

General Notes

1. This drawing is to be read in conjunction with all other relevant Engineering and Architect's details.
2. All dimensions are in metres unless otherwise stated.
3. The Contractor shall be responsible for checking all levels for line and level with existing foul and surface water systems before commencing any works.
4. The Engineer shall be notified immediately, in writing, should any errors or discrepancies be found prior to the commencement or continuation of any works.
5. All work is to be carried out in accordance with current British Standards, Building Regulations and NHBC Standards.
6. All drainage work is to be strictly in accordance with the requirements of the Building Regulations 2010, Approved Document Part H, "Drainage and waste disposal" (2015 Edition).
7. It is the responsibility of the Contractor to execute the works at all times in strict accordance with the requirements of the Health and Safety at Work Act 1974, and the C.O.M. Regulations 2015. The Contractor will be deemed to have allowed for full compliance, including full liaison with the structural engineer, within the rules.
8. All existing land drains encountered on site during construction are to be re-connected.
9. Should any departure from the proposed slab or external levels be considered, agreement shall be sought from the Engineer immediately and prior to the commencement or continuation of any works. Proposals should take full account of all restrictions to the slab level.
10. Temporary protection to be provided to drainage work during construction as necessary.

Specification Notes

11. The following types of pipe may be used unless noted or agreed otherwise:
 - Pipes up to 450mm diameter to be Structured Walled to BS EN 13476, Polypropylene to BS EN 1862 or PVC-U to BS EN 1401.
 - Pipes over 450mm diameter to be Concrete to BS 5911.
12. Both Clay and Concrete pipes shall be strength class 120 (100/150mm min crushing strength 20kN/m²). Thermoplastic pipes shall have a minimum ring stiffness of 0.04.
13. Pipes which run adjacent to buildings shall be installed in strict accordance with Part H, Clause 2.23 to 2.25.
14. All pipes, chambers and fittings shall be installed, bedded and backfilled in accordance with the manufacturers instructions subject to the following minimum requirements:

Pipe Location	Cover to crown	Clay/Concrete Pipe * bedding	Plastic Pipe Bedding	Backfill
Roads (HDV)	<1.2m	Class S	Class S (Start)	Type 1 (Coarse) or suitable, approved as dug material
	<1.2m	Class A* (Concrete)	Class A* (Concrete)	
Drives / car parking	>0.6m	Class S (Concrete)	Class S (Start)	Type 1 (Coarse) or suitable, approved as dug material
	>0.6m	Class W* (Concrete)	Class S (Start)	
Hard and soft landscaping	>0.6m	Class S (Concrete)	Class S (Start)	Suitable as dug material
	>0.6m	Class A* (Concrete)	Class S (Start)	

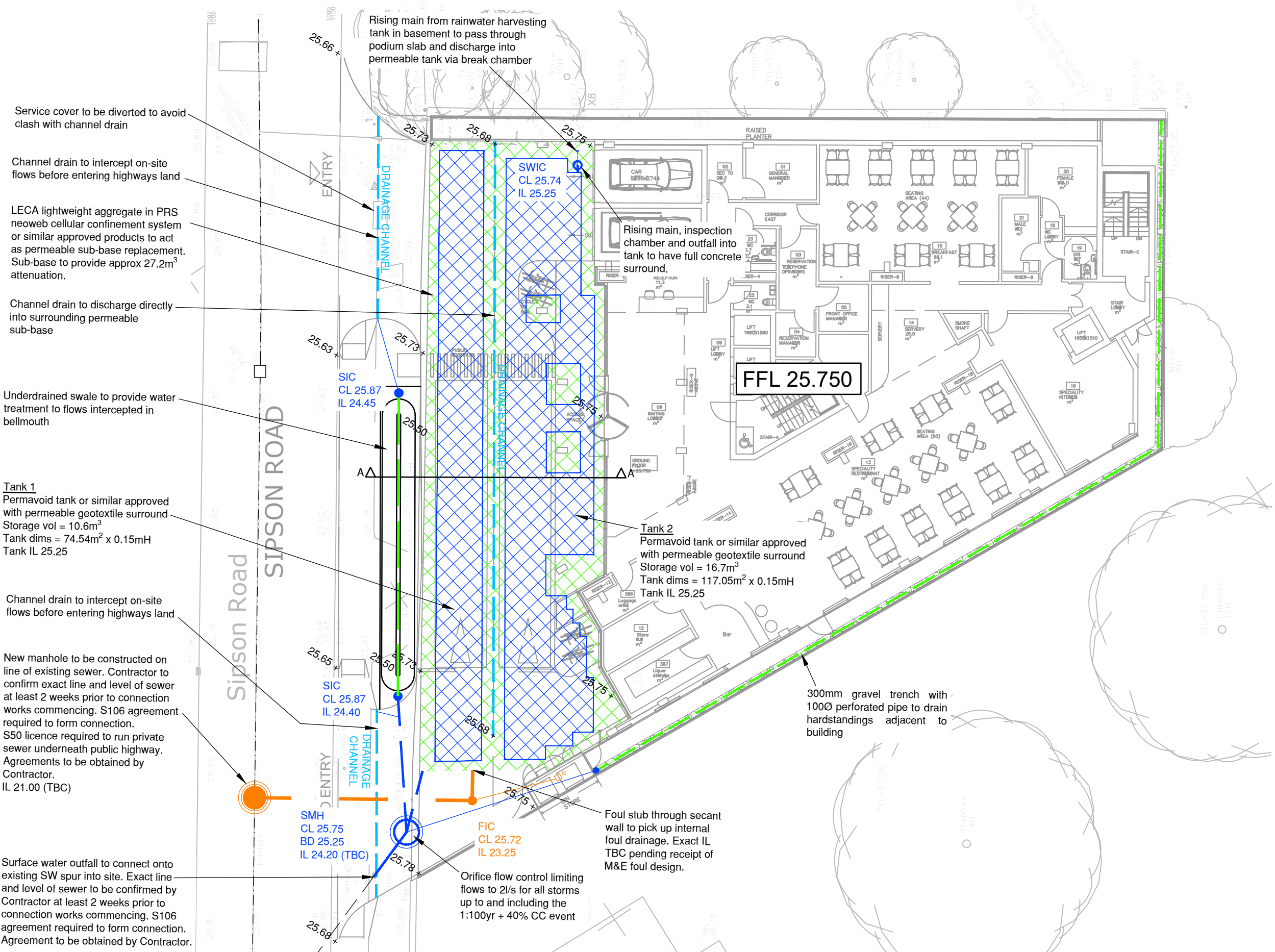
15. The first flexible joint in pipes adjoining a manhole shall be a maximum length of 600mm from the inside face of the manhole, connecting to a rocker pipe. The length of the rocker pipe shall be as follows:

Pipe diameter	Length of Rocker pipe
150-600mm	600mm
675-750mm	1000mm
over 750mm	1250mm

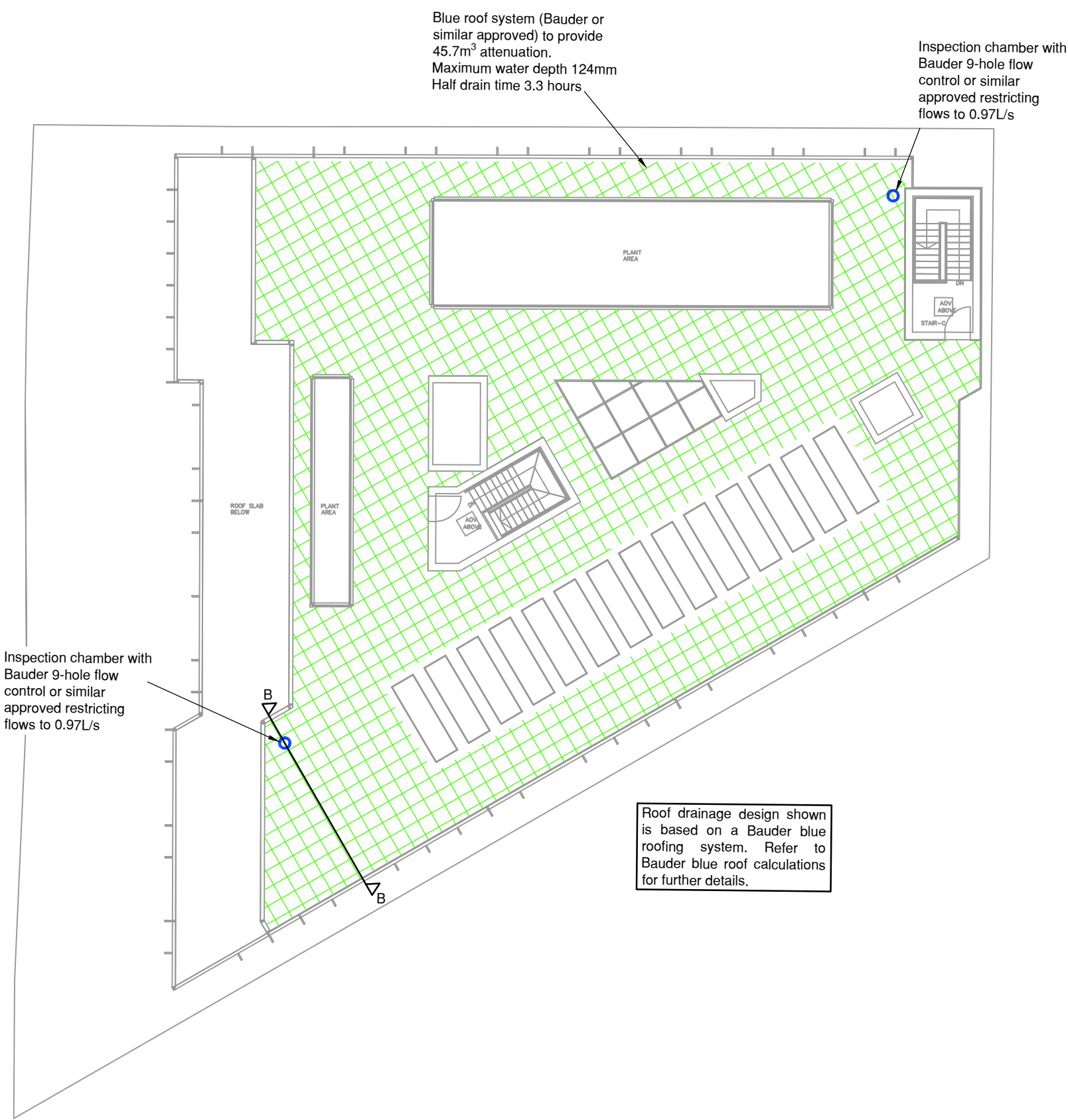
16. All manholes and inspection chambers situated in areas subject to vehicular loading to have class D400 covers and frames to BS EN124 and those not subject to vehicular loading to have class S125 covers and frames.
17. Drainage frames must be tied to manhole risers by use of manufacturers ties (eg. Polyprop or FR9500 tang kit and FR9501 track ties). The ground works contractor will be held fully responsible for any accidents due to incorrect fitting or failure to use the correct manufacturers tying equipment.
18. All drains in the vicinity of existing or proposed trees to be constructed in accordance with the requirements of N-HBC Practice Note 3.
19. All drainage MH cover and frames to be orientated so that they are square and perpendicular to the block paving pattern. MH cover location also to avoid building door opening locations where possible.

Key

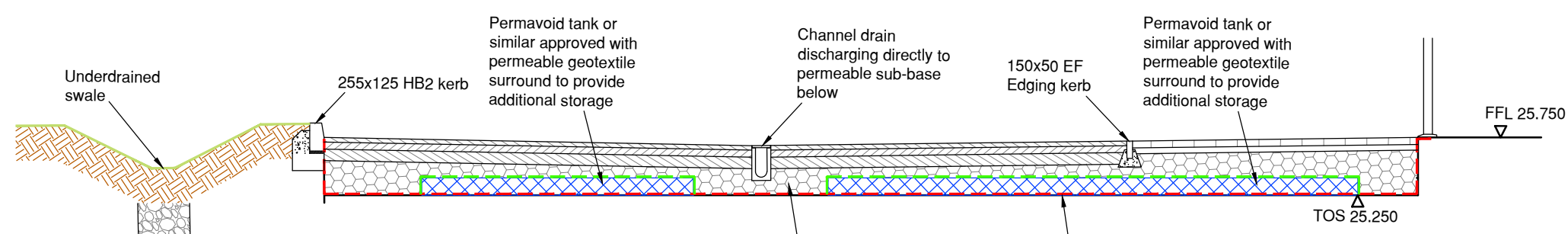
- Surface water drainage
- Linear drainage channel
- Perforated surface water pipe
- Surface water rising main
- Extents of permeable sub-base / blue roof system
- Extents of permeable tank
- Existing surface water lateral
- Foul water drainage
- Foul water rising main
- Proposed foul bin store gully with lateral shown
- Existing foul sewer



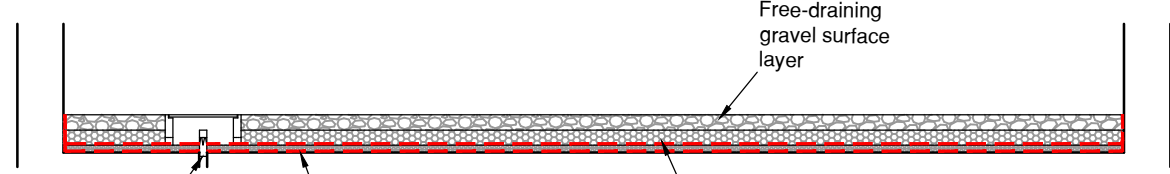
External Works Plan
SCALE 1:200



Roof Drainage Plan
SCALE 1:200



Section A-A
SCALE 1:50



Section B-B
SCALE 1:50

Outline Private Drainage Maintenance Plan

Manholes/Catchpits and Sewers - To be inspected quarterly and immediately after extreme rainfall events.

Inspect Manhole/Catchpit cover and frame for any defects, repair and replace as necessary.

Inspect Manhole/Catchpit interior, benching and incoming and outgoing pipe connections for the build up of silt and debris. Removal of silt and debris to be by means of vacuum suction and/or jetting/rodding.

Inspect Manhole/Catchpit interior for evidence of Vermin. Sewers and structures are to be dished or batted when evidence of infestations are observed during an inspection or in response to a service request or complaint.

Ensure Manhole access steps/ladders are secured and inspected for corrosion.

Inspect for any deleterious industrial waste and noxious odours.

Ensure there is no evidence of settlement above sewer lines.

Ensure that contractor is fully aware of the depths of pipe drains and other services present, to ensure these are not damaged.

Keep a detailed log of when the drainage systems are inspected, maintained, emptied and serviced. Also record specific events relating to the drainage systems such as cleaning, repairs, accidents and incidents.

Gullies and Channels - To be inspected quarterly and immediately after extreme rainfall events.

Inspect cover and frame for any defects, repair and replace as necessary.

Inspect channels for the build up of silt and debris. Removal of silt and debris to be by means of vacuum suction and/or jetting/rodding.

Inspect sumps and outgoing pipework for the build up of silt and debris. Removal of silt and debris to be by means of vacuum suction and/or jetting/rodding.

Keep a detailed log of when the drainage systems are inspected, maintained, emptied and serviced. Also record specific events relating to the drainage systems such as cleaning, repairs, accidents and incidents.

Hydro-Brake Flow Control Device

It is recommended that the unit is inspected monthly for the first three months and thereafter at six monthly intervals. How often if required. Further maintenance to be undertaken in accordance with Manufacturer's guidance.

Blue Roof System

Outlets to be visually inspected following any significant storm event to ensure no blockage has occurred.

Visually inspect outlets after any significant remedial works to ensure they are all draining freely.

Inspect each outlet quarterly for any build-up of debris. Any debris to be removed from roof and not simply flushed down pipes.

Visually inspect waterproofing at all upstands to ensure integrity during any maintenance visits.

Further maintenance to be undertaken as per Manufacturer's guidance.

The outline maintenance plan shown here is for planning purposes only. This plan should be re-visited following practical completion of the scheme to ensure that the recommendations made within do not contradict either the Manufacturer's maintenance requirements for specific products or the Client's operational requirements.

P05	12.07.22	Layout updated	AP	ML
P04	30.06.22	Layed updated, Discharge rate reduced to 21s. Design amended to include LFA correction	AP	ML
P03	30.08.19	Blue roof design updated to line with storage provided in portfolio web.	AP	BD
P02	17.06.19	Outline drainage maintenance plan added	AP	BD
P01	17.04.19	Layouts updated	AP	AP
Rev	Date	Amendments	By	Chk



Client
PHULL EMPIRE

Project
560 SIPSON ROAD
WEST DRAYTON

Drawing Title
EXTERNAL WORKS
AND DRAINAGE

Status
INFORMATION

Scale	Drawn	Checked	Date
A0@As Shown	AP	BD	05.04.19

Drawing No. Rev.

18403-RL-19-XX-DR-C-2000 P05

