

Project Name:	Land at Bayards, Eastergate (Miller Homes)
Document Reference:	091.5016/SVR/7
Document Name:	SuDS Verification Report – Area 7
Prepared By:	Samuel Flesher
Checked By:	Meagan Weedon
Approved By:	Jon Soar

Revision Record				
Rev	Date	By	Summary of Changes	Aprvd
P01	08/05/2026	MDW	First issue.	JFS

Disclaimer

This document has been prepared in accordance with the scope of Paul Basham Associates Ltd's appointment with its client and is subject to the terms of that appointment. It is addressed to and for the sole use and reliance of Paul Basham Associates clients. Paul Basham Associates accepts no liability for any use of this document other than by its client and only for the purposes, stated in the document, for which it was prepared and provided. No person other than the client may copy (in whole or in part), use or rely on the contents of this document, without the prior written permission of a Director of Paul Basham Associates. Any advice, opinions, or recommendations within this document should be read and relied upon only in the context of the document as a whole. The contents of this document are not to be construed as providing legal, business or tax advice or opinion.

© Paul Basham Associates Limited

1. INTRODUCTION

- 1.1 This Sustainable urban Drainage Strategy (SuDS) Verification Report – Area 7, has been prepared by Paul Basham Associates on behalf of Miller Homes to support the 'As-Built' verification report to Arun District Council in relation to Land at Bayards, Eastergate.
- 1.2 This Verification Report has been prepared to support the discharge of Planning Condition 24. The report authors are Paul Basham Associates Ltd. Paul Basham Associates were established in 2009 and are a multi-disciplinary Transport Planning, Civil and Structural Engineering Consultancy, employing a team of Civil Engineers.
- 1.3 The development is located to the north of Fontwell Farm, west of Northfield Farmhouse. The nearest postcode to the site is PO20 3SA, Grid reference SU 94608 06305. The outline application number is AL/113/21/OUT and the reserved matters application is AL/122/22/DOC.
- 1.4 The total site development is approximately 2.31ha and development comprises of 67 dwellings with associated hardstanding and landscaping.
- 1.5 The Surface Water Management for the development comprises of a series of localised infiltration / soakaway systems which for the purposes of verification have been divided into discrete local areas as work progresses throughout the site with each area being dealt with separately for the purposes of Verification of the Surface Water Management.

- 1.6 The development must comply with Condition 24 outlined by Arun district council: *"Immediately following implementation of the approved surface water drainage system and prior to occupation of any part of the development, the developer/applicant shall provide the local planning authority with as-built drawings of the implemented scheme together with a completion report prepared by an independent engineer that confirms that the scheme was built in accordance with the approved drawing/s and is fit for purpose. The scheme shall thereafter be maintained in perpetuity."*
- 1.7 **Figure 1** outlines the total site area however, the site will be subdivided and assessed independently of each other due to each section being self-contained.



Figure 1- Total site Area

- 1.8 Submitting discrete independently assessed local areas allows the verification process to align with the plot construction and completion process for the site.
- 1.9 An independent company, OST Engineering has been appointed to conduct inspections of the surface water network design construction.
- 1.10 **Figure 2** shows the extent of Verification Area 7, comprising of 6 dwellings and associated roads.
- 1.11 See **Appendix A** for the location of all the discrete verification areas as show on drawing number 091.5016.0578.

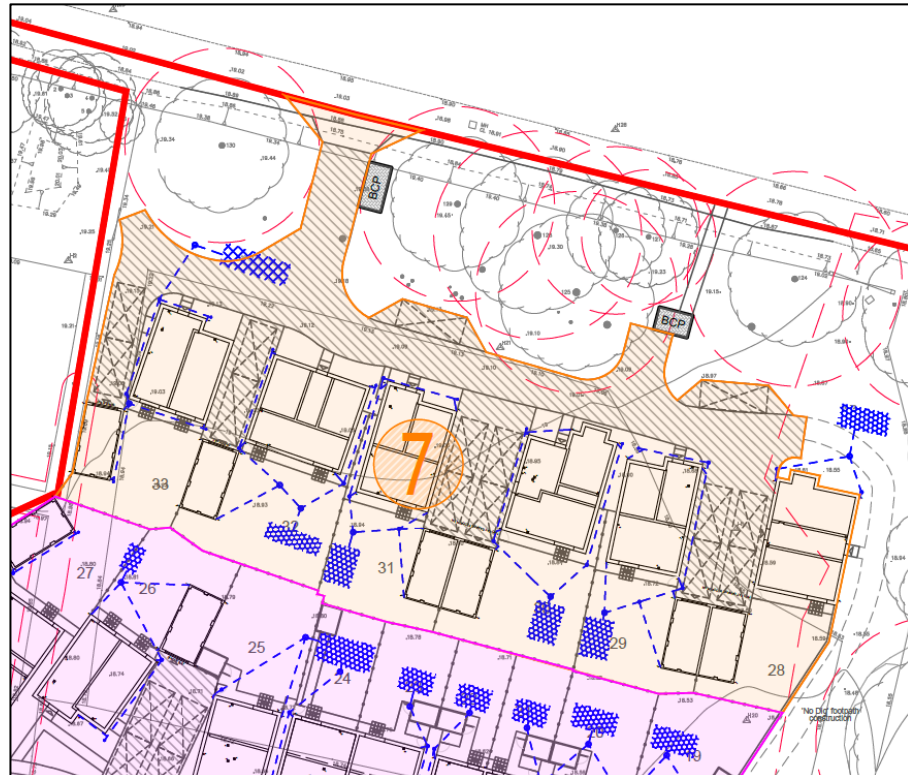


Figure 2- Site extent of Area 7

- 1.12 The relevant Drainage Layout drawings that cover the extent of Area 7 are included as **Appendix B**.

2. INSPECTIONS

- 2.1 Site staff and OST, see 1.8 above, have carried out inspection of the works although some sections of Area 7 have been inspected retroactively by exposing soakaways and pipelines.

3. AS-BUILT SURVEY

- 3.1 As-Built surveys of the site area and drainage systems have been carried out and the surveys are included as **Appendix C**.
- 3.1 These levels have been reviewed against the design levels shown in 091.5016.0501 C08, 091.5016.0502 C05 and 092.5016.0503 C06 the design drawings can be found in **Appendix B**
- 3.2 A tabulated summary of invert levels for chambers constructed within Area 7 is given below.

Area	Ref No	As-Built CL	Design IL	As-Built IL	Comments
7	RE108	19.15	18.80	18.85	
7	PS107 (Designer Annotation)	19.10	18.709	18.71	Annotated "n/a" on the As-Built drawing
7	RE110	19.14	18.80	18.84	
7	PS336	19.10	18.698	18.69	
7	PS106 (Designer Annotation)	19.10	18.586	18.58	RE105 on the As-Built drawing
7	RE105	19.10	18.80	18.80	
7	RE10	19.10	18.775	18.80	
7	PS 102 (Designer Annotation)	19.10	18.658	18.62	RE10 on the As-Built drawing
7	PS103	19.00	18.597	18.56	
7	RE97	19.10	18.775	18.80	
7	PS98	19.05	18.624	18.60	
7	RE89	19.10	18.781	18.80	
7	PS 90 (Designer Annotation)	19.10	18.695	18.71	RE89 on the As-Built drawing
7	PS91	19.05	18.557	18.52	
7	PS93	19.00	18.568	18.59	
7	RE79	19.00	18.70	18.70	
7	PS84	19.00	18.569	18.55	
7	RE72	18.79	18.504	18.56	
7	PS73	18.78	18.424	18.42	
7	PS74	18.78	18.281	18.29	
7	PS77	18.76	18.23	18.23	
7	PS70	18.72	18.215	18.22	
7	PS14	18.72	18.24	18.26	

Table 1: As Built levels against design levels

- 3.3 The comparison between the design and as built levels shown that the invert levels are generally within normal building site tolerances.
- 3.4 Cross checks of raised invert levels appear to show that no backfalls have been created.

4. MATERIALS AND CONSTRUCTION RECORDS

- 4.1 The list of materials suppliers is contained within **Appendix D**.
- 4.2 The materials selected for inclusion in the works have Manufacturers confirmation that the materials selected meet the required national standards.
- 4.3 Photographic evidence of the materials used during construction works is given below:



Plot 28



Plot 28



Plot 29



Plot 30



Plot 31



Plot 32

- 4.4 The image provided for Plot 28 shows the infiltration crates to be misaligned and not securely clipped together. The crates appear to be separating and moving away from one another, which is likely attributable to an uneven or inadequately prepared formation surface beneath the crates, which is missing lining. The movement may compromise the stability and performance of the infiltration system and does not appear to be in accordance with the approved installation requirements.

The installed crates appear to be Polystorm Modular Cell units, and it would appear that an insufficient number of units have been installed when compared to the approved design.

The approved proposal specified an attenuation structure measuring approximately 2.0m wide, 4.5m long, and 1.2m deep. However, the photograph provided appears to show only 8 crates installed. Based on the manufacturer's datasheet dimensions of approximately 0.5m wide, 1.0m long, and 0.4m deep per unit, this would provide an approximate storage volume of 1.6m³.

This is significantly less than the 10.8m³ attenuation volume specified within the approved design. As a result, the installed system may not provide the required storage capacity and could increase the risk of surface water flooding to the property.

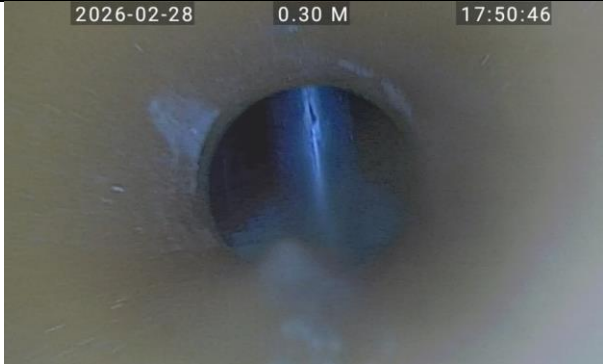
Furthermore, the second image for Plot 28 shows the infiltration crates completely covered with material. As a result, it has not been possible to visually inspect the pipe connections or confirm whether the correct geotextile membrane has been installed. Consequently, compliance with the approved design and specification for these elements cannot be verified.

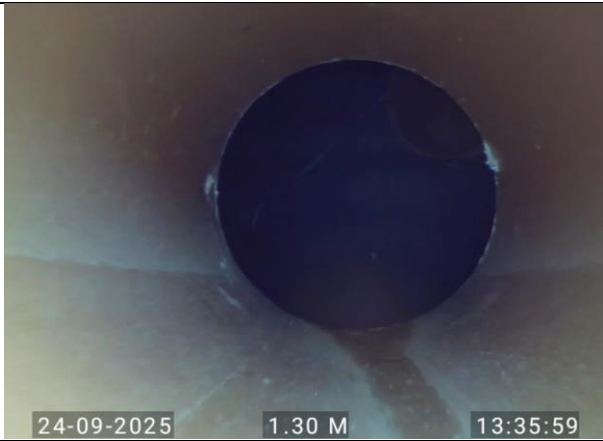
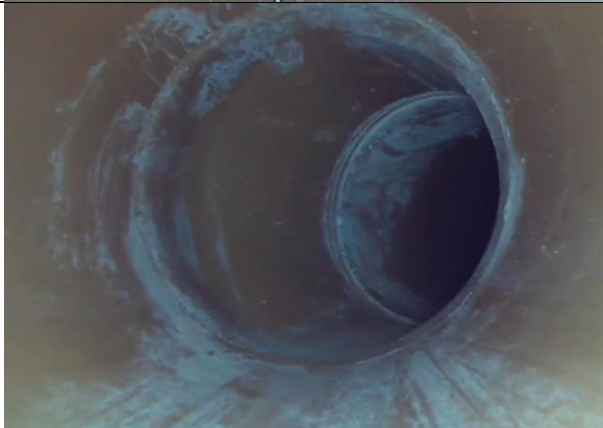
- 4.5 The image for Plot 29, 30 and 31 indicates that a different membrane has been used to line the soakaway. The Contractor has confirmed that this membrane is the SDS Geomembrane – GSE UltraFlex Smooth Geomembrane. GSE UltraFlex is a smooth linear low-density polyethylene (LLDPE) geomembrane and is therefore impermeable. This will prevent the soakaway from infiltrating and, as such, is not in accordance with the approved design strategy and cannot be verified.
- 4.6 The infiltration crates for Plot 31 are covered with material. As a result, we are unable to confirm whether the infiltration crates, associated geotextile membrane, and all connection details have been installed in full accordance with the approved design drawings and specifications.
- 4.7 No photographic evidence has been provided for SA34 and therefore we are unable to confirm whether the infiltration trench, associated geotextile membrane, and all connection details have been installed in full accordance with the approved design drawings and specifications.

- 4.8 Where the submitted images do not show the crate systems in an uncovered state, it has not been possible to visually confirm the extent and configuration of the installed crates. As a result, we are unable to verify whether the required number of crates has been installed or whether sufficient storage volume has been provided in accordance with the approved drainage design and specifications.
- 4.9 Based on the photographs provided, the connections to the crate system are not visible and therefore it has not been possible to visually confirm that the system has been constructed in accordance with the design specifications. As such, compliance with the proposed design cannot currently be verified.
- 4.10 The images also suggest that vents have not been installed in line with the construction detail on sheet 091.5061.551 C01 and in accordance with manufactures specifications which can be found in **Appendix E**.
- 4.11 No images have been provided for any of the permeable paving within this area therefore, we are unable to verify this element on the absence of this evidence.

5. CCTV SURVEY OF PIPELINES

- 5.1 CCTV Surveys of most pipelines in Area 7 have been carried out to confirm the as-built conditions. The video files have been examined in detail with pipe conditions and a report assessing the condition of the pipe produced is included in **Appendix E**. Copies of the CCTV media files are listed below and are appended to this report as **Appendix E**.
- PS14-PSCP15
 - PSCP15-SA28
 - PS77-PSCP75
 - PS75-SA29
 - PS84-PSCP81
 - PSCP81-SA30
 - PS93-PSCP92
 - PSCP92-SA31
 - PS98-PSCP99
 - PSCP99-SA32
 - PS106-PSCP337
 - PS337-SA34
- 5.2 Each video has been reviewed and comments relating to specific pipes are listed below.
- 5.3 The general quality of the CCTV surveys is incomplete, the videos do not start looking up at the chamber at the head of the run, so there is no way to guarantee the position in the pipe, equally they do not finish looking up at the downstream chamber. There are also several videos where the footage is blocked due to obstructions in the pipe.

Ref	Defect Images	Comments
PS14-PSCP15		No visible major defects
PSCP15-SA28		Small amount of sediment build up in pipe upstream of infiltration crates
PS77-PSCP75		No visible major defects
PS75-SA29		No visible major defects (2 second video)
PS84-PSCP81		No visible major defects
PSCP81-SA30		Small amount of sediment build up in pipe upstream of infiltration crates
PS93-PSCP92		No visible major defects
PSCP92-SA31		No visible major defects

PS98-PSCP99		PS98-PSCP99 footage looks to be the same as PS93-PSCP92, white spot on left side of the pipe appears in the same place
PSCP99-SA32		No visible major defects
PS106-PSCP337		No visible major defects, footage terminates at bend rather than chamber.
PS337-SA34		Footage is for same pipe as PSCP99-SA32 (recorded 1 minute apart.)

6. VARIATIONS TO THE APPROVED DESIGN

- 6.1 The design levels have in certain areas been subject to minor amendments, these are shown in 3.2 (Table 1) above.
- 6.2 For the most part the level changes to the Surface Water Drainage Systems within Area 7 are not likely to prevent the systems from performing adequately. However, the CCTV footage indicates general workmanship issues.
- 6.3 The air vents to all the Soakaways appear to have been missing. This needs to be investigated.
- 6.4 The soakaways have been constructed with other types of infiltration crates opposed to the previously specified Aquacell Core-R, and as such the shape and size of the crates has been changed. In some cases this has resulted in a reduction of storage capacity and infiltration surface area.
- 6.5 The image for Plot 29, 30 and 31 indicates that a different membrane has been used to line the soakaway. The Contractor has confirmed that this membrane is the SDS Geomembrane – GSE UltraFlex Smooth Geomembrane. GSE UltraFlex is a smooth linear low-density polyethylene (LLDPE) geomembrane and is therefore impermeable. This will prevent the soakaway from infiltrating and, as such, is not in accordance with the approved design strategy and cannot be verified.
- 6.6 Plot 28 appears to have been constructed with an insufficient number of attenuation units installed when compared to the approved design. As a result, the installed system may not provide the required storage capacity and could increase the risk of surface water flooding to the property.
- 6.7 Given the number of crates used is not clear from the images, the Contractor will need to confirm the amount of crates for each soakaway to ensure compliance was achieved.

7. REMEDIAL WORKS TO BE UNDERTAKEN AND PLANNED

- 7.1 The air vent to the Soakaways requires investigation and resolution.
- 7.2 The remedial works carried out within Area 7 is as listed below:
- The Contractor shall obtain written approval from crate supplier that the constructed soakaways comply with their specification. Notwithstanding this requirement, it is recommended that all damaged or deformed pipes be removed and replaced.
 - Install additional infiltration crates where the storage volume is less than what was specified in the approved design or provide supporting hydraulic modelling to support the as-built storage.
 - Impermeable geomembranes used within soakaways are to be replaced with permeable membranes to ensure infiltration occurs in accordance with the design. Upon completion of the remedial works, photographic evidence is to be provided.
 - Once remedial works have been carried out the system will need to be re-CCTV surveyed.

8. CONCLUSION

- 8.1 The records and details contained within this report reference 091.5016/SVR7 “SuDS Verification Report Area 7 and Appendices” show that the Surface Water Systems within Area 7 have not been constructed completely to the design and that the surface water network cannot be signed off without remedial actions.

Appendix A Verification Areas (Dwg 091.5016.0578)



The drawings, information and data recorded in this document ("the information") is the property of Paul Basham Associates. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purposes other than which it was supplied by Paul Basham Associates. Paul Basham Associates makes no representation, undertakes no duty and accepts no responsibilities to any third party who may use or rely upon this document or the information.

CDM Regulations 2015 - Reg. 9

None of the below is deemed to relieve any contractor of his obligations under all applicable health and safety legislation.

In preparing the design shown on this and related drawings Paul Basham Associates has considered and, where reasonably practicable, eliminated foreseeable risks. Any further abnormal or unusual risks, which remain, are numbered below and identified thus, and should be given particular attention by all those carrying out construction or of future maintenance works.

1. Existing services present
- 2.
- 3.

GENERAL NOTES

1. THIS DRAWING IS INTENDED TO BE VIEWED IN COMBINATION WITH ALL RELEVANT ARCHITECTS, ENGINEERS, SERVICES AND SPECIALIST DRAWINGS AND SPECIFICATION.
2. ANY VARIATIONS OR DISCREPANCIES BETWEEN THESE DRAWINGS IN TERMS OF DIMENSIONS OR DETAILS SHOULD BE DRAWN TO THE ATTENTION OF THE ARCHITECT AND/OR THE ENGINEER FOR CLARIFICATION.
3. PAUL BASHAM ASSOCIATES ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY.
4. ALL DIMENSIONS AND LEVELS ARE IN METRES. DO NOT SCALE THIS DRAWING, PRINT, PLOT OR DISK.
5. THIS DRAWING SHOULD ONLY BE USED FOR CONSTRUCTION IF THE PROJECT PHASE IN THE TITLE FRAME BELOW IS SHOWN AS "CONSTRUCTION". PAUL BASHAM ASSOCIATES TAKE NO RESPONSIBILITY FOR CONSTRUCTION WORKS UNDERTAKEN TO DRAWINGS WHICH ARE NOT MARKED UNDER THIS PHASE.

- — STORM WATER SEWER, Ø AS NOTED
- ○ SURFACE WATER MANHOLE (CUL/SILT/TYPE AS SHOWN)
- ○ SURFACE WATER INSPECTION CHAMBER/CATCHPIT
- ○ SURFACE WATER RODDING EYE
- ■ ROAD GULLY
- ⊙ DOWNSTREAM DEFENDER VORTEX PLUS
- ▨ GRAVEL INFILTRATION TRENCH (SEE 091.5016.551 FOR FULL DETAILS)
- ▨ INFILTRATION CRATES (SEE 091.5016.551 FOR FULL DETAILS)
- ▨ PERMEABLE PAVING

FOR
CONSTRUCTION

C02	UPDATED TO SUIT CLIENT COMMENT	03.08.2023	OJT	JM
C01	FIRST ISSUE	31.07.2023	OJT	JM
Rev	Description	Date	By	Chkd



Paul Basham Associates Ltd
The Bobby, Curra Hall Estate, Farnham, PO16 8UT
01529 711 000
info@paulbashamassociates.com www.paulbashamassociates.com

Client

millershomes

Project Name
LAND AT BAYARDS,
EASTERGATE

Title
SURFACE WATER
VERIFICATION AREAS

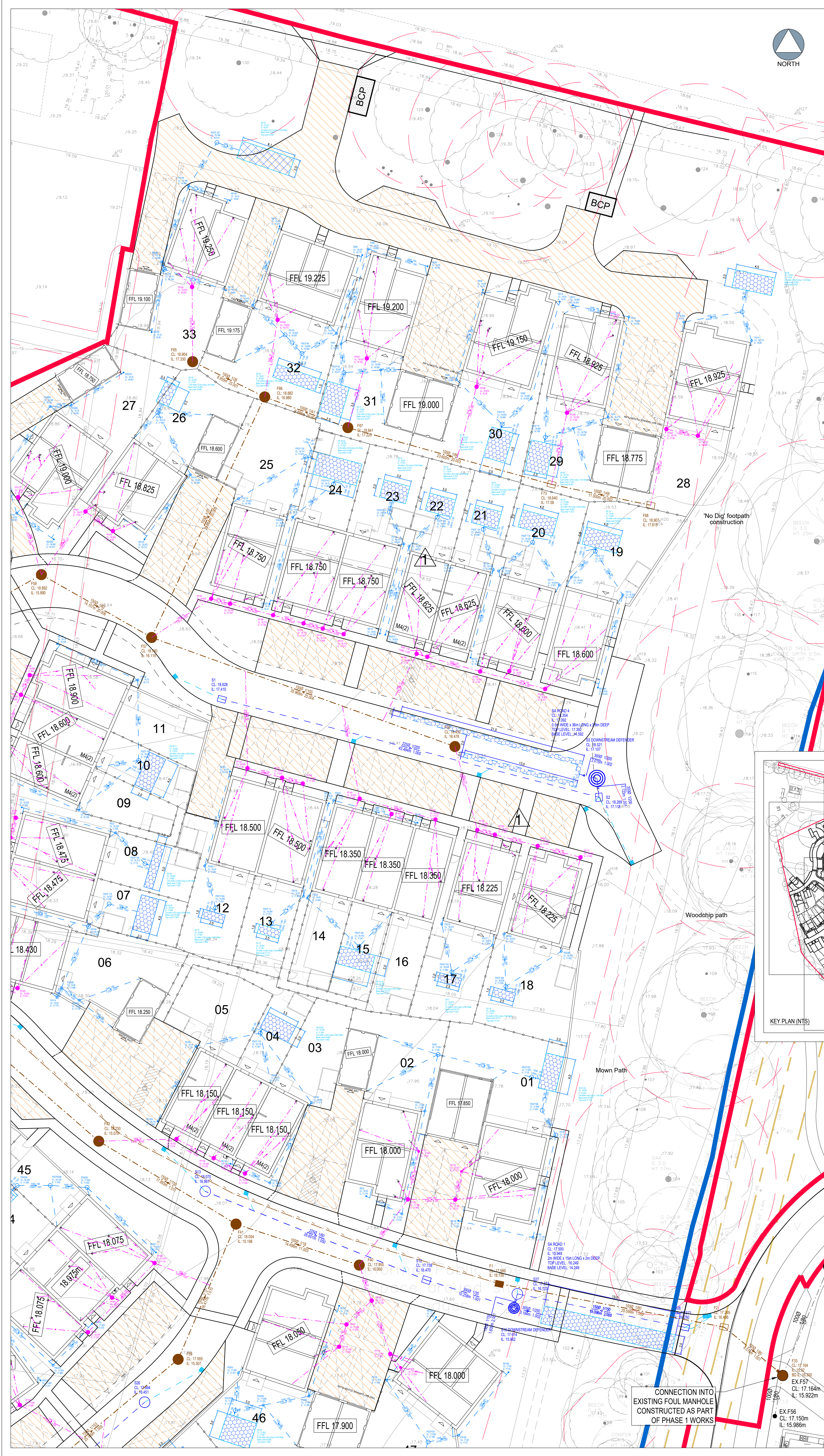
Project Phase

FOR CONSTRUCTION

Checked By	Checked Date	Drawn By	Drawn Date
JM	31.07.2023	OJT	31.07.2023
Client Drawing No.	Scale	(AT A1 SIZE)	
-	1:500		

PBA Drawing No.	Revision
091.5016.0578	C02

Appendix B Relevant Drainage Layout Drawings



The drawings, information and data recorded in this document ("the information") is the property of Paul Basham Associates. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purposes other than that which it was supplied by Paul Basham Associates. Paul Basham Associates makes no representation, undertakes no duty and accepts no responsibilities to any third party who may use or rely upon this document or the information.

CDM Regulations 2015 - Reg. 9			
None of the below is deemed to relieve any contractor of his obligations under all applicable health and safety legislation.			
In preparing the design shown on this and related drawings Paul Basham Associates has considered and, where reasonably practicable, eliminated foreseeable risks. Any further abnormal or unusual risks, which remain, are numbered below and identified thus (A), and should be given particular attention by all those carrying out construction or of future maintenance works.			
1	Existing services present		
2			
3			

GENERAL NOTES

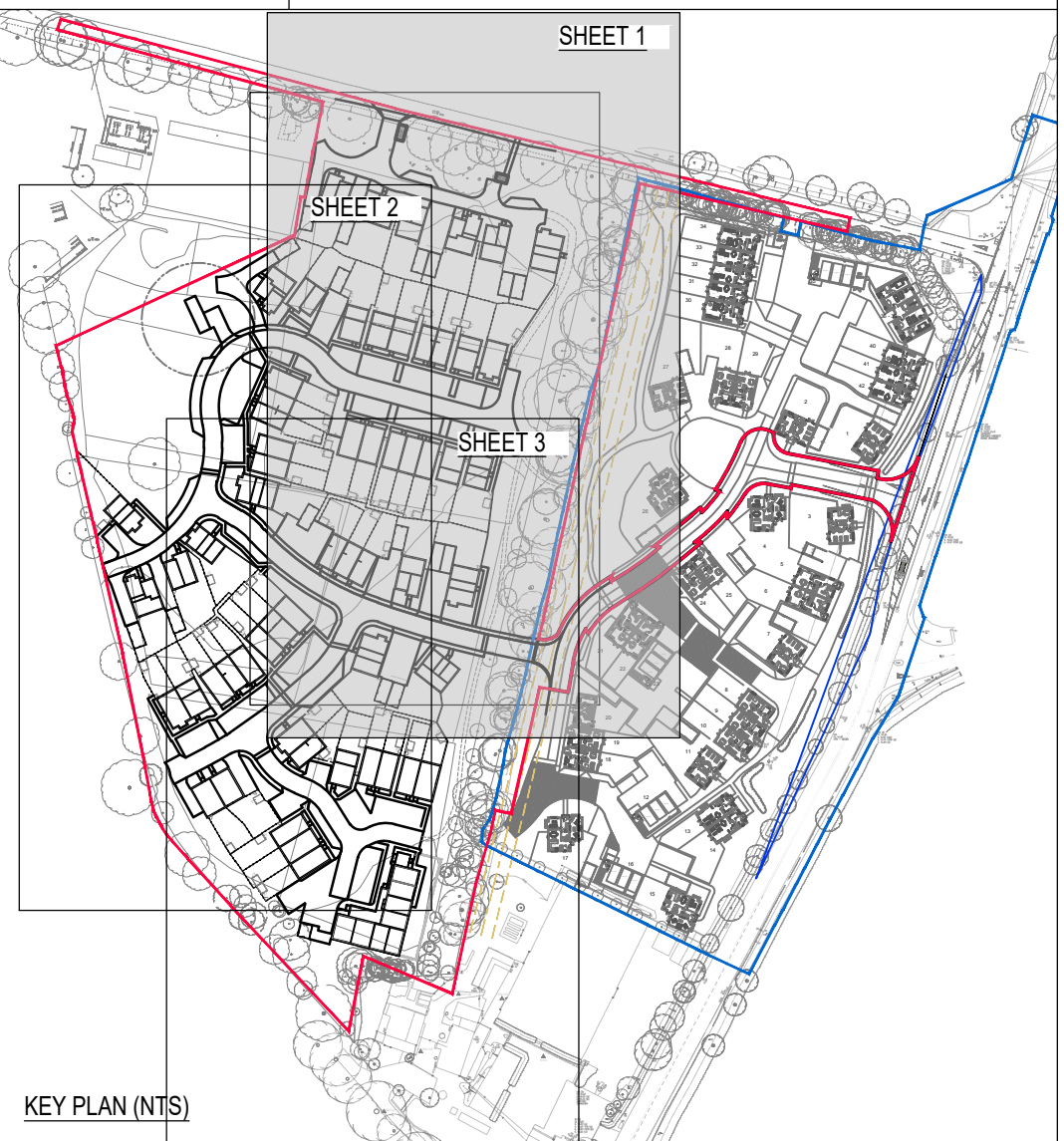
- THIS DRAWING IS INTENDED TO BE VIEWED IN COMBINATION WITH ALL RELEVANT ARCHITECTS, ENGINEERS, SERVICES AND SPECIALIST DRAWINGS AND SPECIFICATION.
- ANY VARIATIONS OR DISCREPANCIES BETWEEN THESE DRAWINGS IN TERMS OF DIMENSIONS OR DETAILS SHOULD BE DRAWN TO THE ATTENTION OF THE ARCHITECT AND/OR THE ENGINEER FOR CLARIFICATION.
- PAUL BASHAM ASSOCIATES ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY.
- ALL DIMENSIONS AND LEVELS ARE IN METRES. DO NOT SCALE THIS DRAWING, PRINT, PLOT OR DISK.
- THIS DRAWING SHOULD ONLY BE USED FOR CONSTRUCTION IF THE PROJECT PHASE IN THE TITLE FRAME BELOW IS SHOWN AS "CONSTRUCTION". PAUL BASHAM ASSOCIATES TAKE NO RESPONSIBILITY FOR CONSTRUCTION WORKS UNDERTAKEN TO DRAWINGS WHICH ARE NOT MARKED UNDER THIS PHASE.

DRAINAGE NOTES

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS, SERVICES AND SPECIALIST DRAWINGS AND SPECIFICATION.
- THE LEVEL OF THE EXISTING FOUL AND STORM SEWERS ON SITE HAS BEEN EXTRAPOLATED FROM THE LEVELS OF ADJACENT MANHOLES THE EXACT LEVEL AT THE POINT OF CONNECTION SHALL BE CHECKED PRIOR TO THE COMMENCEMENT OF THE WORKS AND ANY VARIANCE REPORTED TO THE ENGINEER IMMEDIATELY.
- ALL LEVELS ARE TO ORDNANCE DATUM
- ALL DRAINAGE TO BE IN ACCORDANCE WITH BUILDING REGULATIONS PART H. SEWERS NOTED AS ADAPTABLE SHALL BE TO SEWERS FOR ADOPTION 7th EDITION.
- THE LOCATION OF EXISTING UNDERGROUND UTILITY SERVICES IS AS PROVIDED BY THE RELEVANT STATUTORY UNDERTAKERS THE CONTRACTOR IS TO ASCERTAIN THE EXACT LOCATION PRIOR TO COMMENCEMENT OF WORKS.
- UNLESS NOTED OTHERWISE ALL DRAINAGE PIPES ARE TO BE 100mm DIA. AND ALL GULLY LEADS ARE TO BE 150mm DIA. MINIMUM ADOPTABLE SEWER 100mm DIA.
- MAXIMUM OUTFLOW RATE FOR FOUL PUMP STATION TO BE 4.0 l/s

LEGEND:

- ADOPTABLE/PRIVATE FOUL WATER SEWER, Ø AS NOTED
- PRIVATE FOUL WATER DRAIN, 100mm Ø U.N.O
- PRIVATE/ADOPTABLE STORM WATER SEWER, Ø AS NOTED
- PRIVATE STORM WATER DOMESTIC DRAIN, 100mm Ø, U.N.O.
- FOUL RISING MAIN
- FOUL WATER MANHOLE (CUL/S/L/TYPE AS SHOWN)
- SURFACE WATER MANHOLE (CUL/S/L/TYPE AS SHOWN)
- FOUL WATER CATCHPIT/INSPECTION CHAMBER
- SURFACE WATER INSPECTION CHAMBER/CATCHPIT
- SURFACE WATER ROOFING EYE
- FOUL GULLY
- ROAD GULLY
- FINISHED FLOOR LEVELS
- DOWNSTREAM DEFENDER
- VORTEX PLUS
- INFILTRATION CRATES (SEE 091.5016.551 FOR FULL DETAILS)
- GRAVEL INFILTRATION TRENCH (SEE 091.5016.551 FOR FULL DETAILS)
- PERMEABLE PAVING
- SITE BOUNDARY
- EXISTING FOUL WATER SEWER
- TREE ROOT PROTECTION AREAS
- TREE ROOT PROTECTION AREAS CALCULATED AND SPECIFIED IN ACCORDANCE WITH BS 5827:2012 - 'TREES IN RELATION TO DESIGN, DEMOLITION AND CONSTRUCTION - RECOMMENDATIONS'



FOR CONSTRUCTION

Rev	Description	Date	By	Chkd
C08	LEGEND REVERTED TO REV. C05	16.02.2024	RL	RW
C07	COVER LEVELS UPDATED TO SUIT V.E. / PART M REVISIONS	08.08.2023	RL	RW
C06	SITE LAYOUT UPDATED	21.04.2023	RL	RW
C05	PLOT 19: PS115 LOCALLY RELOCATED	24.02.2023	RL	RW
C04	FW: Mh's F1, F2 & F33 AMENDED	08.02.2023	RL	RW
C03	ROAD 4 SOAKAWAY SIZED AMD.	07.02.2023	RL	RW
C02	ROAD 1/4 SOAKAWAY INFORMATION ADDED	02.02.2023	RL	RW
C01	ISSUED FOR CONSTRUCTION	20.01.2023	RL	RW

Paul Basham Associates Ltd
The Bolly, Curra Hall Estate, Farnham, PO16 8UT
01529 711 000
info@paulbashamassociates.com www.paulbashamassociates.com

Project Name
LAND AT BAYARDS, EASTERGATE

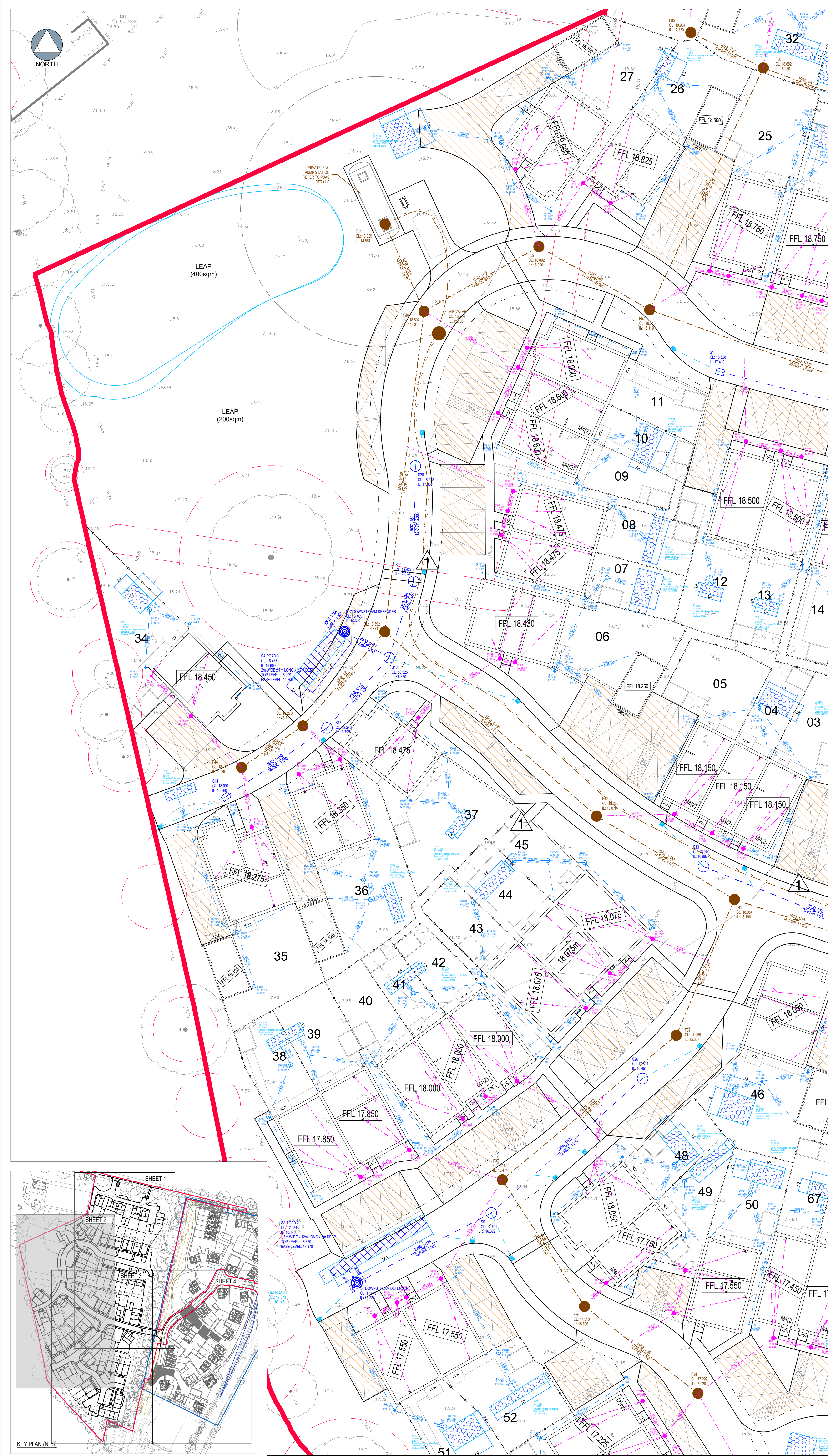
From
ENGINEERING LAYOUT DRAINAGE SHEET 1

Project Phase
CONSTRUCTION

Checked By	Checked Date	Drawn By	Drawn Date
RW	21.03.2022	CP	21.03.2022

Client Drawing No. - Scale 1:200 (AT A1 SIZE)

PBA Drawing No. 091.5016.0501 Revision C08



The drawings, information and data recorded in this document ("the information") is the property of Paul Basham Associates. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purposes other than that it was supplied by Paul Basham Associates. Paul Basham Associates makes no representation, undertakes no duty and accepts no responsibilities to any third party who may use or rely upon this document or the information.

CDM Regulations 2015 - Reg. 9			
None of the below is deemed to relieve any contractor of his obligations under all applicable health and safety legislation.			
In preparing the design shown on this and related drawings Paul Basham Associates has considered and, where reasonably practicable, eliminated foreseeable risks. Any further abnormal or unusual risks, which remain, are numbered below and identified thus (A) and should be given particular attention by all those carrying out construction or of future maintenance works.			
1.	Existing services present		
2.			
3.			

GENERAL NOTES

- THIS DRAWING IS INTENDED TO BE VIEWED IN COMBINATION WITH ALL RELEVANT ARCHITECTS, ENGINEERS, SERVICES AND SPECIALIST DRAWINGS AND SPECIFICATION.
 - ANY VARIATIONS OR DISCREPANCIES BETWEEN THESE DRAWINGS IN TERMS OF DIMENSIONS OR DETAILS SHOULD BE DRAWN TO THE ATTENTION OF THE ARCHITECT AND/OR THE ENGINEER FOR CLARIFICATION.
 - PAUL BASHAM ASSOCIATES ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY.
 - ALL DIMENSIONS AND LEVELS ARE IN METRES. DO NOT SCALE THIS DRAWING, PRINT, PLOT OR DISK.
 - THIS DRAWING SHOULD ONLY BE USED FOR CONSTRUCTION IF THE PROJECT PHASE IN THE TITLE FRAME BELOW IS SHOWN AS "CONSTRUCTION". PAUL BASHAM ASSOCIATES TAKE NO RESPONSIBILITY FOR CONSTRUCTION WORKS UNDERTAKEN TO DRAWINGS WHICH ARE NOT MARKED UNDER THIS PHASE.
- DRAINAGE NOTES**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS, SERVICES AND SPECIALIST DRAWINGS AND SPECIFICATION.
 - THE LEVEL OF THE EXISTING FOUL AND STORM SEWERS ON SITE HAS BEEN EXTRAPOLATED FROM THE LEVELS OF ADJACENT MANHOLES THE EXACT LEVEL AT THE POINT OF CONNECTION SHALL BE CHECKED PRIOR TO THE COMMENCEMENT OF THE WORKS AND ANY VARIANCE REPORTED TO THE ENGINEER IMMEDIATELY.
 - ALL LEVELS ARE TO ORDNANCE DATUM
 - ALL DRAINAGE TO BE IN ACCORDANCE WITH BUILDING REGULATIONS PART H. SEWERS NOTED AS ADAPTABLE SHALL BE TO SEWERS FOR ADOPTION 7th EDITION.
 - THE LOCATION OF EXISTING UNDERGROUND UTILITY SERVICES IS AS PROVIDED BY THE RELEVANT STATUTORY UNDERTAKERS THE CONTRACTOR IS TO ASCERTAIN THE EXACT LOCATION PRIOR TO COMMENCEMENT OF WORKS.
 - UNLESS NOTED OTHERWISE ALL DRAINAGE PIPES ARE TO BE 100mm DIA. AND ALL GULLY LEADS ARE TO BE 150mm DIA. MINIMUM ADOPTABLE SEWER 100mm DIA.
 - MAXIMUM OUTFLOW RATE FOR FOUL PUMP STATION TO BE 4.0 l/s

LEGEND:	
	ADOPTABLE/PRIVATE FOUL WATER SEWER, Ø AS NOTED
	PRIVATE FOUL WATER DRAIN, 100mm Ø U.N.O
	PRIVATE/ADOPTABLE STORM WATER SEWER, Ø AS NOTED
	PRIVATE STORM WATER DOMESTIC DRAIN, 100mm Ø, U.N.O.
	FOUL RISING MAIN
	FOUL WATER MANHOLE (CUL/SL/TYPE AS SHOWN)
	SURFACE WATER MANHOLE (CUL/SL/TYPE AS SHOWN)
	FOUL WATER CATCHPIT/INSPECTION CHAMBER
	SURFACE WATER INSPECTION CHAMBER/CATCHPIT
	SURFACE WATER ROOSTING EYE
	FOUL GULLY
	ROAD GULLY
	FINISHED FLOOR LEVELS
	DOWNSTREAM DEFENDER
	VORTEX PLUS
	INFILTRATION CRATES (SEE 091.5016.551 FOR FULL DETAILS)
	GRAVEL INFILTRATION TRENCH (SEE 091.5016.551 FOR FULL DETAILS)
	PERMEABLE PAVING
	SITE BOUNDARY
	EXISTING FOUL WATER SEWER
	TREE ROOT PROTECTION AREAS
	TREE ROOT PROTECTION AREAS CALCULATED AND SPECIFIED IN ACCORDANCE WITH BS 5837:2012 - 'TREES IN RELATION TO DESIGN, DEMOLITION AND CONSTRUCTION - RECOMMENDATIONS'

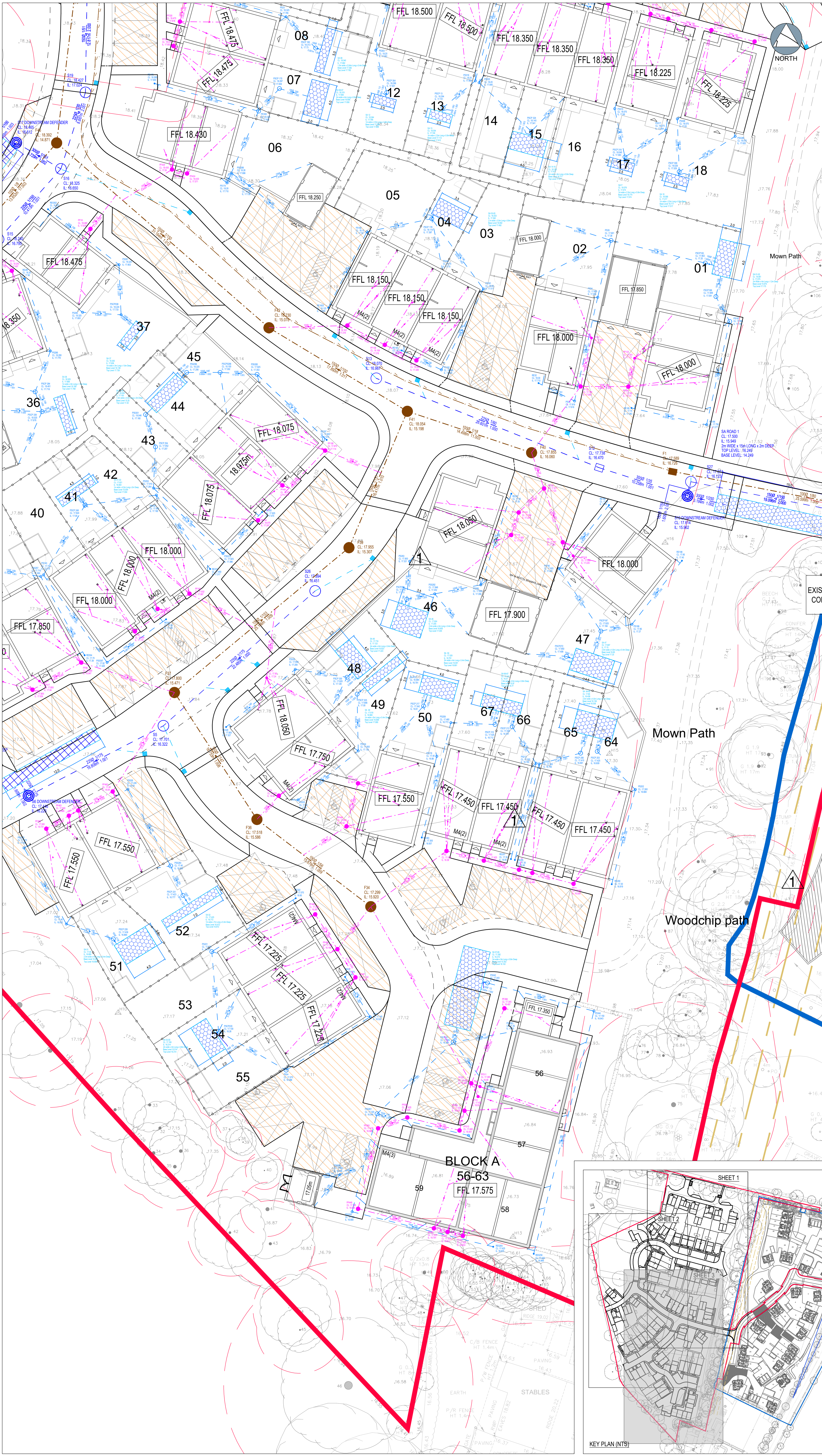
FOR CONSTRUCTION

C05	LEGEND REVERTED TO REV. C02	16.02.2024	RL	RW
C04	COVER LEVELS UPDATED TO SUIT V.E./PART M REVISIONS	08.08.2023	RL	RW
C03	SITE LAYOUT UPDATED	21.04.2023	RL	RW
C02	ROAD 2/3 SOAKAWAY INFORMATION ADDED	02.02.2023	RL	RW
C01	ISSUED FOR CONSTRUCTION	20.01.2023	RL	RW
Rev	Description	Date	By	Chkd

paul basham associates

Paul Basham Associates Ltd
The Belfry, Curnall Hall Estate, Farnham, PO16 8UT
01529 711 000
info@paulbashamassociates.com www.paulbashamassociates.com

Client			
millerhomes			
Project Name			
LAND AT BAYARDS, EASTERGATE			
Project Phase			
CONSTRUCTION			
Checked By	Checked Date	Drawn By	Drawn Date
RW	21.03.2022	CP	21.03.2022
Client Drawing No.		Scale	
		1:250	(AT A1 SIZE)
PBA Drawing No.		Revision	
091.5016.0502		C05	



The drawings, information and data recorded in this document ("the information") is the property of Paul Basham Associates. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purposes other than which it was supplied by Paul Basham Associates. Paul Basham Associates makes no representation, undertakes no duty and accepts no responsibilities to any third party who may use or rely upon this document or the information.

CDM Regulations 2015 - Reg. 9			
None of the below is deemed to relieve any contractor of his obligations under all applicable health and safety legislation.			
In preparing the design shown on this and related drawings Paul Basham Associates has considered and, where reasonably practicable, eliminated foreseeable risks. Any further abnormal or unusual risks, which remain, are numbered below and identified thus (X), and should be given particular attention by all those carrying out construction or of future maintenance works.			
1.	Existing services present		
2.			
3.			

- GENERAL NOTES**
- THIS DRAWING IS INTENDED TO BE VIEWED IN COMBINATION WITH ALL RELEVANT ARCHITECTS, ENGINEERS, SERVICES AND SPECIALIST DRAWINGS AND SPECIFICATION.
 - ANY VARIATIONS OR DISCREPANCIES BETWEEN THESE DRAWINGS IN TERMS OF DIMENSIONS OR DETAILS SHOULD BE DRAWN TO THE ATTENTION OF THE ARCHITECT AND/OR THE ENGINEER FOR CLARIFICATION.
 - PAUL BASHAM ASSOCIATES ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY.
 - ALL DIMENSIONS AND LEVELS ARE IN METRES. DO NOT SCALE THIS DRAWING, PRINT, PLOT OR DISK.
 - THIS DRAWING SHOULD ONLY BE USED FOR CONSTRUCTION IF THE PROJECT PHASE IN THE TITLE FRAME BELOW IS SHOWN AS "CONSTRUCTION". PAUL BASHAM ASSOCIATES TAKE NO RESPONSIBILITY FOR CONSTRUCTION WORKS UNDERTAKEN TO DRAWINGS WHICH ARE NOT MARKED UNDER THIS PHASE.

- DRAINAGE NOTES**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS, SERVICES AND SPECIALIST DRAWINGS AND SPECIFICATION.
 - THE LEVEL OF THE EXISTING FOUL AND STORM SEWERS ON SITE HAS BEEN EXTRAPOLATED FROM THE LEVELS OF ADJACENT MANHOLES THE EXACT LEVEL AT THE POINT OF CONNECTION SHALL BE CHECKED PRIOR TO THE COMMENCEMENT OF THE WORKS AND ANY VARIANCE REPORTED TO THE ENGINEER IMMEDIATELY.
 - ALL LEVELS ARE TO ORDNANCE DATUM
 - ALL DRAINAGE TO BE IN ACCORDANCE WITH BUILDING REGULATIONS PART H. SEWERS NOTED AS ADOPTABLE SHALL BE TO SEWERS FOR ADOPTION 7th EDITION.
 - THE LOCATION OF EXISTING UNDERGROUND UTILITY SERVICES IS AS PROVIDED BY THE RELEVANT STATUTORY UNDERTAKERS THE CONTRACTOR IS TO ASCERTAIN THE EXACT LOCATION PRIOR TO COMMENCEMENT OF WORKS.
 - UNLESS NOTED OTHERWISE ALL DRAINAGE PIPES ARE TO BE 100mm DIA. AND ALL GULLY LEADS ARE TO BE 150mm DIA. MINIMUM ADOPTABLE SEWER 100mm DIA.
 - MAXIMUM OUTFLOW RATE FOR FOUL PUMP STATION TO BE 4.0 l/s

- LEGEND:**
- ADOPTABLE/PRIVATE FOUL WATER SEWER, Ø AS NOTED
 - PRIVATE FOUL WATER DRAIN, 100mm Ø U.N.O
 - PRIVATE/ADOPTABLE STORM WATER SEWER, Ø AS NOTED
 - PRIVATE STORM WATER DOMESTIC DRAIN, 100mm Ø, U.N.O.
 - FOUL RISING MAIN
 - FOUL WATER MANHOLE (CL/ULS/TYPE AS SHOWN)
 - SURFACE WATER MANHOLE (CL/ULS/TYPE AS SHOWN)
 - FOUL WATER CATCHPIT/INSPECTION CHAMBER
 - SURFACE WATER INSPECTION CHAMBER/CATCHPIT
 - SURFACE WATER ROOING EYE
 - FOUL GULLY
 - ROAD GULLY
 - FINISHED FLOOR LEVELS
 - DOWNSIDE DEFENDER
 - VORTEX PLUS
 - INFILTRATION CRATES (SEE 091.5016.551 FOR FULL DETAILS)
 - GRAVEL INFILTRATION TRENCH (SEE 091.5016.551 FOR FULL DETAILS)
 - PERMEABLE PAVING
 - SITE BOUNDARY
 - EXISTING FOUL WATER SEWER
 - TREE ROOT PROTECTION AREAS
 - TREE ROOT PROTECTION AREAS CALCULATED AND SPECIFIED IN ACCORDANCE WITH BS 5837:2012 - 'TREES IN RELATION TO DESIGN, DEMOLITION AND CONSTRUCTION - RECOMMENDATIONS'

FOR CONSTRUCTION

C06	LEGEND REVERTED TO REV. C03	16.02.2024	RL	RW
C05	COVER LEVELS UPDATED TO SUIT V.E. / PART M REVISIONS	08.08.2023	RL	RW
C04	SITE LAYOUT UPDATED	21.04.2023	RL	RW
C03	FW Mths F1, F2 & F33 AMENDED	08.02.2023	RL	RW
C02	ROAD 1 SOAKAWAY INFORMATION ADDED	02.02.2023	RL	RW
C01	ISSUED FOR CONSTRUCTION	20.01.2023	RL	RW
Rev	Description	Date	By	Chkd



Paul Basham Associates Ltd
The Bolly, Cume Hall Estate, Farnham, PO16 8UT
01250 711 000
info@paulbashamassociates.com www.paulbashamassociates.com

Client



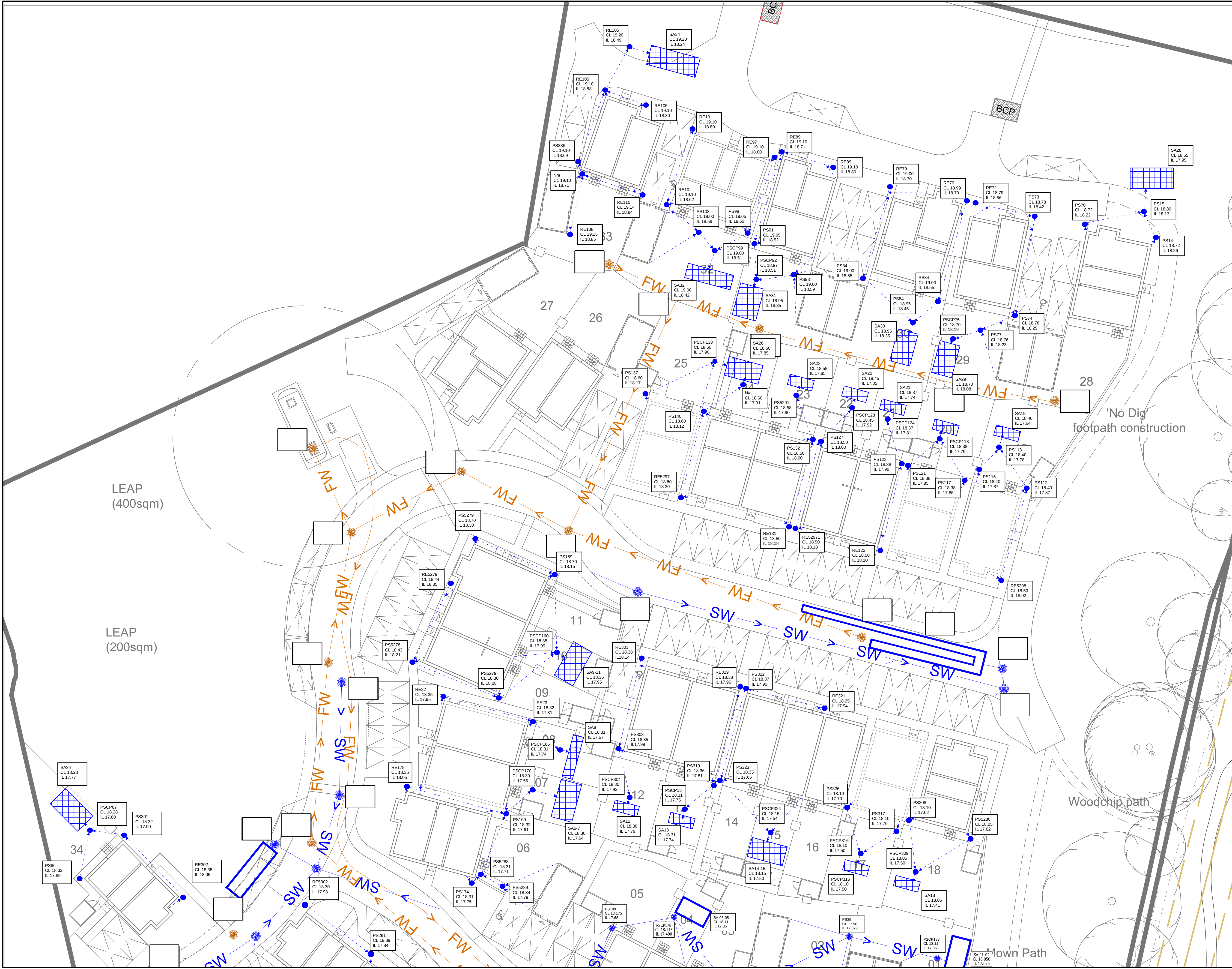
Project Name
LAND AT BAYARDS, EASTERGATE

Draw
ENGINEERING LAYOUT DRAINAGE SHEET 3

Project Phase
CONSTRUCTION

Checked By	Checked Date	Drawn By	Drawn Date
RW	21.03.2022	CP	21.03.2022
Client Drawing No.	-	Scale	(AT A1 SIZE)
		1:250	
PBA Drawing No.	091.5016.0503	Revision	C06

Appendix C As Built Survey



COPYRIGHT HI ACRE CONSTRUCTION. ALL RIGHTS RESERVED. THIS DOCUMENT IS ISSUED FOR THE PARTY WHO COMMISSIONED IT AND FOR THE SPECIFIC PURPOSES CONNECTED WITH THE PROJECT ONLY. IT SHOULD NOT BE RELIED UPON BY ANY OTHER PARTY OR USED FOR ANY OTHER PURPOSE. HI ACRE ACCEPTS NO RESPONSIBILITY OR LIABILITY WHICH MAY ARISE FROM RELIANCE OR USE OF THIS DOCUMENT OR THE DATA CONTAINED HEREIN BY ANY OTHER PARTY OR FOR ANY OTHER PURPOSE.

Notes

- DO NOT SCALE FROM THIS DRAWING.
- ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
- ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM UNLESS SHOWN OTHERWISE.

— SW — SURFACE WATER

— FW — FOUL WATER

MANHOLE/INSPECTION CHAMBER/RODDING EYE

FOUL WATER MANHOLE

101	FOR INFORMATION	22/08	RU	RU
Rev	Description	Date	By	App
			CHK	

FOR INFORMATION

BAYARDS LANE
EASTERGATE

HI-ACRE CONSTRUCTION

AS BUILT DRAINAGE
LAYOUT PLAN
SHEET 1 OF 2

Project No:	Scale (BA1):	BT	Date:
EASTERGATE	1:200	-----	AUG 23
Drawing No:			Rev:
EASTERGATE-HA-XX-DR-C-00001			101

Appendix D Materials

Appendix E CCTV Survey of Pipelines and CCTV Video Files