



## **Drainage Strategy**

**3 Lower Marsh BA12 9PB**

Reference: U0536 -Rev - V1

Date: sep-26

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- 2 Site Characteristics**
- 3 Discharge Arrangement**
- 4 Peak Runoff**
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- 7 Foul Sewer Drainage**

### **Appendices**

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- B Site Characteristics**
- C Drainage Calculations**
- D Drainage System General Arrangement**

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## Drainage Strategy

3 Lower Marsh BA12 9PB

Reference: U0536 -Rev - V1

### Report Limitations

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### Approval

|              | Name | Position           | Date       |
|--------------|------|--------------------|------------|
| Prepared By: | MM   | Senior Engineer    | 31/08/2026 |
| Reviewed By: | AG   | Assistant Engineer | 01/09/2026 |
| Approved By: | CD   | Chartered Engineer | 02/09/2026 |

### Revision

| Revision Number | Date Issued | Details   |
|-----------------|-------------|-----------|
| V1              | 02/09/2026  | 1st Issue |
| -               | -           | -         |
| -               | -           | -         |

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## Purpose of this report

- 1.1 The purpose of this statement is to accompany the technical drawings and details showing the proposed Surface and Foul 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 3 Lower Marsh BA12 9PB. 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?                      | Yes     |
| 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                        | 0.013         | 0.052         |
| Permeable Areas                          |               |               |
| Connected to Drainage                    | 0.000         | 0.000         |
| Self Draining Areas                      | 0.029         | 0.074         |
| Areas Draining Away from drainage System | 0.157         | 0.073         |
| <b>Total Development Area</b>            | <b>0.199</b>  | <b>0.199</b>  |

- 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 standards for sustainable drainage systems (SuDS). The aim is to discharge surface water run-off as high up the drainage hierarchy, as reasonably practicable:

1. collected for non-potable use
2. infiltrated to ground
3. discharged to an above ground surface water body
4. discharged to a surface water sewer, or another piped surface water drainage system
5. discharged 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

|                         |                                                   |                                                                                                                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                       | Rain Water Harvesting                             | For this site, it is recommended that a water butt is installed to collect roof runoff for minor reuse, such as external cleaning or garden watering.                                                                                                                                             |
| Infiltration Evaluation | Superficial geology classification                | The British Geological Society records show that the superficial deposits are Alluvium - Clay, Silt, Sand and Gravel.                                                                                                                                                                             |
|                         | Bedrock geology classification                    | The British Geological Society records of the site show that it is located within the Cann Sand Member - Sandstone.                                                                                                                                                                               |
|                         | Landis Top Soil Infiltration                      | The SOILSCAPE's records of the site show that it is located within an area of freely draining soils.                                                                                                                                                                                              |
|                         | Groundwater                                       | The British Geological Survey's flood risk susceptibility maps show that the development has potential for groundwater flooding above ground level. Groundwater levels would tend to vary seasonally and are influenced by ground and meteorological conditions and proximity to water features.  |
| 2                       | Is infiltration feasible?                         | Infiltration is not possible on this site due to findings on groundwater and soils                                                                                                                                                                                                                |
| 3                       | Is a discharge to a watercourse feasible?         | There is an existing watercourse near the site. It is possible to connect to the watercourse, and it is proposed to discharge into this watercourse.                                                                                                                                              |
| 4                       | Is a discharge to a surface water sewer feasible? | There is no surface water sewer in the proximity to the site.                                                                                                                                                                                                                                     |
| 5                       | Is a discharge to a combined sewer feasible?      | There is an existing public foul sewer in the proximity of the site. It is not proposed to connect to this foul network as its depth is unknown but based on the natural lie of the land it is unlikely that a gravity connection would be feasible to discharge the surface water from the roofs |

## 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 1.2 l/s. See table 6 for values and appendix C for calculations.

Table 6: Peak discharge rates for SuDS

| Return Period Event | Discharge Rate<br>(l/s) |                        |          | Infiltration Rate<br>(m/hr) |
|---------------------|-------------------------|------------------------|----------|-----------------------------|
|                     | Existing<br>Greenfield  | Existing<br>Brownfield | Proposed |                             |
| Qbar                | 0.00                    | N/A                    | N/A      | 0.0000                      |
| 1 in 1              | 0.00                    | 2.30                   | 1.2      | 0.0000                      |
| 1 in 2              | 0.00                    | 3.00                   | 1.2      | 0.0000                      |
| 1 in 30             | 0.10                    | 5.50                   | 1.2      | 0.0000                      |
| 1 in 30 + CC        | N/A                     | N/A                    | 1.2      | 0.0000                      |
| 1 in 100            | 0.10                    | 6.90                   | 1.2      | 0.0000                      |
| 1 in 100 + CC       | N/A                     | N/A                    | 1.2      | 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 |
|------------------------------------------------------------------------------------|-----------------------------|----------|----------|-----------------|---------------------|------------------------------|
|  | <b>Living Roofs</b>         |          |          |                 |                     |                              |
|                                                                                    | Green Roof                  | No       | No       | X               | X                   | X                            |
|                                                                                    | Green Blue Roof             | No       | No       | X               | X                   | X                            |
|                                                                                    | <b>Basins and Ponds</b>     |          |          |                 |                     |                              |
|                                                                                    | Rainwater Gardens           | No       | No       | X               | X                   | X                            |
|                                                                                    | Rainwater Planters          | No       | No       | X               | X                   | X                            |
|                                                                                    | Constructed Wetlands        | No       | No       | X               | X                   | X                            |
|                                                                                    | Balancing Pond              | No       | No       | X               | X                   | X                            |
|                                                                                    | Detention Basins            | No       | No       | X               | X                   | X                            |
|                                                                                    | Retention Ponds             | No       | No       | X               | X                   | X                            |
|                                                                                    | <b>Filters and Swales</b>   |          |          |                 |                     |                              |
|                                                                                    | Filter Strips               | No       | No       | X               | X                   | X                            |
|                                                                                    | Swales                      | No       | No       | X               | X                   | X                            |
|                                                                                    | <b>Infiltration Devices</b> |          |          |                 |                     |                              |
|                                                                                    | Soakaways Crates            | No       | No       | X               | X                   | X                            |
|                                                                                    | Deep Boreholes              | No       | No       | X               | X                   | X                            |
|                                                                                    | Infiltration Trenches       | No       | No       | X               | X                   | X                            |
|                                                                                    | Infiltration Basin          | No       | No       | X               | X                   | X                            |
|                                                                                    | <b>Permeable Surfaces</b>   |          |          |                 |                     |                              |
|                                                                                    | Permeable Surfaces          | Yes      | Yes      | X               | X                   |                              |
|                                                                                    | Filter Drains               | No       | No       | X               | X                   |                              |
|                                                                                    | <b>Tanked System</b>        |          |          |                 |                     |                              |
|                                                                                    | Storage Crates              | Yes      | Yes      | X               |                     |                              |
|                                                                                    | Oversized Tanks             | No       | No       | X               |                     |                              |
|                                                                                    | Oversized Pipes             | No       | No       | X               |                     |                              |
|                                                                                    | Blue Roof                   | No       | No       | X               |                     |                              |
|                                                                                    | Water Harvesting            | Yes      | Yes      | X               |                     |                              |
| <i>Least Sustainable</i>                                                           |                             |          |          |                 |                     |                              |

- 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.

### Water Quality Assessment

- 5.6 The pollution hazard indices for this development has been taken from the CIRIA C753 publication 'The SuDS Manual' – Table 26.2. The tables below shows the mitigation measure for the highest pollution hazard indices presented in the development.

Table 8: Pollution Hazard Indices

| Land Use          | Pollution Hazard | Total Suspended | Metals | Hydrocarbons |
|-------------------|------------------|-----------------|--------|--------------|
| Residential roofs | Very low         | 0.2             | 0.2    | 0.05         |
| <b>TOTAL</b>      |                  | 0.2             | 0.2    | 0.05         |

Table 9: SuDS Mitigation Indices for worst case\*\*

| Type of SuDS     | Total Suspended Solids (TSS) | Metals | Hydrocarbons |
|------------------|------------------------------|--------|--------------|
| Permeable paving | 0.7                          | 0.6    | 0.7          |
| <b>TOTAL</b>     |                              | 0.6    | 0.7          |

- 5.7 It is demonstrated that the proposed sustainable systems exceeds the required pollution indices and provides sufficient treatment as part of the surface water management train in accordance with the 2015 SuDS Manual (CIRIA C753)

## 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        |
| <b>Inlets, outlets and surface control structures</b>                                                                                                                                  |                  |
| 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          |
| <b>Inspection chambers and below ground control chambers</b>                                                                                                                           |                  |
| Remove cover and inspect ensuring water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt.<br>Undertake inspection after leaf fall in autumn | Annually         |
| <b>Occasional Maintenance</b>                                                                                                                                                          |                  |
| Check topsoil levels are 20mm above edges of baskets and chambers to avoid mower damage                                                                                                | As necessary     |
| <b>Remedial work</b>                                                                                                                                                                   | <b>Frequency</b> |
| 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 RWH systems |                                                                                                                            |                                           |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Maintenance schedule                                   | Required action                                                                                                            | Typical frequency                         |
| Regular maintenance                                    | Inspection of the tank for debris and sediment build-up, inlets/outlets/withdrawal devices, overflow areas, pumps, filters | Annually (and following poor performance) |
|                                                        | Cleaning of tank, inlets, outlets, gutters, withdrawal devices and roof drain filters of silts and other debris            | Annually (and following poor performance) |
| Occasional maintenance                                 | Cleaning and/or replacement of any filters                                                                                 | Three monthly (or as required)            |
| Remedial actions                                       | Repair of overflow erosion damage or damage to tank                                                                        | As required                               |
|                                                        | Pump repairs                                                                                                               | As required                               |

| Operation and maintenance requirements for pervious pavements |                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maintenance schedule                                          | Required action                                                                                                                                                                      | Typical frequency                                                                                                                                                                                                                                                                                                            |
| Regular maintenance                                           | Brushing and vacuuming (standard cosmetic sweep over whole surface)                                                                                                                  | Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment |
| Occasional maintenance                                        | Stabilise and mow contributing and adjacent areas                                                                                                                                    | As required                                                                                                                                                                                                                                                                                                                  |
|                                                               | Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying                                                                | As required – once per year on less frequently used pavements                                                                                                                                                                                                                                                                |
| Remedial Actions                                              | Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving                                             | As required                                                                                                                                                                                                                                                                                                                  |
|                                                               | Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material | As required                                                                                                                                                                                                                                                                                                                  |
|                                                               | Rehabilitation of surface and upper substructure by remedial sweeping                                                                                                                | Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)                                                                                                                                                                                                                     |
| Monitoring                                                    | Initial inspection                                                                                                                                                                   | Monthly for three months after installation                                                                                                                                                                                                                                                                                  |
|                                                               | Inspect for evidence of poor operation and/or weed growth – if required, take remedial action                                                                                        | Three-monthly, 48 h after large storms in first six months                                                                                                                                                                                                                                                                   |
|                                                               | Inspect silt accumulation rates and establish appropriate brushing frequencies                                                                                                       | Annually                                                                                                                                                                                                                                                                                                                     |
|                                                               | Monitor inspection chambers                                                                                                                                                          | Annually                                                                                                                                                                                                                                                                                                                     |

| 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        |

### Foul Drainage

- 7.1 The proposed foul drainage system is shown in appendix D. The calculations in appendix C

# Appendix A

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   |
| 1:5                                                | = 0.25 metres |
| 1:10                                               | = 0.5 metres  |
| 1:20                                               | = 1.0 metres  |
| 1:25                                               | = 1.25 metres |
| 1:50                                               | = 2.5 metres  |
| 1:100                                              | = 5.0 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**



Client:

Project:  
**3 Lower Marsh BA12 9PB**

Drawing:  
**Existing and Proposed Areas  
Permeable and Impermeable**

Print: Size: **A1** Project No: **U0536** Drawing No: **002** Revision: **P1**

EXISTING SITE  
1:200

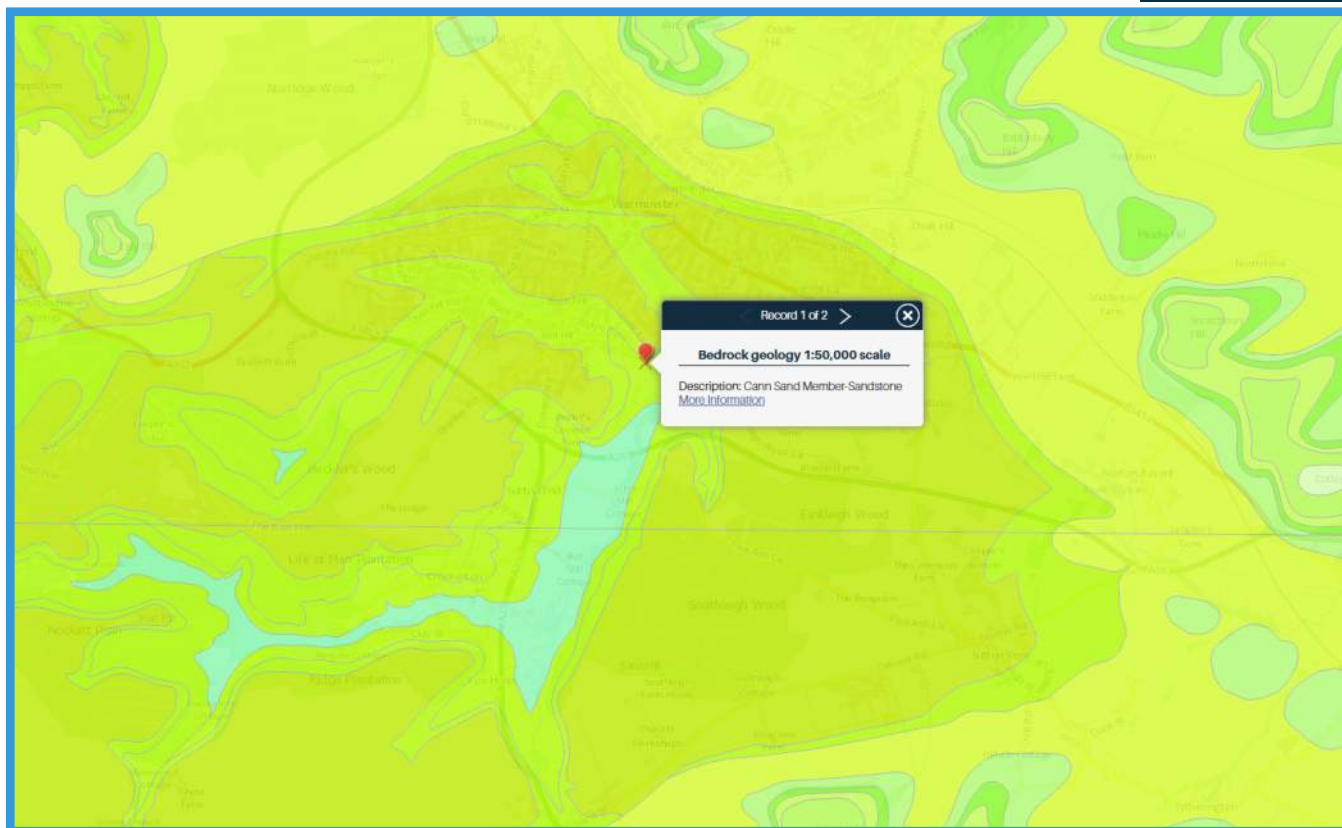
PROPOSED SITE  
1:200



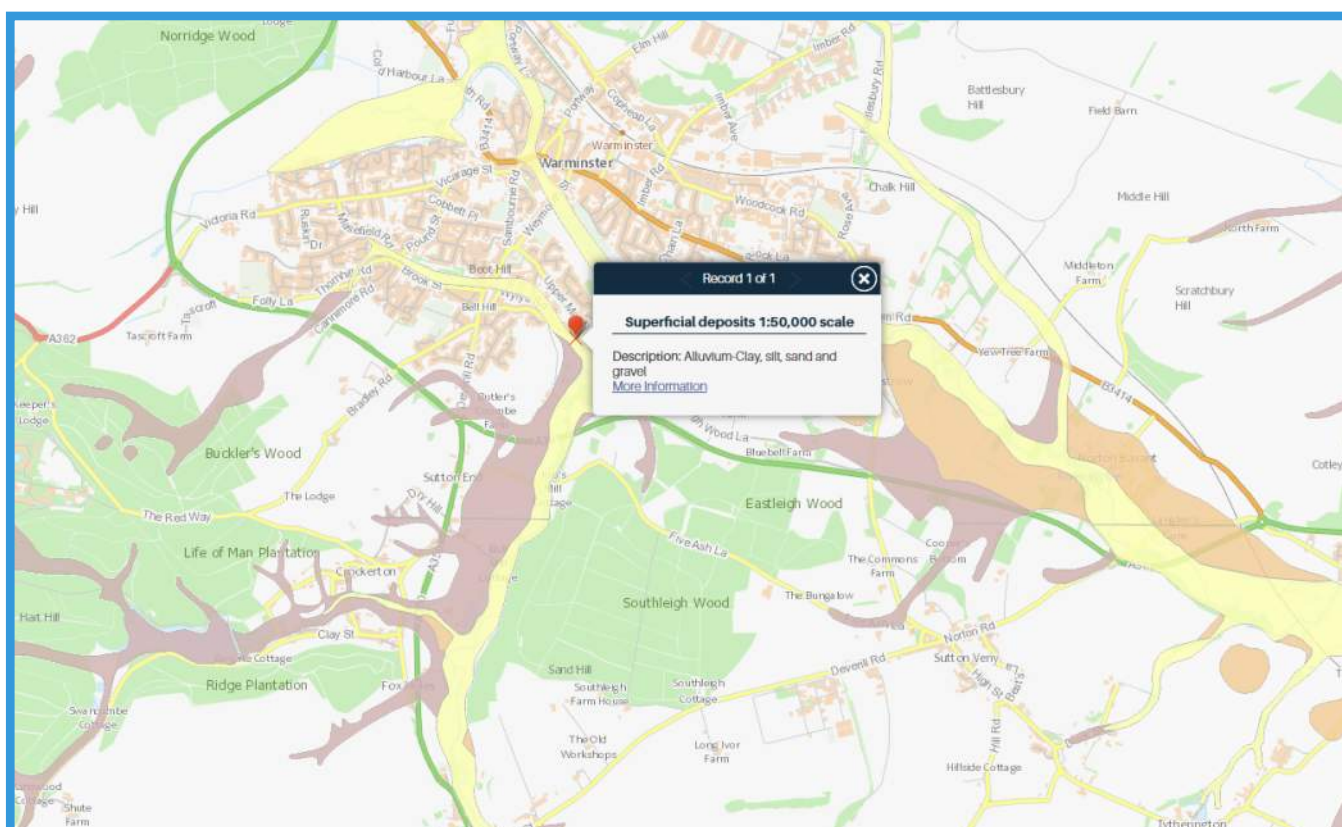
Proposed Site Plan

# Appendix B

## GEOLOGY - BEDROCK - Cann Sand Member-Sandstone



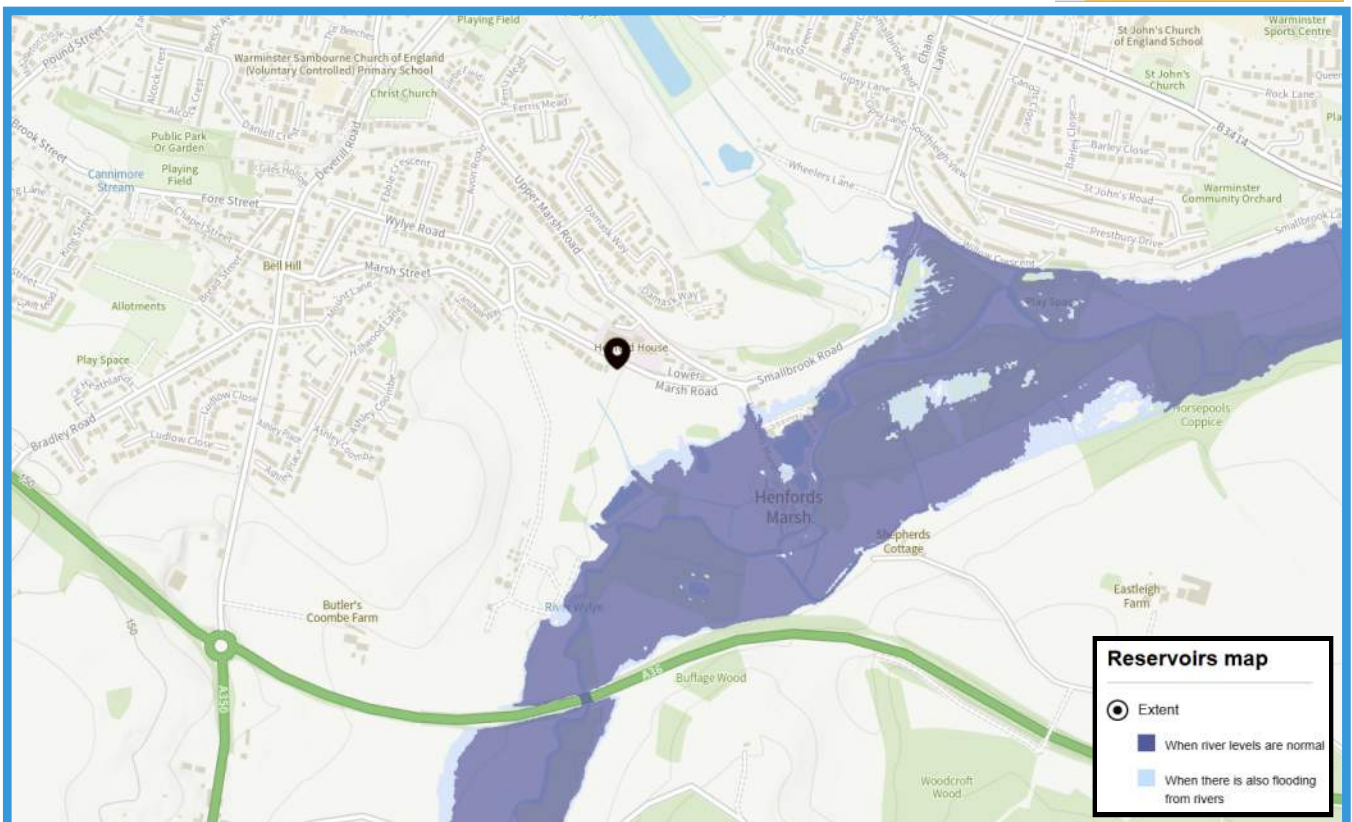
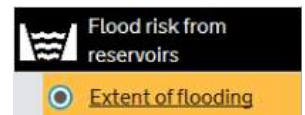
## GEOLOGY - SUPERFICIAL DEPOSITS - Alluvium-Clay, silt, sand and gravel



## Main River Map



## Reservoirs Map



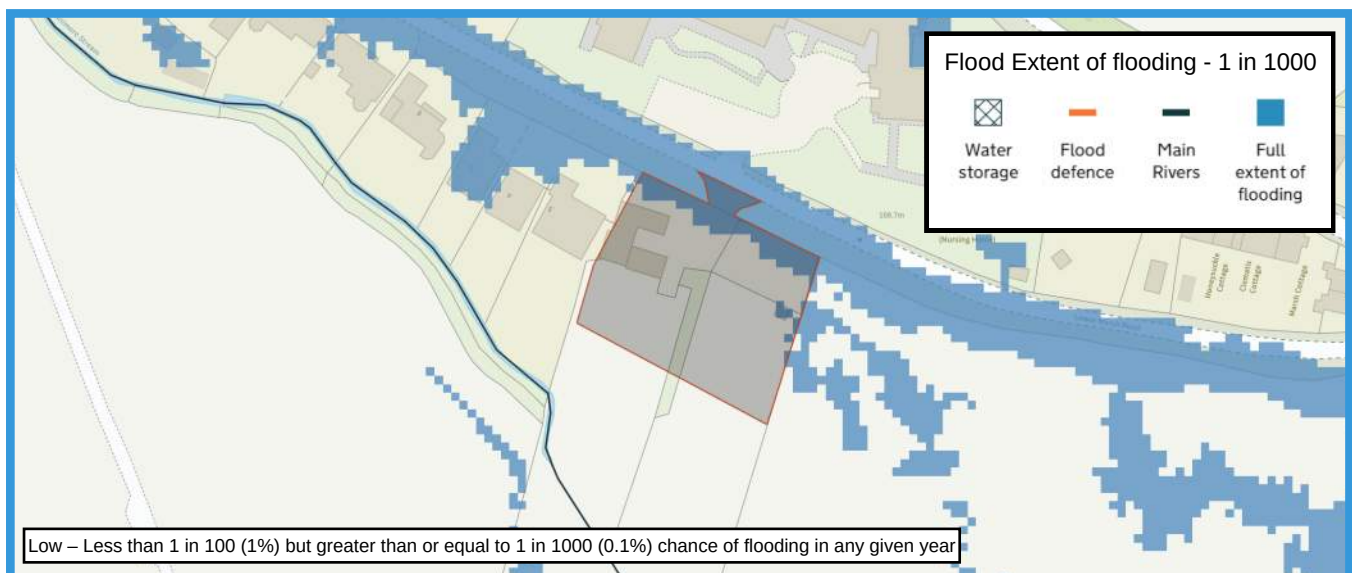
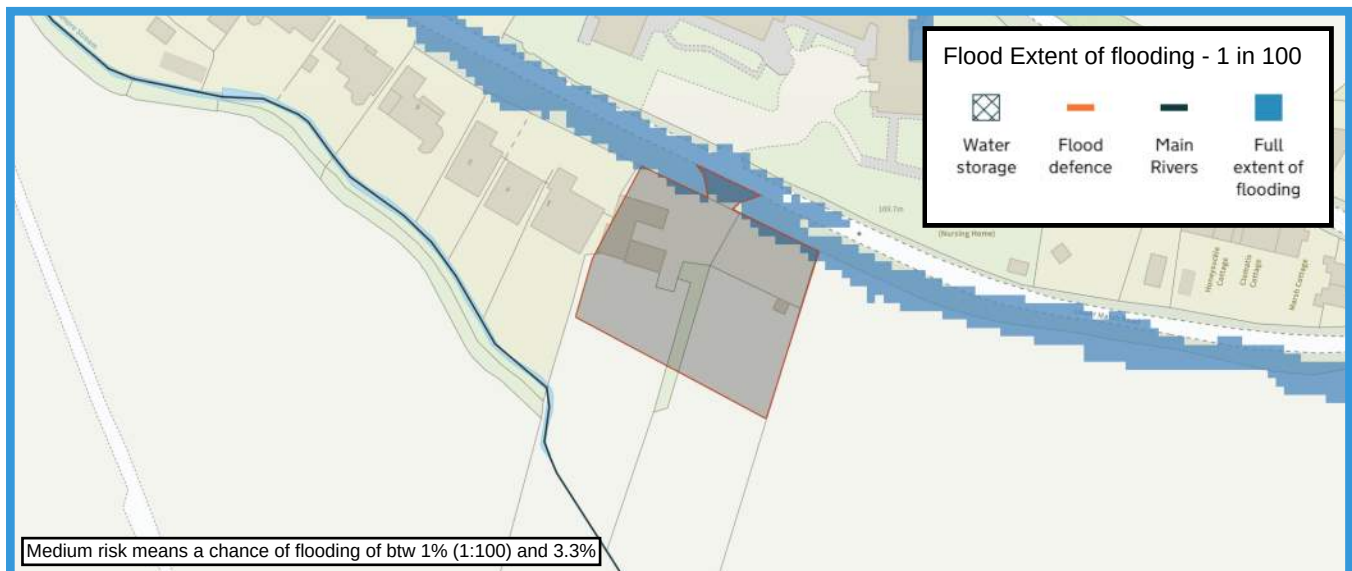
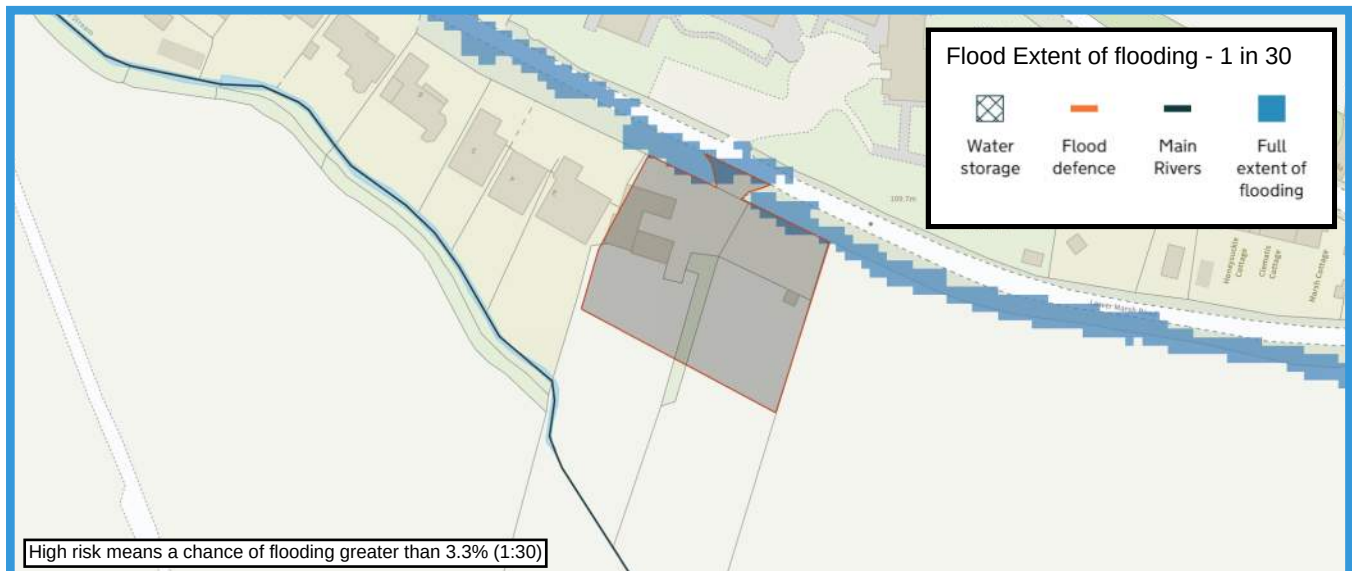
# SITE SURFACE WATER FLOOD RISK

This is the EA Climate change scenarios. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5.

The 'Upper end' (based on the 95th percentile) for the 2070s epoch (2061-2125) has been used for the climate change scenarios. We have chosen long-term epochs appropriate to support long-term planning and development decisions.

EXTENT

2061 to 2125



# SITE SURFACE WATER FLOOD RISK



WATER DEPTH 2061 to 2125

Surface water depth in millimetres



150 300 600 900 1200 2300



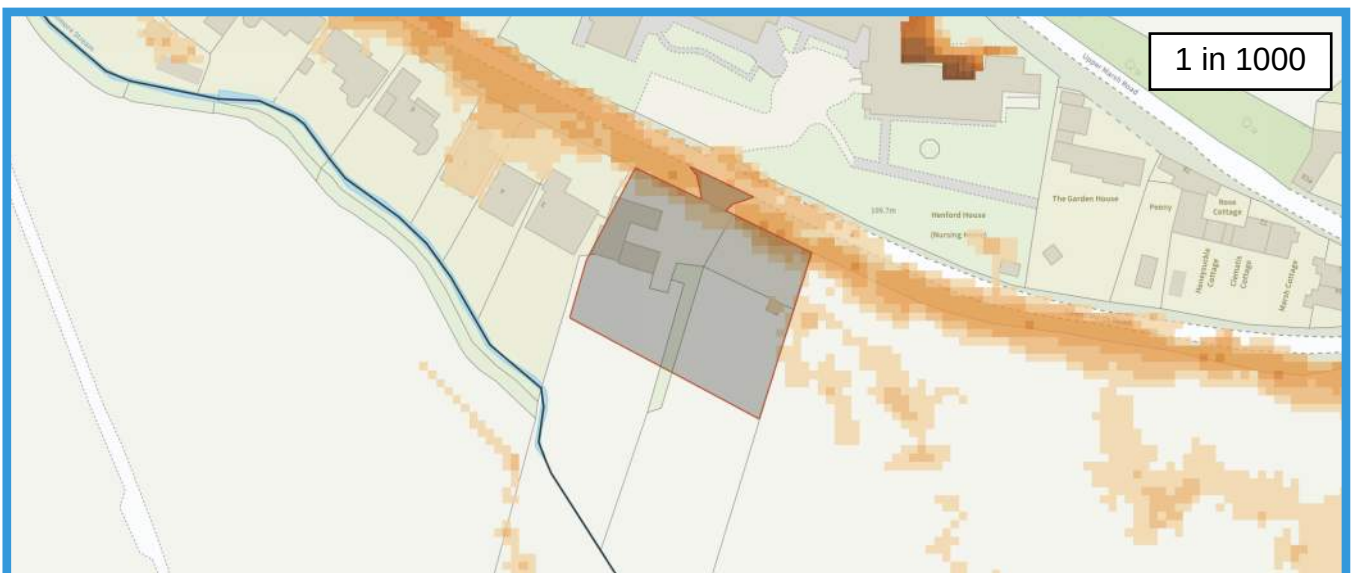
Water storage



Flood defence



Main Rivers

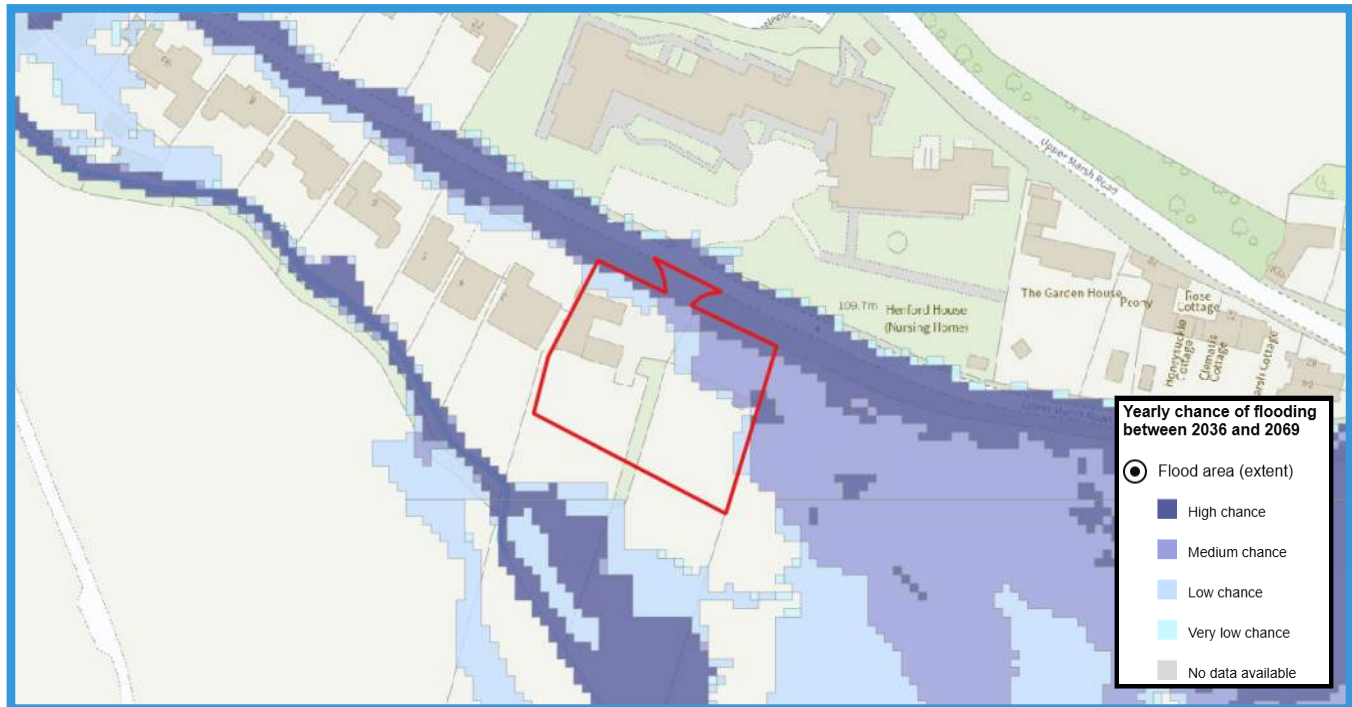


\*High risk means a chance of flooding greater than 3.3% (1:30)

\*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



This shows the RoFRS\_CC01\_4band.lyr of flooding from rivers and the sea, climate change scenarios. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5.

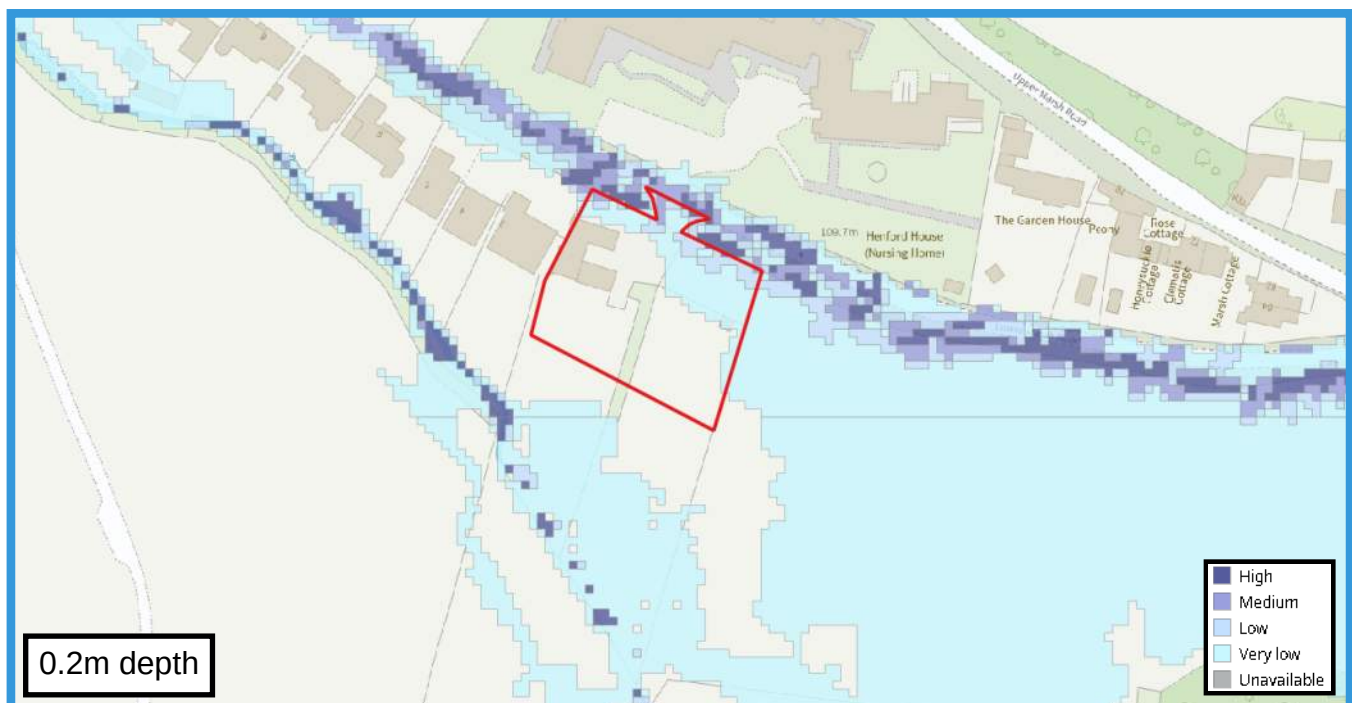
Near-term epochs and central/higher central allowances are being used initially, to support short and medium-term decisions informed by the highest flood likelihood projections:

Fluvial: central allowance - 2040-2069 ("2050s" epoch)

Coastal: higher central allowance - 2036-2065

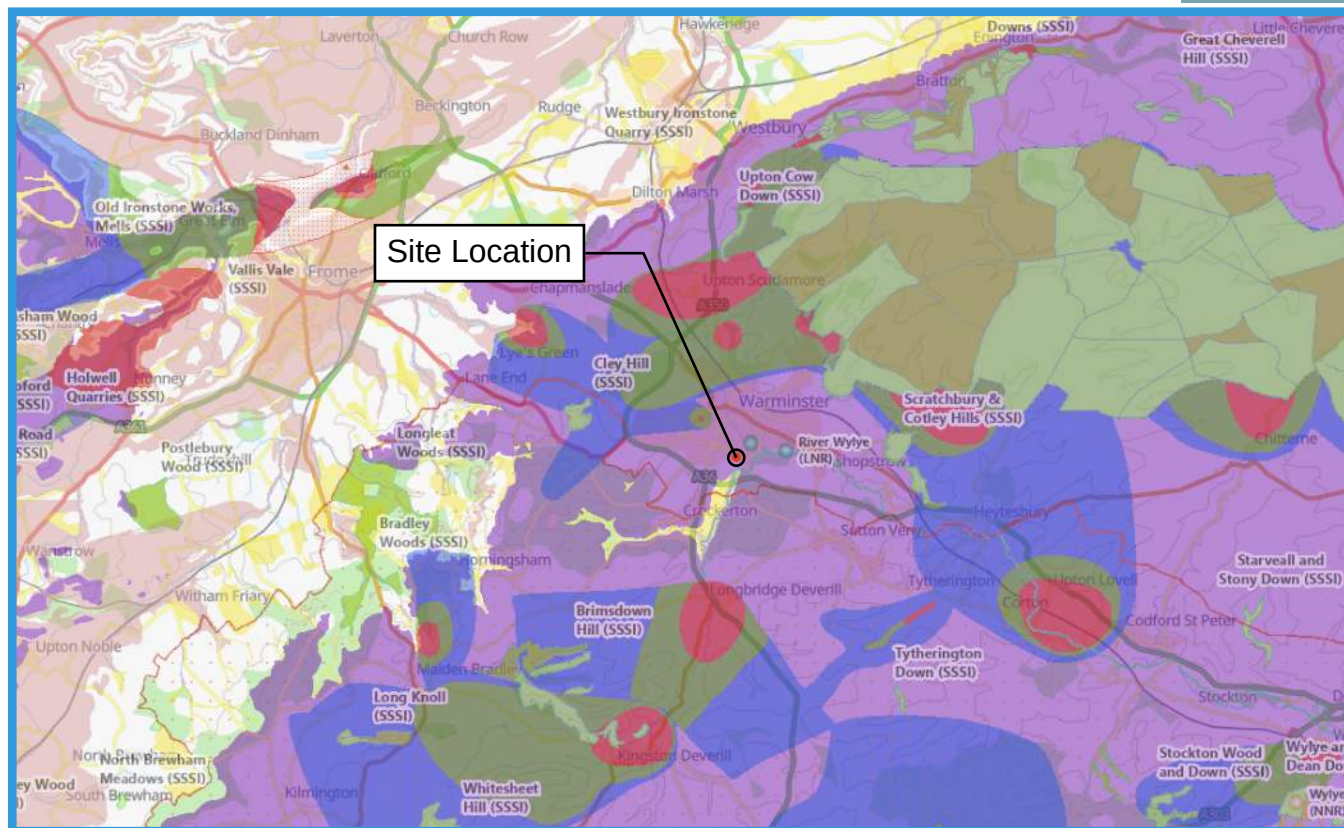
Likelihood of defence failure unsuitable and depth info does not provide the design flood depth needed for planning approval.

## DEPTH



## MAGIC RESULTS

MAGIC



MAGIC

### Site Check Results

Site Check Report generated on Thu Aug 27 2026

The following features have been found in your search area:

**You selected the location:** Centroid Grid Ref: ST87474402

#### Aquifer Designation Map (Superficial Drift) (England)

**TPOLOGY** Secondary A

#### Aquifer Designation Map (Bedrock) (England)

**TPOLOGY** Principal

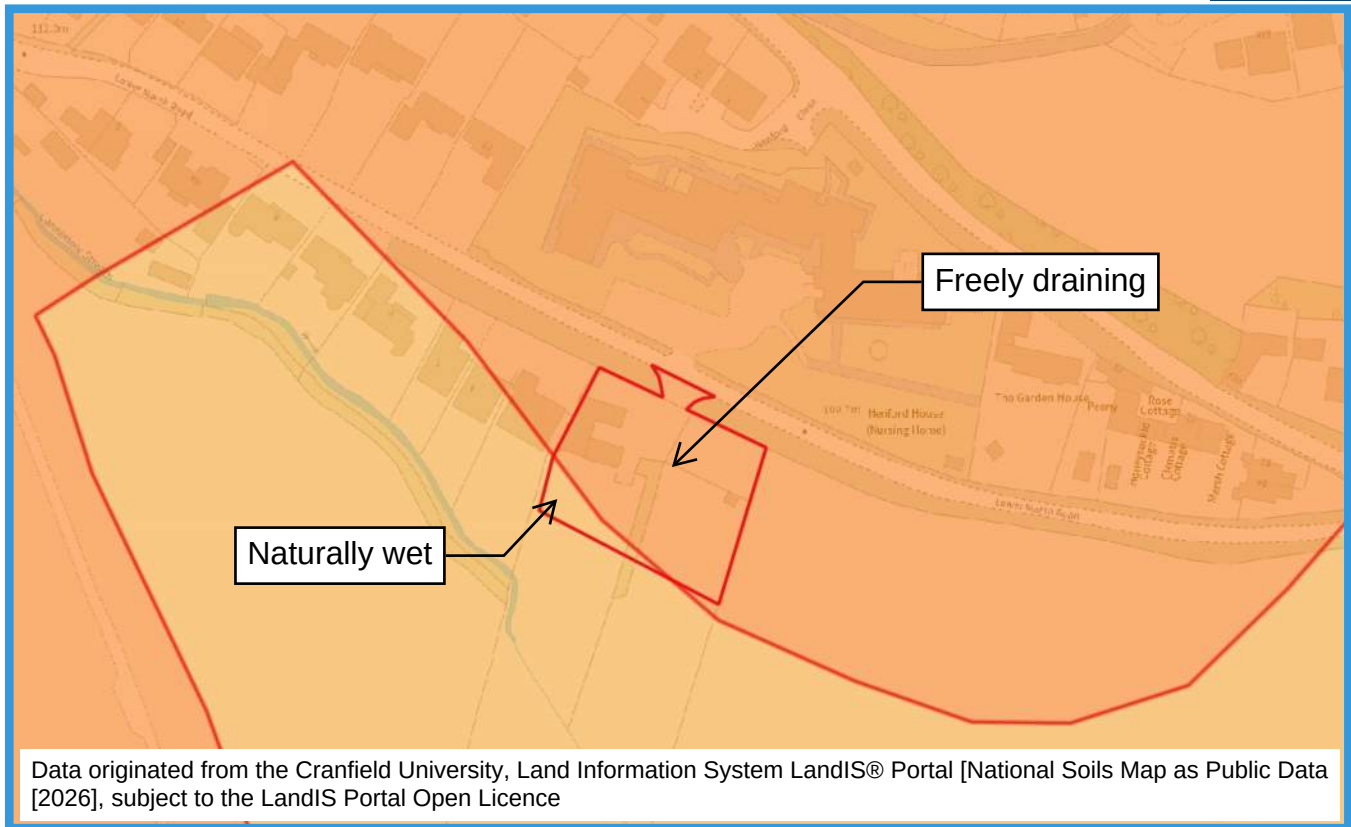
#### Source Protection Zones merged (England)

No Features found

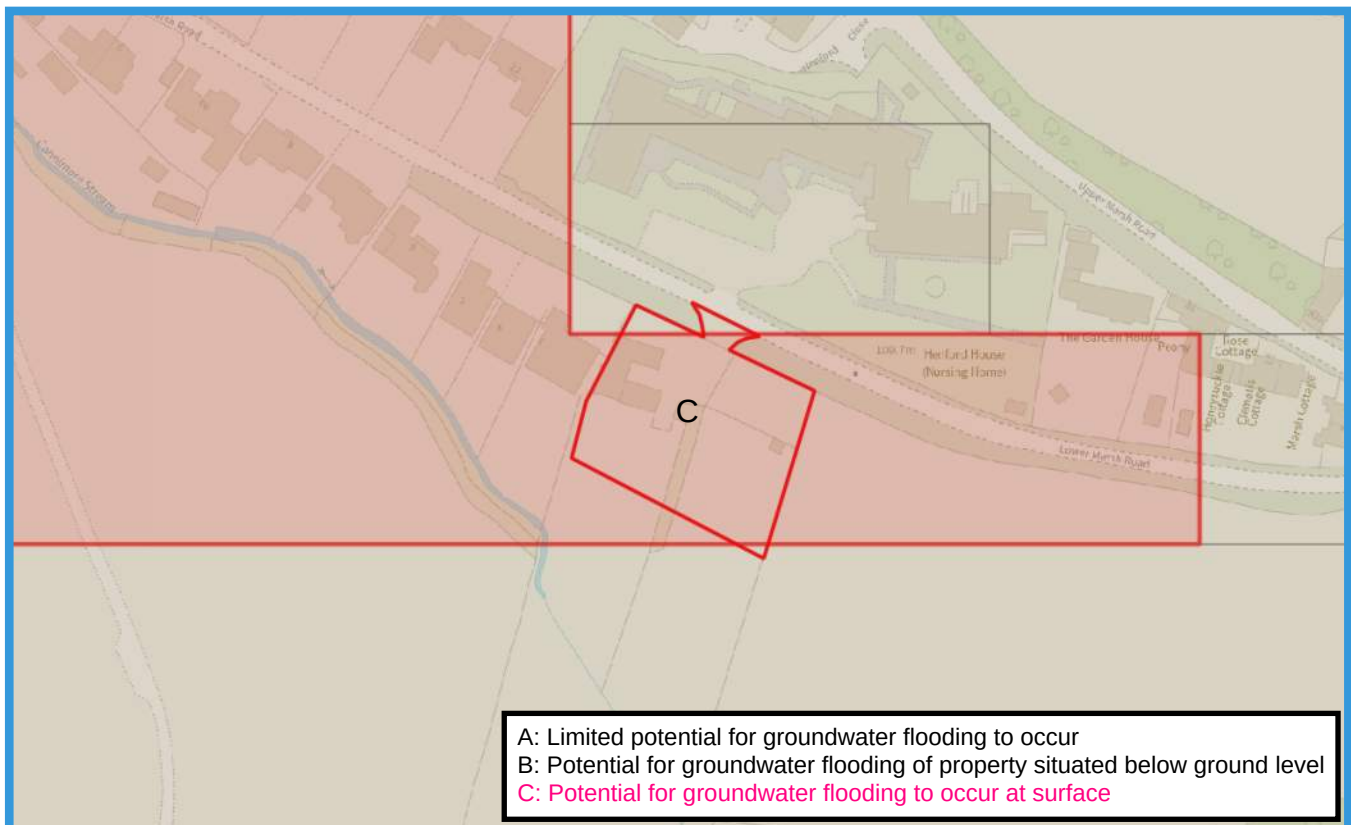


## SOILSCAPES MAP

LandIS®



## GROUND WATER FLOOD RISK



# Flood map for planning

Your reference  
**Unspecified**

Location (easting/northing)  
**387479/144028**

Created  
**27 August 2026 21:21**

**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>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2026 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



## Flood map for planning

Your reference

**Unspecified**

Location (easting/northing)

**387479/144028**

Scale

**1:2,500**

Created

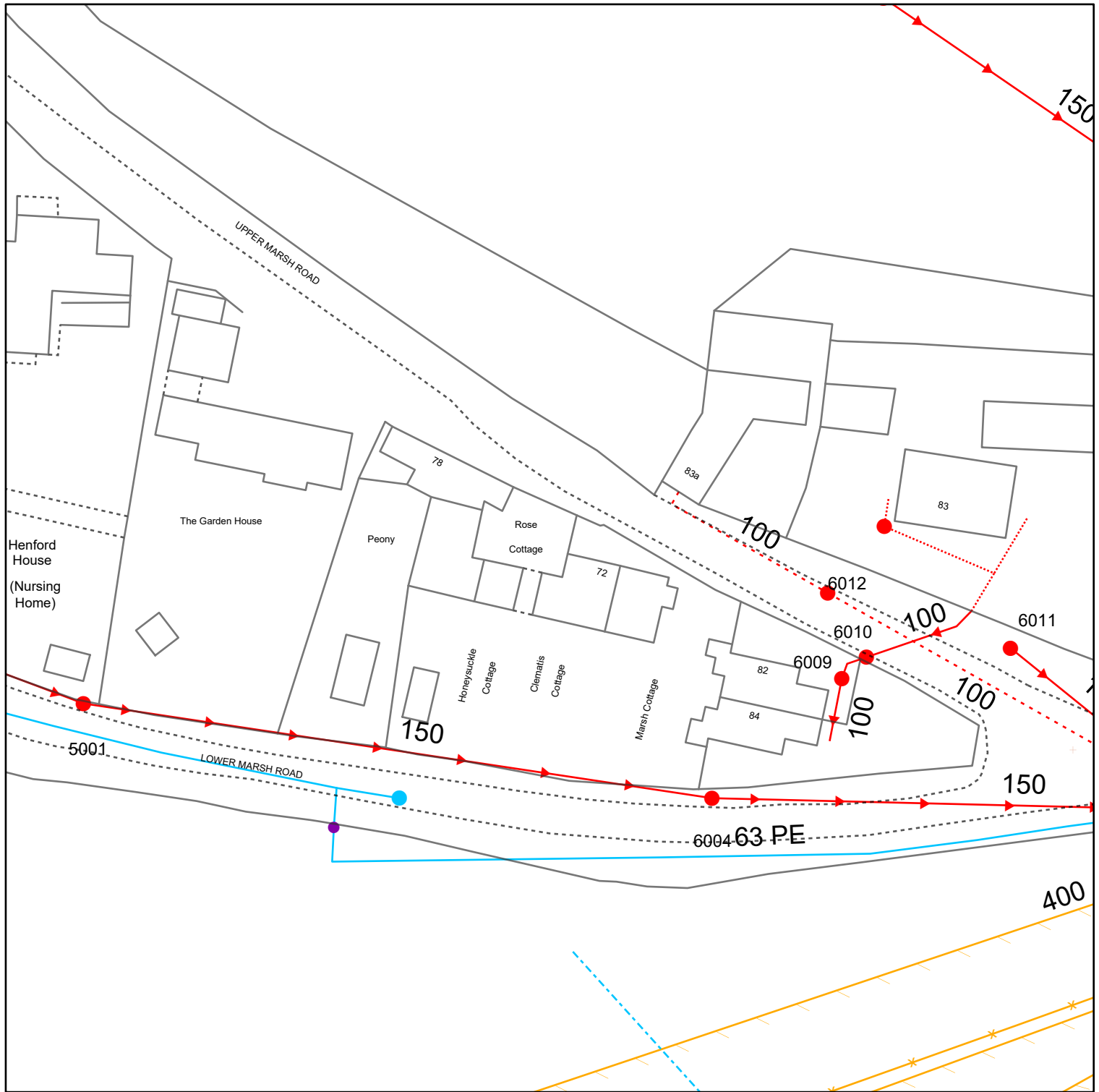
**27 Aug 2026 21:21**

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



0 20 40 60m

# Wessex Water Network Map

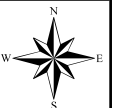


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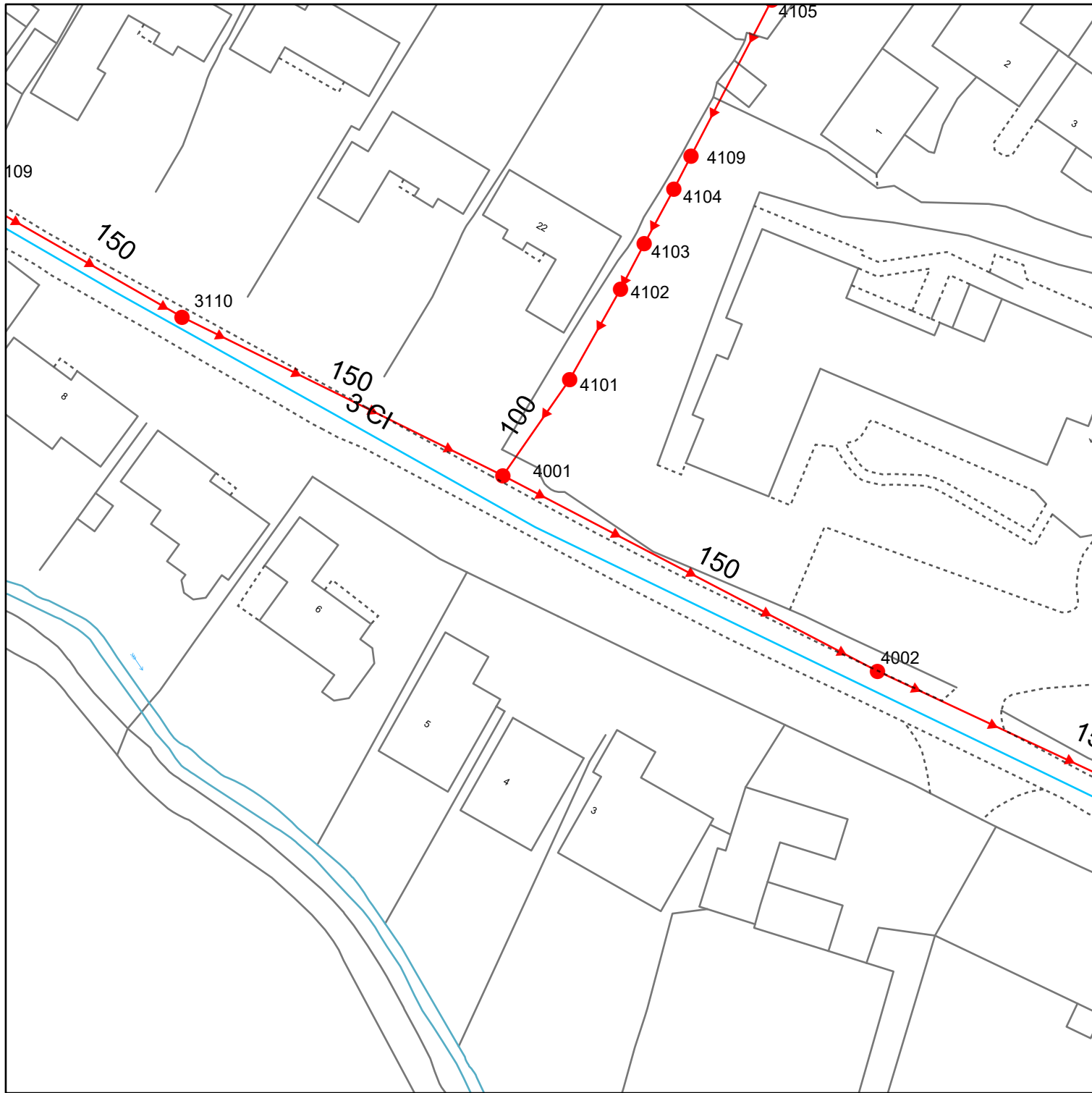
| WATER MAINS                                                                                                                                                                                                                                                               |              | SEWERS            |                          | STRATEGIC |                             | PUBLIC |  | PRIVATE |  | SECTION 104 |     | OTHER WESSEX PIPES |                      | NON-WESSEX / UNKNOWN |                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------|--------------------------|-----------|-----------------------------|--------|--|---------|--|-------------|-----|--------------------|----------------------|----------------------|-----------------------|
|                                                                                                                                                                                                                                                                           | Distribution |                   | Foul                     |           | Surface                     |        |  |         |  |             |     |                    | Rising Mains         |                      | Private Rising Mains  |
|                                                                                                                                                                                                                                                                           | Washout      |                   | Surface                  |           | Combined                    |        |  |         |  |             |     |                    | Standby Rising Mains |                      | Culverted Watercourse |
|                                                                                                                                                                                                                                                                           | Raw Water    |                   | Abandoned                |           |                             |        |  |         |  |             | EDM |                    | Effluent Disposal    |                      | Highway Drain         |
|                                                                                                                                                                                                                                                                           | Abandoned    |                   |                          |           |                             |        |  |         |  |             |     |                    | Overflow             |                      | Use Unknown           |
|                                                                                                                                                                                                                                                                           | Private      |                   |                          |           |                             |        |  |         |  |             |     |                    | Syphon               |                      | Status Unknown        |
| <p>Colours generally indicate the use of the sewer/drain (i.e Red - Foul, Dark Blue - Surface, Magenta - Combined/Dual Use, Light Green - Highway Drain, Mid Green - Overflow).</p> <p>Some styles of line and symbol are shown on the key in sample/typical colours.</p> |              |                   |                          |           |                             |        |  |         |  |             |     |                    |                      |                      |                       |
| <b>FITTINGS</b>                                                                                                                                                                                                                                                           |              | <b>STRUCTURES</b> |                          |           |                             |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           | Hydrant      |                   | Manhole - Foul           |           | Pumping Station - Surface   |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           | Other        |                   | Manhole - Surface        |           | Pumping Stn - Foul/Combined |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           |              |                   | Manhole - Combined       |           | Gully                       |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           |              |                   | Inlet                    |           | Outfall                     |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           |              |                   | Lamphole                 |           | Vent Column                 |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           |              |                   | Bifurcation - Foul       |           | Rodding Eye                 |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           |              |                   | Bifurcation - Surface    |           | Catchpit                    |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           |              |                   | Bifurcation - Combined   |           | Flushing Chamber            |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           |              |                   | Combined Sewage Overflow |           | Soakaway                    |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           |              |                   |                          |           | Non Return Valve            |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           |              |                   |                          |           | Air Valve                   |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           |              |                   |                          |           | Hatch Box                   |        |  |         |  |             |     |                    |                      |                      |                       |
|                                                                                                                                                                                                                                                                           |              |                   |                          |           | Washout                     |        |  |         |  |             |     |                    |                      |                      |                       |
| <p><b>OTHER STRUCTURES</b></p> <p> Attenuation Tank     Chamber</p> <p> Storage Tank     Tunnel</p> <p> Interceptor</p>                                                                                                                                                   |              |                   |                          |           |                             |        |  |         |  |             |     |                    |                      |                      |                       |
| <p><b>Wessex Water</b></p> <p>YTL GROUP</p> <p></p>                                                                                                                                                                                                                       |              |                   |                          |           |                             |        |  |         |  |             |     |                    |                      |                      |                       |

Information in this map is provided for identification purposes only. No warranty as to accuracy is given or implied. The precise route of pipe work may not exactly match that shown. Wessex Water does not accept liability for inaccuracies. Sewers and lateral drains adopted by Wessex Water under the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 are to be plotted over time and may not yet be shown. In carrying out any works, you accept liability for the cost of any repairs to Wessex Water apparatus damaged as a result of your works. You are advised to commence excavations using hand tools only. Mechanical digging equipment should not be used until pipe work has been precisely located. If you are considering any form of building works and pipe work is shown within the boundary of your property or a property to be purchased (or very close by) a surveyor should plot its exact position prior to commencing works or purchase. If you are proposing to build over or near Wessex Water's apparatus you should contact the Developer Services Team, tel: 01225 526633 or e-mail: [developer.enquiries@wessexwater.co.uk](mailto:developer.enquiries@wessexwater.co.uk) to discuss your proposals. Details of assets within Wessex Water's land ownership are unavailable through this service.

**Date:** 31/08/2026  
**Centre:** 387611E, 144046N  
**Scale:** 1:625  
(when printed at A4 size)



# Wessex Water Network Map



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| WATER MAINS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              | SEWERS     |                                                                                                                                                                              | STRATEGIC PUBLIC                                                               |                             | PRIVATE |  | SECTION 104 |  | OTHER WESSEX PIPES                     |                       | NON-WESSEX / UNKNOWN |                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------|---------|--|-------------|--|----------------------------------------|-----------------------|----------------------|-----------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Distribution |            | Foul                                                                                                                                                                         |                                                                                |                             |         |  |             |  |                                        | Rising Mains          |                      | Private Rising Mains  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Washout      |            | Surface                                                                                                                                                                      |                                                                                |                             |         |  |             |  |                                        | Standby Rising Mains  |                      | Culverted Watercourse |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Raw Water    |            | Combined                                                                                                                                                                     |                                                                                |                             |         |  |             |  |                                        | EDM Effluent Disposal |                      | Highway Drain         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Abandoned    |            | Abandoned                                                                                                                                                                    |                                                                                |                             |         |  |             |  |                                        | Overflow              |                      | Use Unknown           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Private      |            | Colours generally indicate the use of the sewer/drain (i.e Red - Foul, Dark Blue - Surface, Magenta - Combined/Dual Use, Light Green - Highway Drain, Mid Green - Overflow). |                                                                                |                             |         |  |             |  |                                        | Syphon                |                      | Status Unknown        |
| FITTINGS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              | STRUCTURES |                                                                                                                                                                              | Some styles of line and symbol are shown on the key in sample/typical colours. |                             |         |  |             |  | OTHER STRUCTURES                       |                       |                      |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Hydrant      |            | Manhole - Foul                                                                                                                                                               |                                                                                | Pumping Station - Surface   |         |  |             |  |                                        | Attenuation Tank      |                      | Chamber               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Other        |            | Manhole - Surface                                                                                                                                                            |                                                                                | Pumping Stn - Foul/Combined |         |  |             |  |                                        | Storage Tank          |                      | Tunnel                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |            | Manhole - Combined                                                                                                                                                           |                                                                                | Gully                       |         |  |             |  |                                        |                       |                      | Interceptor           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |            | Inlet                                                                                                                                                                        |                                                                                | Vent Column                 |         |  |             |  |                                        |                       |                      |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |            | Outfall                                                                                                                                                                      |                                                                                | Rodding Eye                 |         |  |             |  |                                        |                       |                      |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |            | Lamphole                                                                                                                                                                     |                                                                                | Catchpit                    |         |  |             |  |                                        |                       |                      |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |            | Bifurcation - Foul                                                                                                                                                           |                                                                                | Flushing Chamber            |         |  |             |  |                                        |                       |                      |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |            | Bifurcation - Surface                                                                                                                                                        |                                                                                | Soakaway                    |         |  |             |  |                                        |                       |                      |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |            | Bifurcation - Combined                                                                                                                                                       |                                                                                | Non Return Valve            |         |  |             |  |                                        |                       |                      |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |            | Combined Sewage Overflow                                                                                                                                                     |                                                                                | Air Valve                   |         |  |             |  |                                        |                       |                      |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |            |                                                                                                                                                                              |                                                                                | Hatch Box                   |         |  |             |  |                                        |                       |                      |                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |            |                                                                                                                                                                              |                                                                                | Washout                     |         |  |             |  |                                        |                       |                      |                       |
| <p>Information in this map is provided for identification purposes only. No warranty as to accuracy is given or implied. The precise route of pipe work may not exactly match that shown. Wessex Water does not accept liability for inaccuracies. Sewers and lateral drains adopted by Wessex Water under the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 are to be plotted over time and may not yet be shown. In carrying out any work, you accept liability for the cost of any repairs to Wessex Water apparatus damaged as a result of your works. You are advised to commence excavations using hand tools only. Mechanical digging equipment should not be used until pipe work has been precisely located. If you are considering any form of building works and pipe work is shown within the boundary of your property or a property to be purchased (or very close by) a surveyor should plot its exact position prior to commencing works or purchase. If you are proposing to build over or near Wessex Water's apparatus you should contact the Developer Services Team, tel: 01225 526333 or e-mail: <a href="mailto:developer.enquiries@wessexwater.co.uk">developer.enquiries@wessexwater.co.uk</a> to discuss your proposals. Details of assets within Wessex Water's land ownership are unavailable through this service.</p> |              |            |                                                                                                                                                                              |                                                                                |                             |         |  |             |  |                                        |                       |                      |                       |
| <p><b>Wessex Water</b><br/>YTL GROUP</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |            |                                                                                                                                                                              |                                                                                |                             |         |  |             |  |                                        |                       |                      |                       |
| <p><b>Date:</b> 31/08/2026</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |            |                                                                                                                                                                              |                                                                                |                             |         |  |             |  | <p><b>Centre:</b> 387439E, 144077N</p> |                       |                      |                       |
| <p><b>Scale:</b> 1:625<br/>(when printed at A4 size)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |            |                                                                                                                                                                              |                                                                                |                             |         |  |             |  |                                        |                       |                      |                       |

# Appendix C



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)           | 21.000            | Check Discharge Rate(s)    | ✓   |
| Ratio-R              | 0.340             | 1 year (l/s)               | 0.0 |
| Summer CV            | 1.000             | 2 year (l/s)               | 0.0 |
| Winter CV            | 1.000             | 30 year (l/s)              | 0.1 |
| Analysis Speed       | Normal            | 100 year (l/s)             | 0.1 |
| 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 %) | Return Period (years) | Climate Change (CC %) | Additional Area (A %) | Additional Flow (Q %) | Return Period (years) | Climate Change (CC %) | Additional Area (A %) | Additional Flow (Q %) | Return Period (years) |
| 1                     | 0                     | 0                     | 0                     | 30                    | 40                    | 0                     | 0                     | 30                    | 40                    | 0                     | 0                     | 30                    |
| 2                     | 0                     | 0                     | 0                     | 100                   | 0                     | 0                     | 0                     | 100                   | 0                     | 0                     | 0                     | 100                   |
| 30                    | 0                     | 0                     | 0                     | 100                   | 45                    | 0                     | 0                     | 100                   | 45                    | 0                     | 0                     | 100                   |

Pre-development Discharge Rate

|                              |            |                        |      |                  |     |
|------------------------------|------------|------------------------|------|------------------|-----|
| Site Makeup                  | Greenfield | Region                 | 7    | QBar             | 0.0 |
| Greenfield Method            | IH124      | Growth Factor 1 year   | 0.85 | Q 1 year (l/s)   | 0.0 |
| Positively Drained Area (ha) | 0.199      | Growth Factor 2 year   | 0.88 | Q 2 year (l/s)   | 0.0 |
| SAAR (mm)                    | 867        | Growth Factor 30 year  | 2.40 | Q 30 year (l/s)  | 0.1 |
| Soil Index                   | 1          | Growth Factor 100 year | 3.19 | Q 100 year (l/s) | 0.1 |
| SPR                          | 0.10       | Betterment (%)         | 0    |                  |     |

|                      |                   |                            |     |
|----------------------|-------------------|----------------------------|-----|
| 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)           | 21.000            | Check Discharge Rate(s)    | ✓   |
| Ratio-R              | 0.340             | 1 year (l/s)               | 2.3 |
| Summer CV            | 1.000             | 2 year (l/s)               | 3.0 |
| Winter CV            | 1.000             | 30 year (l/s)              | 5.5 |
| Analysis Speed       | Normal            | 100 year (l/s)             | 6.9 |
| Skip Steady State    | x                 | Check Discharge Volume     | x   |

| Storm Durations          |                          |                          |    |     |                          |     |     |                          |                          |                          |     |      |                          |   |
|--------------------------|--------------------------|--------------------------|----|-----|--------------------------|-----|-----|--------------------------|--------------------------|--------------------------|-----|------|--------------------------|---|
|                          | 15                       | 30                       | 60 | 120 | 180                      | 240 | 360 | 480                      | 600                      | 720                      | 960 | 1440 |                          |   |
| Return Period<br>(years) | Climate Change<br>(CC %) | Additional Area<br>(A %) |    |     | Additional Flow<br>(Q %) |     |     | Return Period<br>(years) | Climate Change<br>(CC %) | Additional Area<br>(A %) |     |      | Additional Flow<br>(Q %) |   |
| 1                        |                          | 0                        |    | 0   |                          | 0   |     | 30                       |                          | 40                       |     | 0    |                          | 0 |
| 2                        |                          | 0                        |    | 0   |                          | 0   |     | 100                      |                          | 0                        |     | 0    |                          | 0 |
| 30                       |                          | 0                        |    | 0   |                          | 0   |     | 100                      |                          | 45                       |     | 0    |                          | 0 |

|                        |            |                              |       |                  |     |
|------------------------|------------|------------------------------|-------|------------------|-----|
| Site Makeup            | Brownfield | CV                           | 1.000 | Q 2 year (l/s)   | 3.0 |
| Brownfield Method      | MRM        | Time of Concentration (mins) | 6.00  | Q 30 year (l/s)  | 5.5 |
| Contributing Area (ha) | 0.013      | Betterment (%)               | 0     | Q 100 year (l/s) | 6.9 |
| PIMP (%)               | 100        | Q 1 year (l/s)               | 2.3   |                  |     |

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          |
| FSR Region            | England and Wales | Connection Type                      | Level Inverts |
| M5-60 (mm)            | 21.000            | Minimum Backdrop Height (m)          | 0.200         |
| Ratio-R               | 0.340             | Preferred Cover Depth (m)            | 1.200         |
| CV                    | 1.000             | Include Intermediate Ground          | ✓             |
| Time of Entry (mins)  | 6.00              | Enforce best practice design rules   | ✓             |

Nodes

| Name        | Area<br>(ha) | T of E<br>(mins) | Cover<br>Level<br>(m) | Diameter<br>(mm) | Easting<br>(m) | Northing<br>(m) | Depth<br>(m) | Invert<br>Level<br>(m) |
|-------------|--------------|------------------|-----------------------|------------------|----------------|-----------------|--------------|------------------------|
| Development | 0.057        | 6.00             | 110.500               | 450              | 0.000          | 0.000           | 0.500        | 110.000                |
| Tank        |              |                  | 110.500               |                  | 20.000         | 0.000           | 1.500        | 109.000                |
| Outfall     |              |                  | 110.500               | 450              | 40.000         | 0.000           | 1.700        | 108.800                |

Links (Input)

| Name  | US<br>Node  | DS<br>Node | Length<br>(m) | ks (mm) /<br>n | US IL<br>(m) | DS IL<br>(m) | Fall<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | T of C<br>(mins) | Rain<br>(mm/hr) |
|-------|-------------|------------|---------------|----------------|--------------|--------------|-------------|----------------|-------------|------------------|-----------------|
| 1.000 | Development | Tank       | 20.000        | 0.600          | 110.000      | 109.000      | 1.000       | 20.0           | 225         | 6.11             | 50.0            |
| 1.001 | Tank        | Outfall    | 20.000        | 0.600          | 109.000      | 108.800      | 0.200       | 100.0          | 225         | 6.37             | 50.0            |

Node Tank Online Hydro-Brake® Control

|                          |         |                         |                                |
|--------------------------|---------|-------------------------|--------------------------------|
| Flap Valve               | x       | Objective               | (HE) Minimise upstream storage |
| Downstream Link          | 1.001   | Sump Available          | ✓                              |
| Replaces Downstream Link | x       | Product Number          | CTL-SHE-0047-1200-1500-1200    |
| Invert Level (m)         | 109.000 | Min Outlet Diameter (m) | 0.075                          |
| Design Depth (m)         | 1.500   | Min Node Diameter (mm)  | 1200                           |
| Design Flow (l/s)        | 1.2     |                         |                                |

Node Tank Depth/Area Storage Structure

|                             |         |               |      |                           |         |
|-----------------------------|---------|---------------|------|---------------------------|---------|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 109.000 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity      | 0.95 | Time to half empty (mins) |         |

| Depth<br>(m) | Area<br>(m²) | Inf Area<br>(m²) | Depth<br>(m) | Area<br>(m²) | Inf Area<br>(m²) | Depth<br>(m) | Area<br>(m²) | Inf Area<br>(m²) | Depth<br>(m) | Area<br>(m²) | Inf Area<br>(m²) |
|--------------|--------------|------------------|--------------|--------------|------------------|--------------|--------------|------------------|--------------|--------------|------------------|
| 0.000        | 51.8         | 51.8             | 0.400        | 51.8         | 62.0             | 0.800        | 51.8         | 72.2             | 0.801        | 0.0          | 72.2             |

Rainfall

| Event                    | Peak<br>Intensity<br>(mm/hr) | Average<br>Intensity<br>(mm/hr) | Event                     | Peak<br>Intensity<br>(mm/hr) | Average<br>Intensity<br>(mm/hr) |
|--------------------------|------------------------------|---------------------------------|---------------------------|------------------------------|---------------------------------|
| 1 year 15 minute summer  | 109.175                      | 30.893                          | 1 year 360 minute winter  | 10.543                       | 4.174                           |
| 1 year 15 minute winter  | 76.614                       | 30.893                          | 1 year 480 minute summer  | 12.988                       | 3.432                           |
| 1 year 30 minute summer  | 73.180                       | 20.707                          | 1 year 480 minute winter  | 8.629                        | 3.432                           |
| 1 year 30 minute winter  | 51.354                       | 20.707                          | 1 year 600 minute summer  | 10.783                       | 2.949                           |
| 1 year 60 minute summer  | 51.175                       | 13.524                          | 1 year 600 minute winter  | 7.368                        | 2.949                           |
| 1 year 60 minute winter  | 33.999                       | 13.524                          | 1 year 720 minute summer  | 9.724                        | 2.606                           |
| 1 year 120 minute summer | 32.842                       | 8.679                           | 1 year 720 minute winter  | 6.535                        | 2.606                           |
| 1 year 120 minute winter | 21.819                       | 8.679                           | 1 year 960 minute summer  | 8.144                        | 2.145                           |
| 1 year 180 minute summer | 25.924                       | 6.671                           | 1 year 960 minute winter  | 5.395                        | 2.145                           |
| 1 year 180 minute winter | 16.851                       | 6.671                           | 1 year 1440 minute summer | 6.072                        | 1.627                           |
| 1 year 240 minute summer | 20.802                       | 5.497                           | 1 year 1440 minute winter | 4.081                        | 1.627                           |
| 1 year 240 minute winter | 13.820                       | 5.497                           | 2 year 15 minute summer   | 141.123                      | 39.933                          |
| 1 year 360 minute summer | 16.219                       | 4.174                           | 2 year 15 minute winter   | 99.034                       | 39.933                          |

### Rainfall

| Event                             | Peak<br>Intensity<br>(mm/hr) | Average<br>Intensity<br>(mm/hr) | Event                              | Peak<br>Intensity<br>(mm/hr) | Average<br>Intensity<br>(mm/hr) |
|-----------------------------------|------------------------------|---------------------------------|------------------------------------|------------------------------|---------------------------------|
| 2 year 30 minute summer           | 93.858                       | 26.559                          | 30 year +40% CC 360 minute summer  | 48.880                       | 12.578                          |
| 2 year 30 minute winter           | 65.865                       | 26.559                          | 30 year +40% CC 360 minute winter  | 31.773                       | 12.578                          |
| 2 year 60 minute summer           | 64.525                       | 17.052                          | 30 year +40% CC 480 minute summer  | 38.473                       | 10.167                          |
| 2 year 60 minute winter           | 42.869                       | 17.052                          | 30 year +40% CC 480 minute winter  | 25.560                       | 10.167                          |
| 2 year 120 minute summer          | 40.638                       | 10.740                          | 30 year +40% CC 600 minute summer  | 31.493                       | 8.614                           |
| 2 year 120 minute winter          | 26.999                       | 10.740                          | 30 year +40% CC 600 minute winter  | 21.518                       | 8.614                           |
| 2 year 180 minute summer          | 31.695                       | 8.156                           | 30 year +40% CC 720 minute summer  | 28.057                       | 7.520                           |
| 2 year 180 minute winter          | 20.603                       | 8.156                           | 30 year +40% CC 720 minute winter  | 18.856                       | 7.520                           |
| 2 year 240 minute summer          | 25.297                       | 6.685                           | 30 year +40% CC 960 minute summer  | 23.029                       | 6.064                           |
| 2 year 240 minute winter          | 16.807                       | 6.685                           | 30 year +40% CC 960 minute winter  | 15.255                       | 6.064                           |
| 2 year 360 minute summer          | 19.588                       | 5.041                           | 30 year +40% CC 1440 minute summer | 16.685                       | 4.472                           |
| 2 year 360 minute winter          | 12.733                       | 5.041                           | 30 year +40% CC 1440 minute winter | 11.213                       | 4.472                           |
| 2 year 480 minute summer          | 15.603                       | 4.124                           | 100 year 15 minute summer          | 347.578                      | 98.353                          |
| 2 year 480 minute winter          | 10.367                       | 4.124                           | 100 year 15 minute winter          | 243.915                      | 98.353                          |
| 2 year 600 minute summer          | 12.899                       | 3.528                           | 100 year 30 minute summer          | 234.383                      | 66.322                          |
| 2 year 600 minute winter          | 8.813                        | 3.528                           | 100 year 30 minute winter          | 164.479                      | 66.322                          |
| 2 year 720 minute summer          | 11.589                       | 3.106                           | 100 year 60 minute summer          | 161.115                      | 42.578                          |
| 2 year 720 minute winter          | 7.789                        | 3.106                           | 100 year 60 minute winter          | 107.041                      | 42.578                          |
| 2 year 960 minute summer          | 9.647                        | 2.540                           | 100 year 120 minute summer         | 99.418                       | 26.273                          |
| 2 year 960 minute winter          | 6.390                        | 2.540                           | 100 year 120 minute winter         | 66.051                       | 26.273                          |
| 2 year 1440 minute summer         | 7.134                        | 1.912                           | 100 year 180 minute summer         | 75.587                       | 19.451                          |
| 2 year 1440 minute winter         | 4.794                        | 1.912                           | 100 year 180 minute winter         | 49.133                       | 19.451                          |
| 30 year 15 minute summer          | 267.843                      | 75.790                          | 100 year 240 minute summer         | 59.370                       | 15.690                          |
| 30 year 15 minute winter          | 187.960                      | 75.790                          | 100 year 240 minute winter         | 39.444                       | 15.690                          |
| 30 year 30 minute summer          | 178.958                      | 50.639                          | 100 year 360 minute summer         | 44.952                       | 11.568                          |
| 30 year 30 minute winter          | 125.584                      | 50.639                          | 100 year 360 minute winter         | 29.220                       | 11.568                          |
| 30 year 60 minute summer          | 122.494                      | 32.372                          | 100 year 480 minute summer         | 35.197                       | 9.301                           |
| 30 year 60 minute winter          | 81.382                       | 32.372                          | 100 year 480 minute winter         | 23.384                       | 9.301                           |
| 30 year 120 minute summer         | 75.819                       | 20.037                          | 100 year 600 minute summer         | 28.688                       | 7.847                           |
| 30 year 120 minute winter         | 50.372                       | 20.037                          | 100 year 600 minute winter         | 19.601                       | 7.847                           |
| 30 year 180 minute summer         | 58.032                       | 14.934                          | 100 year 720 minute summer         | 25.465                       | 6.825                           |
| 30 year 180 minute winter         | 37.723                       | 14.934                          | 100 year 720 minute winter         | 17.114                       | 6.825                           |
| 30 year 240 minute summer         | 45.799                       | 12.103                          | 100 year 960 minute summer         | 20.776                       | 5.471                           |
| 30 year 240 minute winter         | 30.428                       | 12.103                          | 100 year 960 minute winter         | 13.762                       | 5.471                           |
| 30 year 360 minute summer         | 34.914                       | 8.985                           | 100 year 1440 minute summer        | 14.915                       | 3.997                           |
| 30 year 360 minute winter         | 22.695                       | 8.985                           | 100 year 1440 minute winter        | 10.024                       | 3.997                           |
| 30 year 480 minute summer         | 27.480                       | 7.262                           | 100 year +45% CC 15 minute summer  | 503.989                      | 142.611                         |
| 30 year 480 minute winter         | 18.257                       | 7.262                           | 100 year +45% CC 15 minute winter  | 353.676                      | 142.611                         |
| 30 year 600 minute summer         | 22.495                       | 6.153                           | 100 year +45% CC 30 minute summer  | 339.855                      | 96.167                          |
| 30 year 600 minute winter         | 15.370                       | 6.153                           | 100 year +45% CC 30 minute winter  | 238.495                      | 96.167                          |
| 30 year 720 minute summer         | 20.041                       | 5.371                           | 100 year +45% CC 60 minute summer  | 233.617                      | 61.738                          |
| 30 year 720 minute winter         | 13.469                       | 5.371                           | 100 year +45% CC 60 minute winter  | 155.209                      | 61.738                          |
| 30 year 960 minute summer         | 16.449                       | 4.332                           | 100 year +45% CC 120 minute summer | 144.156                      | 38.096                          |
| 30 year 960 minute winter         | 10.896                       | 4.332                           | 100 year +45% CC 120 minute winter | 95.774                       | 38.096                          |
| 30 year 1440 minute summer        | 11.918                       | 3.194                           | 100 year +45% CC 180 minute summer | 109.601                      | 28.204                          |
| 30 year 1440 minute winter        | 8.009                        | 3.194                           | 100 year +45% CC 180 minute winter | 71.243                       | 28.204                          |
| 30 year +40% CC 15 minute summer  | 374.980                      | 106.107                         | 100 year +45% CC 240 minute summer | 86.087                       | 22.750                          |
| 30 year +40% CC 15 minute winter  | 263.144                      | 106.107                         | 100 year +45% CC 240 minute winter | 57.194                       | 22.750                          |
| 30 year +40% CC 30 minute summer  | 250.541                      | 70.894                          | 100 year +45% CC 360 minute summer | 65.180                       | 16.773                          |
| 30 year +40% CC 30 minute winter  | 175.818                      | 70.894                          | 100 year +45% CC 360 minute winter | 42.369                       | 16.773                          |
| 30 year +40% CC 60 minute summer  | 171.492                      | 45.320                          | 100 year +45% CC 480 minute summer | 51.035                       | 13.487                          |
| 30 year +40% CC 60 minute winter  | 113.935                      | 45.320                          | 100 year +45% CC 480 minute winter | 33.907                       | 13.487                          |
| 30 year +40% CC 120 minute summer | 106.146                      | 28.051                          | 100 year +45% CC 600 minute summer | 41.598                       | 11.378                          |
| 30 year +40% CC 120 minute winter | 70.521                       | 28.051                          | 100 year +45% CC 600 minute winter | 28.422                       | 11.378                          |
| 30 year +40% CC 180 minute summer | 81.245                       | 20.907                          | 100 year +45% CC 720 minute summer | 36.925                       | 9.896                           |
| 30 year +40% CC 180 minute winter | 52.812                       | 20.907                          | 100 year +45% CC 720 minute winter | 24.816                       | 9.896                           |
| 30 year +40% CC 240 minute summer | 64.119                       | 16.945                          | 100 year +45% CC 960 minute summer | 30.125                       | 7.933                           |
| 30 year +40% CC 240 minute winter | 42.599                       | 16.945                          | 100 year +45% CC 960 minute winter | 19.955                       | 7.933                           |

Rainfall

| Event                               | Peak<br>Intensity<br>(mm/hr) | Average<br>Intensity<br>(mm/hr) | Event                               | Peak<br>Intensity<br>(mm/hr) | Average<br>Intensity<br>(mm/hr) |
|-------------------------------------|------------------------------|---------------------------------|-------------------------------------|------------------------------|---------------------------------|
| 100 year +45% CC 1440 minute summer | 21.626                       | 5.796                           | 100 year +45% CC 1440 minute winter | 14.534                       | 5.796                           |

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

| Node Event        | US<br>Node  | Peak<br>(mins) | Level<br>(m) | Depth<br>(m) | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status |
|-------------------|-------------|----------------|--------------|--------------|-----------------|------------------|---------------|--------|
| 15 minute summer  | Development | 9              | 110.044      | 0.044        | 9.0             | 0.0071           | 0.0000        | OK     |
| 240 minute summer | Tank        | 160            | 109.148      | 0.148        | 3.3             | 7.2700           | 0.0000        | OK     |
| 240 minute summer | Outfall     | 160            | 108.819      | 0.019        | 0.8             | 0.0000           | 0.0000        | OK     |

| Link Event<br>(Upstream Depth) | US<br>Node  | Link  | DS<br>Node | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
|--------------------------------|-------------|-------|------------|------------------|-------------------|----------|------------------|-----------------------|
| 15 minute summer               | Development | 1.000 | Tank       | 9.0              | 2.215             | 0.077    | 0.1404           |                       |
| 240 minute summer              | Tank        | 1.001 | Outfall    | 0.8              | 0.481             | 0.015    | 0.0330           | 11.5                  |

Results for 2 year Critical Storm Duration. Lowest mass balance: 100.00%

| Node Event        | US<br>Node  | Peak<br>(mins) | Level<br>(m) | Depth<br>(m) | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status |
|-------------------|-------------|----------------|--------------|--------------|-----------------|------------------|---------------|--------|
| 15 minute summer  | Development | 9              | 110.050      | 0.050        | 11.7            | 0.0079           | 0.0000        | OK     |
| 240 minute summer | Tank        | 168            | 109.183      | 0.183        | 4.0             | 9.0157           | 0.0000        | OK     |
| 240 minute summer | Outfall     | 168            | 108.820      | 0.020        | 0.8             | 0.0000           | 0.0000        | OK     |

| Link Event<br>(Upstream Depth) | US<br>Node  | Link  | DS<br>Node | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
|--------------------------------|-------------|-------|------------|------------------|-------------------|----------|------------------|-----------------------|
| 15 minute summer               | Development | 1.000 | Tank       | 11.7             | 2.282             | 0.100    | 0.1919           |                       |
| 240 minute summer              | Tank        | 1.001 | Outfall    | 0.8              | 0.485             | 0.016    | 0.0336           | 13.9                  |

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.84%

| Node Event                     | US<br>Node  | Peak<br>(mins) | Level<br>(m) | Depth<br>(m)     | Inflow<br>(l/s)   | Node<br>Vol (m³) | Flood<br>(m³)    | Status                |
|--------------------------------|-------------|----------------|--------------|------------------|-------------------|------------------|------------------|-----------------------|
| 15 minute summer               | Development | 11             | 110.066      | 0.066            | 22.1              | 0.0105           | 0.0000           | OK                    |
| 240 minute winter              | Tank        | 228            | 109.387      | 0.387            | 4.8               | 19.0633          | 0.0000           | SURCHARGED            |
| 60 minute summer               | Outfall     | 37             | 108.820      | 0.020            | 0.8               | 0.0000           | 0.0000           | OK                    |
| Link Event<br>(Upstream Depth) | US<br>Node  | Link           | DS<br>Node   | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap         | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
| 15 minute summer               | Development | 1.000          | Tank         | 22.1             | 2.397             | 0.189            | 0.3932           |                       |
| 240 minute winter              | Tank        | 1.001          | Outfall      | 0.8              | 0.487             | 0.016            | 0.0338           | 19.8                  |

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.59%

| Node Event                     | US<br>Node  | Peak<br>(mins) | Level<br>(m) | Depth<br>(m)     | Inflow<br>(l/s)   | Node<br>Vol (m³) | Flood<br>(m³)    | Status                |
|--------------------------------|-------------|----------------|--------------|------------------|-------------------|------------------|------------------|-----------------------|
| 15 minute summer               | Development | 11             | 110.079      | 0.079            | 31.0              | 0.0125           | 0.0000           | OK                    |
| 360 minute winter              | Tank        | 336            | 109.595      | 0.595            | 5.0               | 29.2835          | 0.0000           | SURCHARGED            |
| 15 minute summer               | Outfall     | 68             | 108.820      | 0.020            | 0.8               | 0.0000           | 0.0000           | OK                    |
| Link Event<br>(Upstream Depth) | US<br>Node  | Link           | DS<br>Node   | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap         | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
| 15 minute summer               | Development | 1.000          | Tank         | 31.0             | 2.433             | 0.265            | 0.5008           |                       |
| 360 minute winter              | Tank        | 1.001          | Outfall      | 0.8              | 0.487             | 0.016            | 0.0338           | 23.6                  |

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.72%

| Node Event                     | US<br>Node  | Peak<br>(mins) | Level<br>(m) | Depth<br>(m)     | Inflow<br>(l/s)   | Node<br>Vol (m³) | Flood<br>(m³)    | Status                |
|--------------------------------|-------------|----------------|--------------|------------------|-------------------|------------------|------------------|-----------------------|
| 15 minute summer               | Development | 11             | 110.076      | 0.076            | 28.7              | 0.0120           | 0.0000           | OK                    |
| 240 minute winter              | Tank        | 232            | 109.541      | 0.540            | 6.2               | 26.5960          | 0.0000           | SURCHARGED            |
| 60 minute winter               | Outfall     | 34             | 108.820      | 0.020            | 0.8               | 0.0000           | 0.0000           | OK                    |
| Link Event<br>(Upstream Depth) | US<br>Node  | Link           | DS<br>Node   | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap         | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
| 15 minute summer               | Development | 1.000          | Tank         | 28.7             | 2.429             | 0.246            | 0.4792           |                       |
| 240 minute winter              | Tank        | 1.001          | Outfall      | 0.8              | 0.487             | 0.016            | 0.0338           | 18.9                  |

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.25%

| Node Event                     | US<br>Node  | Peak<br>(mins) | Level<br>(m) | Depth<br>(m)     | Inflow<br>(l/s)   | Node<br>Vol (m³) | Flood<br>(m³)    | Status                |
|--------------------------------|-------------|----------------|--------------|------------------|-------------------|------------------|------------------|-----------------------|
| 240 minute winter              | Development | 232            | 110.412      | 0.412            | 9.1               | 0.0655           | 0.0000           | FLOOD RISK            |
| 240 minute winter              | Tank        | 232            | 110.412      | 1.412            | 9.1               | 39.3926          | 0.0000           | FLOOD RISK            |
| 240 minute winter              | Outfall     | 232            | 108.823      | 0.023            | 1.2               | 0.0000           | 0.0000           | OK                    |
| Link Event<br>(Upstream Depth) | US<br>Node  | Link           | DS<br>Node   | Outflow<br>(l/s) | Velocity<br>(m/s) | Flow/Cap         | Link<br>Vol (m³) | Discharge<br>Vol (m³) |
| 240 minute winter              | Development | 1.000          | Tank         | 9.1              | 1.367             | 0.078            | 0.7954           |                       |
| 240 minute winter              | Tank        | 1.001          | Outfall      | 1.2              | 0.538             | 0.022            | 0.0431           | 22.5                  |

Approval Settings

|             |   |                       |   |                       |    |                  |   |
|-------------|---|-----------------------|---|-----------------------|----|------------------|---|
| Node Size   | x | Crossings             | x | Surcharged Depth      | x  | Discharge Volume | x |
| Node Losses | x | Cover Depth           | x | Flooding              | x  | First Flush      | x |
| Link Size   | x | Backdrops             | x | Time to Half Empty    | ✓  | Water Quality    | x |
| Link Length | x | Full Bore Velocity    | x | Return Period (years) | 10 |                  |   |
| Coordinates | x | Proportional Velocity | x | Discharge Rates       | x  |                  |   |

## Foul Flow Calculation as per Design and Construction Guidance 2020

This calculation uses the standard flow information provided in the Design and Construction Guidance 2020

### Existing Site

Key:

|  |               |
|--|---------------|
|  | Input         |
|  | Calculation   |
|  | Model Result  |
|  | Standard Info |
|  | Linked        |

#### Domestic Flow

|                     |               |
|---------------------|---------------|
| Number of dwellings | 0             |
| Design flow rate    | 4000 l/dw/day |
| Total Domestic Flow | 0 l/s         |

#### Industrial Flow

|                                    |                  |            |
|------------------------------------|------------------|------------|
| Wet Industrial Development area    | 0 m <sup>2</sup> | 1 l/s/ha   |
| Normal Industrial Development area | 0 m <sup>2</sup> | 0.5 l/s/ha |

#### Rates As per SfA 7

When wet industry flow is unknown use:

|                                   |                  |            |
|-----------------------------------|------------------|------------|
| Total Industrial Development area | 0 m <sup>2</sup> | 0.7 l/s/ha |
| Total Industrial Flow             | 0 l/s            |            |

**Total Existing Site Flows** 0.000 l/s

### Proposed Site

#### Domestic Flow

|                     |               |
|---------------------|---------------|
| Number of dwellings | 3             |
| Design flow rate    | 4000 l/dw/day |
| Total Domestic Flow | 0.139 l/s     |

#### Industrial Flow

|                                    |                  |            |
|------------------------------------|------------------|------------|
| Domestic Flow Element              | 0 m <sup>2</sup> | 0.6 l/s/ha |
| Wet Industrial Development area    | 0 m <sup>2</sup> | 1 l/s/ha   |
| Normal Industrial Development area | 0 m <sup>2</sup> | 0.5 l/s/ha |

#### Rates

When wet industry flow is unknown

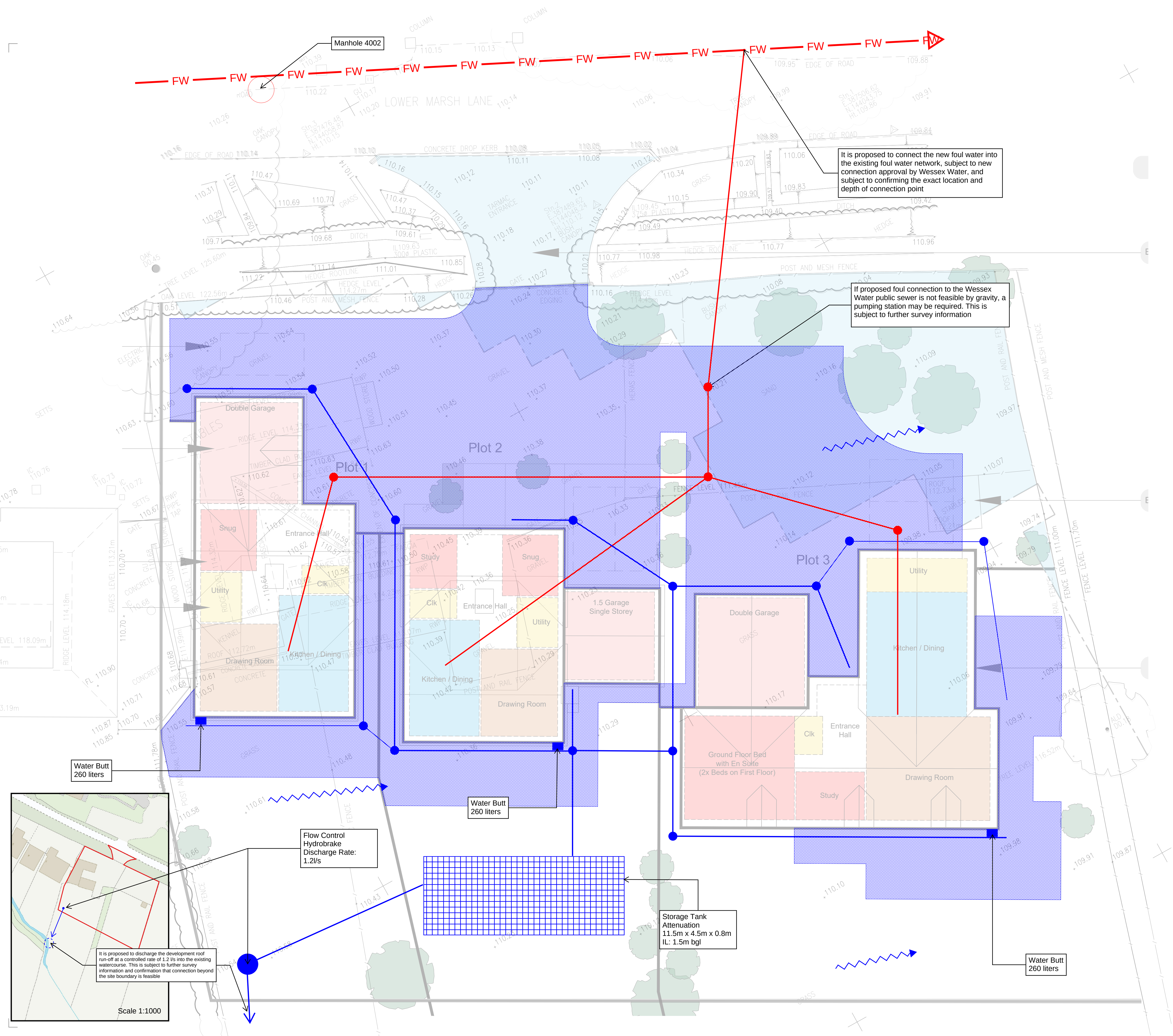
|                                   |                  |            |
|-----------------------------------|------------------|------------|
| Total Industrial Development area | 0 m <sup>2</sup> | 0.7 l/s/ha |
| Total Industrial Flow             | 0.0000 l/s       |            |

**Total New Site Flows** 0.139 l/s

### Conclusion:

There is an increase of flow from 0.000 l/s to 0.139 l/s

# 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**
1. All dimensions are in millimetres and levels in m AOD unless stated otherwise.
  2. Do not scale. If in any doubt, consult Engineer.
  3. Read in conjunction with the architects and engineers schedule drawings.
  4. Check inverts and sizes of existing pipes prior to the commencement of any work. Report any discrepancies to the engineer and await instructions.
  5. 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.
  6. The proposed dwelling shall be provided with a rainwater butt with a minimum storage capacity of 260 litres. The water butt shall be connected to a roof downpipe (with an appropriate diverter and an overflow returning to the drainage system) and positioned to allow safe access and routine use by the occupants.

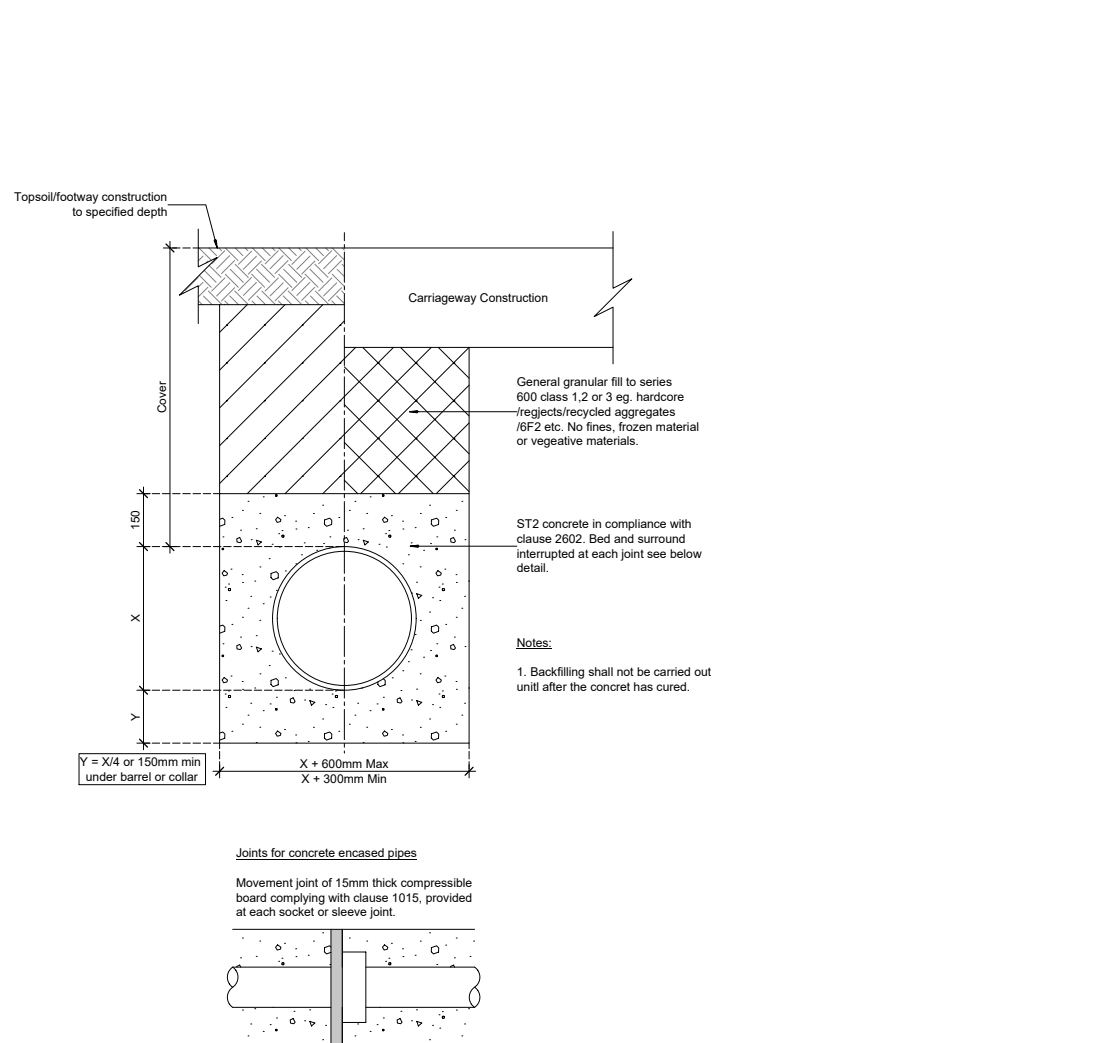
- KEY**
- Proposed Surface Water Sewer Pipe
  - Exceedance Flows
  - Permeable Surface as per architect's details  
Sub-base 350mm Type 3
  - Silt Trap
  - Proposed Foul Sewer Pipe
  - Type 3 Manhole
  - FW Existing Foul Sewer Pipe

| Rev | Details | Date | By | Chd |
|-----|---------|------|----|-----|
|     |         |      |    |     |

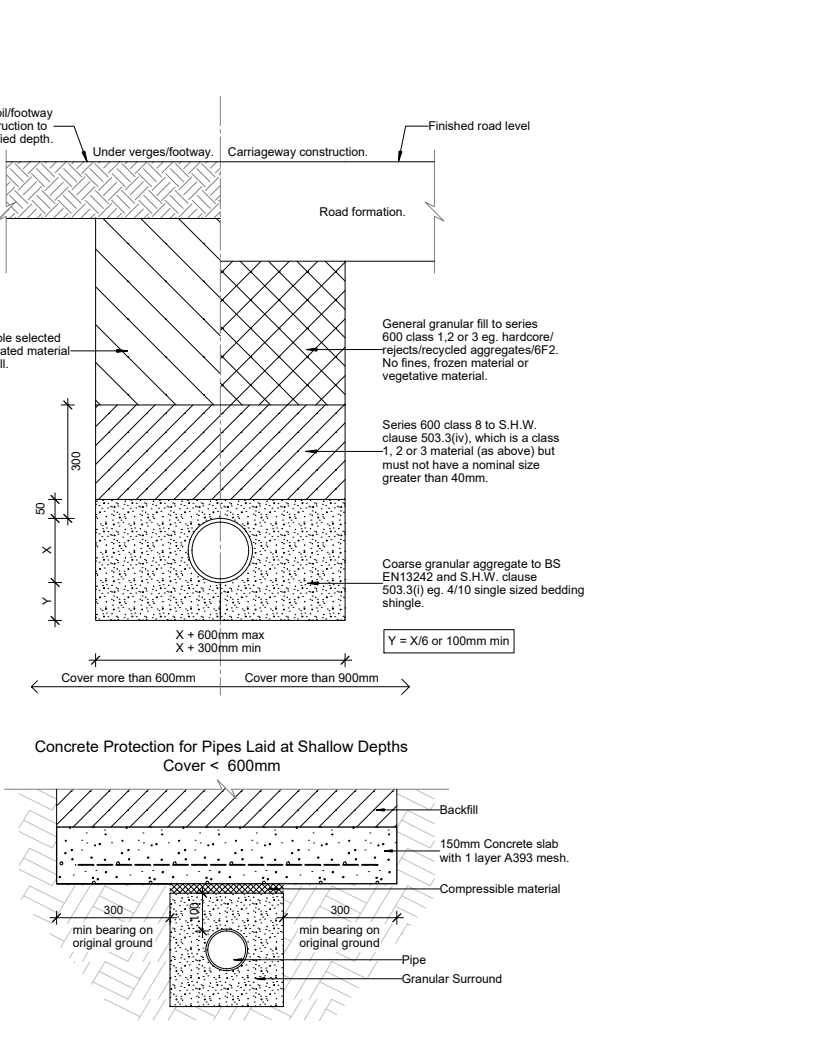
Drawing Status: **PRELIMINARY**



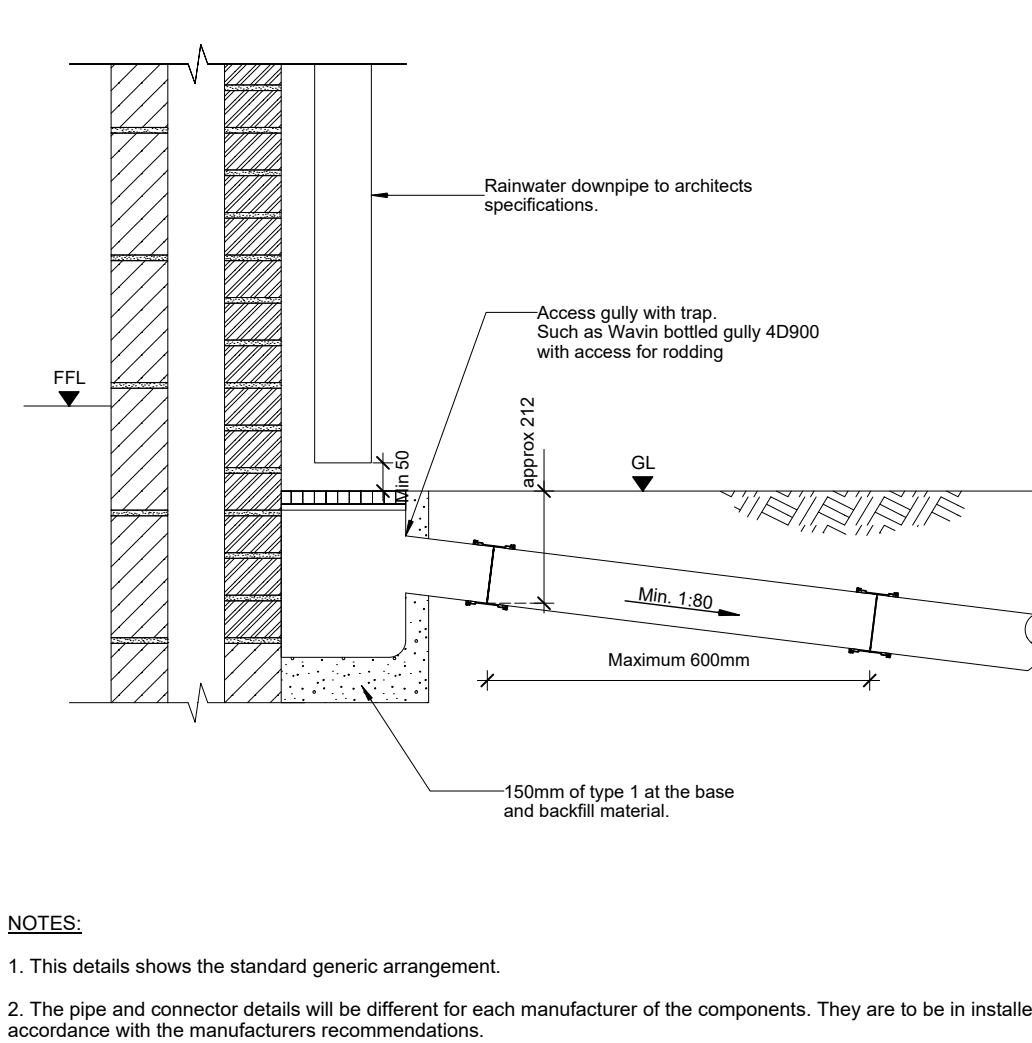
Client:   
Project: **3 Lower Marsh BA12 9PB**  
Drawing: **Proposed Drainage Strategy**



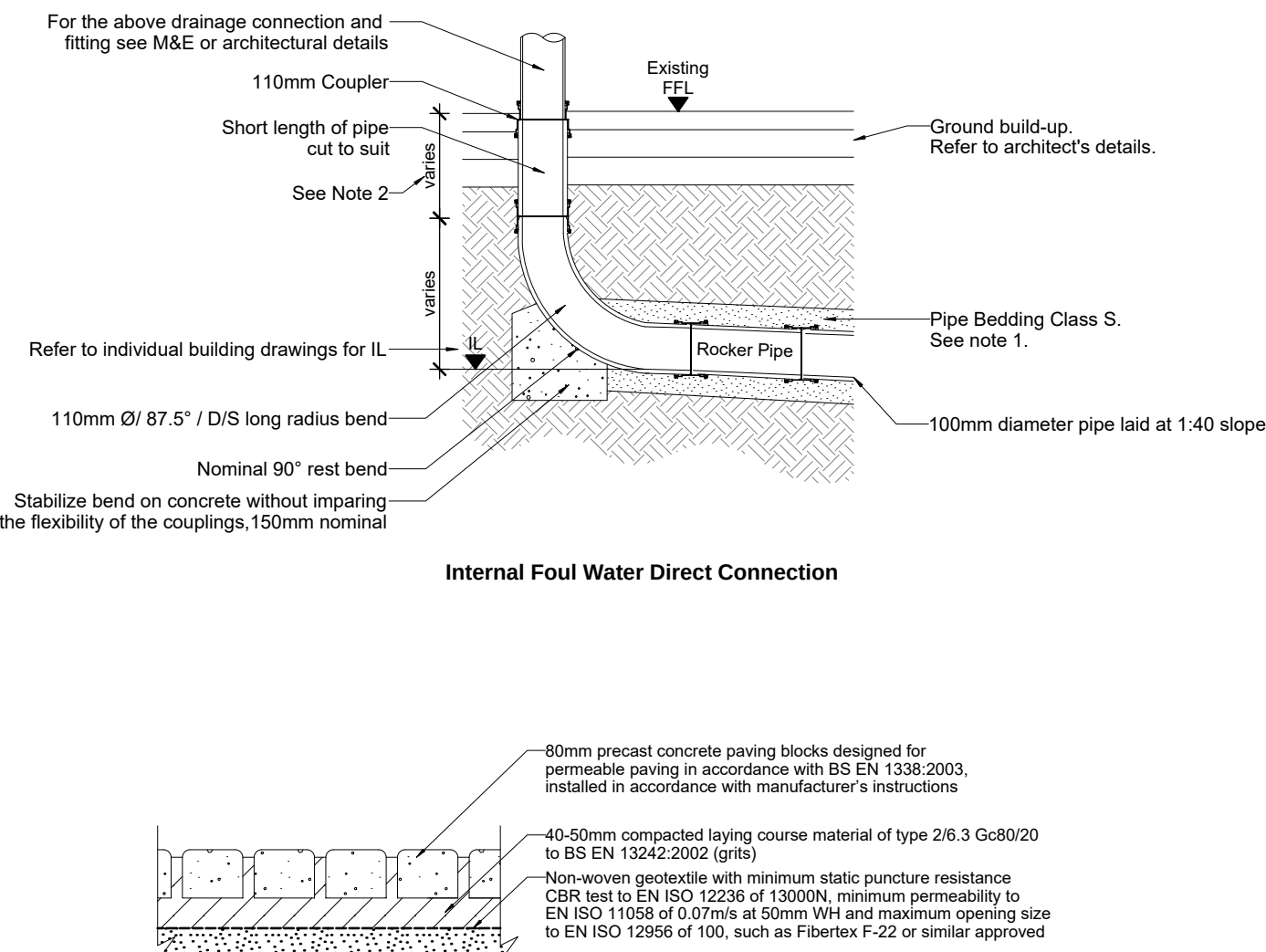
Pipe Bedding Detail Type Z



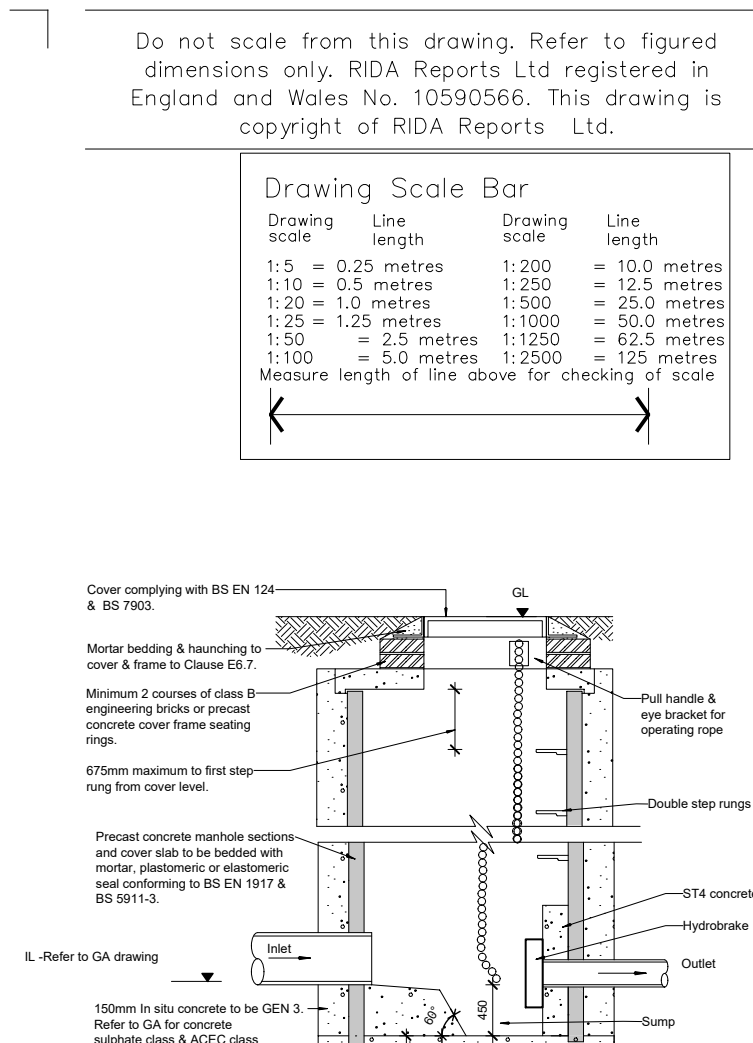
Pipe Bedding Detail Type S



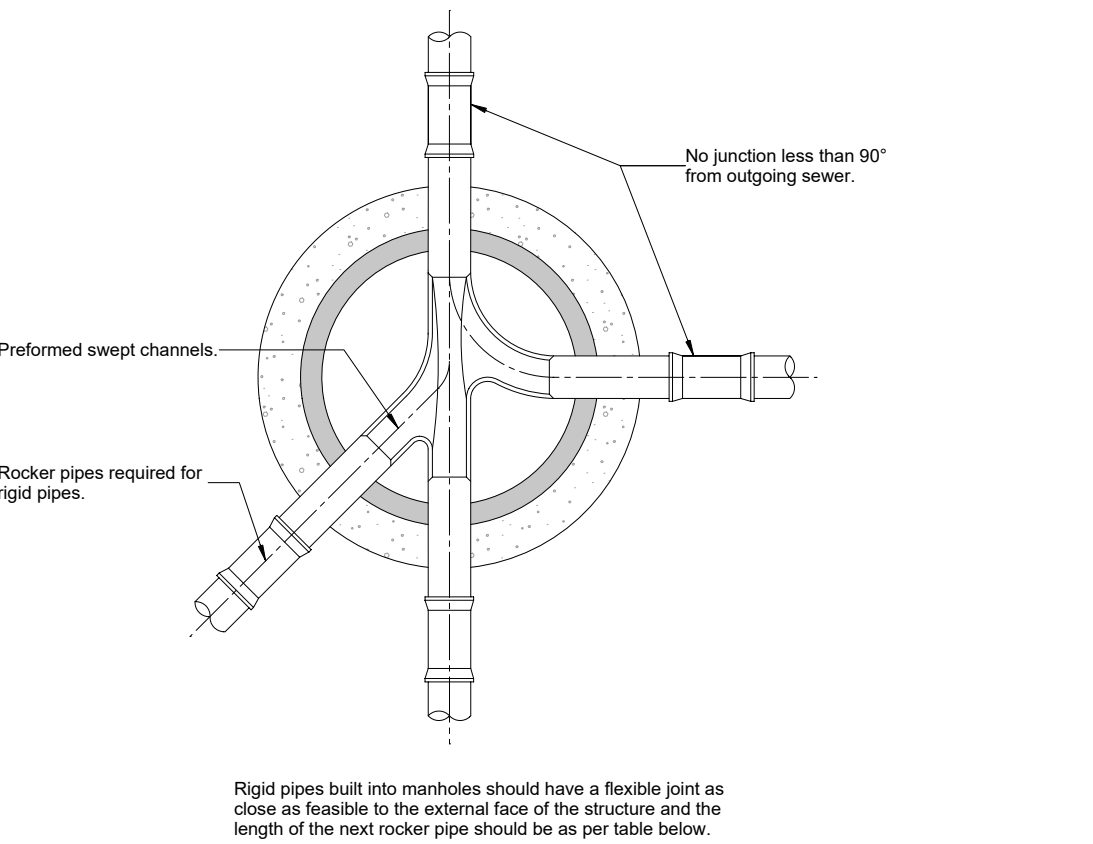
8250 - External Rainwater (High Level)



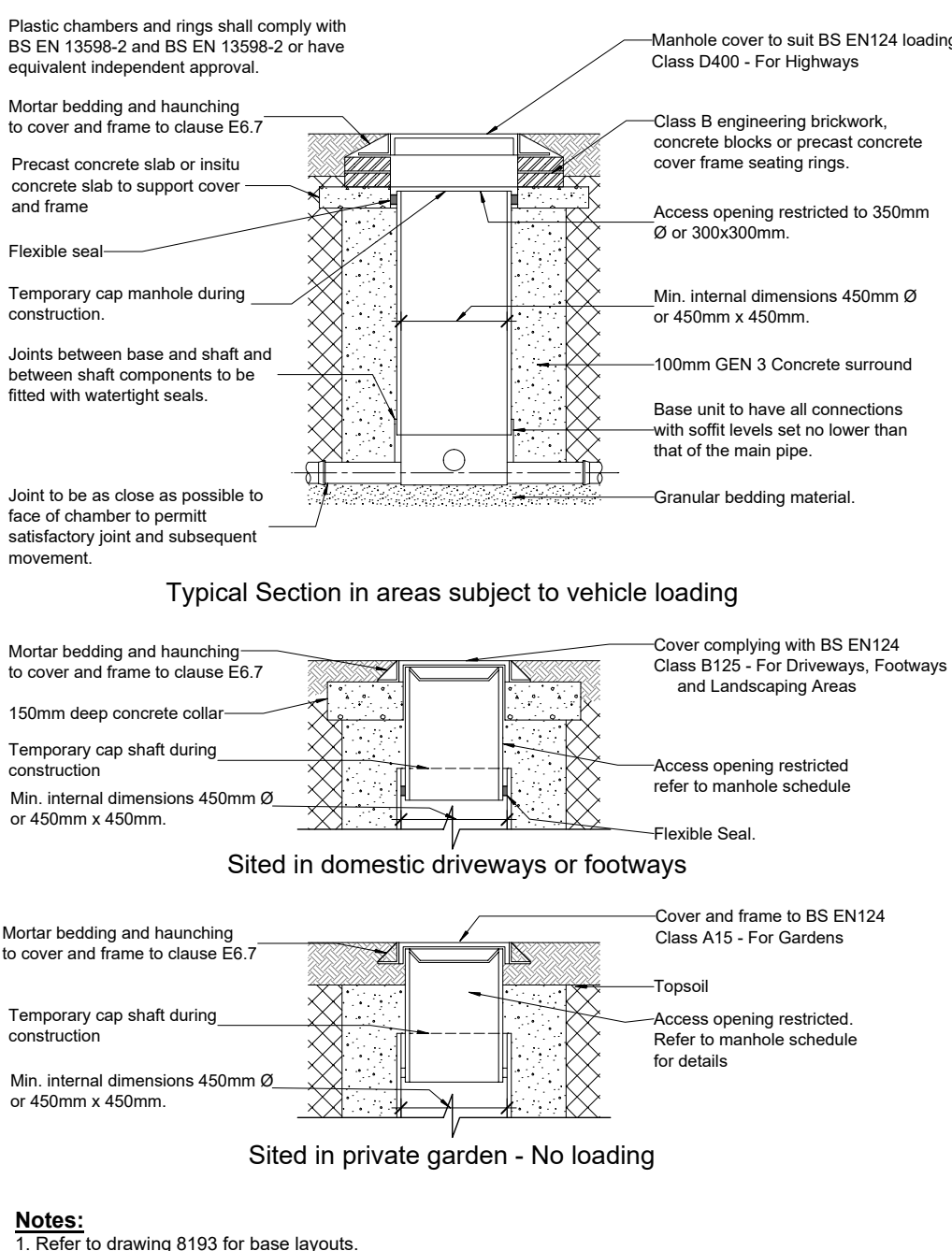
Permeable Paving - Infiltration



Flow Control Device Chamber- Hydrobrake

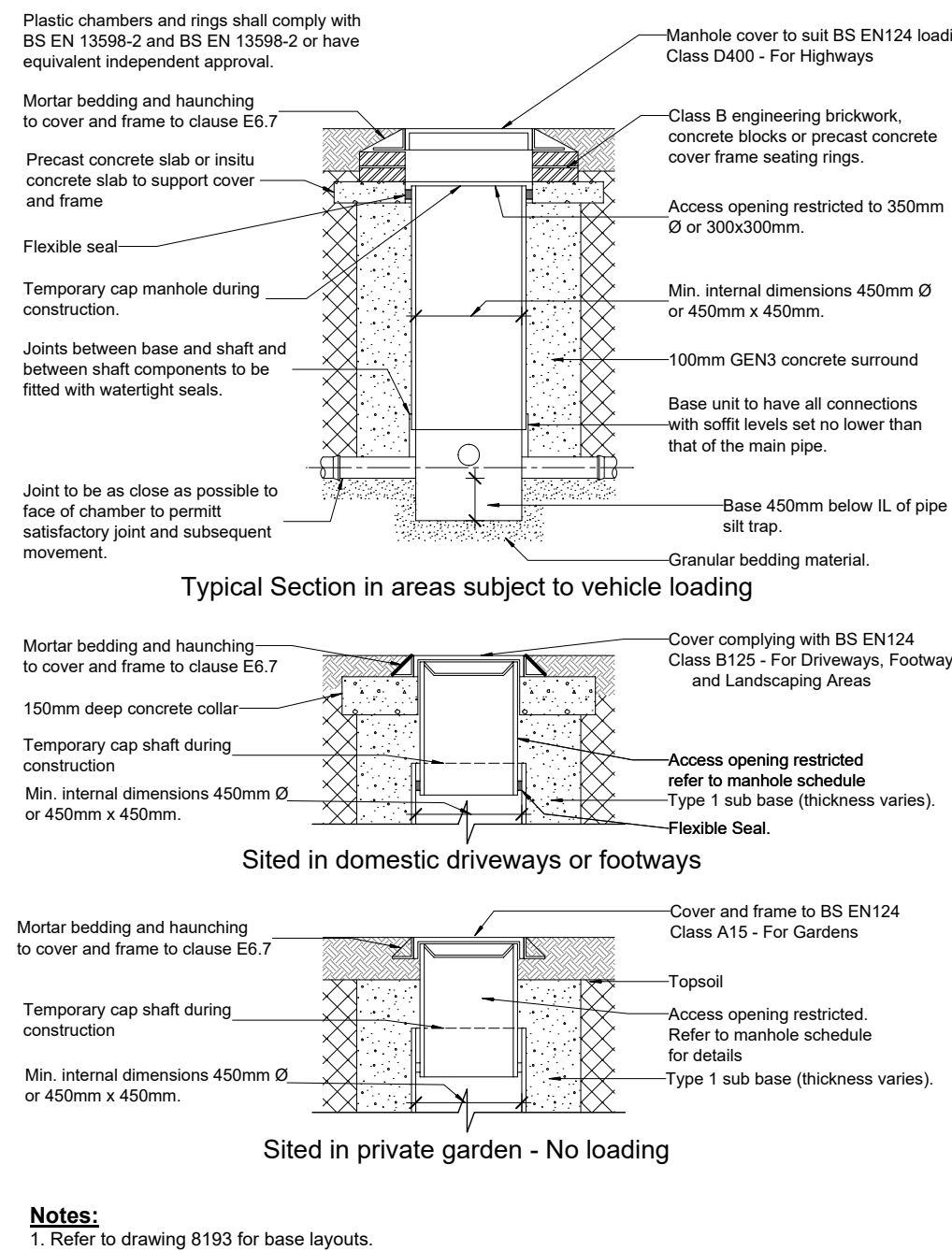


Pipe Junction within Manhole



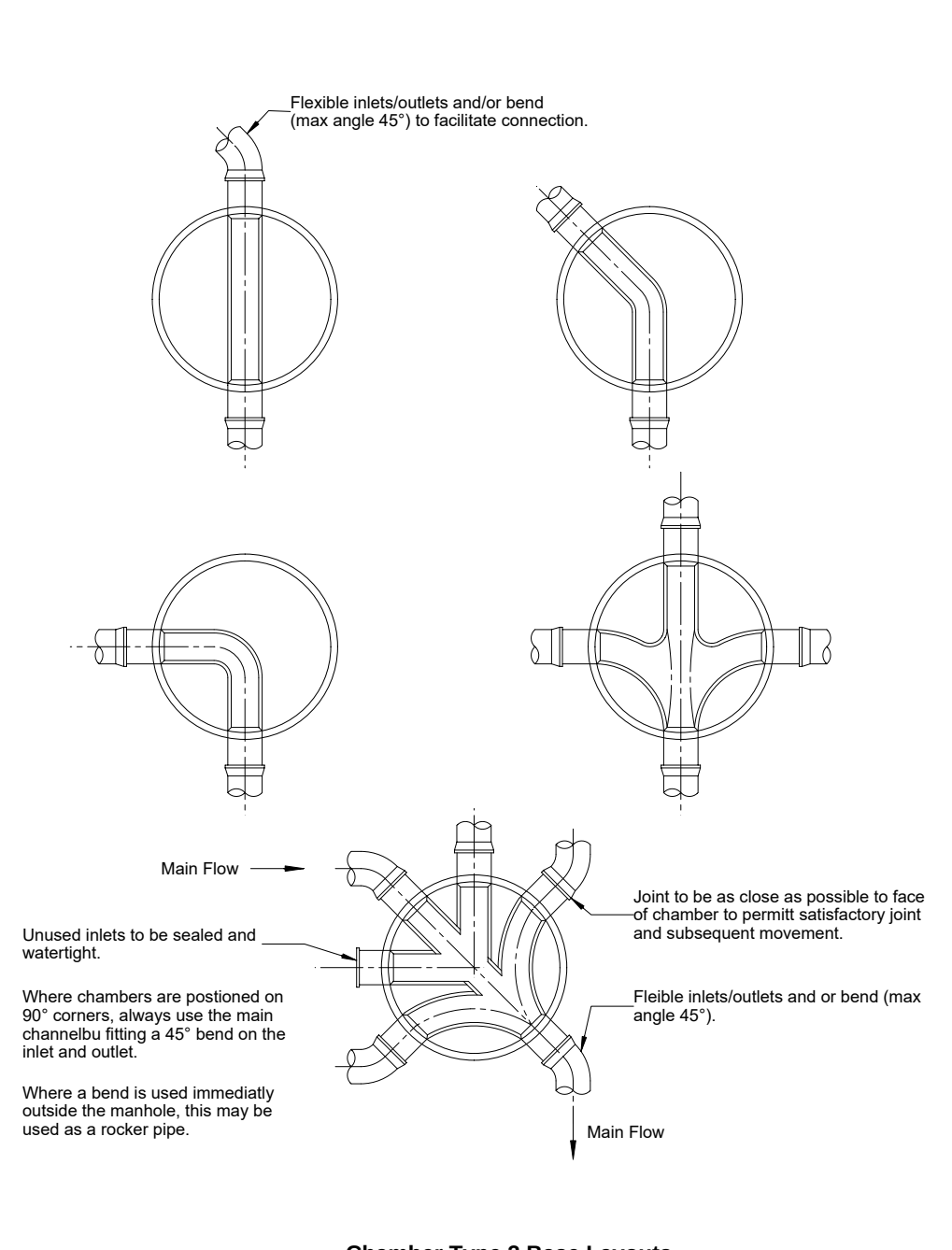
Notes:

1. Refer to drawing B193 for base layouts.

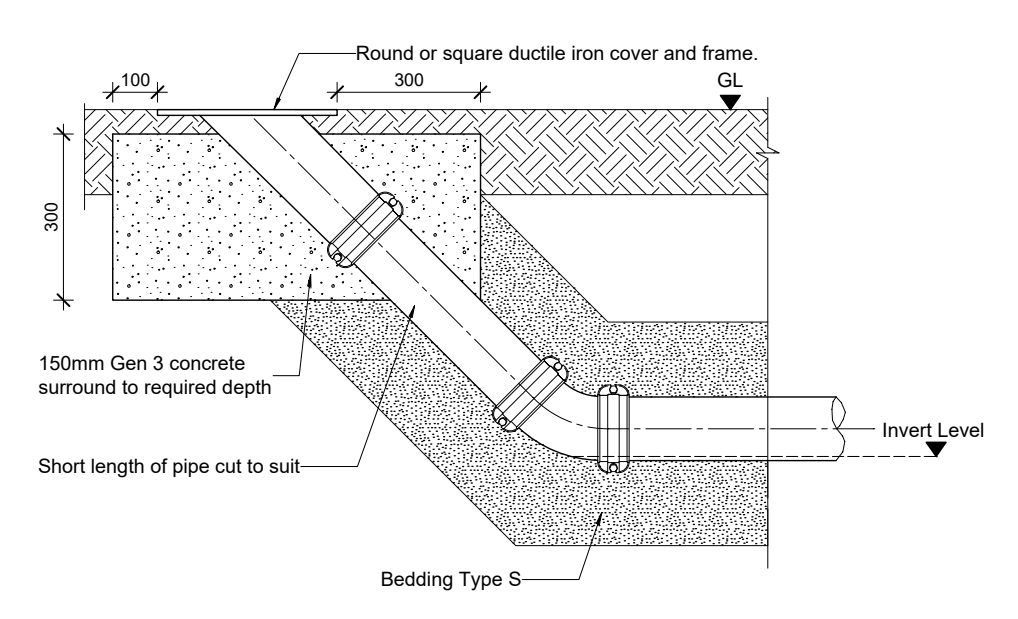


Notes:

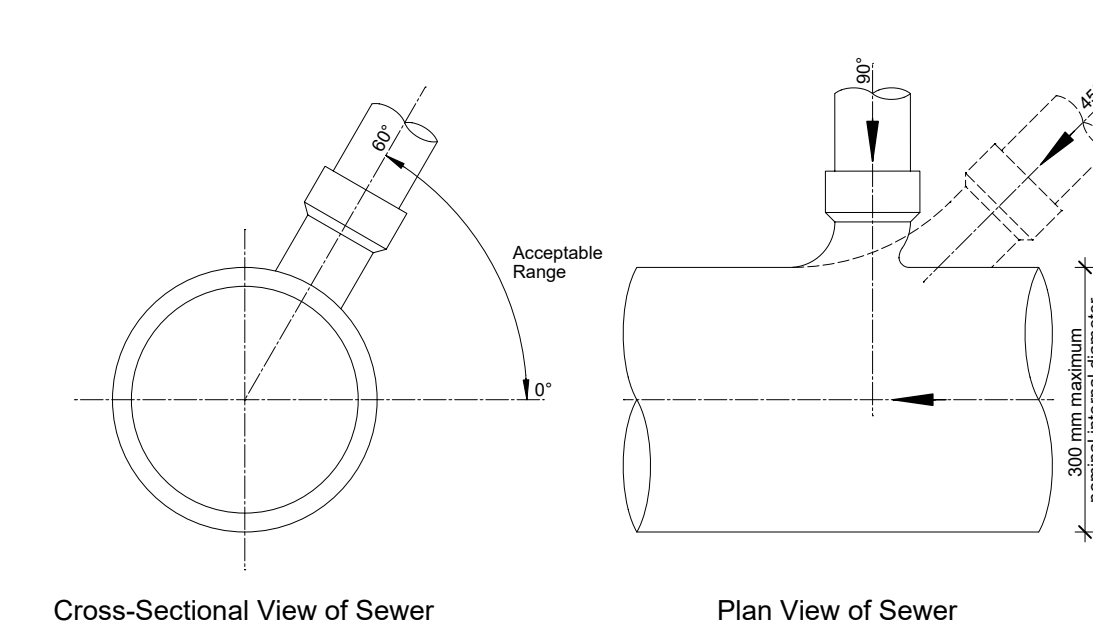
1. Refer to drawing B193 for base layouts.



Chamber Type 3 Base Layouts



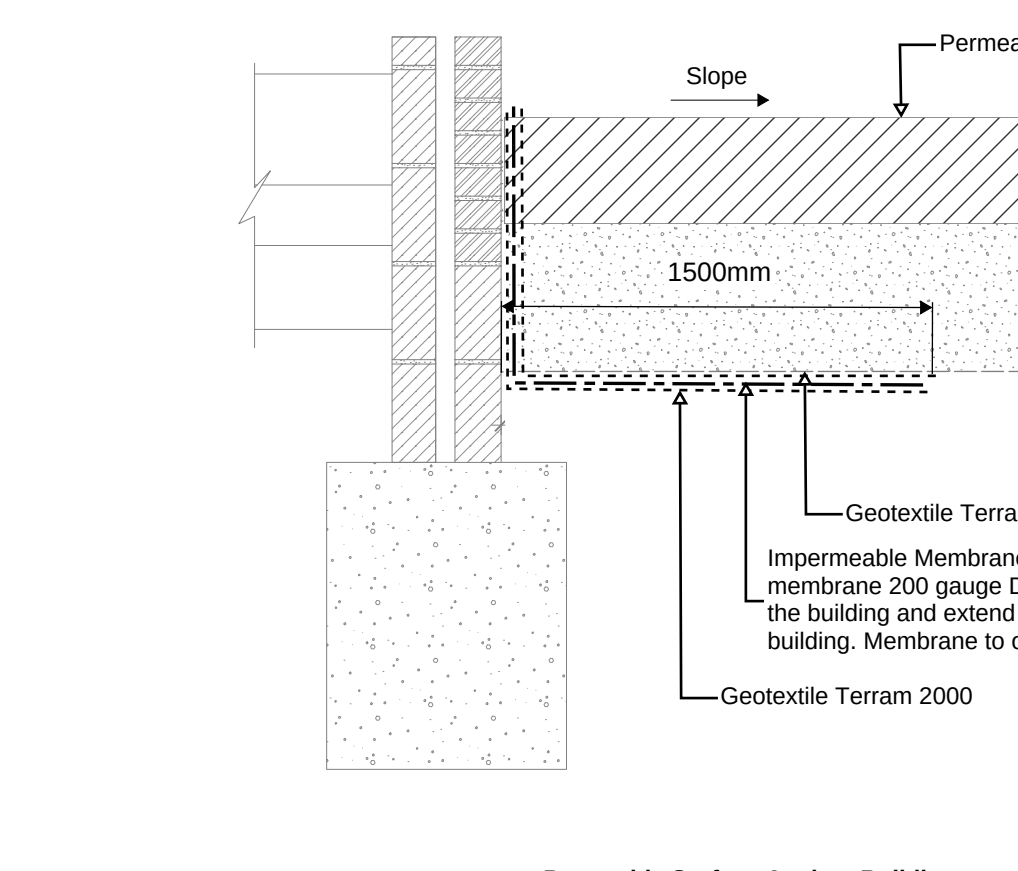
External Rodding Eye Detail



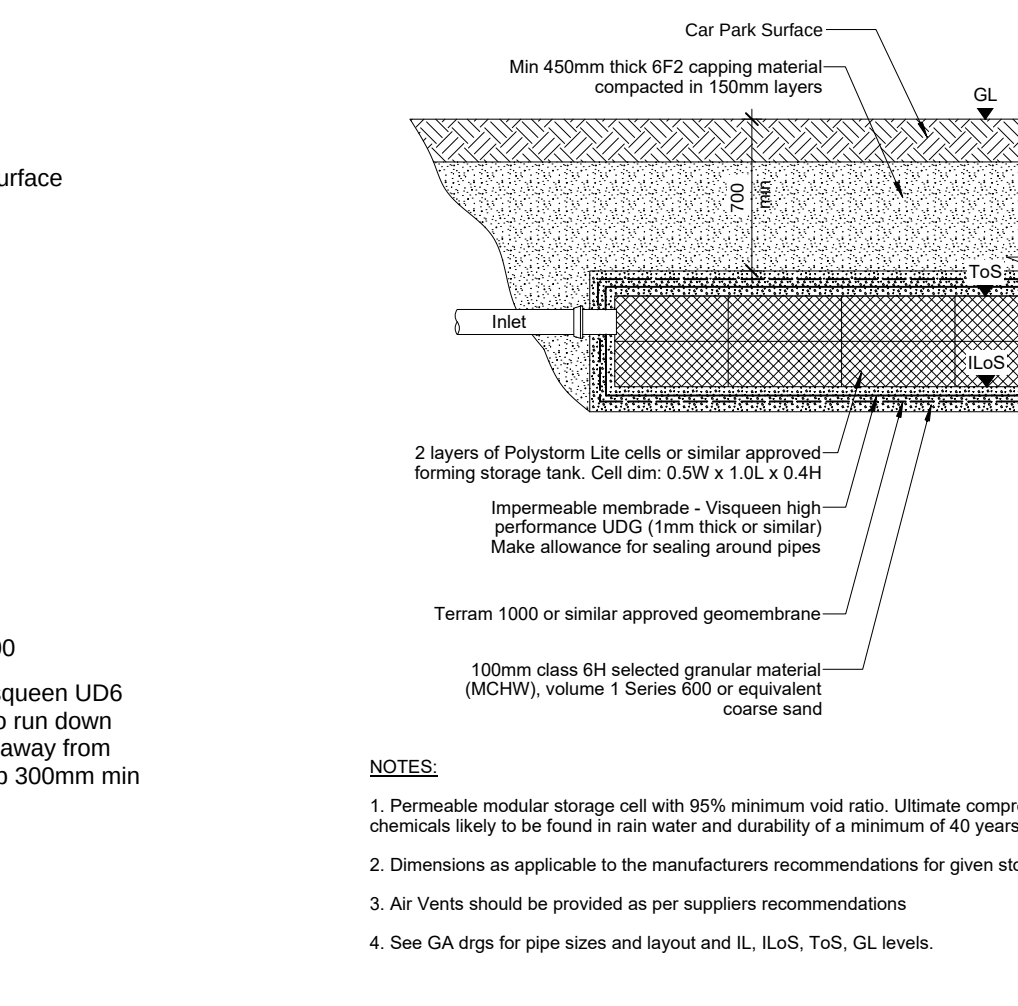
Notes:

1. The vertical angle between the connecting pipe and the horizontal should be greater than 0° and not more than 60°.
2. Where the connection is being made to a sewer with a nominal internal diameter of 300 mm or less, connections should be made using 45° angle, or 90° angle, curved square junctions.
3. Connections made with junction fittings should be made by cutting the existing pipe, inserting the junction fitting and joining with flexible repair couplings or slip couplers.
4. Where the connection is being made to a sewer with a nominal internal diameter greater than 300 mm:
  - a) Where the diameter of the connecting pipe is greater than half the diameter of the sewer, the connection of an access point should be constructed;
  - or
  - b) where the diameter of the connecting pipe is less than or equal to half the diameter of the sewer, then the connection should be made using a preformed saddle fitting.

Lateral Connection to public sewer



Permeable Surface Against Building



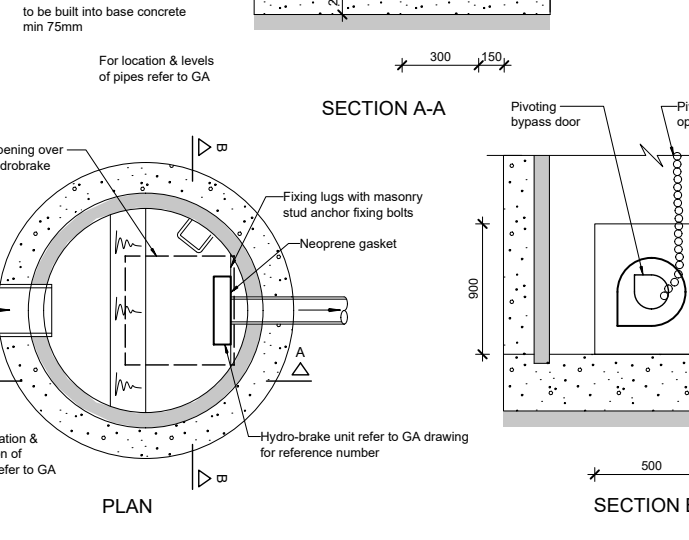
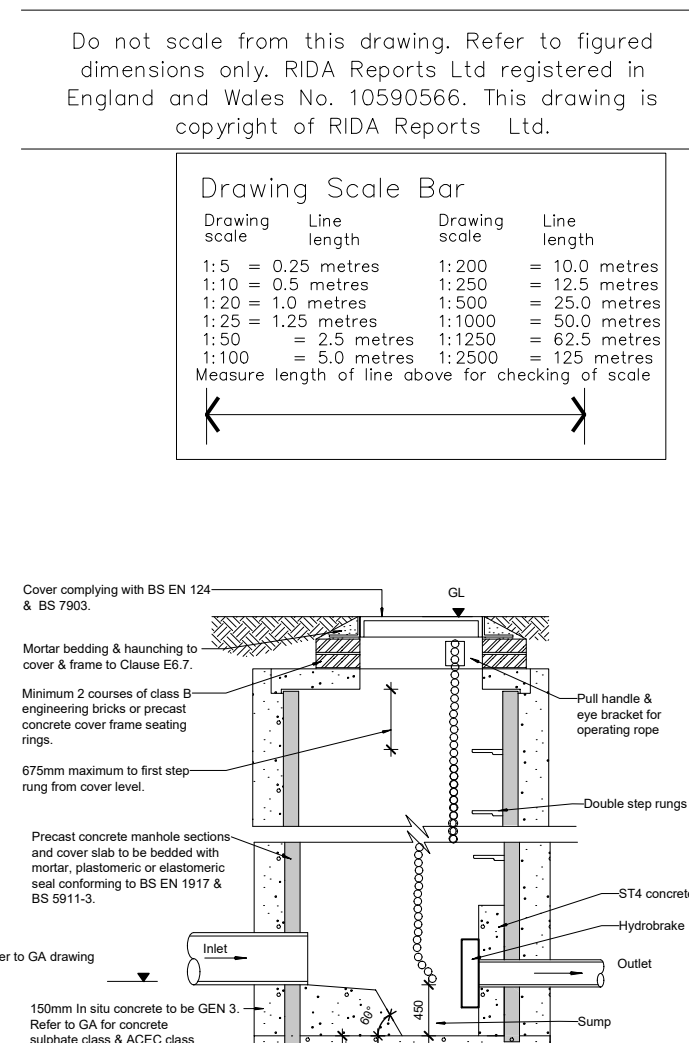
Notes:

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, LoS, ToS, GL levels.

Cellular Attenuation System - Landscape Area

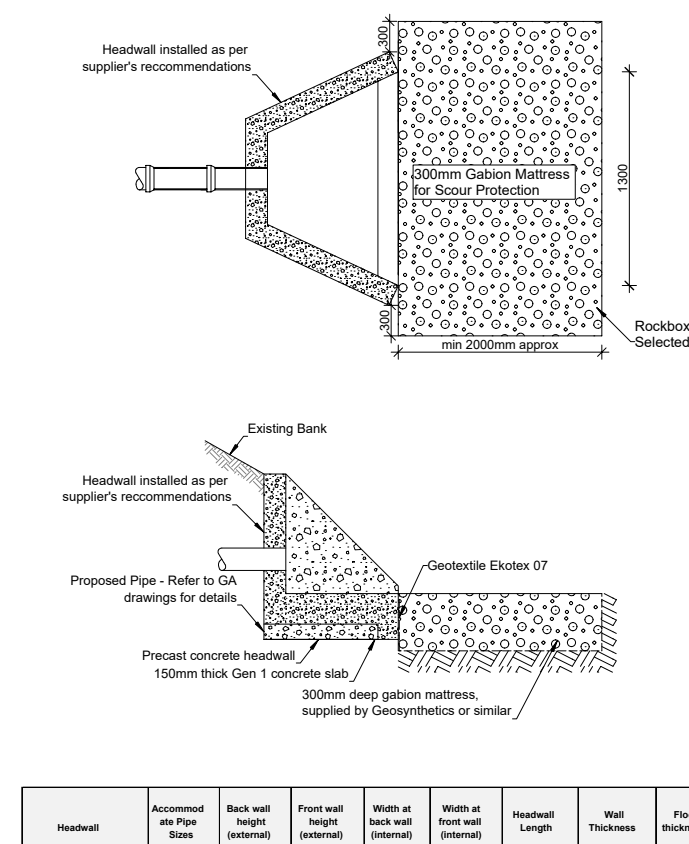


Rainwater Butt



NOTE:  
1. Refer to GA for manhole size and Hydrobrake reference number.  
2. Hydrobrake to be installed as per supplier's recommendations

Flow Control Device Chamber- Hydrobrake



| Headwall                  | Assumed silt flow rate | Back wall height (mm) | Front wall height (mm) | Width of back wall (mm) | Width of front wall (mm) | Headwall Length | Wall Thickness | Front thickness | Approx. Weight |
|---------------------------|------------------------|-----------------------|------------------------|-------------------------|--------------------------|-----------------|----------------|-----------------|----------------|
| Precast Concrete Headwall | 100                    | 100                   | 100                    | 100                     | 100                      | 100             | 100            | 100             | 100            |

| Rev | Details | Date | By | Chd |
|-----|---------|------|----|-----|
|     |         |      |    |     |

Drawing Status:  
**PRELIMINARY**



Client:  
Project:  
**3 Lower Marsh BA12 9PB**  
Drawing:  
**Standard Details**