

Project Title

Land North of Water Lane, Angmering

Report Title

Phase 2 - Surface Water Drainage
Verification Report

Document Reference:

5968-002-001

Prepared For

Cala Southern Home Counties

Date

February 2026

Status	Details of Amendments	Date	Checked	Approved
P0.1	Draft Issue	06/02/2026	HS	RW
P1	First Issue	XX/02/2026	HS	RW

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EXECUTIVE SUMMARY

- I. Cala Southern Home Counties has commissioned Robert West Consulting (RWC) to prepare a Drainage Verification Report following the construction of the surface water drainage system for Phase 2 of the proposed housing development at Land North of Water Lane, Angmering, West Sussex, BN16 4RJ.
- II. The verification report has been produced by Harry Saffin, Senior Engineer for RWC. I certify that the below report has been produced in complete independence from the groundworker implementing the approved scheme and I have not been involved in the scheme prior to undertaking the inspection and verification works necessary to produce this report. I certify that RWC's professional indemnity insurance covers the verification work completed. The contents of this report are correct and a true reflection of the constructed site.
- III. I hold an Honours degree in Civil Engineering, and I am a Graduate Member of the Institution of Civil Engineers with 10 years' experience in the design and construction of surface water drainage schemes. My previous experience in design and construction was gained whilst working for Atkins, Patrick Parsons and Fairhurst.
- IV. This document has been reviewed by Reggie Wright who has 11 years' experience in the design and implementation of drainage and SuDS alongside wider Civil Engineering principles. He holds an Honours degree in Civil Engineering and a Master's degree in Water and Environmental Engineering.
- V. The residential development consists of 525 residential units with 3 Ha of employment land, public open space, play areas, access, associated infrastructure and landscaping. Surface water drainage is incorporates sustainable drainage systems which discharge surface water at a suitably restricted rate of 2l/s to the Black Ditch watercourse to the south of the site, as per the approved design. Storage is provided for all storm return periods up to and including the 1:100 year rainfall event with a 40% allowance for climate change.
- VI. This verification report is in relation to Phase 2 of the residential development at Land North of Water Lane, Angmering. Phase 1A (303.1A.SHC.0501-B) and Phase 1B (303.1B.SHC.0501-C) Surface Water Verification Reports can be found on the online planning portal. The site Phasing Plan can be found in Appendix A.
- VII. This verification report has been prepared to discharge Condition 29 of Arun County Council decision notice A/40/18/OUT:

"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 details. The agreed scheme shall thereafter be maintained in perpetuity."

- VIII. The Planning Decision Notice is contained within Appendix K.
- IX. The purpose of this report is to summarise the conclusion of the CCTV surveys and to review the as built drainage system, its compliance, and to acknowledge any departure from the approved detailed drainage design produced by Robert West Ltd.
- X. All information within this report is based on photos and reports from site.

1.0 LIST OF APPROVED DOCUMENTS

- 1.1 Overleaf is a list of documents that form the surface water drainage design, submitted to discharge the pre-commencement condition 27 under the outline planning consent A/40/18/OUT.

Drawing Number	Revision
189.5005_P1A_1% AEP + 40% CC	-
189.5005_P1A_10% AEP + 40% CC	-
189.5005_P1A_3.3% AEP + 40% CC	-
189.5005_P1A_50% AEP + 40% CC	-
189.5005_P1B_1% AEP + 40% CC	-
189.5005_P1B_10% AEP + 40% CC	-
189.5005_P1B_3.3% AEP + 40% CC	-
189.5005_P1B_50% AEP + 40% CC	-
189.5005_P1B NORTH_1% AEP + 40%CC	-
189.5005_P1B NORTH_10% AEP + 40% CC	-
89.5005_P1B NORTH_3.3% AEP + 40% CC	-
189.5005_P1B NORTH_50% AEP + 40% CC	-
189.5005_P2 NE_1% AEP + 40% CC	-
189.5005_P2 NE_10% AEP + 40% CC	-
189.5005_P2 NE_3.3% AEP + 40% CC	-
189.5005_P2 NE_50% AEP + 40% CC	-
189.5005_P2 NW_1% AEP + 40% CC	-
189.5005_P2 NW_10% AEP + 40% CC	-
189.5005_P2 NW_3.3% AEP + 40% CC	-
189.5005_P2 NW_50% AEP + 40% CC	-
189.5005.501	M
189.5005.502	M
189.5005.503	L
189.5005.504	J
189.5005.505	J
189.5005.506	J
189.5005.507	J

189.5005.508	J
189.5005.509	L
189.5005.510	H
189.5005.511	H
189.5005.512	J
189.5005.513	D
189.5005.514	D
189.5005.515	D
189.5005.516	D
189.5005.517	D
189.5005.518	D
189.5005.519	D
189.5005.520	D
189.5005.521	D
189.5005.522	D
189.5005.523	B
189.5005.526	C
189.5005.527	D
189.5005.528	D
189.5005.529	B
189.5005.530	F
189.5005.546	A
189.5005.547	B
189.5005.548	D
189.5005.551	J
189.5005.552	J
189.5005.553	E
189.5005.554	E

189.5005.555	E
189.5005.563	D
189.5005.1321	B
189.5005.1322	B
189.5005.1323	B
189.5005.1324	B
189.5005.1325	B
189.5005.1331	B
189.5005.1341	B
189.5005.1351	B
189.5005.1352	B
189.5005.1353	B
189.5005.1354	B
189.5005.1355	B
189.5005.1356	B
189.5005.1357	B
189.5005.1527	A

APPROVED DETAILED DRAINAGE DESIGN STRATEGY

- 1.2 Paul Basham Associates developed the detailed drainage design for the development. Robert West can confirm that there have been no significant changes to the site layout, including building footprint or areas of soft and hard landscaping which would otherwise impact upon the drainage design.
- 1.3 No planting has been installed on site yet. All planting to be installed as per approved Planting Schedules and Soft Landscaping Plans (see Appendix J). Paul Basham Associates have confirmed that no trees or other landscaping will be located in areas which would be detrimental to the drainage infrastructure. All planting stock shall comply with the requirements of the BS3936, and shall be healthy, strong with a good shape and strong root system in accordance with the National Plant Specification. The supply and planting of trees to be in accordance with BS8545:2014.
- 1.4 Run-off from the roofs and areas of hard-standing associated with the development is collected and discharges to drainage infrastructure. The drainage infrastructure within the highways (including headwall connections to swales and culverts) have been offered for adoption to IWNL. The drainage infrastructure within private areas is privately owned. All surface water drainage discharges at a suitably restricted rate to the Black Ditch watercourse to the south of the site, as per the approved design.
- 1.5 The final construction issue of Paul Basham Associates Drainage Layouts are appended to this report in Appendix B.
- 1.6 Summarised below are the key elements of the surface water drainage system:
 - Manholes and Catchpits
 - Pipework
 - Rainwater Pipes
 - Road Gullies
 - Swales/Ditches
 - Headwalls

2.0 BELOW GROUND DRAINAGE – AS CONSTRUCTED

- 2.1 Photographs were taken to verify the construction of the key surface water drainage elements and are shown below.

Swales and Headwalls

- 2.2 The site incorporates a series of swales which discharge the surface water collected from the impermeable areas of the site into two storage ponds. The southern side of Swale 8 (shown on drawing 189.5005.514) has been constructed with an impermeable membrane. The connecting pipes have been constructed through concrete bagwork headwalls with concrete bagwork wingwalls.



Swale During Construction



Swale During Construction



Swale During Construction



Swale During Construction



Photo of Concrete Bagwork Headwall During Construction



Photo of Concrete Bagwork Headwall During Construction



Photo of Concrete Bagwork Headwall During Construction



Photo of Concrete Bagwork Headwall During Construction



Photo of Concrete Bagwork Headwall During Construction

Manholes and Catchpits

- 2.3 Manholes have all been constructed in accordance with the approved surface water drainage design.
- 2.4 Please refer to Appendix L for construction phase and as-built photographs of the manholes and catchpits on site.
- 2.5 Catchpits have been constructed in accordance with the approved surface water drainage design as a measure to capture silt and sediment, to reduce the risk of blockage to the system. Catchpits will require inspection and periodic clearance in accordance with the approved Drainage Maintenance Statement in order to reduce the risk of blockage.

Rainwater Pipes

- 2.6 Rainwater pipes have been installed to assist in draining the roof area of all plots. All rainwater pipes are positively drained, discharging to the wider surface water drainage system constructed.



Photo of Rainwater Pipe During Construction



Photo of Rainwater Pipe During Construction



Photo of Rainwater Pipe During Construction



Photo of Rainwater Pipe During Construction



Photo of Rainwater Pipe During Construction



Photo of Rainwater Pipe Installed on Site



Photo of Rainwater Pipe Installed on Site



Rainwater Pipe Installed on Site



Rainwater Pipe Installed on Site

Road Gullies

- 2.7 Road gullies have been constructed to collect surface water run-off for areas which are not self-draining.
- 2.8 The road gullies discharge to the below-ground piped surface water drainage system.

- 2.9 Road gullies will require inspection and periodic clearance in accordance with the approved Drainage Maintenance Statement in order to reduce the risk of blockage.



Road Gully Installed on Site

CCTV Survey

- 2.10 To further ensure compliance a CCTV survey was undertaken by Audez Drainage Services Ltd in January 2026. The CCTV confirmed that the pipes were laid at the sizes and the locations shown at the drainage drawings.
- 2.11 The CCTV survey report is found in Appendix C.
- 2.12 The CCTV survey states that the pipework between S106 and S107 is Grade B (defined as 'there is an issue that might require remedial works') as there are two incoming pipes causing 20% cross sectional area loss. As this pipe is 525mm diameter, laid at 1/21 gradient, this loss of cross-sectional area is not considered to be an issue.
- 2.13 The CCTV survey confirms that the condition of all other drainage is Grade A (defined as 'drain is serviceable no recommendations required').

As-Built Drainage Variations

- 2.14 When assessing the drainage, an order of tolerance has been allowed when comparing the as-built drainage to the approved drawings. In addition to this, the accuracy of the survey equipment has been considered when assessing whether remedial measures are necessary.
- 2.15 Differences between the designed drainage and as-built survey have been reviewed if the variation is greater than 20mm. Any variation with a level difference less than 20mm is considered to be within reasonable construction tolerances.

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Level Difference
S2707	31.692m	31.682m	-0.010m
S109	32.064m	32.335m	+0.271m
S110	30.930m	31.009m	+0.079m
S111	29.742m	29.669m	-0.073m
S113	29.188m	29.204m	+0.016m
S114	27.867m	27.879m	+0.012m
S115	27.737m	27.748m	+0.011m
PS880	27.755m	27.745m	-0.010m
PS879	27.590m	27.590m	-
PS878	27.445m	27.443m	-0.002m
S1468	36.799m	36.784m	-0.015m
S1454	35.682m	35.710m	+0.028m
S1453	34.959m	34.939m	+0.020m
S1466	34.496m	34.499m	+0.003m
S1433	34.123m	34.104m	-0.019m
S3072	33.354m	33.331m	-0.023m
S1418	32.304m	32.400m	+0.096m
PS133	31.123m	31.036m	-0.087m
S89	34.450m	34.450m	-
S92	33.485m	33.490m	+0.005m
S90	34.034m	34.054m	+0.020m
S93	34.223m	34.215m	-0.008m
S94	35.355m	35.392m	+0.037m
S95	34.022m	34.100m	+0.078m
S97	33.120m	33.100m	-0.020m
S99	32.150m	32.135m	-0.015m
S100	31.373m	31.399m	+0.026m

S101	30.788m	30.444m	-0.344m
S102	30.587m	30.611m	+0.024m
S103	30.358m	30.465m	+0.107m
S104	30.243m	30.262m	+0.019m
S105	29.715m	29.705m	-0.010m
S106	29.324m	29.330m	+0.006m
S107	28.332m	28.330m	-0.002m
S108	27.299m	27.310m	+0.011m

2.16 The following paragraphs summarise variations that have been Identified between the approved drainage design drawings and the as-built survey.

Variation 1

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Length	Proposed Pipe Gradient	As-Built Pipe Gradient
S109	32.064m	32.335m	25.98m	1/26	1/20
S110	30.930m	31.009m			

2.17 The as-built pipe gradient is a betterment relative to the original design, therefore no remedial works are required.

Variation 2

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Length	Proposed Pipe Gradient	As-Built Pipe Gradient
S110	30.930m	31.009m	27.88m	1/23	1/21
S111	29.742m	29.669m			

2.18 The as-built pipe gradient is a betterment relative to the original design, therefore no remedial works are required.

Variation 3

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Length	Proposed Pipe Gradient	As-Built Pipe Gradient
S3072	33.354m	33.331m	22.26m	1/21	1/24
S1418	32.304m	32.400m			

2.19 The constructed drainage is still compliant with standards despite the variation between proposed and as-built invert levels.

Variation 4

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Length	Proposed Pipe Gradient	As-Built Pipe Gradient
S94	35.355m	35.392m	17.64m	1/14	1/14
S95	34.022m	34.100m			

2.20 The constructed drainage is still compliant with standards despite the variation between proposed and as-built invert levels.

Variation 5

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Length	Proposed Pipe Gradient	As-Built Pipe Gradient
S93	34.223m	34.215m	12.57m	1/100	1/109
S95	34.022m	34.100m			

2.21 The constructed drainage is still compliant with standards despite the variation between proposed and as-built invert levels.

Variation 6

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Length	Proposed Pipe Gradient	As-Built Pipe Gradient
S101	30.788m	30.444m	30.20m	1/150	1/181
S102	30.587m	30.611m			

2.22 The constructed drainage is still compliant with standards despite the variation between proposed and as-built invert levels.

Variation 7

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Length	Proposed Pipe Gradient	As-Built Pipe Gradient
S102	30.587m	30.611m	23.13m	1/150	1/158
S103	30.358m	30.465m			

2.23 The constructed drainage is still compliant with standards despite the variation between proposed and as-built invert levels.

Variation 8

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Length	Proposed Pipe Gradient	As-Built Pipe Gradient
S100	31.373m	31.399m	16.45m	1/18	1/18
S103	30.358m	30.465m			

- 2.24 The constructed drainage is still compliant with standards despite the variation between proposed and as-built invert levels.

Variation 9

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Length	Proposed Pipe Gradient	As-Built Pipe Gradient
S103	30.358m	30.465m	7.56m	1/66	1/37
S104	30.243m	30.262m			

- 2.25 The as-built pipe gradient is a betterment relative to the original design, therefore no remedial works are required.

Variation 10

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Length	Proposed Pipe Gradient	As-Built Pipe Gradient
S111	29.742m	29.669m	29.81m	1/17	1/17
S114	27.867m	27.879m			

- 2.26 The constructed drainage is still compliant with standards despite the variation between proposed and as-built invert levels.

Variation 11

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Length	Proposed Pipe Gradient	As-Built Pipe Gradient
S1468	36.799m	36.784m	22.17m	1/21	1/21
S1454	35.682m	35.710m			

- 2.27 The constructed drainage is still compliant with standards despite the variation between proposed and as-built invert levels.

Variation 12

Manhole Ref.	Proposed Invert Level	As-Built Invert Level	Length	Proposed Pipe Gradient	As-Built Pipe Gradient
S3072	33.354m	33.331m	22.26m	1/24	1/24
S1418	32.304m	32.400m			

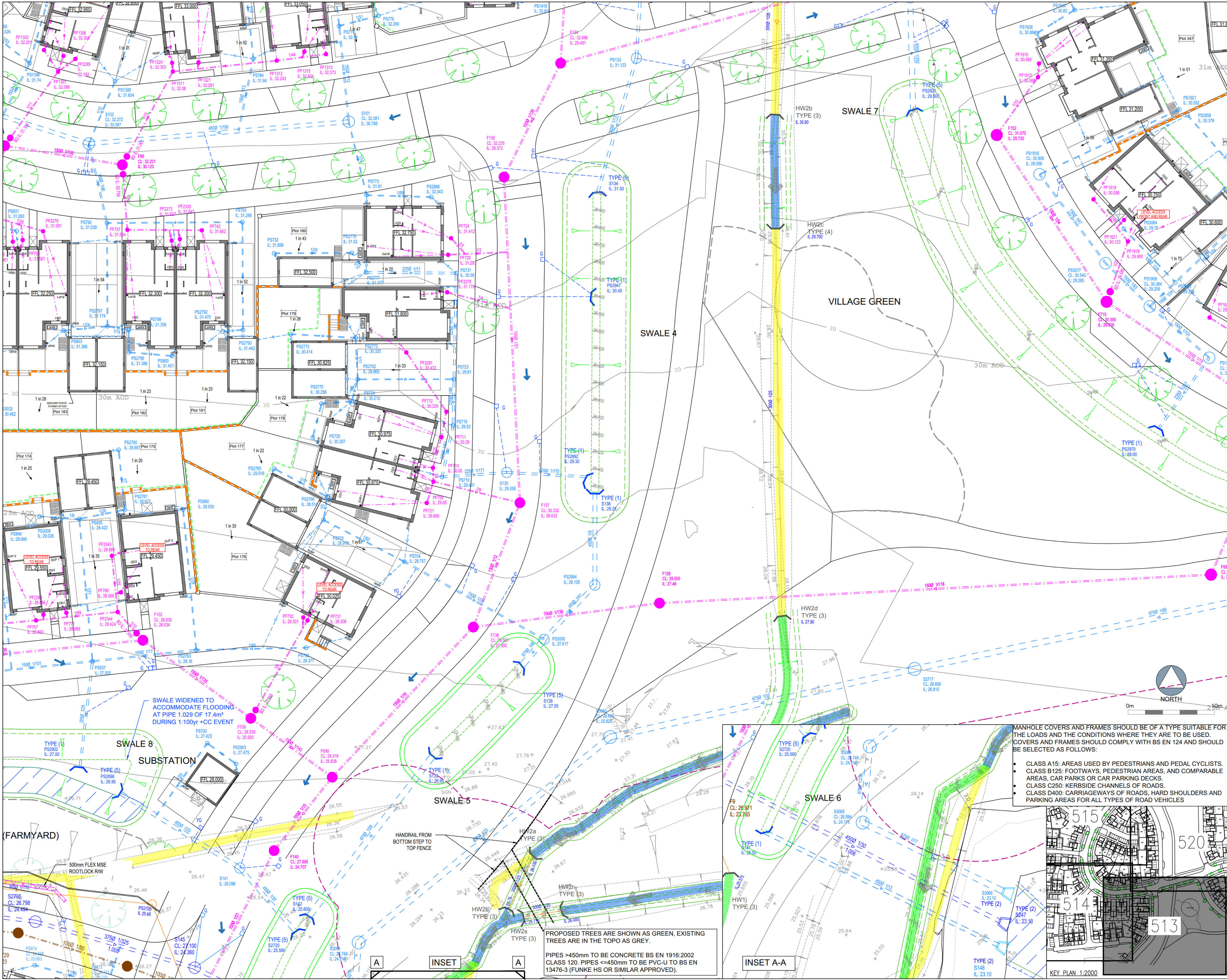
- 2.28 The constructed drainage is still compliant with standards despite the variation between proposed and as-built invert levels.

3.0 CONCLUSION

- 3.1 This Surface Water Drainage Verification Report has been prepared to assist in the discharge of Condition 29 of Arun County Council decision notice A/40/18/OUT.
- 3.2 In general, the installed drainage matches that of the design with construction carried out to a good degree of workmanship.
- 3.3 Photograph evidence of the construction process and CCTV survey has been provided, demonstrating that all the critical surface water drainage elements were constructed.
- 3.4 All significant variations between proposed and as-built invert levels have been reviewed to ensure they meet adoption standards.
- 3.5 The surface water drainage system which has been installed follows the LLFA's approved detailed surface water drainage design and is deemed fit for purpose.
- 3.6 Maintenance activities shall be undertaken in accordance with the approved Drainage Maintenance Statement to ensure that the system continues to function as intended, through its design.
- 3.7 RWC believes that the constructed foul and surface water drainage is adequate, and any variations through the design and construction process will not affect the operation, maintenance, or performance of the drainage system

Appendix A – Phasing Plan

Appendix B – Construction 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 not to be used, copied or reproduced in whole or part for any purposes other than that for 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.

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.
- ARCH LAYOUT - 00303 EWP (21.10.2024)
- SOILFIX - SF007 PROPOSED CONTOURS (05.07.2023)
- 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.

LEGEND

- 1000/1000 1800/1000 PRIVATE SURFACE
- 1000/1000 1800/1000 PRIVATE FOUL
- RWP & SVP LATERALS (WITH 100mm CONNECTION) PROPOSED DITCH BED LEVEL
- FOUL WATER MANHOLE, BACKDROP
- PRIVATE FOUL WATER CHAMBER, BACKDROP
- PRIVATE SURFACE WATER MANHOLE
- SURFACE WATER MANHOLE
- YARD GULLY (WITH 150mm OUTLET)
- ROAD GULLY (WITH 150mm OUTLET)
- HEADWALL
- ACO-DRAIN W/ 100mm OUTLET PIPE
- PASSIVE GARDEN FILTER DRAIN
- RETAINING WALLS
- 100mm ASPH OUTLET
- EXCEEDANCE FLOW PATHS
- WATERCOURSE FLOW PATHS
- EXISTING DITCH TO REMAIN
- PROPOSED DITCH TO BE INSTALLED
- EXISTING DITCH/CULVERT TO BE ABANDONED/FILLED
- PROPOSED CULVERTED WATERCOURSES ALL CULVERT MANHOLES TO BE SUMP TYPE
- IMPERMEABLE MEMBRANE
- DUMMY PIPES REF FOR CALCULATIONS
- ROOT PROTECTION AREA

CALA HOMES STANDARD NOTES

- THE CONTRACTOR SHALL REVIEW ALL DOCUMENTS, DRAWINGS, REPORTS AND SURVEYS PROVIDED ON VIEWPOINT PRIOR TO COMMENCING WORK ON SITE. THIS SHALL INCLUDE THE CALA HOMES CONSTRUCTION SPECIFICATION. ANY DISCREPANCIES OR GAPS SHALL BE REPORTED TO THE TECHNICAL DEPARTMENT AT CALA HOMES IMMEDIATELY.
- THE CONTRACTOR IS RESPONSIBLE FOR POSITIVELY IDENTIFYING ALL SERVICES ON SITE AND REPORTING THE POSITION AND DEPTH TO THE TECHNICAL DEPARTMENT AT CALA HOMES. WHEREVER POSSIBLE NON-INTRUSIVE METHODS, SUCH AS GPR, SHOULD BE USED.
- THE CONTRACTOR IS TO STRIP THE SITE TOPSOIL IN SECTIONS, USING TRACKED EQUIPMENT AND IN DRY CONDITIONS. TOPSOIL AND SUBSOIL ARE TO BE STORED IN SEEDS STOCKPILES TO PROTECT THEM FROM EROSION. PRIOR TO PLACING TOPSOIL, THE SUBSOIL SHOULD BE RIPPED USING A SINGLE TYPE RIPPER TO A SUITABLE DEPTH TO ENCOURAGE POSITIVE DRAINAGE OF THE SOIL.
- IN-SITU OR TESTS SHALL BE UNDERTAKEN FOR EACH SECTION OF HIGHWAY AT INTERVALS OF 25M OR LESS. RESULTS TO BE SUBMITTED TO THE TECHNICAL DEPARTMENT AT CALA HOMES FOR APPROVAL PRIOR TO CARRIAGEWAY CONSTRUCTION.
- ALL DRAINAGE WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE DESIGN AND CONSTRUCTION GUIDANCE (DSC), AND THE BUILDING REGULATIONS "APPROVED DOCUMENT" IF ANY DISCREPANCIES SHOULD BE REPORTED TO CALA FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORKS.
- ALL MANHOLE CHAMBER COVERS TO BE INSTALLED PARALLEL TO FINAL KERBS, EDGINGS, PAVING JOINTS OR BUILDING LINES AS APPROPRIATE. THE MANHOLE COVER SHALL BE PLACED ENTIRELY WITHIN ONE SURFACE FINISH.
- THE CONTRACTOR IS TO SEEK APPROVAL FROM THE TECHNICAL DEPARTMENT AT CALA HOMES PRIOR TO ORDERING ANY PERFECT MANHOLES.
- ON COMPLETION OF EACH BUILD AREA THE CONTRACTOR SHALL LEAVE CLEAN AND CARRY OUT ALL DRAINAGE AND PROVIDE A COPY OF THE VIDEO FOOTAGE AND PDF REPORT TO CALA. THE REPORT SHALL INCLUDE AN EXECUTIVE SUMMARY OF THE FINDINGS AND A SCHEMATIC OF THE DRAINAGE LAYOUT.
- PRIOR TO FORMING EACH DWELLING ACCESS, THE CONTRACTOR SHALL CHECK THAT THE AS-BUILT LEVELS COMPLY WITH THE CURRENT VERSION OF THE NHBC TECHNICAL STANDARDS AND THE BUILDING REGULATIONS PART M. IF CLARIFICATION OR DESIGN CHANGE IS REQUIRED, THE CONTRACTOR SHALL WAIT FURTHER INSTRUCTION FROM CALA BEFORE PROCEEDING.
- THE CONTRACTOR IS TO PROVIDE AS-BUILT RECORDS IN PDF AND DWG FORMAT FOR THE FULL EXTENT OF THE WORKS. THIS IS TO INCLUDE (BUT NOT LIMITED TO) ALL SERVICES, HIGHWAYS, DRAINAGE, RETAINING STRUCTURES, AND ALL EXTERNAL AREAS.

MANHOLE COVERS AND FRAMES SHOULD BE OF A TYPE SUITABLE FOR THE LOADS AND THE CONDITIONS WHERE THEY ARE TO BE USED. COVERS AND FRAMES SHOULD COMPLY WITH BS EN 124 AND SHOULD BE SELECTED AS FOLLOWS:

- CLASS A15: AREAS USED BY PEDESTRIANS AND PEDAL CYCLISTS.
- CLASS B125: FOOTWAYS, PEDESTRIAN AREAS, AND COMPARABLE AREAS, CAR PARKS OR CAR PARKING DECKS.
- CLASS C250: KERBSIDE CHANNELS OF ROADS.
- CLASS D400: CARRIAGEWAYS OF ROADS, HARD SHOULDERS AND PARKING AREAS FOR ALL TYPES OF ROAD VEHICLES

PROPOSED TREES ARE SHOWN AS GREEN, EXISTING TREES ARE IN THE TOPO AS GREY.

PIPES >450mm TO BE CONCRETE BS EN 1916:2002 CLASS 120. PIPES <450mm TO BE PVC-U TO BS EN 13476-3 (FUNKIE HS OR SIMILAR APPROVED).

MANHOLE COVERS AND FRAMES SHOULD BE OF A TYPE SUITABLE FOR THE LOADS AND THE CONDITIONS WHERE THEY ARE TO BE USED. COVERS AND FRAMES SHOULD COMPLY WITH BS EN 124 AND SHOULD BE SELECTED AS FOLLOWS:

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- CLASS C250: KERBSIDE CHANNELS OF ROADS.
- CLASS D400: CARRIAGEWAYS OF ROADS, HARD SHOULDERS AND PARKING AREAS FOR ALL TYPES OF ROAD VEHICLES

KEY PLAN 1:2000

Client

Project Name

LAND NORTH OF WATER LANE
ANGMERING

Title

DOMESTIC DRAINAGE LAYOUT
SHEET 13 OF 22

Project Phase

DETAILED DESIGN

Checked By	Checked Date	Drawn By	Drawn Date
RW	12.08.22	LC	22.04.22

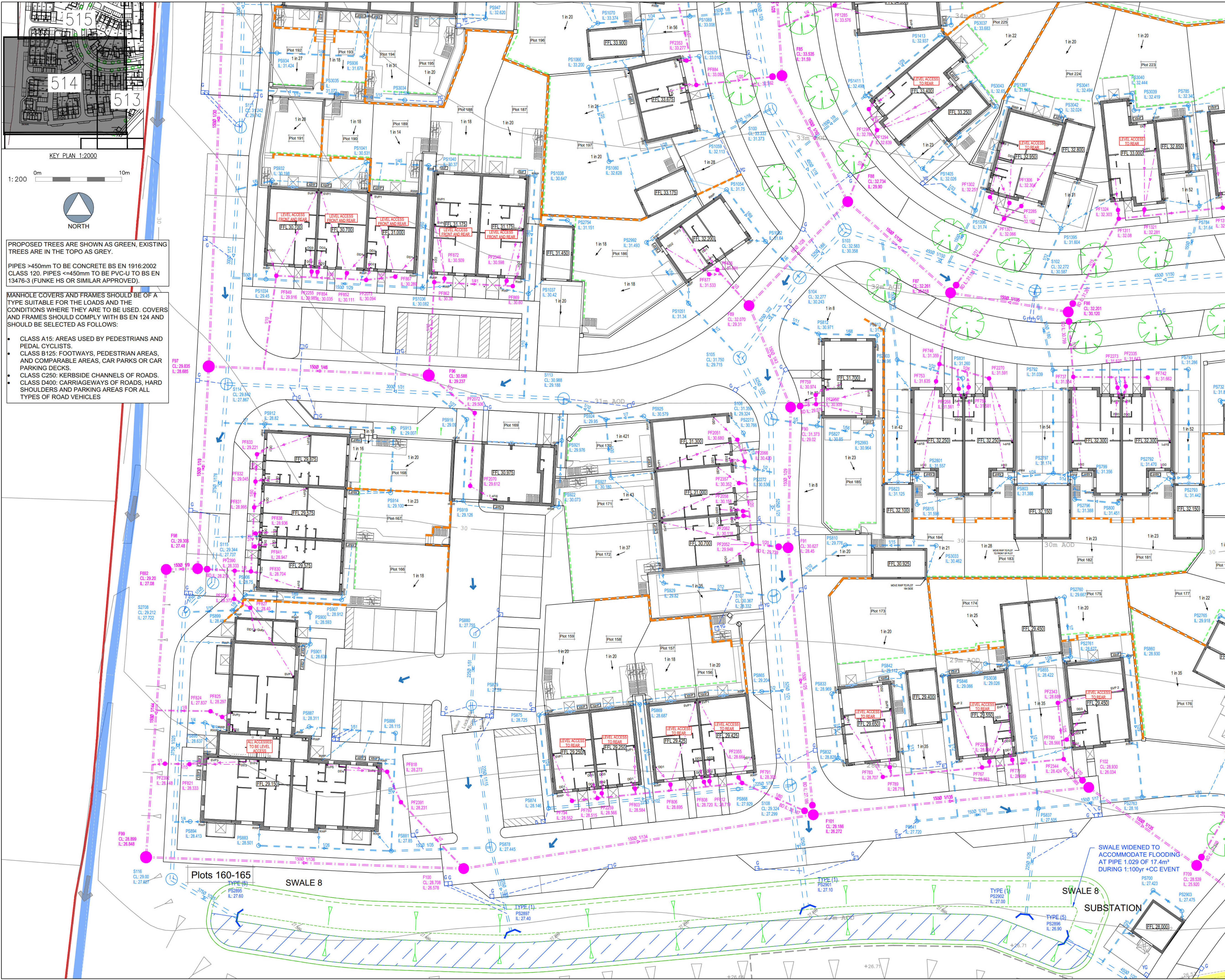
Client Drawing No.

PBA Drawing No.

189.5005.513

Revision

K



PROPOSED TREES ARE SHOWN AS GREEN, EXISTING TREES ARE IN THE TOPO AS GREY.

PIPES >450mm TO BE CONCRETE BS EN 1916:2002 CLASS 120. PIPES <450mm TO BE PVC-U TO BS EN 13476-3 (FUNKE HS OR SIMILAR APPROVED).

MANHOLE COVERS AND FRAMES SHOULD BE OF A TYPE SUITABLE FOR THE LOADS AND THE CONDITIONS WHERE THEY ARE TO BE USED. COVERS AND FRAMES SHOULD COMPLY WITH BS EN 124 AND SHOULD BE SELECTED AS FOLLOWS:

- CLASS A15: AREAS USED BY PEDESTRIANS AND PEDAL CYCLISTS.
- CLASS B125: FOOTWAYS, PEDESTRIAN AREAS, AND COMPARABLE AREAS, CAR PARKS OR CAR PARKING DECKS.
- CLASS C250: KERBSIDE CHANNELS OF ROADS.
- CLASS D400: CARRIAGEWAYS OF ROADS, HARD SHOULDERS AND PARKING AREAS FOR ALL TYPES OF ROAD VEHICLES

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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.
ARCH LAYOUT - 03033 EWP (21.10.2024)
SOILFILL - SF007 PROPOSED CONTOURS (05.07.2023)
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.

LEGEND

- LAND OWNERSHIP BOUNDARY
- PRIVATE SURFACE
- PRIVATE FOUL
- RWP & SVP LATERALS (WITH 100mm CONNECTION)
- PROPOSED DITCH BED LEVEL
- FOUL WATER MANHOLE
- PRIVATE FOUL WATER CHAMBER
- PRIVATE SURFACE WATER MANHOLE
- SURFACE WATER MANHOLE
- YARD GULLY (WITH 150mm Ø OUTLET)
- ROAD GULLY (WITH 150mm Ø OUTLET)
- HEADWALL
- ACO-DRAIN W/ 100 Ø OUTLET PIPE
- PASSIVE GARDEN FILTER DRAIN
- RETAINING WALLS
- 100 Ø ASPH OUTLET
- EXCEEDANCE FLOW PATHS
- WATERCOURSE FLOW PATHS
- EXISTING DITCH TO REMAIN
- PROPOSED DITCH TO BE INSTALLED
- EXISTING DITCH/CULVERT TO BE ABANDONED/FILLED
- PROPOSED CULVERTED WATERCOURSES ALL CULVERT MANHOLES TO BE SUMP TYPE
- IMPERMEABLE MEMBRANE
- DUMMY PIPES REF FOR CALCULATIONS
- ROOT PROTECTION AREA

CALA HOMES STANDARD NOTES

1. THE CONTRACTOR SHALL REVIEW ALL DOCUMENTS, DRAWINGS, REPORTS AND SURVEYS PROVIDED ON VENDOR PRIOR TO COMMENCING WORK ON SITE. THIS SHALL INCLUDE THE CALA HOMES CONSTRUCTION SPECIFICATION. ANY DISCREPANCIES OR GAPS SHALL BE REPORTED TO THE TECHNICAL DEPARTMENT AT CALA HOMES IMMEDIATELY.
2. THE CONTRACTOR IS RESPONSIBLE FOR POSITIVELY IDENTIFYING ALL SERVICES ON SITE AND REPORTING THE POSITION AND DEPTH TO THE TECHNICAL DEPARTMENT AT CALA HOMES. WHEREVER POSSIBLE NON-INTRUSIVE METHODS, SUCH AS GPR, SHOULD BE USED.
3. THE CONTRACTOR IS TO STRIP THE SITE TOPSOIL IN SECTIONS, USING TRACKED EQUIPMENT AND IN DRY CONDITIONS. TOPSOIL AND SUBSOIL ARE TO BE STORED IN SEED STOCK PILES TO PROTECT THEM FROM EROSION. PRIOR TO PLACING TOPSOIL, THE SUBSOIL SHOULD BE RIPPED USING A SINGLE TYPE RIPPER TO A SUITABLE DEPTH TO ENCOURAGE POSITIVE DRAINAGE OF THE SOIL.
4. IN-SITU OR TESTS SHALL BE UNDERTAKEN FOR EACH SECTION OF HIGHWAY AT INTERVALS OF 25M OR LESS. RESULTS TO BE SUBMITTED TO THE TECHNICAL DEPARTMENT AT CALA HOMES FOR APPROVAL PRIOR TO CARRIAGEWAY CONSTRUCTION.
5. ALL DRAINAGE WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE DESIGN AND CONSTRUCTION GUIDANCE (DSC), AND THE BUILDING REGULATIONS "APPROVED DOCUMENT" IF ANY DISCREPANCIES SHOULD BE REPORTED TO CALA FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORKS.
6. ALL MANHOLE CHAMBER COVERS TO BE INSTALLED PARALLEL TO FINAL KERBS, EDGINGS, PAWING JOINTS OR BUILDING LINES AS APPROPRIATE. THE MANHOLE COVER SHALL BE PLACED ENTIRELY WITHIN ONE SURFACE FINISH.
7. THE CONTRACTOR IS TO SEEK APPROVAL FROM THE TECHNICAL DEPARTMENT AT CALA HOMES PRIOR TO ORDERING ANY PERFECT MANHOLES.
8. ON COMPLETION OF EACH BUILD AREA THE CONTRACTOR SHALL JET CLEAN AND COV ALL DRAINAGE AND PROVIDE A COPY OF THE VIDEO FOOTAGE AND PDF REPORT TO CALA. THE REPORT SHALL INCLUDE AN EXECUTIVE SUMMARY OF THE FINDINGS AND A SCHEMATIC OF THE DRAINAGE LAYOUT.
9. PRIOR TO FORMING EACH DWELLING ACCESS, THE CONTRACTOR SHALL CHECK THAT THE AS-BUILT LEVELS COMPLY WITH THE CURRENT VERSION OF THE NHBC TECHNICAL STANDARDS AND THE BUILDING REGULATIONS PART M. IF CLARIFICATION OR DESIGN CHANGE IS REQUIRED, THE CONTRACTOR SHALL WAIT FURTHER INSTRUCTION FROM CALA BEFORE PROCEEDING.
10. THE CONTRACTOR IS TO PROVIDE AS-BUILT RECORDS IN PDF AND DWG FORMAT FOR THE FULL EXTENT OF THE WORKS. THIS IS TO INCLUDE (BUT NOT LIMITED TO) ALL SERVICES, HIGHWAYS, DRAINAGE, RETAINING STRUCTURES, AND ALL EXTERNAL AREAS.

Rev	Description	Date	By	Chkd
H	REVISED TO SOUTHERN WATER COMMENTS	13.02.25	RL	LC
G	NEW ARCHITECT LAYOUT	29.10.24	MW	COH

Paul Basham Associates Ltd
The Botley, Combs Hall Estate, Fareham, PO16 8UT
01329 711 000
info@paulbashamassociates.com www.paulbashamassociates.com



Project Name LAND NORTH OF WATER LANE ANGMERING			
Title DOMESTIC DRAINAGE LAYOUT SHEET 14 OF 22			
Project Phase DETAILED DESIGN			
Checked By RW	Checked Date 12.08.22	Drawn By LC	Drawn Date 22.04.22
Client Drawing No. -		Scale 1:200	(AT A1 SIZE)
PBA Drawing No. 189.5005.514		Revision H	