

DOMETT STREET – MANCHESTER



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SUDS Management & Maintenance



consulting engineers

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1.0 INTRODUCTION

This SUDS Management & Maintenance Report has been prepared on behalf of Lovell Homes for the development at Domett Street, Manchester. The site is less than 1 hectare in size and shall provide 4 new dwellings. The site is currently classified as Greenfield.

The purpose of this report is to highlight the management and maintenance of the proposed SuDS Basin in service of the development attenuation.

2.0 SITE DESCRIPTION

The proposed development site is located to the north of Manchester city centre at National Grid Reference SD 85442 02919.

The total site area available is 0.51 ha. The northern boundary is bound by Old Market Street, the eastern boundary is bound by Domett Street, to the west is Blackley Pharmacy and to the south is two existing properties located on Gilman Close

3.0 FUTURE MAINTENANCE

The proposed drainage solution uses SUDS techniques in accordance with the CIRIA SUDS Manual C753, due to appropriate space for their viable use. The surface water run-off is restricted using a vortex flow control device and the attenuated run-off stored using a detention basin, attenuation tanks and below ground oversized pipes.

The following components will be included with the drainage strategy for the proposed development:

- Inspection chambers and manholes
- Pipes
- Drainage channels and gullies
- Pervious Pavements
- Soakaways

A suitable maintenance strategy should be adopted to ensure the drainage network is cleaned regularly and the routine maintenance and cleansing regime should be documented.

3.1 GENERAL MAINTENANCE & INSPECTION REQUIRMENTS

- No work shall be carried out on the drainage system without permission from a nominated person, who has access to information/a working knowledge of the system.
- Maintenance/inspection work shall be carried out in a safe/planned manner.
- All work is to be carried out by competent persons suitably trained and equipped in accordance with current statutory safe working policies.
- Entry into confined spaces shall be kept to a minimum and be restricted to suitably qualified/equipped persons working in accordance with current statutory safe working policies.
- Drainage systems shall be inspected on a regular basis or should any problems be suspected. Any debris/defects discovered shall be recorded and a programme of cleaning/ repair initiated. Urgent repairs/cleaning shall be actioned as soon as practicable.
- It is recommended that the drainage system is inspected as a minimum twice a year, with the system also being inspected after any major storm event.
- Clearing of the drainage system can be achieved by a number of methods depending on the nature of the work;

- Rodding – Manual/Mechanical with flexible rods.
- Jetting – High pressure water jetting.
- Plunging.

3.2 INSPECTION CHAMBERS & MANHOLES

The appropriate health and safety equipment must be used when accessing manholes/catchpits. Confined space certificates must be held by any personnel entering a manhole and the appropriate permits should be obtained from the Maintenance Manager prior to any access. The following operations should be carried out annually.

- Covers of inspection chambers and manholes shall be removed and the sides, benchings and channels cleared.
- Accumulated deposits of silt in inspection chambers and manholes shall be removed. Any traps shall then be plunged and thoroughly flushed out with clean water. This should be completed in Autumn, after leaf fall.
- Main and branch drains shall be cleared as required and afterwards be flushed with clean water. Any obstructions found shall be removed and not flushed down the system.
- Covers of inspection chambers and manholes shall be replaced, bedded in suitable grease or other sealing material as required and bolted/locked down as appropriate. Missing bolts and broken items shall be replaced in accordance with the manufacturer's details.

3.3 PIPES

Regular inspection and maintenance is important to identify areas which may have become obstructed/clogged and may not be draining correctly, as failure to do so would expose the development to a greater level of flood risk.

Pipes are proprietary products and therefore the materials used can vary across the site. As such, where used the manufacturer's recommendations should be followed. Access for maintenance of the pipes is provided through inspection chambers and manholes. The below table sets out the maintenance schedule for the pipe components of the proposed drainage systems.

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect for evidence of poor operation via water levels. If required take remedial action.	Monthly for 3 months, then six-monthly intervals. Also, 48 hours after large storms.
	Check and remove large debris and/or vegetation growth near pipe runs.	Monthly or as required.
Remedial Actions	Rod through poorly performing runs as initial remediation.	As required.
	If continued poor performance jet and CCTV survey poorly performing runs.	As required.
	Seek advice as to remediation techniques suitable for the type of performance issue.	As required, if above actions do not improve performance.
Monitoring	Initial Inspection should be provided as post construction CCTV survey.	N/A
	Inspect/check all inlets, outlets and overflows to ensure they are in good condition and operating as designed.	Monthly for 3 months, then six-monthly intervals. Also, 48 hours after large storms.

3.4 DRAINAGE CHANNELS AND GULLIES

Channels and gullies should be inspected and cleaned in accordance with the manufacturer's details. Channel units can be cleaned through the use of a high-pressure hose; this can be fed into the channel system through access units strategically placed along the channel run. The throat section of channel units should be kept clear at all times to ensure uninterrupted flow of surface water into the drainage channel and any debris within the throat should be removed.

Locking bolts should be replaced and sufficiently tightened, taking care that the bolt heads do not stand above the top surface of the cover or grate. If covers are allowed to move within their frame, this may cause damage to the frame or seating. The below table sets out the maintenance schedule for the drainage channel and gullies components of the proposed drainage systems.

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Litter and debris removal.	Monthly or as required.
	Check and remove large debris and/or vegetation growth near pipe runs.	Monthly or as required.
	Inspect for evidence of poor operation and/or weed growth. If required take remedial action. Inspect silt accumulation rates and establish appropriate brushing frequencies.	Monthly for 3 months, then six-monthly intervals. Also, 48 hours after large storms.
Remedial Actions	Inspect access/outlet boxes and rod through poorly performing channels and outlets as initial remediation.	As required.
	Seek advice as to remediation techniques suitable for the type of performance issue.	As required, if above actions do not improve performance.
Monitoring	Initial Inspection including channel outlet boxes and gully sumps.	Monthly for 3 months, then six-monthly intervals. Also, 48 hours after large storms.

3.5 PERVIOUS PAVEMENT

Regular inspection and maintenance is important for the effective operation of pervious pavements. Maintenance responsibility for a pervious pavement and its surrounding area should be placed with an appropriate reasonable organization. Before handing over the pavement it should be inspected for clogging, litter, weeds and water ponding, and all failures should be rectified.

Pervious pavements need to be regularly cleaned of silt and other sediments to preserve their infiltration capacity. Once per year should be sufficient to maintain an acceptable infiltration rate, however more or less sweeping may be required and the frequency should be adjusted to suit site-specific circumstances and should be informed by inspection reports.

TABLE 20.15 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

3.6 SOAKAWAY DRAINAGE

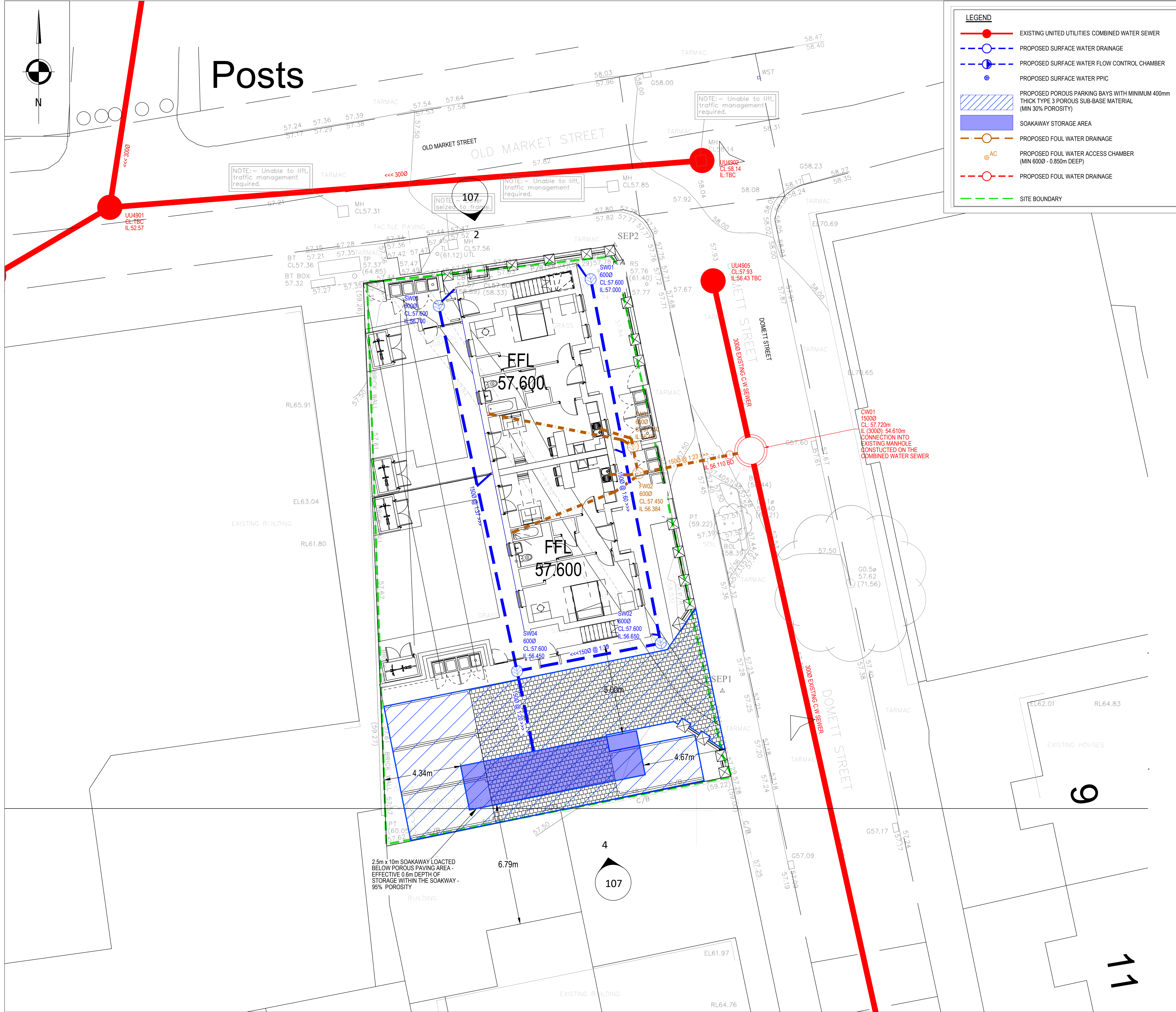
The design of soakaways should include monitoring points where the water level in the system can be observed or measured. This can be either via an inspection well or inspection cover. The useful life and effective operation of an infiltration component is related to the frequency of maintenance and the risk of sediment being introduced into the system.

An 5 metre easement from near properties and 2.5 metre easement from existing highways has been included to ensure long-term access for maintenance purposes

TABLE 13.1 Operation and maintenance requirements for soakaways

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect for sediment and debris in pre-treatment components and floor of inspection tube or chamber and inside of concrete manhole rings	Annually
	Cleaning of gutters and any filters on downpipes	Annually (or as required based on inspections)
	Trimming any roots that may be causing blockages	Annually (or as required)
Occasional maintenance	Remove sediment and debris from pre-treatment components and floor of inspection tube or chamber and inside of concrete manhole rings	As required, based on inspections
Remedial actions	Reconstruct soakaway and/or replace or clean void fill, if performance deteriorates or failure occurs	As required
	Replacement of clogged geotextile (will require reconstruction of soakaway)	As required
Monitoring	Inspect silt traps and note rate of sediment accumulation	Monthly in the first year and then annually
	Check soakaway to ensure emptying is occurring	Annually

4.0 APPENDIX 1 – DRAINAGE LAYOUT SHOWING COMPONENTS



LEGEND

EXISTING UNITED UTILITIES COMBINED WATER SEWER

PROPOSED SURFACE WATER DRAINAGE

PROPOSED SURFACE WATER FLOW CONTROL CHAMBER

PROPOSED SURFACE WATER PPIC

PROPOSED POROUS PARKING BAYS WITH MINIMUM 400mm THICK TYPE 3 POROUS SUB-BASE MATERIAL (MIN 30% POROSITY)

SOAKAWAY STORAGE AREA

PROPOSED FOUL WATER DRAINAGE

PROPOSED FOUL WATER ACCESS CHAMBER (MIN 6000 - 0.850m DEEP)

PROPOSED FOUL WATER DRAINAGE

SITE BOUNDARY

- GENERAL NOTES
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS, ARCHITECTS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.

2. ALL RELEVANT DIMENSIONS TO BE OBTAINED/CHECKED AGAINST ARCHITECT'S DRAWINGS AND BY SITE MEASUREMENT PRIOR TO THE COMMENCEMENT OF WORKS OR ORDERING OF MATERIALS. DISCREPANCIES BETWEEN THE DRAWINGS AND SITE CONDITIONS TO BE NOTIFIED TO THE ENGINEER.

3. DO NOT SCALE FROM THIS DRAWING.

4. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION OF ALL UNDERGROUND SERVICES THAT MAY EXIST AND TO DIVERT THEM IF NECESSARY PRIOR TO THE COMMENCEMENT OF THE WORKS.

5. MATERIALS OR WORKMANSHIP NOT COMPLYING WITH THE ENGINEERS DRAWINGS AND SPECIFICATION SHALL BE DEEMED UNACCEPTABLE AND REMOVED FROM SITE AND REPLACED WITH WORK CORRECTLY MANUFACTURED, DELIVERED AND ERECTED.

6. ALL EXISTING INVERT LEVELS TO BE CHECKED BY THE CONTRACTOR AT THE START OF WORKS AND ANY OTHER DISCREPANCIES NOTIFIED TO THE ENGINEER. ALL LEVELS ARE BASED ON TOPOGRAPHICAL SURVEY INFORMATION PROVIDED BY OTHERS.

7. ALL OPENING NOTICES ETC. AS REQUIRED UNDER HIGHWAYS ACTS ETC. ARE TO BE OBTAINED PRIOR TO COMMENCEMENT OF WORKS. ALL WORKS ARE TO BE INSPECTED BY L.A., NHBC OR UNITED UTILITIES AS APPLICABLE.

8. ALL MATERIALS TO BEAR THE RELEVANT B.S. KITEMARK AND COMPLY FULLY WITH THE SPECIFICATIONS. ALL CONCRETE & CONCRETE PRODUCTS MUST USE SULPHATE RESISTANT CEMENT (UNLESS THE SITE INVESTIGATION REPORT PROVES THAT SULPHATE ATTACK FROM SOILS AND GROUNDWATER WILL NOT OCCUR TO WITHSTAND A CLASS 3 CONDITION).

9. WHERE "ULTRA RIB" UPVC PIPES (OR SIMILAR APPROVED) ARE USED IN ADOPTABLE DRAINAGE THEY SHALL STILL BE HANDLED AND LAID IN ACCORDANCE WITH THE SPECIFICATION AND GUIDANCE ISSUED BY THE HIGH PERFORMANCE PIPE ASSOCIATION. A CLASS S BED AND SURROUND MUST BE USED FOR SUCH PIPES.

10. TRENCH BACKFILL IN HIGHWAYS / CAR PARKS TO WITHIN 1M OF HIGHWAY SHALL BE A SUITABLE GRANULAR MATERIAL ALL IN ACCORDANCE WITH SEWERS FOR ADOPTION CL. 3.3.4. BACKFILL MATERIAL IN OTHER AREAS SHALL BE SELECTED EXCAVATED MATERIAL FREE FROM STONES LARGER THAN 40MM, LUMPS OF CLAY OVER 100MM, TIMBER, FROZEN MATERIAL OR VEGETABLE MATTER.

11. UPVC PIPES AND FITTINGS SHALL COMPLY WITH WIS 4-35-01. CLAY PIPES AND FITTINGS SHALL BE EXTRA STRENGTH TO BS EN 285 AND BS 65. CONCRETE PIPES AND FITTINGS SHALL COMPLY WITH BS 5911, PIPES SHALL BE CLASS H.

12. A CLASS S BED MUST BE PROVIDED TO UPVC PIPES, A CLASS B BED MAY BE USED FOR V.C. AND CONCRETE PIPES.

13. BACKFILL TO DRAINAGE TRENCHES ABOVE PIPE BEDDING AND SURROUND WITHIN ROAD AND CAR PARK AREAS TO BE GRANULAR FILL COMPLYING WITH CLASS 6F2 OR DOT TYPE 1 OR QUARRY SCALPING GRADED FROM 75mm DOWN.

14. A CONCRETE SURROUND IS NOT NORMALLY REQUIRED TO MANHOLES UNLESS INSTALLED IN AREAS OF UNSTABLE GROUND. UNDER CONDITIONS OF FLOATATION OR WHERE SUBJECTED TO EXCEPTIONAL OR ECCENTRIC LOADS, IN WHICH CASE A 150mm SURROUND OF AT LEAST 20N/mm2 CONCRETE SHOULD BE PROVIDED. ANY JOINTS SHOULD BE STAGGERED WITH THE PRECAST CONCRETE JOINTS.

15. DOUBLE STEPS SHALL BE PLASTIC ENCAPSULATED CARBON TO BS EN 1247-2 MANHOLE STEPS. STEP IRONS AT 300ctrs. HORIZONTALLY & VERTICALLY MAY BE USED AS AN ALTERNATIVE TO DOUBLE STEPS.

16. ALL WORK TO BE IN ACCORDANCE WITH "SEWERS FOR ADOPTION SEVENTH EDITION" AND UNITED UTILITIES WATER PLC'S STANDARD CONSTRUCTION DETAILS.

17. TOP OF FOUNDATIONS ARE TO BE A MIN 750mm FROM FINISHED EXTERNAL LEVELS.

18. FOUNDATIONS WITHIN CLOSE PROXIMITY TO PROPOSED DRAINAGE WILL NEED TO BE AT THE SAME DEPTH AS DRAINAGE TO AVOID THE POTENTIAL FOR UNDERMINING.

- DRAINAGE NOTES
- FOUL AND SURFACE WATER CONNECTIONS ARE TO BE CONFIRMED

ALL POP-UP SETTING OUT IS TO BE PROVIDED BY THE ARCHITECT

P04	17.04.2025	SOAKAWAY DISTANCES ADDED	JPR	JPR	KOB
P03	25.02.2025	FOUL DRAINAGE OUTFALL AMENDED FOLLOWING ON SITE DISCOVERY OF NEW MANHOLE	JPR	KOB	KOB
P02	03.02.2025	AMENDED TO SUIT INFILTRATION RESULTS	JPR	KOB	KOB
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TITLE: DRAINAGE STRATEGY

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PROJECT: DSM - AJP - ZZ - 00 - DR - C - 0900

REV: P04

SCALE @ A1: 1:100

DESIGNED: JP

DRAWN: JUR

CHECKED: KOB

APPROVED: KOB

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