

Lineside Way, Wick, Littlehampton, BN17 7EH

Reference: [R0828] -Rev - V1

jun-25

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Rev 1 Produced by: ARD

Lineside Way, Wick, Littlehampton, BN17 7EH

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Report Limitations

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Drainage Strategy

Purpose of this report

- 1.1 The purpose of this statement is to accompany the technical drawings and details showing the proposed Surface Water drainage system as part of the planning application for this development.

Scope

- 1.2 This Sustainable Drainage Strategy (SDS) outlines the key drainage principles and requirements for the proposed development at Lineside Way, Wick, Littlehampton, BN17 7EH. It provides a summary of the sustainable drainage system (SuDS) design, based on the specific site conditions and relevant guidelines, including Building Regulations Approved Document Part H and CIRIA C753: The SuDS Manual 2015. As the project progresses and new information becomes available, this strategy will be updated to reflect ongoing changes and the development of the detailed design.

Site Characteristics

- 2.1 The site background is clearly identified through answers to the questions in table 1 below.

Table 1: Site Characteristics . See appendix B for support documentation

TOPIC	QUESTION	ANSWER
Protected species or habitat	Is the site near to designated sites and priority habitats?	No
Flood Plain	Is the site located in the flood plain?	Yes
Soils and Geology	Soil permeability? - See appendix B for results	No
Space constraints	Space for SuDS components?	Yes
Topography	Sited on a flat site?	Yes
	Sited on a steep slope (5-15%)	No
	Sited on a very steep slope (>15%)	No
Groundwater	Is the site at groundwater flood risk?	No
Contaminated land	Are there contaminated soils on site?	Unknown
Source Protection Zone	Is the site within a SPZ 3?	No
Runoff characteristics	Is the development in a high risk flooding area?	No

Existing and Proposed Site

- 2.2 The distribution of catchment areas for existing and proposed site is as per table 2 below. See appendix A for details

Table 2 : Existing and Proposed catchment areas in hectares

Description	Existing Site	Proposed Site
Impermeable Areas	0.025	0.025
Permeable Areas	0.000	0.000
	0.000	0.000
Areas Draining Away from drainage System	0.000	0.000
Total Development Area	0.025	0.025

- 2.3 It has been assumed that the positively drained areas will have different runoff coefficients depending on the type of surface as follow:

Impermeable Surface	1.0
Permeable Surfaces	0.5
Grass Areas	0.3

Evaluation of Discharge Point

3.1 The SuDS design takes into account Building Regulations Section H3 and the National Planning Practice Guidance. The aim is to discharge surface water run-off as high up the drainage hierarchy, as reasonably practicable:

1. into the ground (infiltration);
2. to a surface water body;
3. to a surface water sewer, highway drain, or another drainage system;
4. to a combined sewer.

3.2 The discharge point has been evaluated following the NPPG and Building regulations. The findings are in table 3 below.

Table 3: Drainage Hierarchy evaluation

Superficial geology classification	The British Geological Society records show that the superficial deposits are Raised Beach Deposits - Sand and Gravel .
Bedrock geology classification	The British Geological Society records of the site show that it is located within the Lewis Nodular Chalk formation.
Landis Top Soil Infiltration	The SOILSCAPE's records of the site show that it is located within an area of naturally wet soils.
Groundwater	The British Geological Survey's flood risk susceptibility maps show that the development has potential for groundwater flooding below ground level. Groundwater levels would tend to vary seasonally and are influenced by ground and meteorological conditions and proximity to water features.
Is infiltration feasible?	Infiltration is not possible on this site due to findings on groundwater and soils
Is a discharge to a watercourse feasible?	There is no watercourse near the site.
Is a discharge to a surface water sewer feasible?	There is a surface water sewer in the proximity to the site. It is possible to connect to the surface water sewer, and it is proposed to discharge into this surface water sewer.
Is a discharge to a combined sewer feasible?	There is no combined water sewer in the proximity to the site.

Existing and Proposed Peak Run-off Calculations

- 4.1 The current site is a Brownfield. The peak runoff rate for the existing site was calculated as per table 4 and discharge rates as per table 5.

Table 4: Peak run-off rate calculation method for existing site

Method Used	Calculation Method
☐	Report 124 Flood Estimation for Small Catchments method has been used to estimate the site peak flow rates
☒	This is a brownfield site, runoff rates are calculated in accordance with best practice simulation modelling and using the modified rational method
☐	This is a brownfield site where the pre-development drainage isn't known. The runoff rates are calculated using the Greenfield model with soil type 5

- 4.2 The runoff flow produced by the development will be controlled as per table 5.

Table 5: Runoff discharge rate control

Control Used	Description of runoff discharge
☐	Water will be discharged into the ground via a SuDS as described in table 6 below
☐	The peak discharge rate has been reduced to Greenfield Qbar flow
☒	The peak discharge rate has been taken as 0.7 l/s as it is not possible to reduce it to the Greenfield Qbar rate
☐	The peak discharge rate has been reduced to Brownfield pre-development 1 in 1 flow
☐	The peak discharge rate has been reduced by 60% from the existing Brownfield pre-development 1 in 2 flow rate

Run-off flows

- 4.3 The size of the SuDS has been calculated for all events up to the 1 in 100 including an allowance for climate change of 45%. As per tables above, it is proposed to discharge at a rate of 0.7 l/s. See table 6 for values and appendix C for calculations.

Table 6: Peak discharge rates for SuDS

Return Period Event	Discharge Rate (l/s)			Infiltration Rate (m/hr)
	Existing Greenfield	Existing Brownfield	Proposed	
Qbar	0.10	0.10	N/A	0.0000
1 in 1	0.10	0.10	0.7	0.0000
1 in 2	0.10	0.20	0.7	0.0000
1 in 30	0.20	0.30	0.7	0.0000
1 in 30 + CC	N/A	N/A	0.7	0.0000
1 in 100	0.20	0.30	0.7	0.0000
1 in 100 + CC	N/A	N/A	0.7	0.0000

Proposed Sustainable Drainage System

5.1 The following sustainable drainage systems have been used for this site. The drainage design uses these drainage system through out the site. See table 7 for details.

Table 7: Evaluation of SuDS and Proposed Drainage System

<i>Most Sustainable</i>	SuDS Technique	Feasible	Proposed	Flood Reduction	Pollution Reduction	Landscape & Wildlife Benefit
	Living Roofs					
	Green Roof	No	No	×	×	×
	Green Blue Roof	No	No	×	×	×
	Basins and Ponds			×	×	×
	Rainwater Gardens	No	No	×	×	×
	Rainwater Planters	No	No	×	×	×
	Constructed Wetlands	No	No	×	×	×
	Balancing Pond	No	No	×	×	×
	Detention Basins	No	No	×	×	×
	Retention Ponds	No	No	×	×	×
	Filters and Swales					
	Filter Strips	No	No	×	×	×
	Swales	No	No	×	×	×
	Infiltration Devices					
	Soakaways Crates	No	No	×	×	×
	Deep Boreholes	No	No	×	×	×
	Infiltration Trenches	No	No	×	×	×
	Infiltration Basin	No	No	×	×	×
	Permeable Surfaces			×	×	
	Permeable Surfaces	No	No	×	×	
	Filter Drains	No	No	×	×	
	Tanked System					
	Storage Crates	Yes	Yes	×		
	Oversized Tanks	No	No	×		
	Oversized Pipes	No	No	×		
	Blue Roof	No	No	×		
<i>Least Sustainable</i>	Water Harvesting	No	No	×		

- 5.2 The location and details of the SuDS can be seen drainage layouts in appendix D. Calculations are in appendix C.
- 5.3 The drainage calculations demonstrate:
 - No flooding occurs for the 1 in 30 storm events.
 - Any flooding for the 1 in 100 year + 45% climate change event can be safely contained on site
- 5.4 The proposed drainage strategy presents one possible solution to demonstrate that the development can be sustainably drained, to comply with the requirements of the NPPF. Other solutions may be feasible and may prove to be better suited to the site. These will become apparent during the detailed design stage. The strategy above should not therefore be interpreted as the definitive scheme solution.

Management of Exceedance Flows

- 5.5 The drainage network has been designed to attenuate surface runoff for all events up to and including the 1% AEP + CC(1 in 100 years). However consideration has been given to what may happen when the design capacity of the surface water drainage network is exceeded. Surface water will flow to the lowest points within the site. The flood risk to the buildings would therefore remain low. See appendix D.

Maintenance and Management plan responsibility

6.1 The SuDS will be maintained by The Owner the property

Maintenance and Management plan for proposed SuDS

6.2 The maintenance and Management Plan Guidance from the SuDS Manual, CIRIA C753 (CIRIA, 2015) is to be followed for the effective maintenance of the proposed SuDS techniques outlined above. The maintenance for SuDS structures are as follow:

INLETS, OUTLETS, CONTROLS AND INSPECTION CHAMBERS	
Regular Maintenance	Frequency
Inlets, outlets and surface control structures	
Inspect surface structures removing obstructions and silt as necessary. Check there is no physical damage.	Monthly
Strim vegetation 1m min. surround to structures and keep hard aprons free from silt and debris	Monthly
Inspection chambers and below ground control chambers	
Remove cover and inspect ensuring water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt.	Annually
Undertake inspection after leaf fall in autumn	
Occasional Maintenance	
Check topsoil levels are 20mm above edges of baskets and chambers to avoid mower damage	As necessary
Remedial work	Frequency
Unpack stone in basket features and unblock or repair and repack stone as design detail as necessary.	As required
Repair physical damage if necessary.	As required

Operation and maintenance requirements for attenuation storage tanks		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/or internal forebays	Annually, or as required
Remedial actions	Repair/rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

Appendix A



EXISTING
SITE
1:250



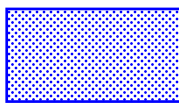
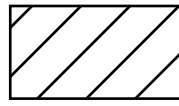
PROPOSED
SITE
1:250

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Drawing Scale Bar		Drawing Scale Bar	
Drawing scale	Line length	Drawing scale	Line length
1:5	= 0.25 metres	1:200	= 10.0 metres
1:10	= 0.5 metres	1:250	= 12.5 metres
1:20	= 1.0 metres	1:500	= 25.0 metres
1:25	= 1.25 metres	1:1000	= 50.0 metres
1:50	= 2.5 metres	1:1250	= 62.5 metres
1:100	= 5.0 metres	1:2500	= 125 metres
Measure length of line above for checking of scale			

GENERAL NOTES

KEY

-  PERMEABLE AREAS
-  IMPERMEABLE AREAS
-  STUDY AREA

Rev	Details	Date	By	Chd

Drawing Status:
PRELIMINARY



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Project:
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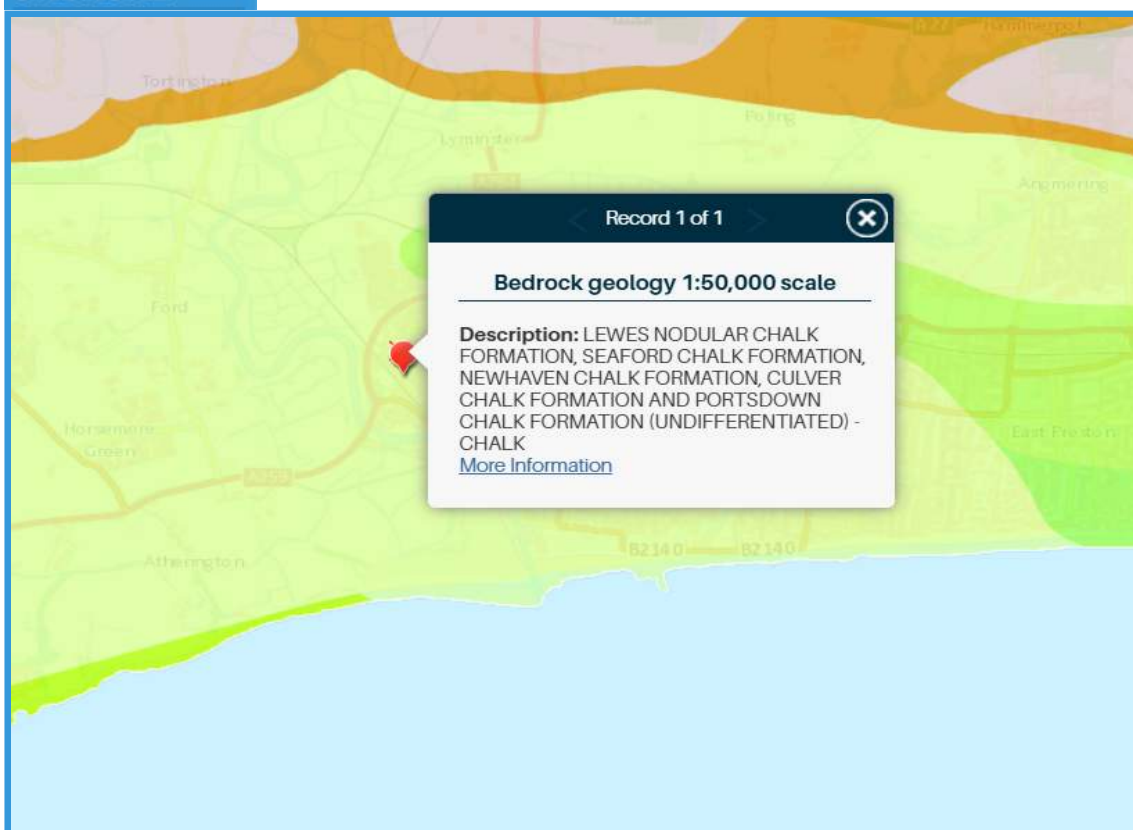
Drawing:
Existing and Proposed Areas
Permeable and Impermeable

Print: Size: Project No: Drawing No: Revision:
A1 [R0828] 002 P1

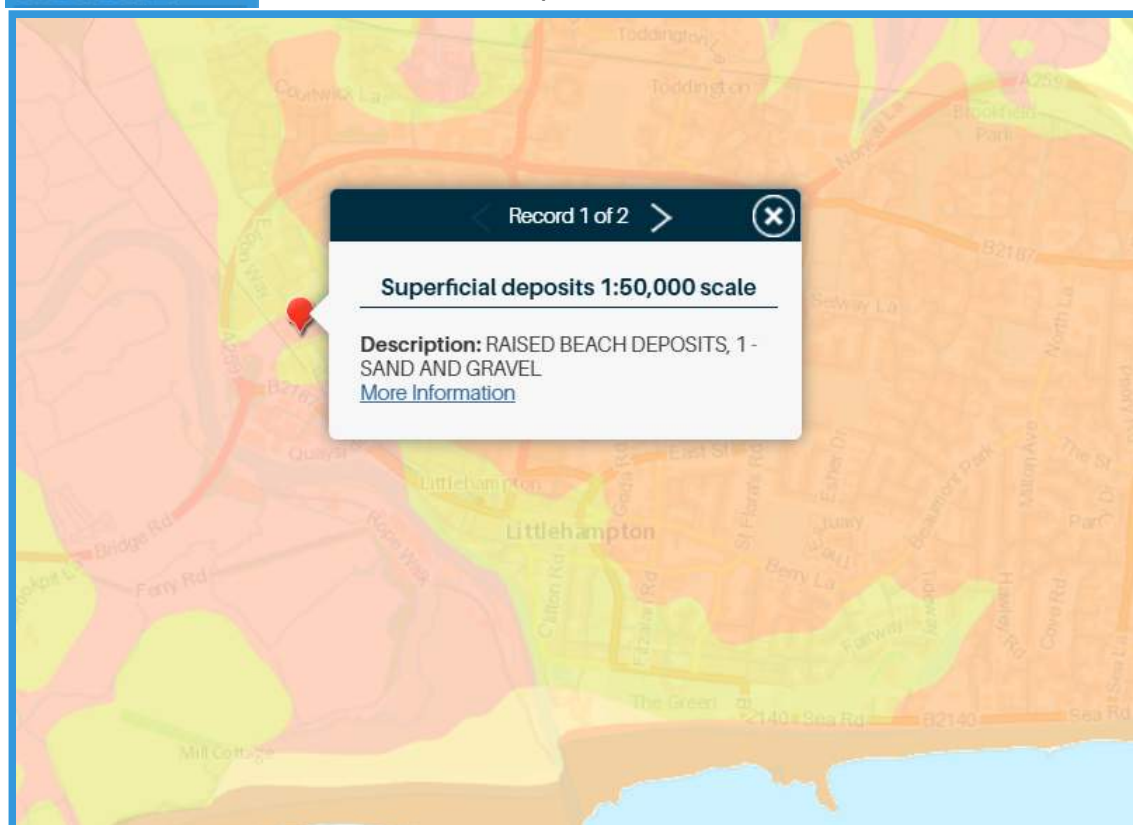
Appendix B



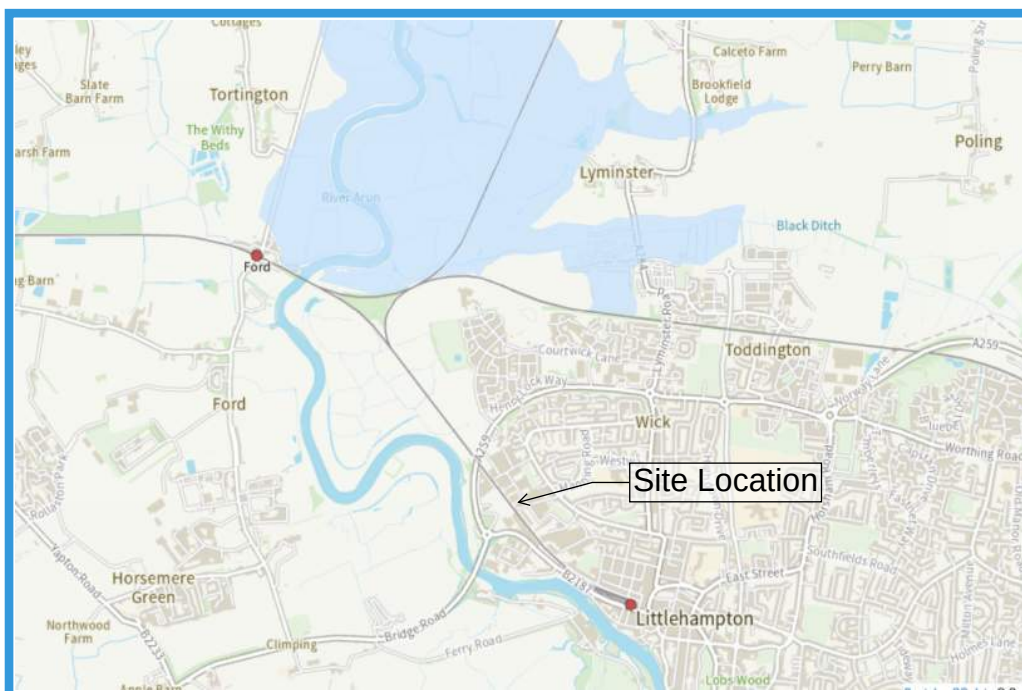
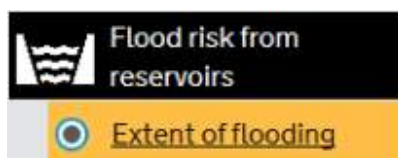
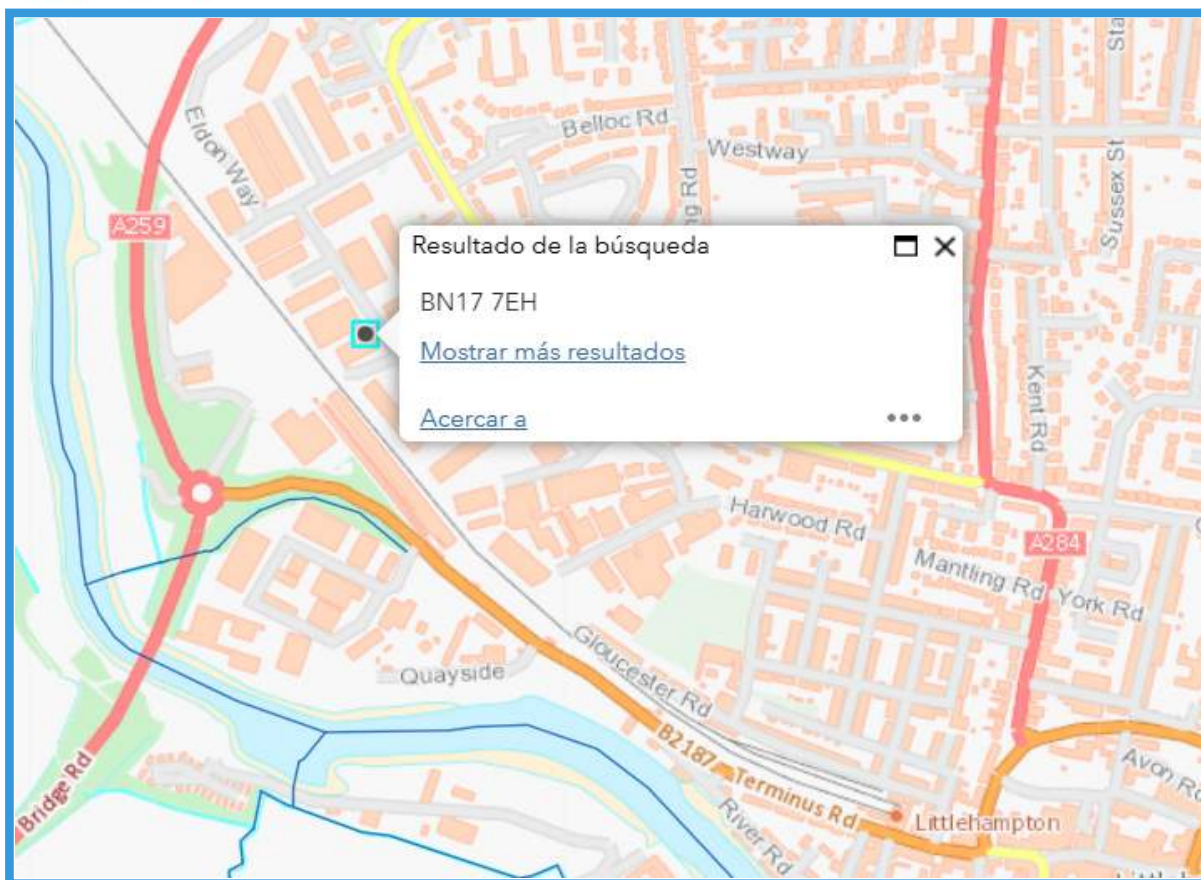
GEOLOGY - BEDROCK - LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION



GEOLOGY - SUPERFICIAL DEPOSITS - Raised Beach Deposits - Sand and Gravel



Main River Map



- When river levels are normal
- When there is also flooding from rivers

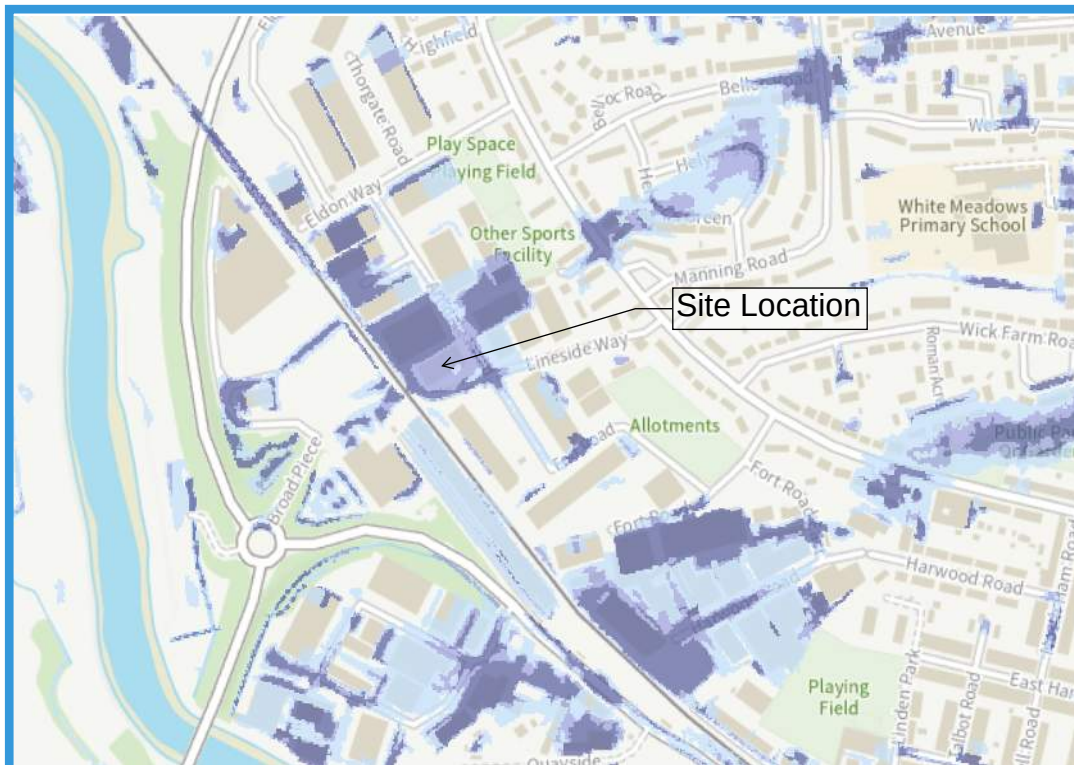
SITE SURFACE WATER FLOOD RISK

High risk means a chance of flooding greater than 3.3% (1:30)

Medium risk means a chance of flooding of btw 1% (1:100) and 3.3%

Low risk means a chance of flooding of btw 0.1% (1:1000) and 1%

Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding



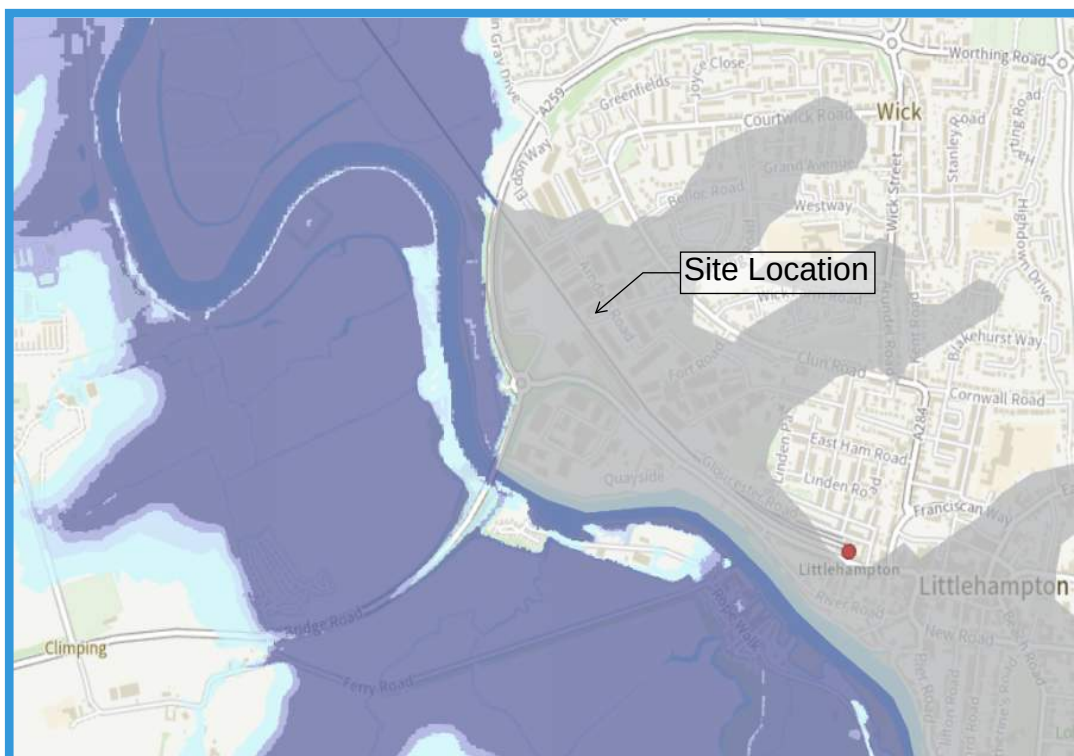
- High - greater than or equal to 1 in 30 (3.3%) chance of flooding in any year
- Medium - Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance of flooding in any given year
- Low - Less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) chance of flooding in any given year
- Very low - less than 1 in 1000 (0.1%) chance of flooding in any given year



Yearly chance of flooding

● Flood area (extent)

- High chance
- Medium chance
- Low chance
- Very low chance



Yearly chance of flooding between 2036 and 2069

● Flood area (extent)

- High chance
- Medium chance
- Low chance
- Very low chance
- No data available

MAGIC RESULTS



Site Check Results

Site Check Report generated on Thu Apr 03 2025

The following features have been found in your search area:

You selected the location: Centroid Grid Ref: TQ01830277

Aquifer Designation Map (Superficial Drift) (England)

TPOLOGY Secondary A

Aquifer Designation Map (Bedrock) (England)

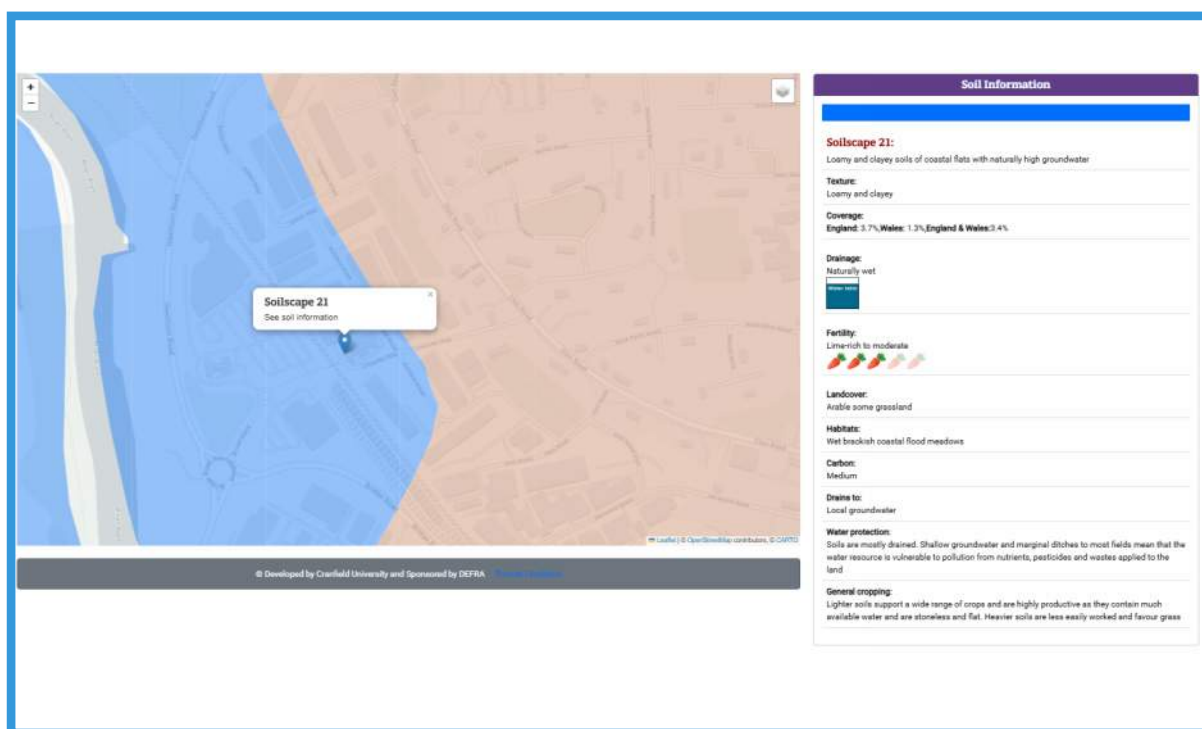
TPOLOGY Principal

Source Protection Zones merged (England)

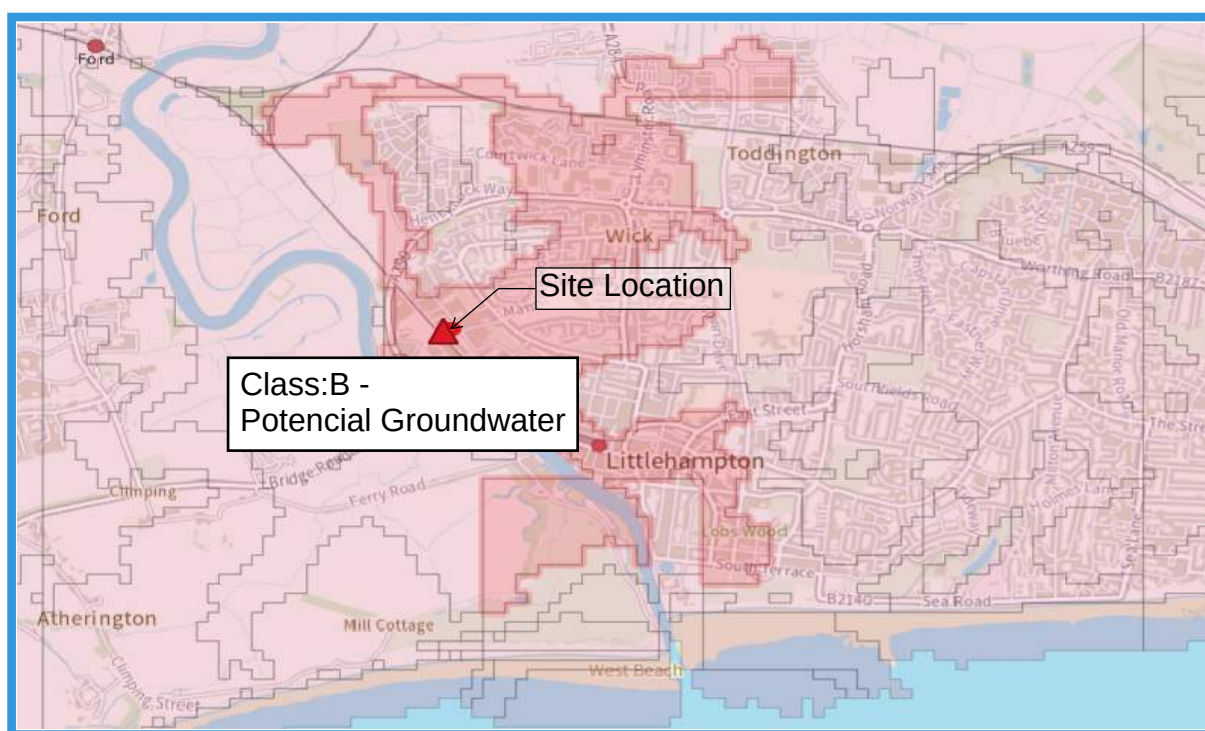
No Features found

[Export to CSV](#)

[Print](#)



GROUND WATER FLOOD RISK



Flood map for planning

Your reference
R0828

Location (easting/northing)
501848/102780

Created
7 April 2025 17:13

Your selected location is in flood zone 3, an area with a high probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see <https://www.gov.uk/guidance/flood-risk-assessment-standing-advice>)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3>

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Flood map for planning

Your reference
R0828

Location (easting/northing)
501848/102780

Scale
1:2,500

Created
7 Apr 2025 17:13

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area


0 20 40 60m

Site Check Report generated on Thu Apr 03 2025

You selected the location: Centroid Grid Ref: TQ01830277

Aquifer Designation Map (Superficial Drift) (England)

TYPOLOGY

Secondary A

Aquifer Designation Map (Bedrock) (England)

TYPOLOGY

Principal

Source Protection Zones merged (England)

No Features found

Nutrient Neutrality Catchments

No Features found

Wild Bird General Licence Protected Sites Condition Zone (England)

No Features found

Nitrate Vulnerable Zones 2017 Designations (England)

No Features found

Less Favoured Areas (England)

No Features found

Biosphere Reserves (England)

No Features found

Biosphere Reserves (England) - points

No Features found

Potential Special Protection Areas (England)

No Features found

Potential Special Protection Areas (England) - points

No Features found

Special Protection Areas (England)

No Features found

Special Protection Areas (England) - points

No Features found

Possible Special Areas of Conservation (England)

No Features found

Possible Special Areas of Conservation (England) - points

No Features found

Special Areas of Conservation (England)

No Features found

Special Areas of Conservation (England) - points

No Features found

SSSI Impact Risk Zones - for LPAs to determine likely impacts on terrestrial SSSIs and when to consult Natural England

No Features found

Sites of Special Scientific Interest (England)

No Features found

Sites of Special Scientific Interest (England) - points

No Features found

Sites of Special Scientific Interest Units (England)

No Features found

Sites of Special Scientific Interest Units (England) - points

No Features found

Proposed Ramsar Sites (England)

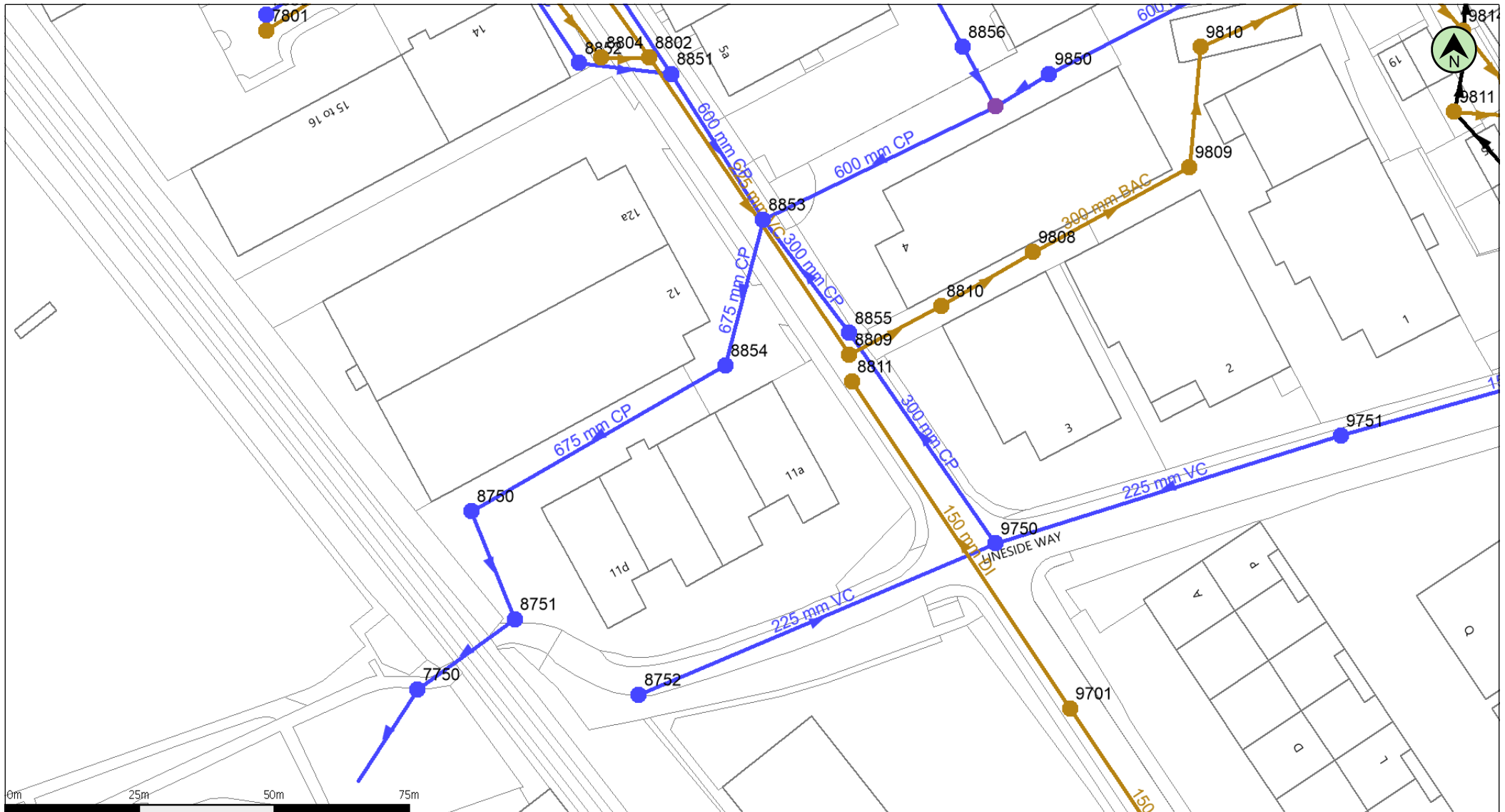
No Features found

Proposed Ramsar Sites (England) - points

No Features found

Ramsar Sites (England)

No Features found
Ramsar Sites (England) - points
No Features found
National Parks (England)
No Features found
National Nature Reserves (England)
No Features found
National Nature Reserves (England) - points
No Features found
Moorland Line (England)
No Features found
Local Nature Reserves (England)
No Features found
Local Nature Reserves (England) - points
No Features found
Limestone Pavement Orders (England)
No Features found
Areas of Outstanding Natural Beauty (England)
No Features found

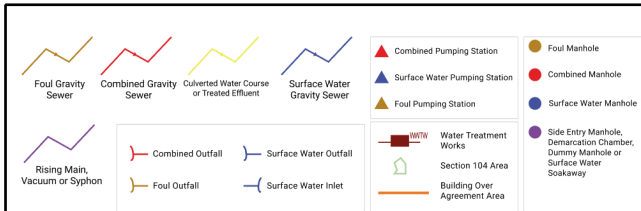


(c) Crown copyright and database rights 2025 Ordnance Survey AC0000808122 Date: 09/04/25 Scale: 1:1000 Map Centre: 501860,102800 Data updated: 20/03/25 Our Ref: 1740469 - 1 Wastewater Plan A4 Powered by digdat

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WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

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



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11 Lineside Way



Appendix C



Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Inverts
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	1.000	Include Intermediate Ground	✓
Time of Entry (mins)	6.00	Enforce best practice design rules	✓

Simulation Settings

Rainfall Methodology	FSR	Drain Down Time (mins)	240
Rainfall Events	Singular	Additional Storage (m³/ha)	0.0
FSR Region	England and Wales	Starting Level (m)	
M5-60 (mm)	20.000	Check Discharge Rate(s)	✓
Ratio-R	0.400	1 year (l/s)	0.1
Summer CV	1.000	2 year (l/s)	0.1
Winter CV	1.000	30 year (l/s)	0.1
Analysis Speed	Normal	100 year (l/s)	0.2
Skip Steady State	x	Check Discharge Volume	x

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
2	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	40	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	1.75
Greenfield Method	IH124	Growth Factor 100 year	2.08
Positively Drained Area (ha)	0.025	Betterment (%)	0
SAAR (mm)	718	QBar	0.1
Soil Index	3	Q 1 year (l/s)	0.1
SPR	0.37	Q 2 year (l/s)	0.1
Region	3	Q 30 year (l/s)	0.1
Growth Factor 1 year	0.86	Q 100 year (l/s)	0.2
Growth Factor 2 year	0.94		



Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
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Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	1.000	Include Intermediate Ground	✓
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Simulation Settings

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Ratio-R	0.400	1 year (l/s)	0.1
Summer CV	1.000	2 year (l/s)	0.2
Winter CV	1.000	30 year (l/s)	0.3
Analysis Speed	Normal	100 year (l/s)	0.3
Skip Steady State	x	Check Discharge Volume	x

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
2	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	40	0	0

Pre-development Discharge Rate

Site Makeup	Brownfield	Growth Factor 2 year	0.94
Brownfield Method	Greenfield	Growth Factor 30 year	1.75
Greenfield Method	IH124	Growth Factor 100 year	2.08
Positively Drained Area (ha)	0.025	Betterment (%)	0
SAAR (mm)	718	QBar	0.2
Soil Index	5	Q 1 year (l/s)	0.1
SPR	0.53	Q 2 year (l/s)	0.2
Region	3	Q 30 year (l/s)	0.3
Growth Factor 1 year	0.86	Q 100 year (l/s)	0.3

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
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Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	1.000	Include Intermediate Ground	✓
Time of Entry (mins)	6.00	Enforce best practice design rules	✓

Circular Link Type

Shape	Circular	Auto Increment (mm)	75
Barrels	1	Follow Ground	x

Available Diameters (mm)

100 | 150

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	1	2	77.159	0.600	1.400	0.800	0.600	128.6	225	7.12	50.0
1.001	2	3	95.171	0.600	0.800	0.680	0.120	793.1	225	10.59	48.8

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.151	45.8	4.5	0.275	0.875	0.025	0.0	48	0.741
1.001	0.457	18.2	4.4	0.875	0.905	0.025	0.0	75	0.376

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	77.159	128.6	225	Circular	1.900	1.400	0.275	1.900	0.800	0.875
1.001	95.171	793.1	225	Circular	1.900	0.800	0.875	1.810	0.680	0.905

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	1	450	Manhole	Adoptable	2		Junction	
1.001	2		Junction		3	450	Manhole	Adoptable

Simulation Settings

Rainfall Methodology	FSR	Drain Down Time (mins)	240
Rainfall Events	Singular	Additional Storage (m³/ha)	0.0
FSR Region	England and Wales	Starting Level (m)	
M5-60 (mm)	20.000	Check Discharge Rate(s)	✓
Ratio-R	0.400	1 year (l/s)	0.1
Summer CV	1.000	2 year (l/s)	0.2
Winter CV	1.000	30 year (l/s)	0.3
Analysis Speed	Normal	100 year (l/s)	0.3
Skip Steady State	x	Check Discharge Volume	x

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
2	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	40	0	0

Pre-development Discharge Rate

Site Makeup	Brownfield	Growth Factor 2 year	0.94
Brownfield Method	Greenfield	Growth Factor 30 year	1.75
Greenfield Method	IH124	Growth Factor 100 year	2.08
Positively Drained Area (ha)	0.025	Betterment (%)	0
SAAR (mm)	718	QBar	0.2
Soil Index	5	Q 1 year (l/s)	0.1
SPR	0.53	Q 2 year (l/s)	0.2
Region	3	Q 30 year (l/s)	0.3
Growth Factor 1 year	0.86	Q 100 year (l/s)	0.3

Node 2 Online Orifice Control

Flap Valve	x	Invert Level (m)	0.800	Diameter (m)	0.023
Downstream Link	1.001	Design Depth (m)	0.400	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Flow (l/s)	0.7		

Node 2 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	0.800
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	134

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	9.0	9.0	0.801	0.0	17.5	1.100	0.0	17.5
0.800	9.0	17.5	0.810	0.0	17.5			

Other (defaults)

Entry Loss (manhole)	0.250	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.250	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Approval Settings

Node Size	✓	Minimum Cover Depth (m)	
Node Losses	✓	Maximum Cover Depth (m)	3.000
Link Size	✓	Backdrops	✓
Minimum Diameter (mm)	150	Minimum Backdrop Height (m)	
Link Length	✓	Maximum Backdrop Height (m)	1.500
Maximum Length (m)	100.000	Full Bore Velocity	✓
Coordinates	✓	Minimum Full Bore Velocity (m/s)	
Accuracy (m)	1.000	Maximum Full Bore Velocity (m/s)	3.000
Crossings	✓	Proportional Velocity	✓
Cover Depth	✓	Return Period (years)	

Approval Settings

Minimum Proportional Velocity (m/s)	0.750	Return Period (years)	30
Maximum Proportional Velocity (m/s)	3.000	Time to Half Empty	x
Surcharged Depth	✓	Discharge Rates	✓
Return Period (years)		Discharge Volume	✓
Maximum Surcharged Depth (m)	0.100	100 year 360 minute (m³)	
Flooding	✓		

Results for 1 year Critical Storm Duration. Lowest mass balance: 97.05%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	1.445	0.045	4.0	0.0072	0.0000	OK
120 minute summer	2	88	0.960	0.160	2.0	1.3709	0.0000	OK
120 minute summer	3	92	0.695	0.015	0.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	4.0	0.786	0.088	0.8116	
120 minute summer	2	1.001	3	0.4	0.196	0.022	0.1992	3.9

Results for 2 year Critical Storm Duration. Lowest mass balance: 97.05%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	11	1.450	0.050	5.1	0.0080	0.0000	OK
120 minute summer	2	88	1.003	0.203	2.5	1.7337	0.0000	OK
180 minute summer	3	128	0.696	0.016	0.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	5.1	0.804	0.111	1.0868	
120 minute summer	2	1.001	3	0.5	0.206	0.025	0.2180	4.8

Results for 30 year Critical Storm Duration. Lowest mass balance: 97.05%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	11	1.470	0.070	9.7	0.0111	0.0000	OK
120 minute summer	2	94	1.253	0.453	4.7	3.8765	0.0000	SURCHARGED
120 minute summer	3	98	0.701	0.021	0.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	9.6	0.855	0.211	1.8277	
120 minute summer	2	1.001	3	0.7	0.238	0.039	0.2911	8.8

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 97.05%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	11	1.483	0.083	13.6	0.0132	0.0000	OK
120 minute winter	2	100	1.457	0.657	4.5	5.6189	0.0000	SURCHARGED
180 minute summer	3	136	0.703	0.023	0.9	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	13.5	0.865	0.296	2.0367	
120 minute winter	2	1.001	3	0.9	0.255	0.048	0.3311	11.7

Results for 100 year Critical Storm Duration. Lowest mass balance: 97.05%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	11	1.480	0.080	12.6	0.0127	0.0000	OK
120 minute winter	2	98	1.425	0.625	4.2	5.3418	0.0000	SURCHARGED
120 minute winter	3	104	0.703	0.023	0.8	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	12.5	0.866	0.274	2.0063	
120 minute winter	2	1.001	3	0.8	0.252	0.046	0.3253	11.1

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 97.05%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	1	104	1.836	0.436	5.9	0.0693	0.0000	FLOOD RISK
120 minute winter	2	108	1.835	1.035	5.9	6.8443	0.0000	FLOOD RISK
120 minute winter	3	108	0.706	0.026	1.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	1	1.000	2	5.9	0.599	0.129	3.0687	
120 minute winter	2	1.001	3	1.1	0.275	0.061	0.3877	14.6

Appendix D

Do not scale from this drawing. Refer to figured dimensions only. RIDA Reports Ltd registered in England and Wales No. 10590566. This drawing is copyright of RIDA Reports Ltd.

Drawing Scale Bar

Drawing scale	Line length	Drawing scale	Line length
1:5 = 0.25 metres		1:200 = 10.0 metres	
1:10 = 0.5 metres		1:250 = 12.5 metres	
1:20 = 1.0 metres		1:500 = 25.0 metres	
1:25 = 1.25 metres		1:1000 = 50.0 metres	
1:50 = 2.5 metres		1:1250 = 62.5 metres	
1:100 = 5.0 metres		1:2500 = 125 metres	

Measure length of line above for checking of scale

GENERAL NOTES

- All dimensions are in millimetres and levels in m AOD unless stated otherwise.
- Do not scale. If in any doubt, consult Engineer.
- Read in conjunction with the architects and engineers schedule drawings.
- Check inverters and sizes of existing pipes prior to the commencement of any work. Report any discrepancies to the engineer and await instructions.
- The location of services is shown as indicative. This drawing should be read in conjunction with the utilities drawings. No warranty to their accuracy can be given. The Contractor shall take all necessary measures to satisfy himself as to the location of the existing services and connection points. Excavation should be undertaken in compliance with HSG47.

KEY

-
- The diagram illustrates a proposed surface water sewer pipe system. It includes the following components and connections:
- Proposed Surface Water Sewer Pipe:** Represented by a solid blue line at the top.
 - Exceedance Flows:** Represented by a blue wavy arrow pointing right.
 - Permeable Surface as per architect's details:** Represented by a blue hatched rectangular area.
 - Sub-base 350mm Type 3:** Represented by a blue hatched rectangular area below the permeable surface.
 - Linear Drainage Channel:** Represented by a blue dashed line.
 - Silt Trap:** Represented by a solid blue circle.
 - Existing Surface Water Sewer Pipe:** Represented by a blue line with 'SW' labels at both ends at the bottom.
- Arrows indicate the flow path: from the permeable surface and sub-base into the linear drainage channel, then through the silt trap, and finally into the existing surface water sewer pipe.

Rev	Details	Date	By Cnrd

Drawing Status:

PRELIMINARY



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Project:

ineside Way, Wick, Littlehampton, BN17 7EH

Proposed Drainage Strategy

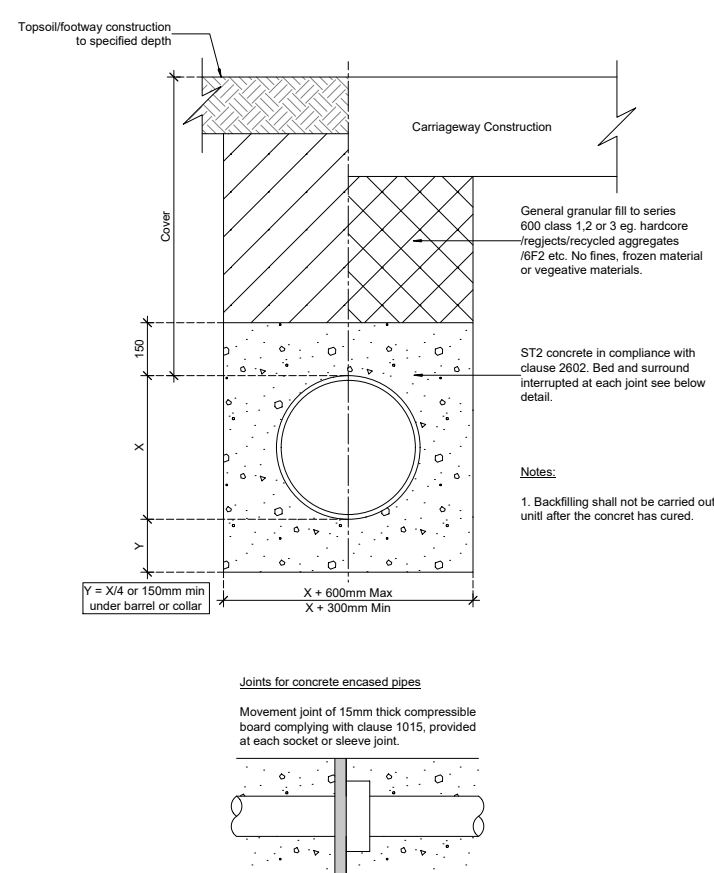
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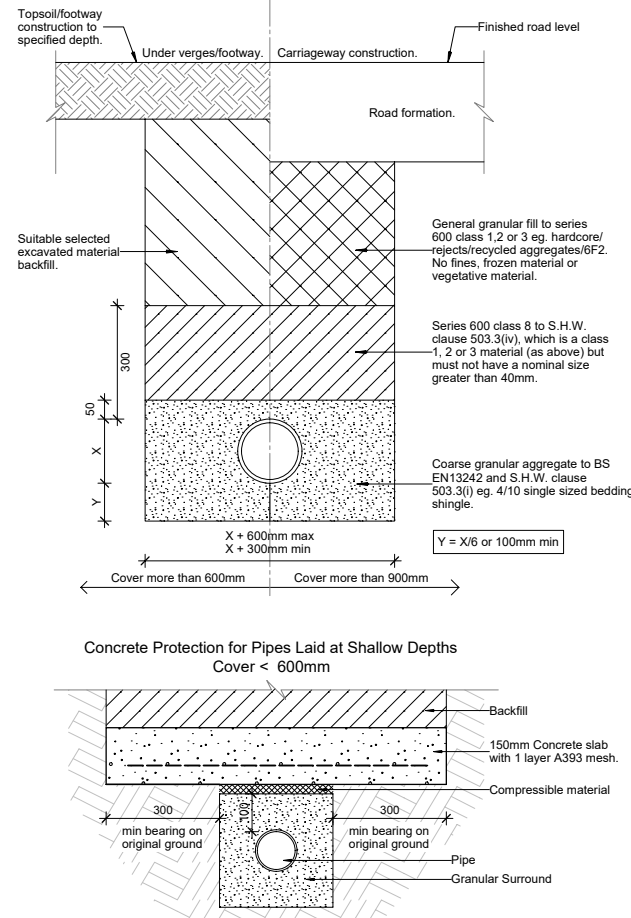
Drawing Scale Bar			
Drawing scale	Line length	Drawing scale	Line length
1:5	= 0.25 metres	1:200	= 10.0 metres
1:10	= 0.5 metres	1:250	= 12.5 metres
1:20	= 1.0 metres	1:500	= 25.0 metres
1:25	= 1.25 metres	1:1000	= 50.0 metres
1:50	= 2.5 metres	1:1250	= 62.5 metres
1:100	= 5.0 metres	1:2500	= 125 metres

Measure length of line above for checking of scale

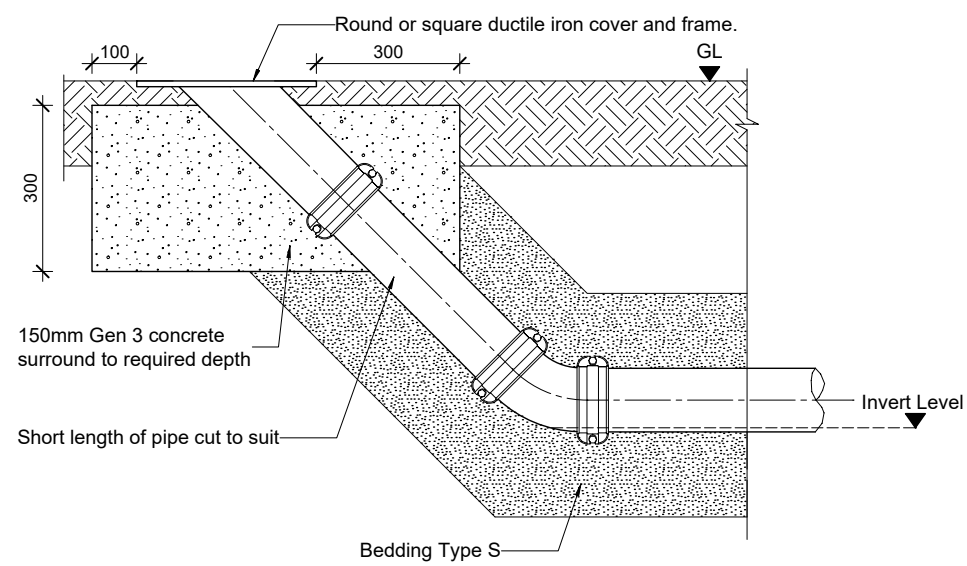
GENERAL NOTES



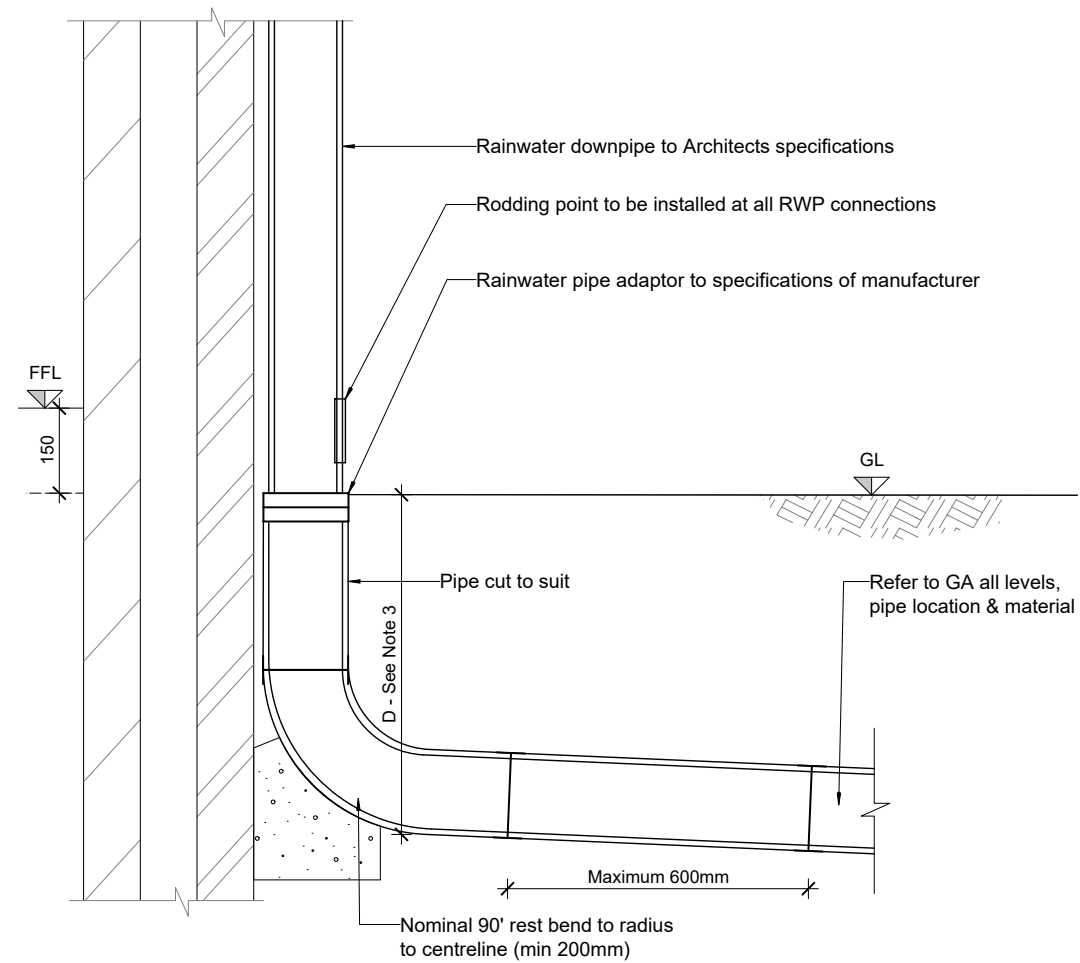
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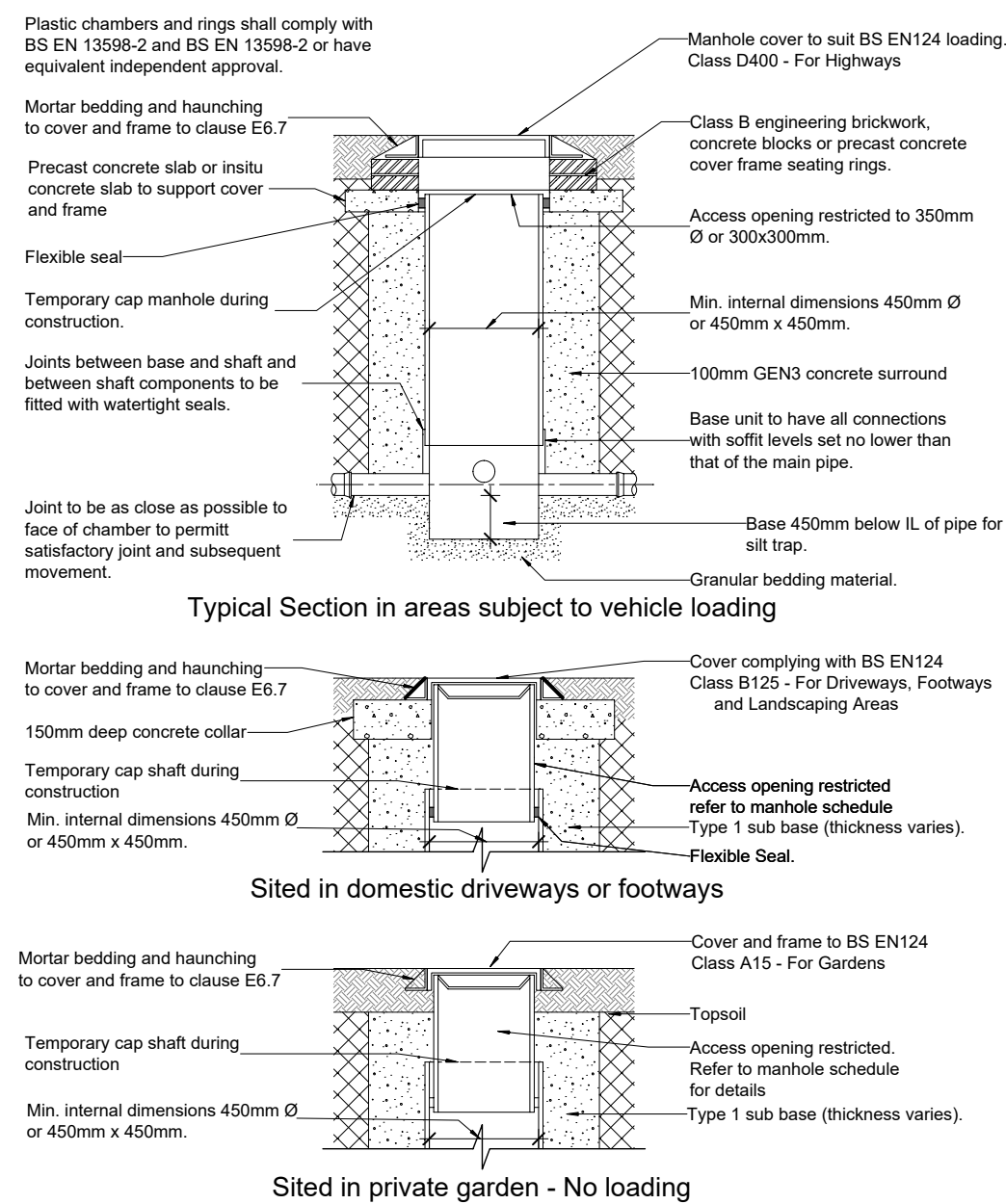
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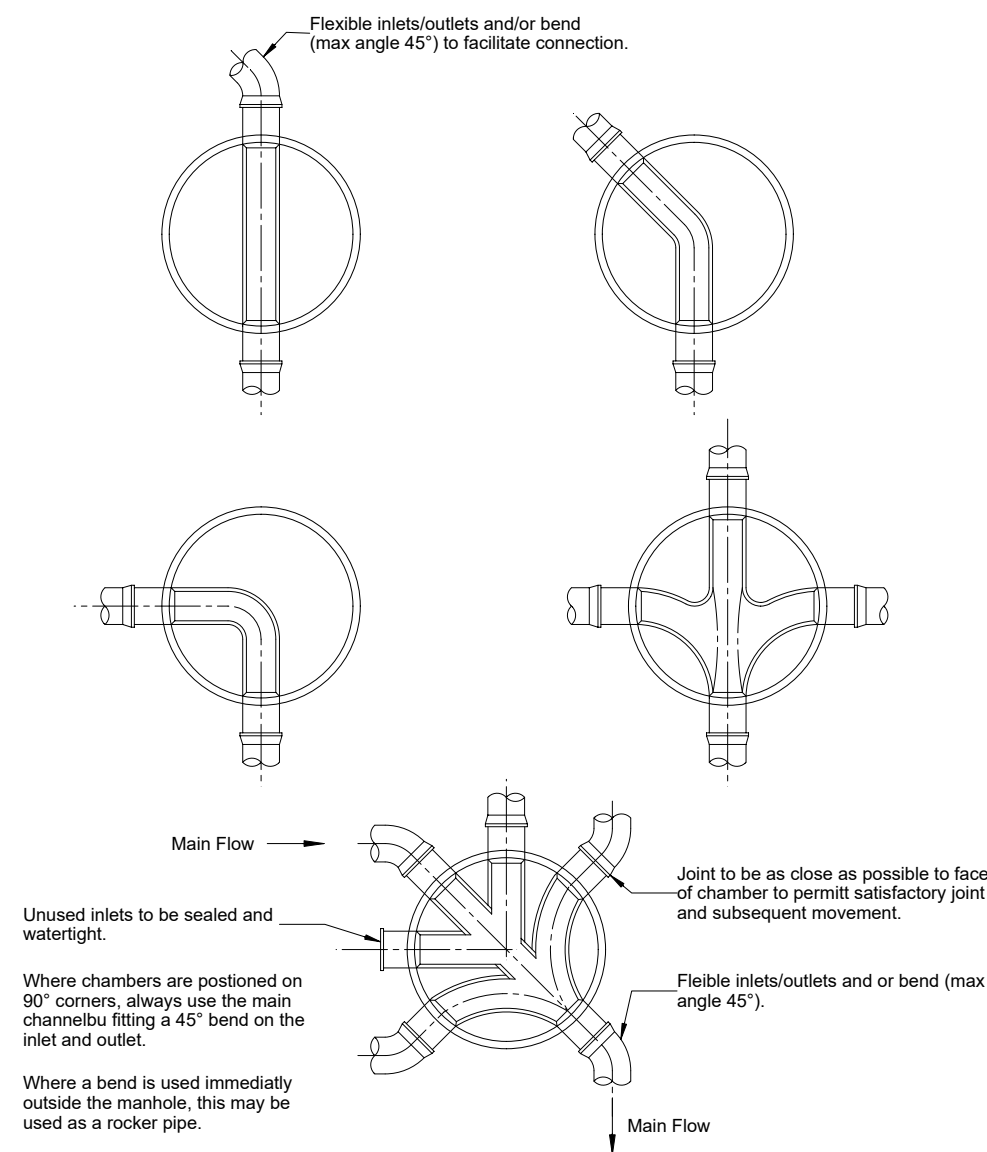
External Rodding Eye Detail



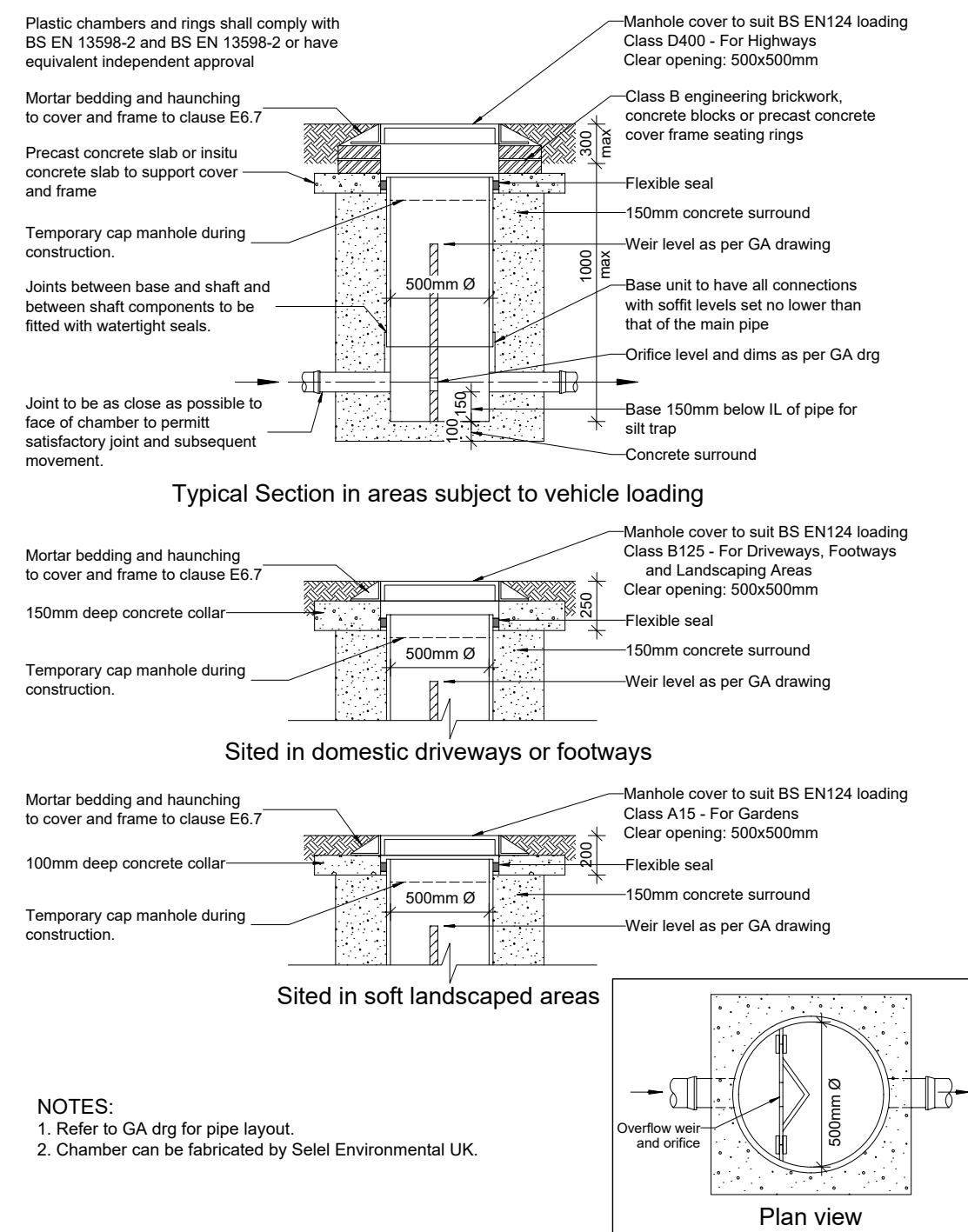
8251 - External Rainwater Pipe Connection Detail



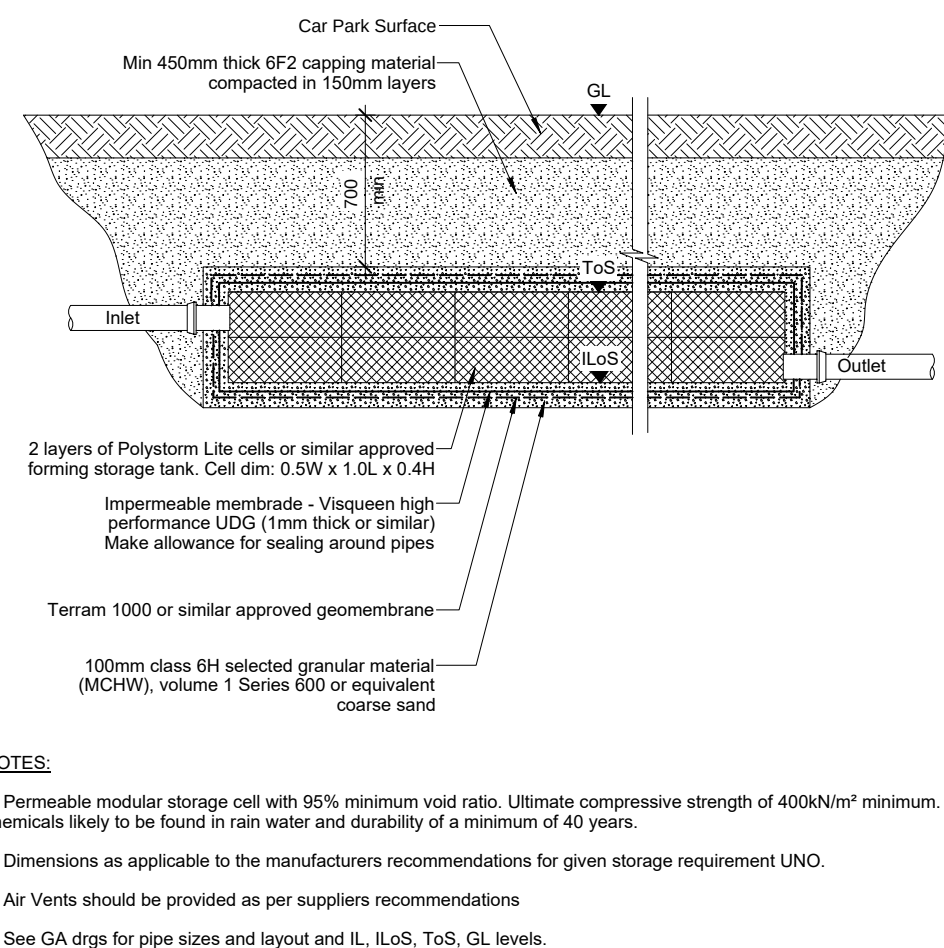
Silt Trap Plastic



Chamber Type 3 Base Layouts



Flow Control -Orifice Plate - Plastic - Type 3



Cellular Attenuation System - Landscape Area

NOTES:

1. Permeable modular storage cell with 95% minimum void ratio. Ultimate compressive strength of 400kN/m² minimum. Resistant to chemicals likely to be found in rain water and durability of a minimum of 40 years.
2. Dimensions as applicable to the manufacturers recommendations for given storage requirement UNO.
3. Air Vents should be provided as per suppliers recommendations
4. See GA drgs for pipe sizes and layout and IL, ILoS, ToS, GL levels.

Client:

Project:

Lineside Way, Wick, Littlehampton, BN17 7EH

Drawing:

Standard Details

Print Size:	Scale:	Project No:	Drawing No:	Revision:
A1	NTS	0828	006	P1