Sustainable Drainage Maintenance Report

The Hill, Littlebourne, Kent

September 2018

Issue 2

FAIRHURST

CONTROL SHEET

CLIENT: Leath Park Developments & Moat

PROJECT TITLE: The Hill, Littlebourne, Kent

REPORT TITLE: Sustainable Drainage Maintenance Report

PROJECT REFERENCE: 122996-SUDS

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Issue & Approval Schedule		Name	Signature	Date
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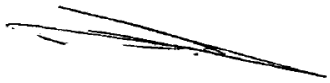
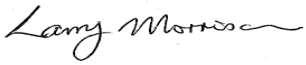
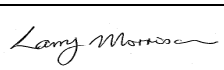
	Checked by	D Aitken		03/09/18
	Approved by	L Morrison		03/09/18

Revision Record	Rev.	Date	Status	Description	Signature	
	2	28/09/18	Final	Drawings updated.	By	
					Check	
					Approve	
	3				By	
					Check	
					Approve	

This document has been prepared in accordance with procedure OP/P02 of the *Fairhurst Quality and Environmental Management System*

This document has been prepared in accordance with the instructions of the client, Leath Park Developments & Moat, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

Contents

Sustainable Drainage Maintenance Report

Development Proposal

Leath Park Developments & Moat propose to develop an area of greenfield land in Littlebourne, Kent with a total development area of 6.47 ha, which will consist of 87 residential dwellings. The site is bound to the north and west by existing residential housing, to the east by Jubilee Road (with frontage housing) and to the south by an existing main road "The Hill" (also with housing fronting it).

The development is located at OS Grid Reference TR 20626 57723. See Appendix A for location plan.

Introduction

Fairhurst have been appointed to design the surface water drainage system for this development, and as part of the proposed drainage system a SUDS maintenance strategy is a requirement.

This document is also a requirement as per planning permission 15/01711 Condition 10, in which it is stated that:

"The surface water drainage scheme shall use sustainable urban drainage system features to restrict run-off rates to that of the pre-development site. This scheme shall also include details of a management and maintenance plan for the lifetime of the development, including arrangements for adoption by an appropriate public authority or statutory undertaker as appropriate."

Surface Water Strategy

The surface water system for the development involves the provision of traditional trapped gullies and road drains in order to collect run-off from proposed roads. Run-off from individual plot roofs will be collected via gutters/rainwater downpipes and then through private plot drainage pipes before passing through a demarcation chamber and lateral drain into the surface water sewer.

This run-off is then passed through the surface water network towards the proposed infiltration basin, whereby the run-off from the development site gains the required surface water treatment and attenuation before infiltrating into the ground and underlying soils.

SUDS Maintenance Requirements

The maintenance of the various drainage and SUDS components on site shall be undertaken by the adopting authority. The various adopting authorities and their maintenance requirements are as follows:

- Surface water sewers, lateral drains, demarcation chambers, private road gullies/tails and the infiltration basin will be adopted and maintained by a private maintenance company.
- Road drains, gullies and gully tails within adoptable roads are to be adopted and maintained by Kent County Council.

See drawing 122996/2207 – Drainage Adoption Plan (Appendix A) for further details.

In terms of the upkeep of the surface water network and SUDS components, it is recommended that maintenance schedules are followed by the relevant adopting authorities. See Appendix B for details of the maintenance schedules for this development.

Pollution

Any pollutants entering the surface water network must be dealt with by the various adopting authorities. On a housing development of this nature it's likely that any pollutant will be small and organic in nature (oils, foodstuffs, etc.). As such, it's likely that the organic compound of these pollutants will be broken down naturally as it passes through the network.

Notwithstanding the above, any large spillages should be removed and disposed of as much as possible, therefore only allowing the residual volumes to enter the drainage network.

Should a more serious spillage occur which may be of a potentially harmful nature, the accountable adopting authority should get in contact with the Environment Agency whereby specialist advice can be given on a site by site basis.

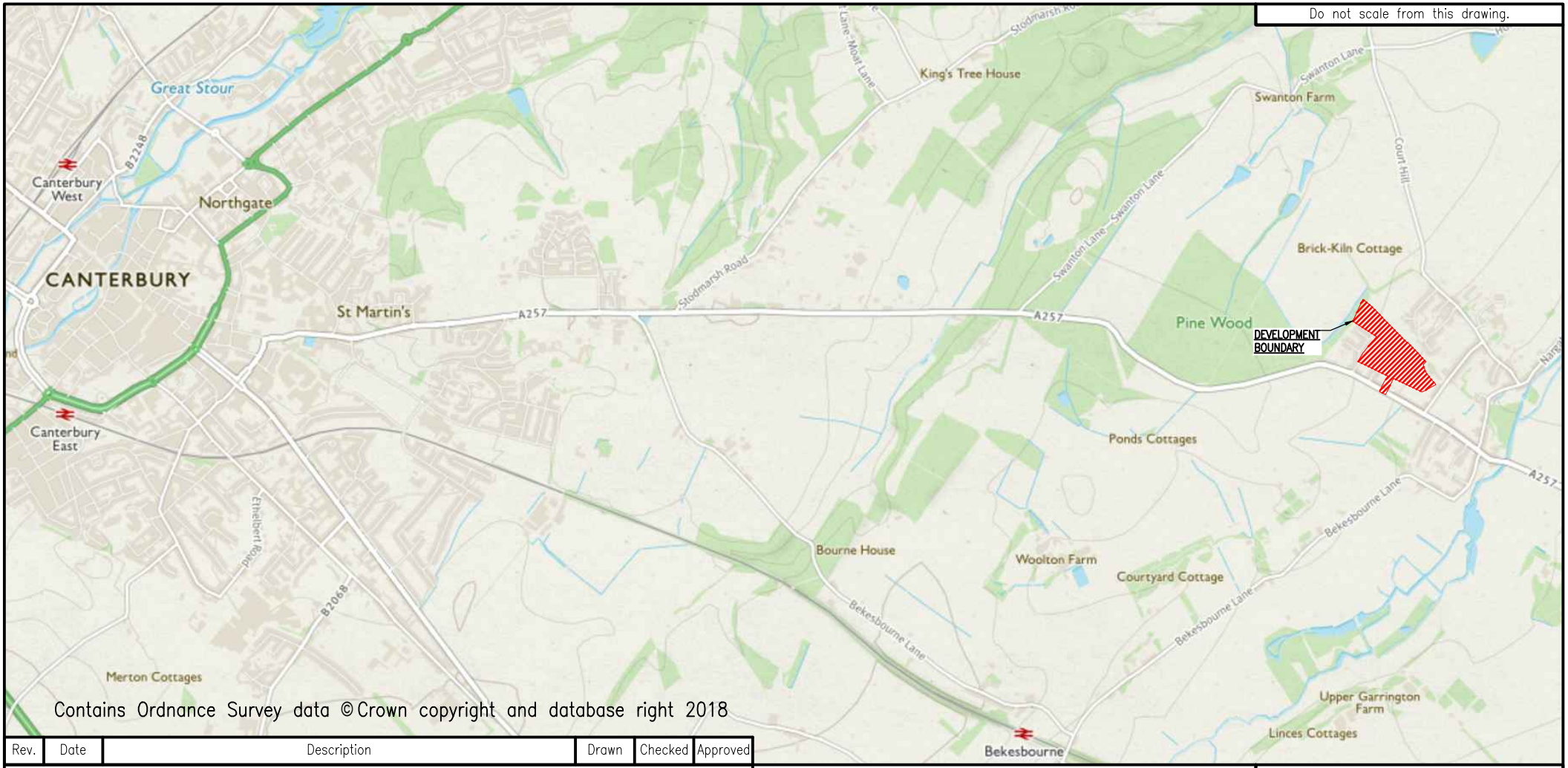
Conclusions

On the basis that the appended maintenance schedules are followed and the relevant guidance on spillages/blockages is adhered to, the surface water network and infiltration basin should last the lifetime of the development.

Appendix A – Drawings

- 122996/0001 Site Location Plan
- 122996/2000 Drainage Layout
- 122996/2007 Drainage Adoption Plan

Do not scale from this drawing.



Rev.	Date	Description	Drawn	Checked	Approved

Project Title:

PROPOSED DEVELOPMENT AT THE HILL LITTLEBOURNE KENT

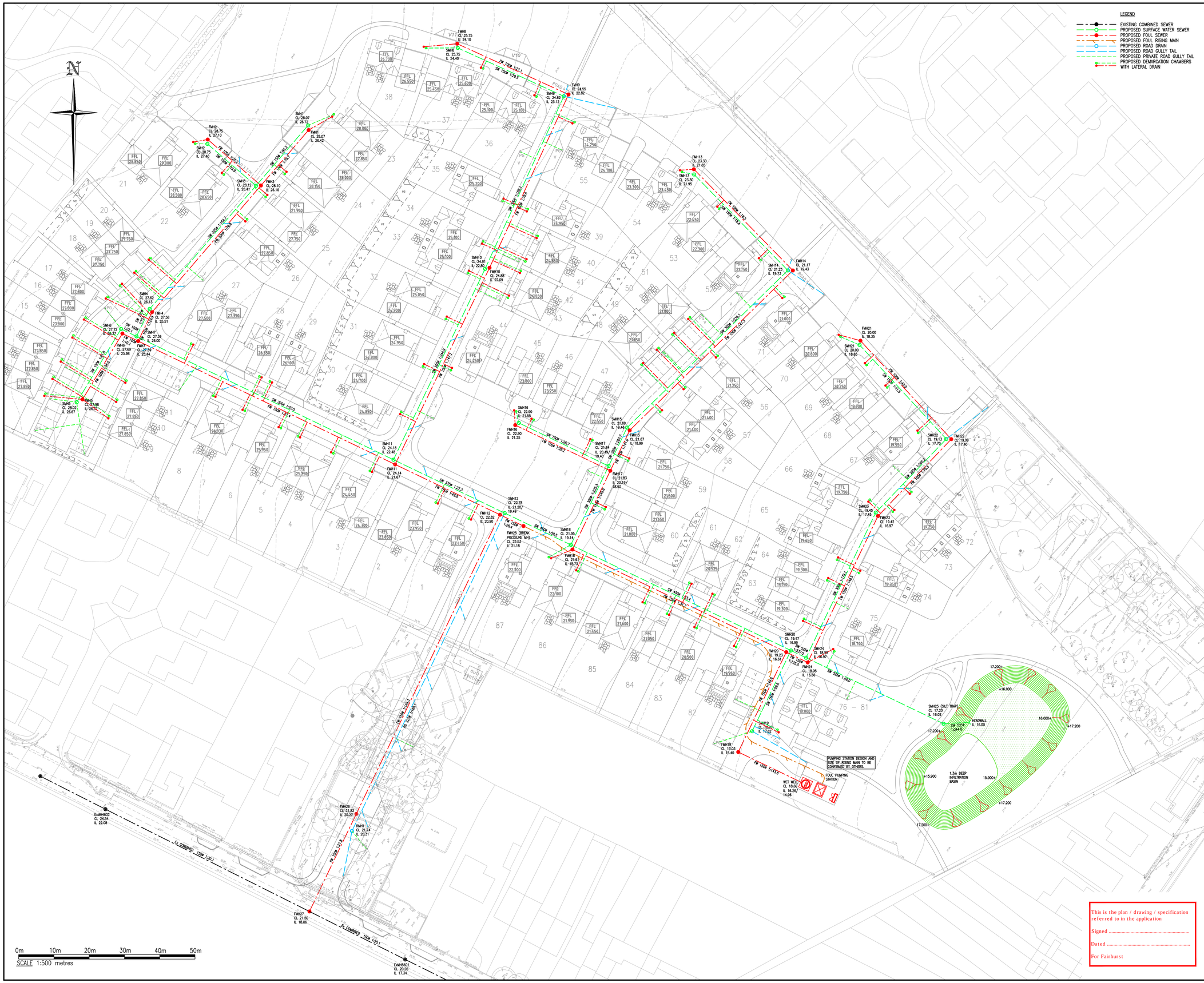
Drawing Title:

SITE LOCATION PLAN

FAIRHURST

160 London Road,
SEVENOAKS, TN13 2JA
Tel: 01732 460 142 Fax: 01732 459 249

Scale at A4:	Status:	
1:25000	For Information	
Drawn:	**Checked:**	**Approved:**
MC	MS	MS
Date:	**Date:**	**Date:**
03/09/18	03/09/18	03/09/18
Drawing No.:		**Revision:**
122996/0001		–



Do not scale from this drawing.

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.

RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO.

CONSTRUCTION
IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

DEMOLITION
NOT APPLICABLE.

FOR INFORMATION RELATING TO USE, CLEANING AND MAINTENANCE SEE THE HEALTH AND SAFETY FILE

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

1. Sewerage installation works to be carried out in accordance with "Sewers for Adoption, Seventh Edition – August 2012".
2. Pipe sizes 150mm to 450mm diameter inclusive. Thermoplastics structured wall sewer pipe shall comply with the relevant provisions of BS EN 13476–1 and WIS 4–35–01 and BS EN 13476–2 or BS EN 13476–3 with the properties specified in Clause 4.2.22 of Sewers for Adoption 7.
3. Pipe sizes 150mm to 300mm diameter inclusive. Vitrified Clay pipes with manufacturer's flexible joints and comply with the relevant provisions of BS EN 295–1 or BS 65.
4. Pipe sizes greater than 300mm. Unreinforced or reinforced concrete pipes to comply with the relevant provisions of BS 5911–1 and BS EN 1916.
5. Concrete protection to sewers to be in accordance with current Sewers for Adoption specification. Concrete protection shown on drawings is for PVC pipework and is indicative only. Concrete surround is to be used for vitrified clay and concrete pipework.
6. Manholes to be constructed in accordance with Sewers for Adoption 7.
7. Demarcation chambers to be provided on foul and surface water drains before connecting to sewers. Chambers to be in accordance with Sewers for Adoption 7. Lateral drain connecting the demarcation chamber and the sewer to be a minimum 100mm diameter.
8. F.F.L. to be checked against architects final drawings prior to commencement of site works.
9. All levels related to Ordnance.

DRAINAGE SHOULD BE CONSTRUCTED BASED ON THE INVERT LEVELS PROVIDED ON THE LONGITUDINAL SECTIONS. ONLY THE DEEPEST INVERT LEVEL IS SHOWN ON THE LAYOUT. GRADIENTS SHOWN ARE TO ONE DECIMAL PLACE AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

MANHOLE COVER LEVELS TO BE CHECKED AGAINST THE CORRESPONDING ROADS SECTION DRAWINGS PRIOR TO CONSTRUCTION. COVER LEVELS SHOWN ARE TO TWO DECIMAL PLACES AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

Rev.	Date	Description	Drwn.	Chkd.	Appd.
A	29/08/18	PIPE SIZES, LEVELS AND DEMARCATION CHAMBERS NOW DETAILED.	MC	MS	MS

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Client:
LEATH PARK DEVELOPMENTS
Moat

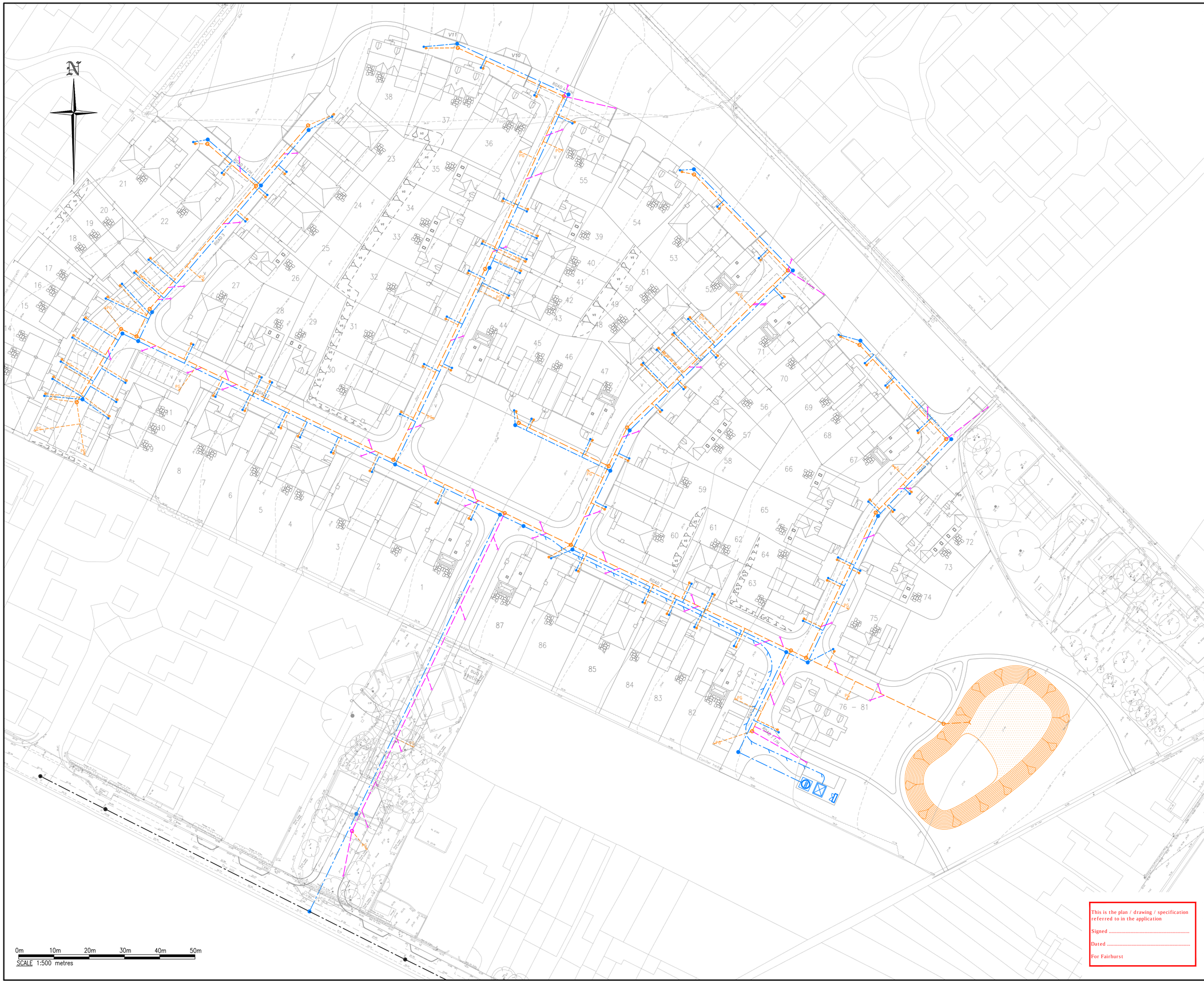
Project Title:
PROPOSED DEVELOPMENT AT
THE HILL
LITTLEBOURNE
KENT

Drawing Title:
DRAINAGE LAYOUT

This is the plan / drawing / specification referred to in the application
Signed .....
Dated .....
For Fairhurst

Scale at A1:	Status:	
1:500	For Information	
Drawn:	Checked:	Approved:
MC	MS	MS
Date:	Date:	Date:
17/08/18	17/08/18	17/08/18

Drawing No.: 122996/2000 Revision: C



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CONSTRUCTION
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DEMOLITION
NOT APPLICABLE.

FOR INFORMATION RELATING TO USE, CLEANING AND MAINTENANCE SEE THE HEALTH AND SAFETY FILE

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

1. ALL MAIN FOUL WATER SEWERS, AND ALL ASSOCIATED MANHOLES TO BE ADOPTED BY SOUTHERN WATER. FOUL WATER LATERAL DRAINS AND DEMARCATION CHAMBERS FROM EACH INDIVIDUAL PLOT ALSO TO BE ADOPTED BY SOUTHERN WATER. SOUTHERN WATER WILL ALSO ADOPT THE FOUL PUMPING STATION WHICH IS PROPOSED TO SERVE THIS DEVELOPMENT.
2. GULLIES, GULLY TAILS AND ROAD DRAINS WITHIN ADOPTED ROADS TO BE ADOPTED BY KENT COUNTY COUNCIL.
3. ALL SURFACE WATER SEWERS, AND ALL ASSOCIATED MANHOLES TO BE ADOPTED BY A PRIVATE MAINTENANCE COMPANY. THIS INCLUDES SURFACE WATER DEMARCATION CHAMBERS FOR EACH PLOT, ASSOCIATED LATERAL DRAINS, AND GULLIES AND GULLY TAILS WITHIN PRIVATE ROADS. THE INFILTRATION BASIN WHICH IS PROPOSED TO SERVE THIS DEVELOPMENT WILL ALSO BE ADOPTED BY THE PRIVATE MAINTENANCE COMPANY.

Rev.	Date	Description	Drwn.	Chkd.	Appd.
A	28/09/18	ROAD 7 AMENDED.	MC	MS	MS

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Client:
LEATH PARK DEVELOPMENTS
Moat

Project Title:
PROPOSED DEVELOPMENT AT
THE HILL
LITTLEBOURNE
KENT

Drawing Title:
DRAINAGE ADOPTION PLAN

This is the plan / drawing / specification referred to in the application
Signed .....
Dated .....
For Fairhurst

Scale at A1:	Status:	
1:500	For Information	
Drawn:	Checked:	Approved:
MC	MS	MS
Date:	Date:	Date:
03/09/18	03/09/18	03/09/18

Drawing No.: 122996/2007 Revision: A

Appendix B – Maintenance Schedules

- Surface Water Sewers, Drains and Gullies
- Infiltration Basin

Surface Water Sewers, Drains and Gullies

Schedule	Required Action	Frequency
Regular Maintenance	Clear silt/debris from road gully pots and gratings	Monthly
Monitoring	Visual inspection of pipe blockages	When required
	CCTV survey of pipes	When required
	Visual inspection of gullies/roads	During/after heavy rainfall
	Inspect manhole covers for signs of damage	When required

The above noted operation and maintanance schedule has been prepared by Fairhurst at the Design Stage of the project. On completion of construction and prior to adoption of the infiltration basin by the relevant authority, a review of the maintanence schedule must be undertaken and accepted by the adopting authority.

Infiltration Basin

Schedule	Required Action	Frequency
Regular Maintenance	Remove litter and debris – Basin, surrounding area and control manhole	Fortnightly
	Cut grass – Access area around basin (*grass cuttings to be removed*)	Fortnightly (during growing season)
	Cut grass – meadow grass in and round basin (*grass cuttings to be removed*)	Half yearly (spring – before nesting season, and autumn)
	Manage other vegetation and remove nuisance plants	As required
Occasional Maintenance	Reseed areas of poor vegetation growth	As required
	Prune and trim any trees and remove cuttings	As required
	Remove sediment from pre-treatment system (silt trap manhole) when 50% full	As required
Remedial Actions	Repair erosion or other damage by reseeding or re-turfing	As required
	Repair or rehabilitate inlets and overflows	As required
	Rehabilitate infiltration surface using scarifying and spiking techniques if performance deteriorates	As required. (regime and rota to be sought as to frequency of rehabilitation)
	Relevel uneven surfaces and reinstate design levels	As required
Monitoring	Inspect inlets for blockages, and clear if required	Monthly
	Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly
	Inspect inlets and pre-treatment systems for silt accumulation; establish appropriate silt removal frequencies	Half yearly
	Inspect infiltration surfaces for compaction and ponding	Monthly

The above noted operation and maintanance schedule has been prepared by Fairhurst at the Design Stage of the project. On completion of construction and prior to adoption of the infiltration basin by the relevant authority, a review of the maintanence schedule must be undertaken and accepted by the adopting authority.

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