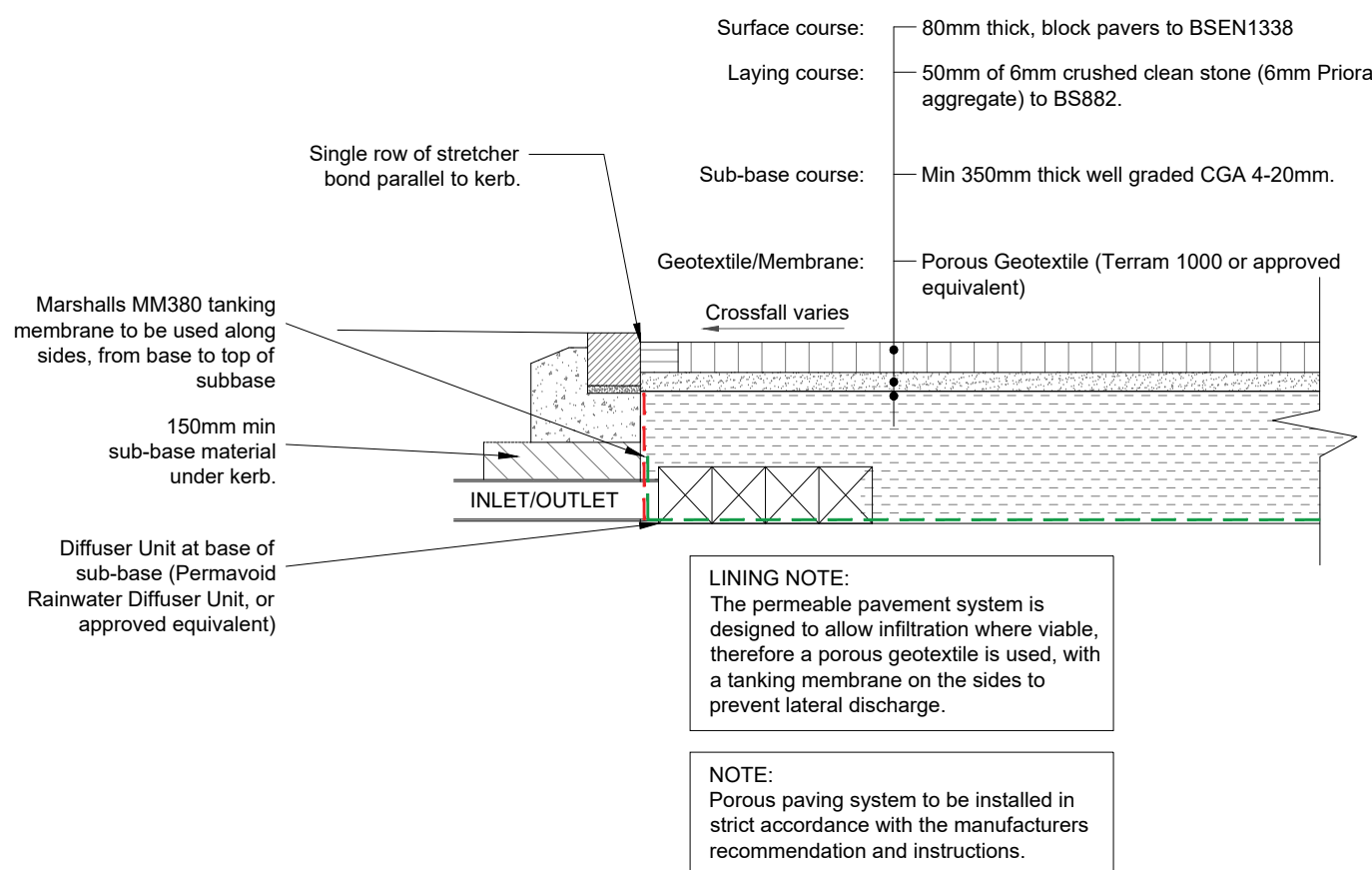
SCHEDULE

COVER LEVEL: 12.600
INVERT LEVEL: 11.600
DESIGN FLOW RATE: 1.0 l/s
DESIGN HEAD: 0.80 m
FLOW CONTROL UNIT: HYDRO-BRAKE OPTIMUM
UNIT REFERENCE: SHE-0049-1000-0800-1000
MANHOLE DIMENSIONS: 1200 mm
SUMP DIMENSIONS: 305 X 140 mm (NONE REQUIRED - TO BE CONFIRMED WITH HYDRO)

FLOW CONTROL CHAMBER S10

SCHEDULE

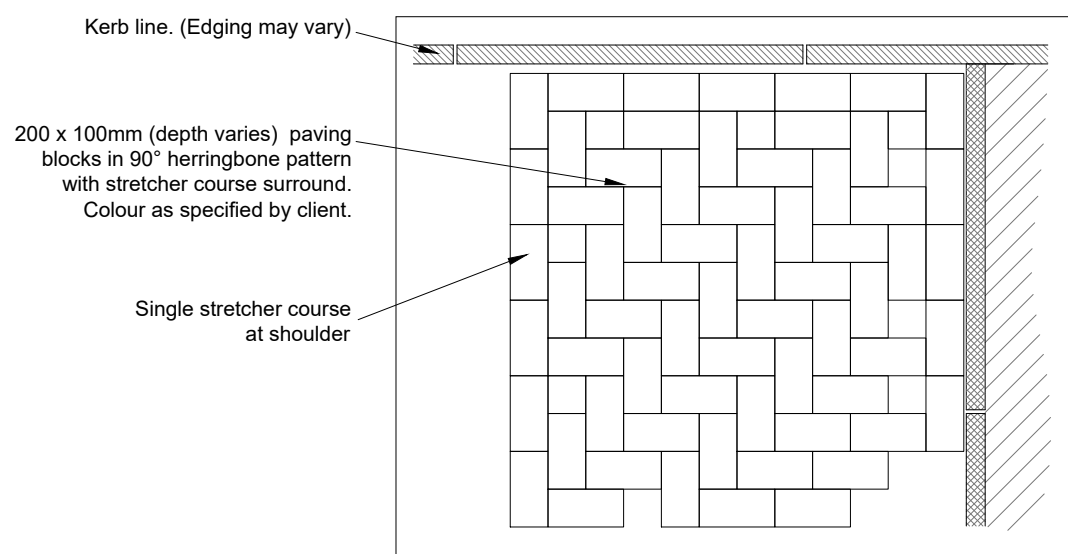
COVER LEVEL: 12.740
INVERT LEVEL: 11.840
DESIGN FLOW RATE: 1.0 l/s
DESIGN HEAD: 0.80 m
FLOW CONTROL UNIT: HYDRO-BRAKE OPTIMUM
UNIT REFERENCE: SHE-0049-1000-0800-1000
MANHOLE DIMENSIONS: 1200 mm
SUMP DIMENSIONS: 305 X 140 mm (NONE REQUIRED - TO BE CONFIRMED WITH HYDRO)



PERMEABLE DRIVEWAY BLOCK PAVING CONSTRUCTION DETAIL

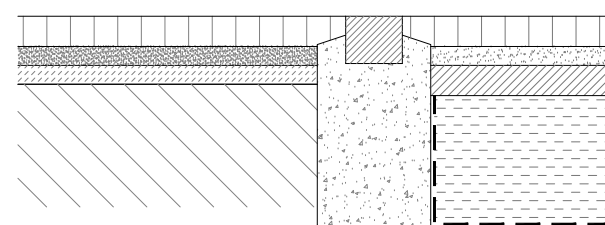
(PERMEABLE PAVERS-TANKED)

(Scale 1:20)



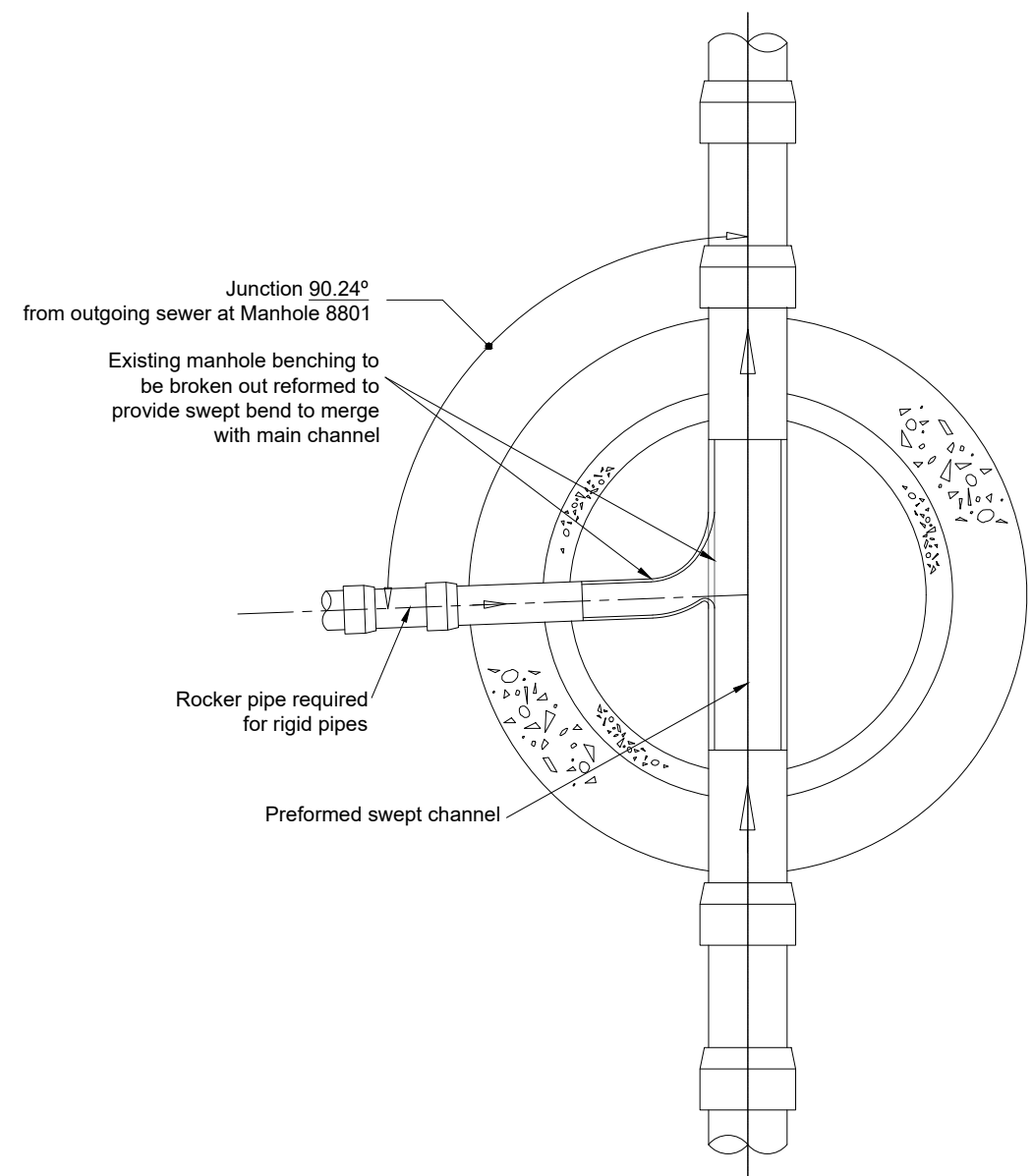
BLOCK PAVING ARRANGEMENT PLAN

(Scale 1:20)



CONCRETE CHECK DAM DETAIL

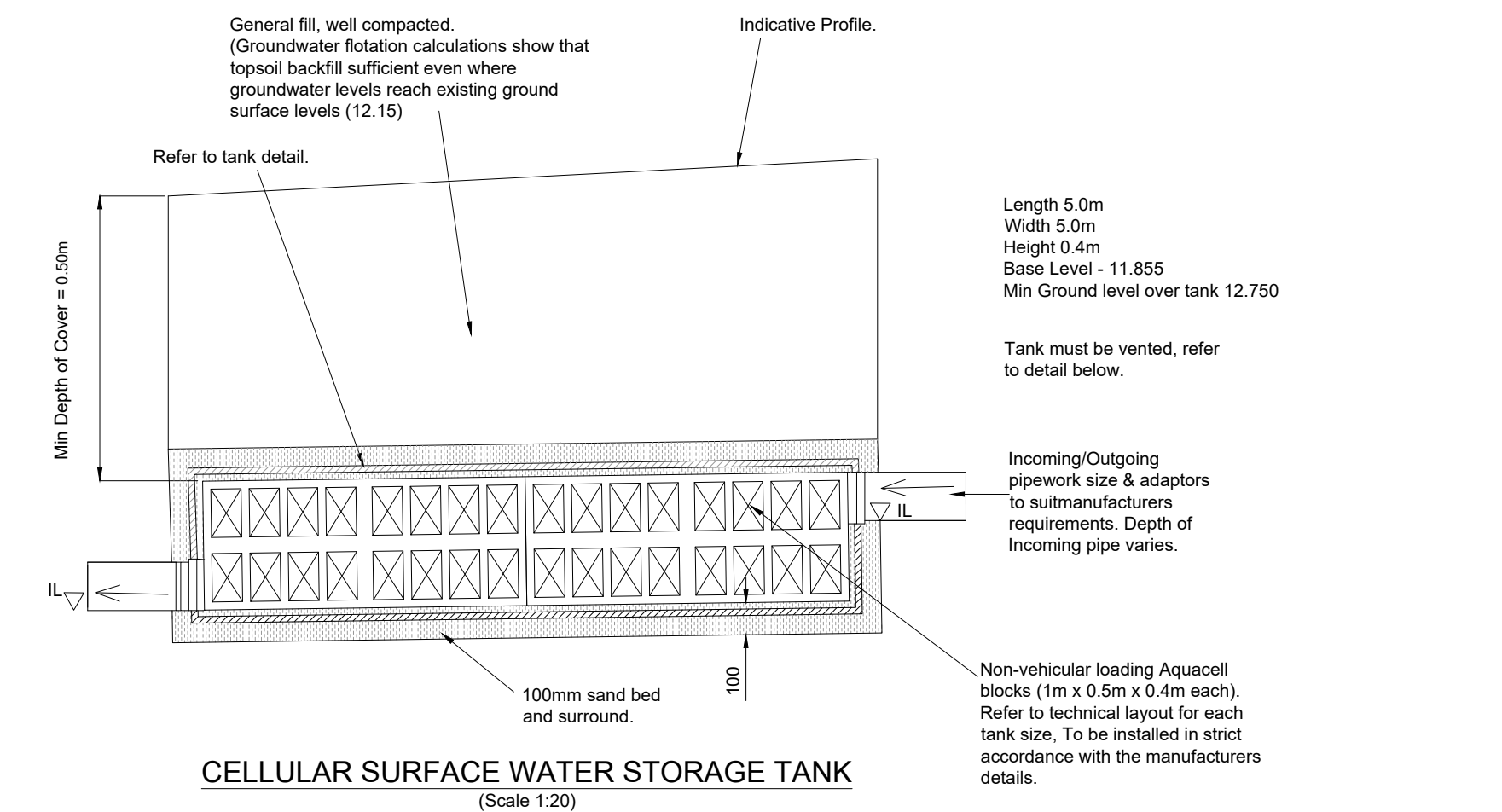
(Scale 1:20)



Nominal diameter (mm)	Maximum effective length (m)
150 - 600	0.6
601 - 750	1.00
over 750	1.25

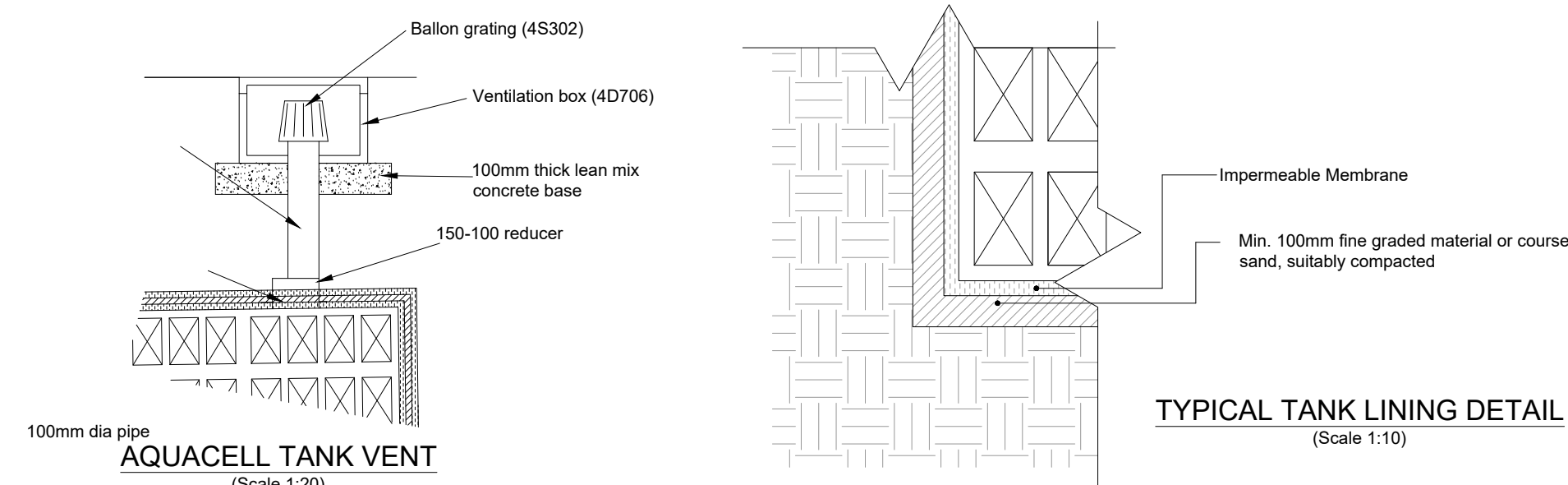
All pipes entering the bottom of the manhole to have soffits level.

ARRANGEMENT OF PIPE JUNCTION WITHIN MANHOLE 8801



CELLULAR SURFACE WATER STORAGE TANK

(Scale 1:20)



TYPICAL TANK LINING DETAIL

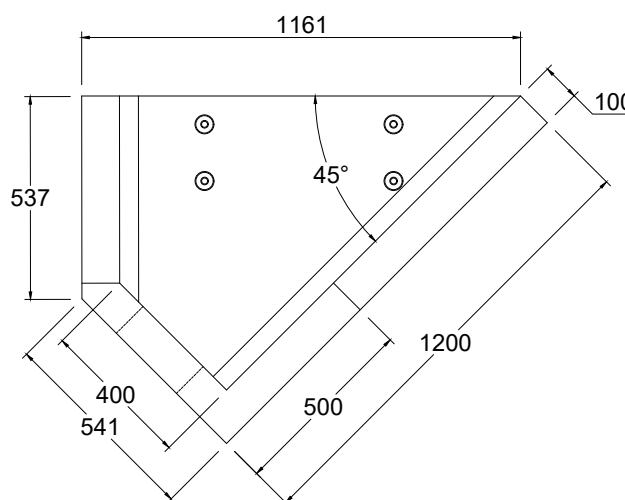
(Scale 1:10)

DRAINAGE NOTES:

- All drainage works to be constructed in strict accordance with specification of the Local Authority, Building Regulations, Design and Construction Guidance (published by Water UK & BS EN 752).
- Any existing drainage found crossing the site is to be investigated, and if found to be 'live', it should be diverted in consultation with Harbournstone Design.
- For location and setting out of building drainage points refer to architects drawings.
- All pipe runs near buildings to comply with the Building Regulations 2015 part H1. Where a pipe is within 1m of a foundation the trench shall be filled with class GEN3 concrete up to the lowest level of the foundation. Where the trench is further than 1m from the foundation, the trench shall be filled with class GEN3 concrete to a level below the lowest level for the foundation equal to the distance from the foundation less 150mm. In both cases the pipe shall be bedded and surrounded in 150mm thick class GEN3 concrete.
- Where pipes, external to the structures, have a depth to soffit from ground level of less than 450mm they shall have a class GEN3 concrete encasement (150mm thick).
- Where a pipe, under a carriageway, has a depth of cover of less than 1.2m the pipe shall be laid in a concrete bed and surround.
- Where a pipe, under a vehicular area other than a carriageway has a depth of cover if less than 0.9m the pipe shall be protected with a concrete slab set above it.
- In any circumstances where pipes are bedded and surrounded in concrete flexible joints should be provided. compressible boards (fibreboard or polystyrene) shall be provided at a maximum of 8m centres (coinciding with pipe joints) the boards shall be pre-cut to pipe diameter and to a height and width equal to the concrete cross section, a board thickness of 18mm for pipes up to 450mm nominal diameter and 36mm for pipes over 450mm nominal diameter.
- All private building drainage shall be constructed in strict accordance with BS EN 752. Foul drainage beneath the floor slab shall be laid, shall be laid no flatter than 1:40. Unless otherwise specified below ground building drainage external to the building shall be 100mm diameter and shall be laid at a minimum gradient of (s/s16 = 1 in 40) s/s16 = 1 in 80) for foul drains and 1 in 80 for surface water drains.
- All building drains shall be laid in conjunction with 'non adoptive bedding details' (class d, n or b) unless otherwise specified.
- All pipes, bends and junction for private building drainage shall be UPVC conforming to BS4660, BSEN13598 and BSEN1401 as appropriate and shall be laid in accordance with the manufacturer's specification.
- All pipes, bends and junction materials for adoptable drainage shall be vitrified clay, extra strength or super strength to BSEN295, with flexible joints and kitemark certified.
- All back inlet gullies to be roddable or connected to inspection chambers.
- All gully connections other than at manholes to be 'Y' junctions.
- All road gully connections to be 150mm diameter.
- All stub stacks to be fitted with air admittance valves where branch drain exceeds 12m except at the head of the run. Soil vent pipes located at the head of a run to terminate to fresh air.
- No low point shall be without a method of drainage.
- All connections to be soffit to soffit unless otherwise noted.
- All concrete and concrete products to be in accordance with BRE 363 for sulphates.
- The locations of all building drainage points shall be cross referenced against the architects drawings during setting out and any discrepancies reported immediately.
- Before connections are made to existing public sewers an application under S106 must be made to relevant sewerage undertaker.
- The precise depth and location and size of existing pipes, watercourses or manholes where connections or diversion are proposed must be confirmed and reported to the engineer before works commence on site.
- Any existing drains to be abandoned to be decommissioned in accordance with the Building Regulations by either grubbing, infilling or sealing.
- Should groundwater be encountered on site during construction Harbournstone Design shall be informed to determine if additional measures are required. **This includes design against flotation.**
- The drainage system shall be fully cleansed on completion of the project using methods that ensure pollution off site does not occur.
- Any existing land drains severed during construction shall be reinstated.

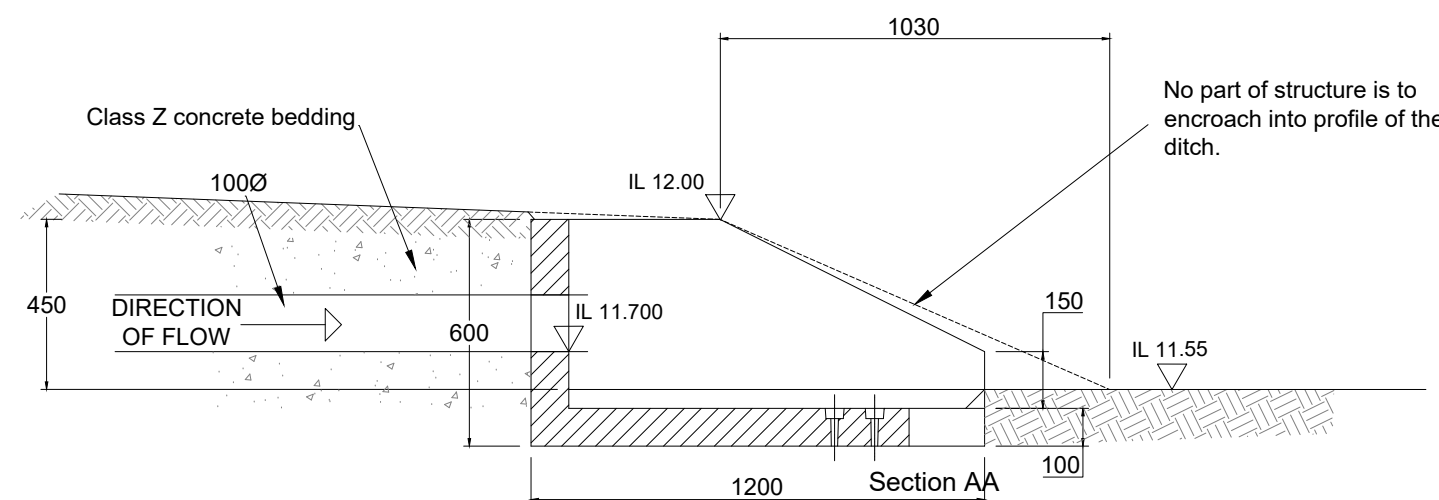
GENERAL

- The main contractor is responsible for the design of all temporary works, and is also responsible for the safe maintenance and stability of existing buildings at all times.
- The main contractor is responsible for dealing with all occurrences of ground water during the construction period.
- The contractor must comply with all current legislation relating to health & safety.
- All products specified shall be installed in strict accordance with the manufacturers recommendations and instructions. If there are discrepancies between that information and the details on any Harbournstone Design drawings, the manufacturers instructions must be used.
- All concrete and cement mortar to be in accordance with BS8500, BSEN206 and BSEN998.
- The contractor is responsible for managing surface water run off during construction.



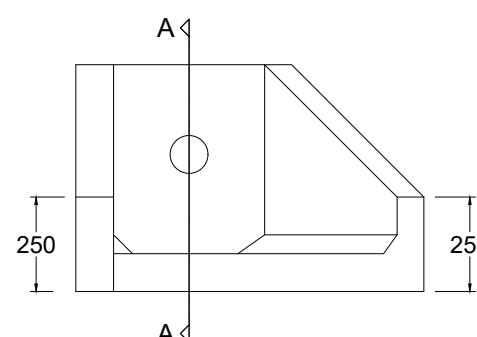
S1 Headwall Athlon Pre-cast AH4C LH Angled Headwall

Scale 1:20



S9 Headwall Athlon Pre-cast AH4C LH Angled Headwall

Scale 1:20



- This drawing is to be read in conjunction with any other information, drawings and specification issued by Principle Designer, Architect and the Harbournstone Design package for this project. Any discrepancies found are to be reported immediately to the Engineer.
- Harbournstone Design accepts no responsibility for inaccuracies in data provided by third parties such as topographic surveys or Ordnance Survey mapping.
- Do not scale, work to figured dimensions only. All dimensions are in millimeters unless noted otherwise and all levels are in metres from the topographic survey datum.
- Any information given regarding existing underground services is given in good faith after consultation with the relevant authority, however accuracy is not certain. The main contractor is responsible for checking all information on site prior to work commencing and taking due care whilst undertaking the works.
- All dimensions to be checked on site. All details and dimensions relating to sub-contractors work must be checked and agreed between the sub-contractor or supplier and the general contractor.
- The electronic information from this drawing can not be guaranteed as dimensionally drawn exact. Figured dimensions must be used for setting out and detailing. Harbournstone Design logos and company information must be removed from copies if information is re-used.
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RESIDUAL HAZARDS

In addition to the hazards/risks normally associated with the type of work detailed on this drawing, note the following:

- Buried services. Contractor to refer to locate existing services and undertake necessary precautions and investigation prior to excavating.
- Excavations close to existing root protection zones. Arboriculturalist to be engaged with regard to civils proposals and appropriate mitigation measures. Contractor to prepare method statement to ensure protection of existing tree roots, in accordance with root protection proposals.
- Connection of existing private drainage. Contractor to ensure drains are shut off during works and ensure operatives are familiar and competent with procedure.
- Excavations close to existing structures. Contractor to prepare method statement to ensure stability of existing structure.
- Working in vicinity of Waterbodies with variable surface water flows & debris. Contractor to provide method statement and ensure operatives have appropriate safeguarding equipment.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved risk assessment and method statement.

Rev.	Original Issue	Date
	Amendments	



Harbournstone Design Limited
Civil Engineering Consultants - harbournstonedesign.co.uk
Registered in England No: 16608131

Drawing Status: **FOR SUBMISSION**

Client: **Domusea Northfields Limited**

Project: **Land East of Northfields Lane, Westergate PO20 3UH**

Drawing Title: **Construction Details
Sht 2 of 2**

Scale	Date	Drawn By	Checked By
As Shown	Oct '2025	DJL	-
Drawing No.			
2025-C109-004			-



IMPERMEABLE AREAS PLAN @ 1:200

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RESIDUAL HAZARDS

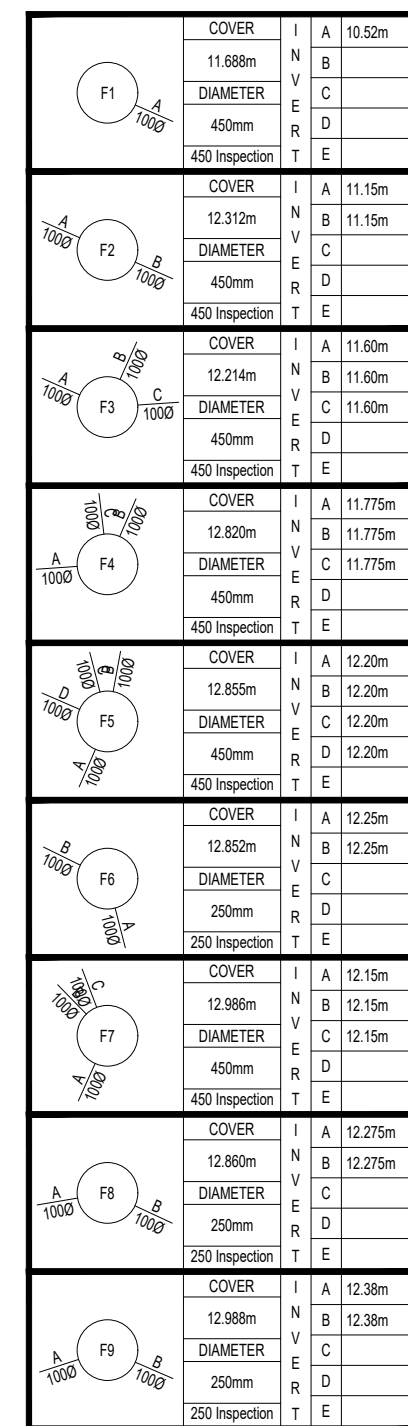
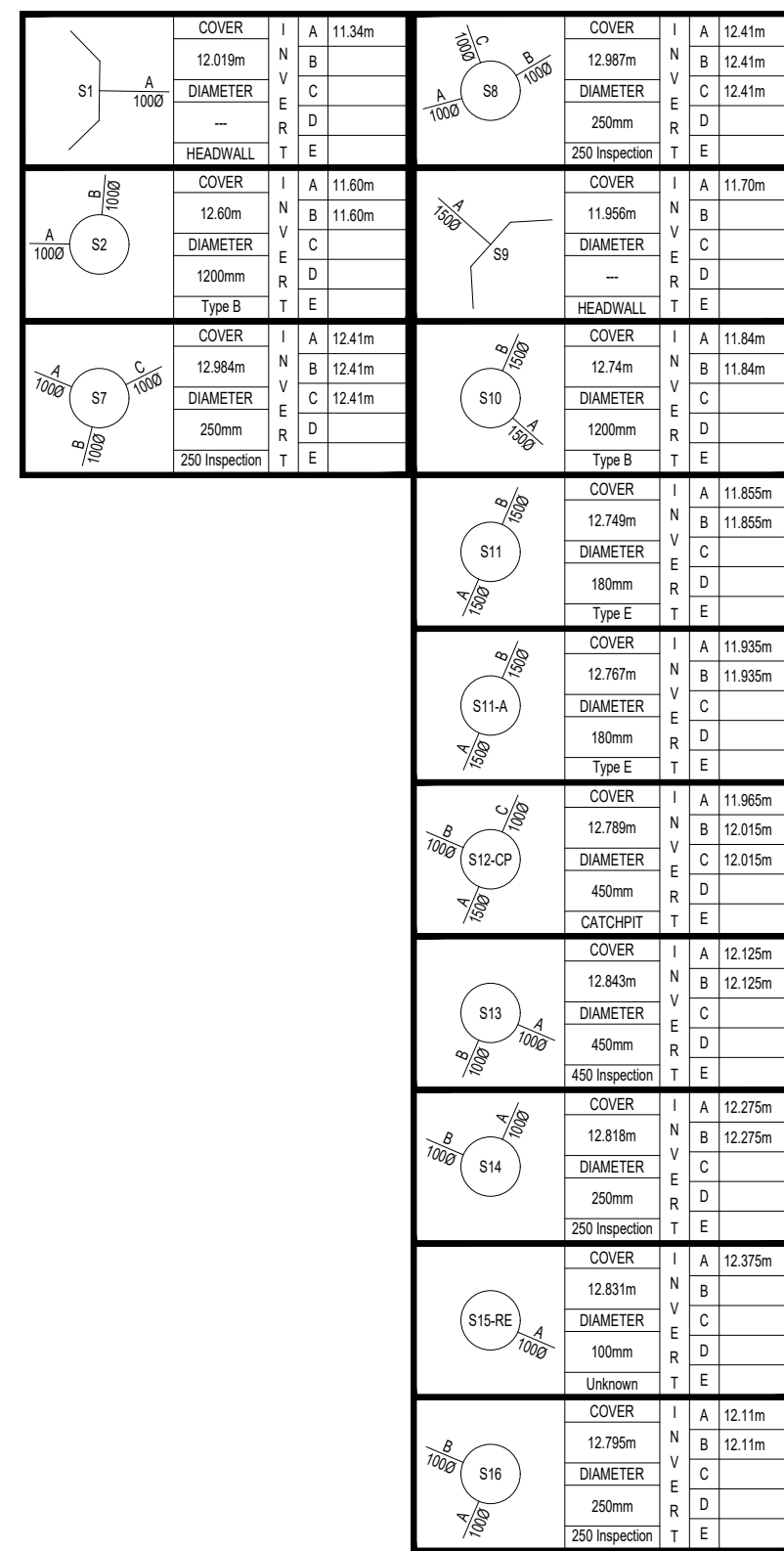
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PHASE: 0 (PRIVATE)

MH No.	MANHOLE DIMENSION (mm)	MANHOLE TYPE	COVER TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)
S1	---	HEADWALL		12.019	11.340	0.579	493893.257	105829.242
S2	1200Ø	Type B		12.600	11.600	0.900	493900.404	105829.137
S7	250Ø	250 Inspection	B125	12.984	12.410	0.474	493938.295	105834.969
S8	250Ø	250 Inspection		12.987	12.410	0.477	493940.264	105841.120
S9	---	HEADWALL		11.956	11.700	0.106	493971.227	105807.662
S10	1200Ø	Type B		12.740	11.840	0.750	493955.659	105821.522
S11	---	Tank		12.749	11.855	0.744	493956.309	105823.016
S13	450Ø	450 Inspection		12.843	12.125	0.618	493949.970	105835.377
S14	250Ø	250 Inspection		12.818	12.275	0.443	493944.061	105821.794
S16	250Ø	250 Inspection		12.795	12.110	0.585	493963.532	105839.943
S11-A	---	Incoming IL		12.767	11.935	0.682	493958.260	105827.621
S12-CP	450Ø	CATCHPIT		12.789	11.965	0.674	493959.775	105831.185
S15-RE	100Ø	Rodding Eye		12.831	12.375	0.356	493935.189	105825.624
S17-RE	100Ø	Rodding Eye		12.867	12.335	0.432	493943.146	105848.588
S3-D	1000x500	Diffuser Unit		12.444	11.970	0.374	493900.648	105832.028
S4-D	1000x500	Diffuser Unit		12.929	12.365	0.464	493934.354	105836.587
S5-D	1000x500	Diffuser Unit		12.906	12.335	0.471	493933.388	105839.264
S6-D	1000x500	Diffuser Unit		12.854	12.300	0.454	493928.829	105841.086
F1	450Ø	450 Inspection		11.688	10.520	1.068	493890.908	105838.324
F2	450Ø	450 Inspection		12.312	11.150	1.062	493898.494	105834.997
F3	450Ø	450 Inspection		12.214	11.600	0.514	493931.282	105820.516
F4	450Ø	450 Inspection		12.820	11.775	0.945	493943.120	105821.332
F5	450Ø	450 Inspection		12.855	12.200	0.555	493949.602	105836.250
F6	250Ø	250 Inspection		12.852	12.250	0.502	493945.648	105828.842
F7	450Ø	450 Inspection	B125	12.986	12.150	0.736	493940.185	105840.377
F8	250Ø	250 Inspection	B125	12.860	12.275	0.485	493935.163	105827.220
F9	250Ø	250 Inspection	B125	12.988	12.380	0.508	493939.155	105836.662



Manhole No.	Pipe No.	Adoptable IMP	Adoptable UC	Private IMP	Private UC	Total IMP + UC
RWP1	0.000	0.000	0.000	32.311	3.231	35.542
RWP2	0.000	0.000	0.000	0.000	0.000	0.000
RWP10	0.000	0.000	0.000	0.000	0.000	0.000
RWP8	0.000	0.000	0.000	0.000	0.000	0.000
RWP9	0.000	0.000	0.000	0.000	0.000	0.000
RWP13	0.000	0.000	0.000	0.000	0.000	0.000
RWP11	0.000	0.000	0.000	0.000	0.000	0.000
RWP12	0.000	0.000	0.000	0.000	0.000	0.000
RWP3	1.000	0.000	0.000	0.000	0.000	0.000
S15-RE	1.000	0.000	0.000	35.111	3.511	38.622
PS1	1.000	0.000	0.000	0.000	0.000	0.000
S8	1.001	0.000	0.000	0.000	0.000	0.000
S14	1.001	0.000	0.000	69.151	6.915	76.066
S5-D	1.002	0.000	0.000	0.000	0.000	0.000
S13	1.002	0.000	0.000	59.953	5.995	65.948
S12-CP	1.003	0.000	0.000	0.000	0.000	0.000
S3-D	1.003	0.000	0.000	285.163	9.475	294.638
S2	1.004	0.000	0.000	0.000	0.000	0.000
S11-A	1.004	0.000	0.000	0.000	0.000	0.000
S11	1.005	0.000	0.000	0.000	0.000	0.000
S10	1.006	0.000	0.000	0.000	0.000	0.000
RWP4	2.000	0.000	0.000	0.000	0.000	0.000
S17-RE	2.000	0.000	0.000	53.475	5.347	58.822
S16	2.001	0.000	0.000	0.000	0.000	0.000
RWP7	3.000	0.000	0.000	0.000	0.000	0.000
S7	3.001	0.000	0.000	0.000	0.000	0.000
S4-D	3.002	0.000	0.000	0.000	0.000	0.000
RWP6	4.000	0.000	0.000	0.000	0.000	0.000
RWP5	5.000	0.000	0.000	0.000	0.000	0.000
S6-D	5.001	0.000	0.000	0.000	0.000	0.000
Totals:		0.000	0.000	535.163	34.475	569.638

Rev.	Original Issue	Date
	Amendments	



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Registered in England No: 16608131

Drawing Status: FOR SUBMISSION

Client: Domusea Northfields Limited

Project: Land East of Northfields Lane, Westergate PO20 3UH

Drawing Title: Manhole & Impermeable Areas Schedules

Scale: As Shown Date: Oct' 2025 Drawn By: DJL Checked By: -

Drawing No: 2025-C109-005 Rev: -