

Project Title
KEYMER ROAD

Report Title
SuDS Verification Report –
Phase 1

Document Reference:
3195-002

Prepared For
Thakeham Burgess Hill LLP

Date
June 2025

1 Paris Garden
London
SE1 8ND

T +44 (0)20 3773 7880
E london@robertwest.co.uk
W www.robertwest.co.uk



Consulting Engineers

Registered office: 147A High Street, Waltham Cross, Hertfordshire, EN8 7AP Registered in Cardiff No: 2901674
Robert West Consulting Ltd (trading as Robert West)

Status	Details of Amendments	Date	Checked	Approved
P01	Issue for comments	20/11/24	BS	GK
P02	Issue for submission	25/11/24	BS	GK
P03	Second issue for submission	06/02/25	GK	GK
P04	Additional photos added	21/03/25	GK	GK
P05	Additional photos added	26/03/25	GK	GK
P06	Additional photos added	06/06/25	GK	GK
P07	Additional photos added	11/06/25	GK	GK

CONTENTS

CHAPTER	PAGE
EXECUTIVE SUMMARY	1
1.0 DRAINAGE STRATEGY – PLANNING SUBMISSION	2
2.0 SURFACE WATER DRAINAGE – DETAILED DESIGN	3
3.0 SURFACE WATER DRAINAGE – AS BUILT	4
4.0 CONCLUSION	5

APPENDICES

APPENDIX A – INITIAL DRAINAGE STRATEGY LAYOUT

APPENDIX B –DETAILED DESIGN DRAINAGE DRAWINGS (BASIN 1 SUB-CATCHMENT)

APPENDIX C – CONSTRUCTION PHOTOGRAPHS

APPENDIX D – AS-BUILT

APPENDIX E – CONTRACTOR’S STATEMENT

EXECUTIVE SUMMARY

- I. Thakeham Burgess Hill LLP (hereafter referred to as Thakeham) have commissioned Robert West Consulting (RWC) to prepare a SuDS Verification Report following the construction of the surface water drainage system for the proposed housing development at Land east of Keymer Road and south of Folders Lane, Burgess Hill. Grid reference TQ 3212017788.
- II. The residential development consists of 260 plots constructed across an area of 15.5ha. This report covers Phase 1 which comprises 59 plots. Surface water run-off is discharging via a basin and a flow control restricted to 7.0 l/s into an existing water course located in the south-eastern side of the site.
- III. This verification report has been prepared to discharge condition 29 of Mid-Sussex District Council decision notice F/TH/22/0573:

“No dwelling, in any phase, shall be first occupied until a verification report, (appended with substantiating evidence demonstrating the approved construction details and specifications have been implemented in accordance with the surface water drainage scheme for that phase), has been submitted to and approved in writing by the Local Planning Authority. The verification report shall include photographs of excavations and soil profiles/horizons, any installation of any surface water structure and control mechanisms. The verification report should clearly identify the individual plot numbers to which the details relate in order to allow these plots to be occupied, whilst other dwellings within the same phase are still under construction.”
- IV. The purpose of this report is to summarise the conclusion of the post construction inspections and to review the as-built drainage system, its compliance, and to acknowledge any departure from the agreed detailed drainage designs produced by RWC and the drainage strategy produced by Glanville Consultants.

1.0 DRAINAGE STRATEGY – PLANNING SUBMISSION

- 1.1 As part of the Original Planning Application, Glanville Consultants prepared on behalf of Thakeham and Charles Church Developments Ltd, a Flood Risk Assessment reference 016-8210962-CS, dated April 2023. The initial drainage strategy layout can be seen in Appendix A.
- 1.2 As the Planning permission relates to the wider site, Thakeham and Persimmon/Charles Church have their own catchments and the verification reports will be submitted separately.
- 1.3 The Thakeham site has 3 sub-catchments areas with outfalls from basins 1, 2 and 3 and a report will be submitted for each sub-catchment area once the works are completed.
- 1.4 Drainage strategy drawings submitted with the planning application indicated the proposed surface water and foul water drainage layouts. The principal SuDS features identified in these drawings and the associated strategy report included:
 - Basin 1 within the Thakeham site, located to the south of the site in a landscaped area (approximate volume of 1700m³) to discharge surface water restricted to 7.0 l/s into the existing water course.
 - Lined permeable paving to provide additional attenuation on the system.

2.0 SURFACE WATER DRAINAGE – DETAILED DESIGN

- 2.1 Following the planning stage RWC developed the detailed drainage design for construction. RWC can confirm that in this period 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.
- 2.2 During the detailed designed RWC proposed not to install permeable paving because the benefits to the drainage system was minimal as the proposed Basin 1 was sufficient for the necessary attenuation. LLFA approved this design as part of Condition 10 under planning reference DM/23/2077.
- 2.3 Accordingly, RWC can confirm that there have been no significant deviations from the general principals of the drainage strategy approved under planning condition, as these supersede the Glanville drainage strategy.
- 2.4 The final construction issue of RWC drainage layouts is appended to this report in Appendix B.

3.0 SURFACE WATER DRAINAGE – AS BUILT

- 3.1 A site visit has been carried out by an Engineer from RWC on the 9th of October 2024 which confirmed that Basin 1 and the relevant drainage features have been built.
- 3.2 Photographs were taken by the contractor to verify the construction of the key surface water drainage features, and are included in Appendix C.
- 3.3 As-built locations of chambers and pipes have been provided by the Contractor at a later stage and have been included in Appendix D. Robert West can confirm that the chambers have been built at the right locations. However, there were some minor changes between the proposed and as-built levels which however do not affect the efficiency of the surface water system.
- 3.4 The Contractor confirmed that the construction of the pond and surface water systems were in accordance with RWC drawings. The statement can be seen in Appendix E.
- 3.5 The Contractor noted the following regarding the construction of the pond:
- Topsoiling and landscaping will be completed once weather conditions are suitable.
 - No ground water was encountered during earthworks for the pond.
 - The pond was constructed by using subsoil and topsoil from site.

4.0 CONCLUSION

- 4.1 Photograph evidence and as-built information of Phase 1 surface water drainage have been provided, demonstrating that all the critical surface water drainage elements were constructed sufficiently.
- 4.2 RWC confirms that the constructed surface water drainage for Phase 1 matches the design that has been approved by Mid-Sussex District Council and West Sussex County Council with construction carried out to a good degree of workmanship, and any variations through the construction process will not affect the operation, maintenance, or performance of the drainage system.
- 4.3 RWC hereby recommends the discharge of Condition 29 with respect to Phase 1 of the development.

Appendix A – Initial Drainage Strategy Layout

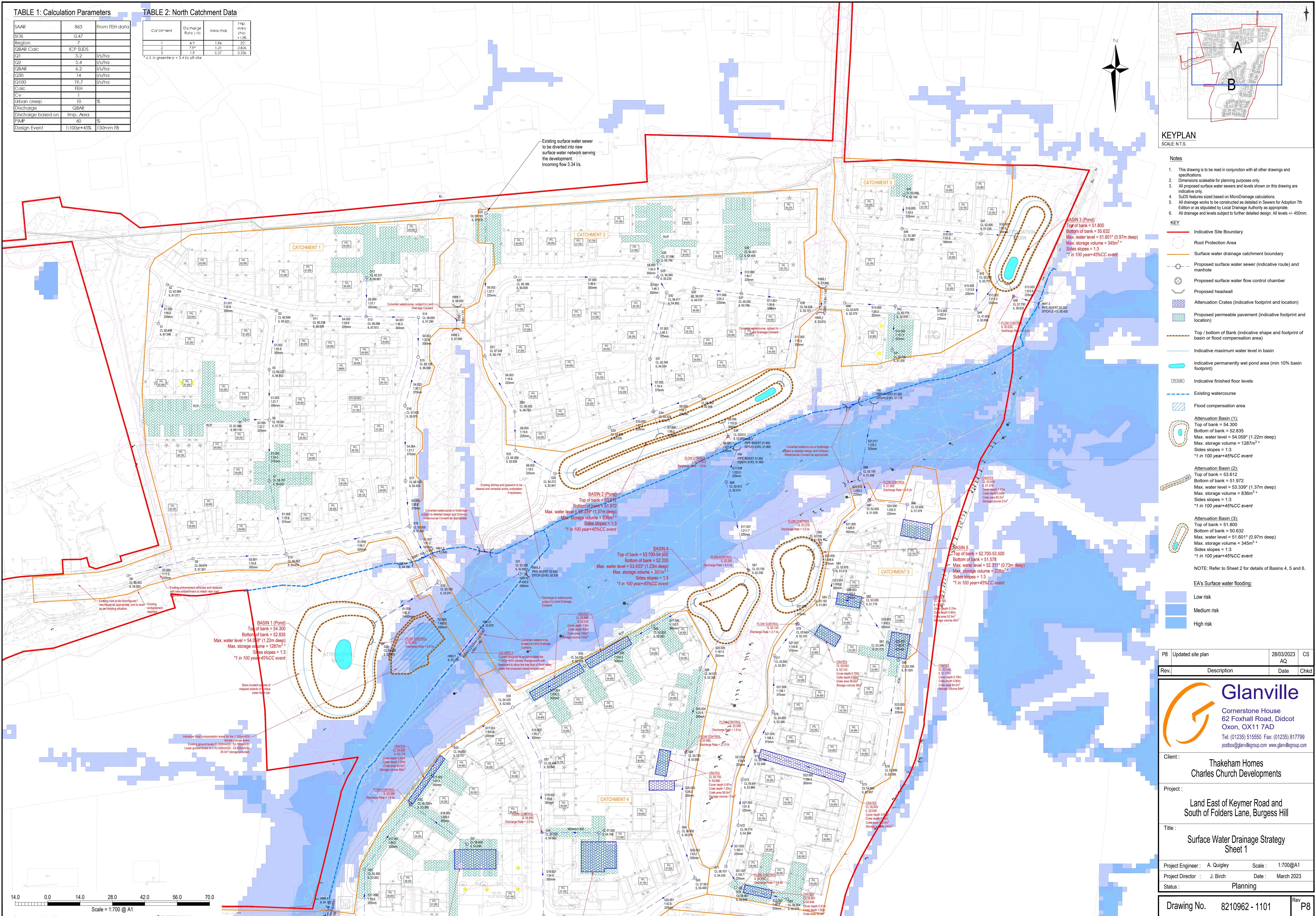
TABLE 1: Calculation Parameters

SAAR	863	From FEH data
Soil	0.47	
Region	7	
QBAR Calc	ICP SUDS	
Q1	5.2	l/s/ha
Q2	5.4	l/s/ha
QBAR	6.2	l/s/ha
Q30	14	l/s/ha
Q100	19.7	l/s/ha
Calc	FEH	
Cv		
Urban creep	10	%
Discharge	QBAR	
Discharge based on	Imp. Area	
PIMP	60	%
Design Event	1:100yr+45%	150mm FB

TABLE 2: North Catchment Data

Catchment	Discharge Rate (l/s)	Area (ha)	Imp. Area (ha)
1	6.5	1.85	1.05
2	7.9	1.81	0.80
3	1.9	0.57	0.33

* 4.5% greenfield + 3.4% built-up



P8	Updated site plan	28/03/2023	CS
Rev.	Description	Date	Chkd

Glanville
Cornerstone House
62 Foxhall Road, Didcot
Oxon, OX11 7AD
Tel: (01235) 515550 Fax: (01235) 817799
postbox@glanvillegroup.com www.glanvillegroup.com

Client : Thakeham Homes
Charles Church Developments

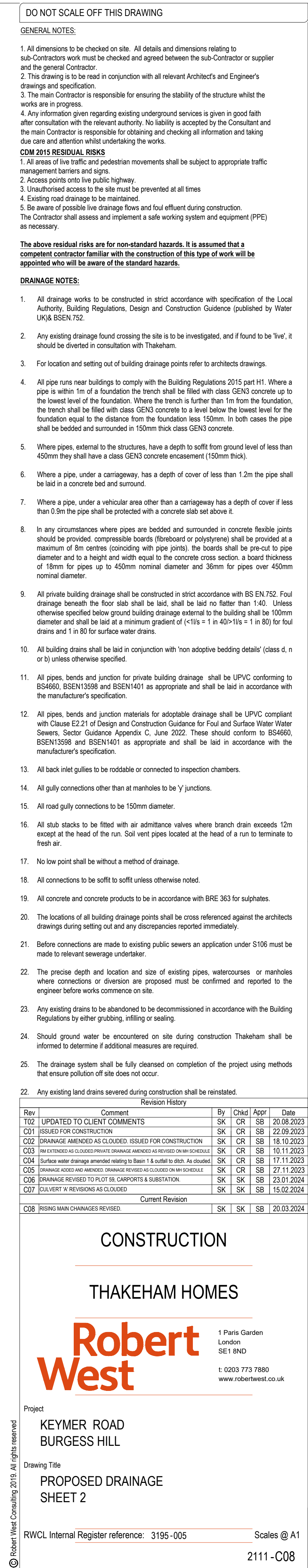
Project : Land East of Keymer Road and
South of Folders Lane, Burgess Hill

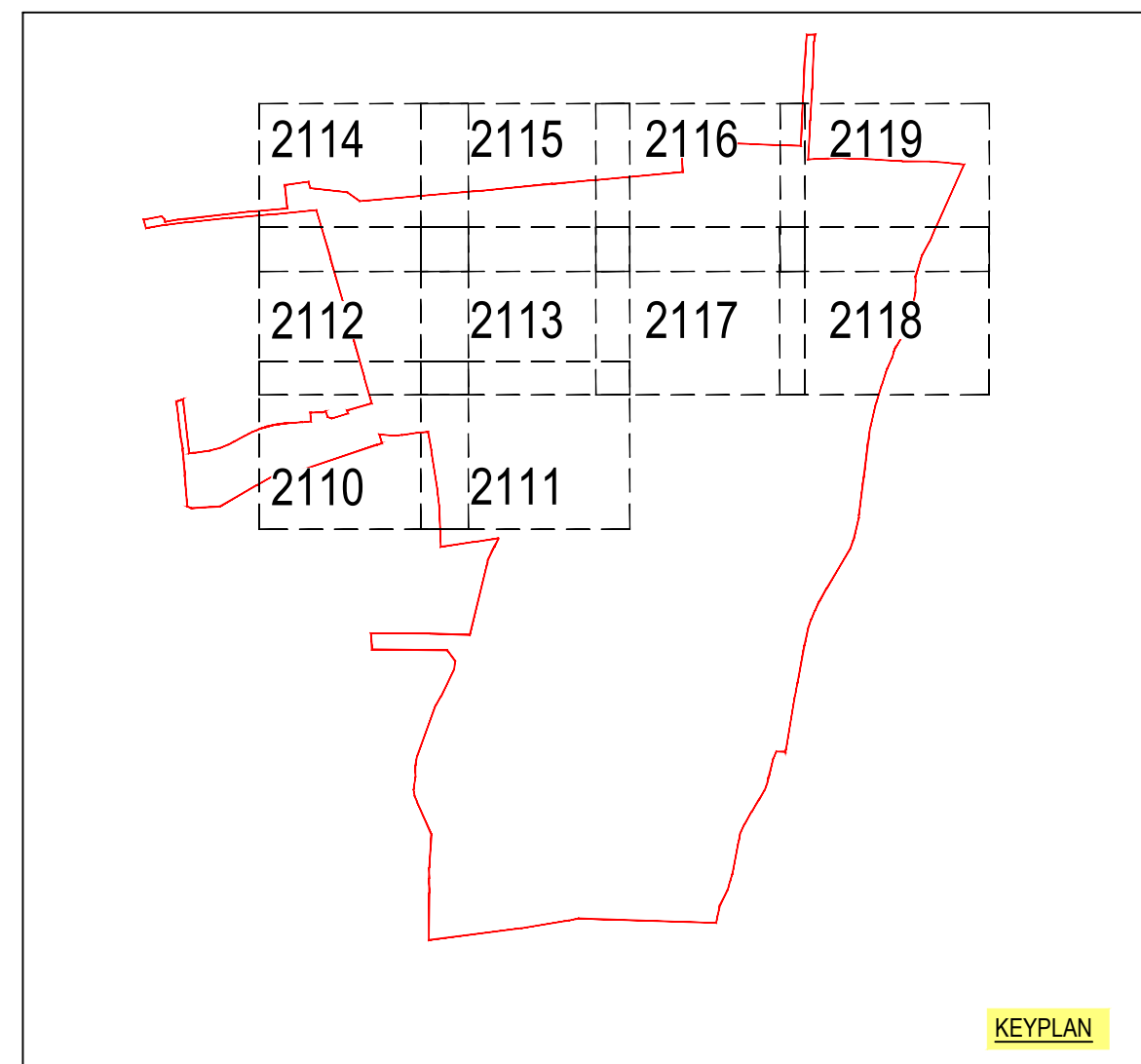
Title : Surface Water Drainage Strategy
Sheet 1

Project Engineer : A. Quigley Scale : 1:700@A1
Project Director : J. Birch Date : March 2023
Status : Planning

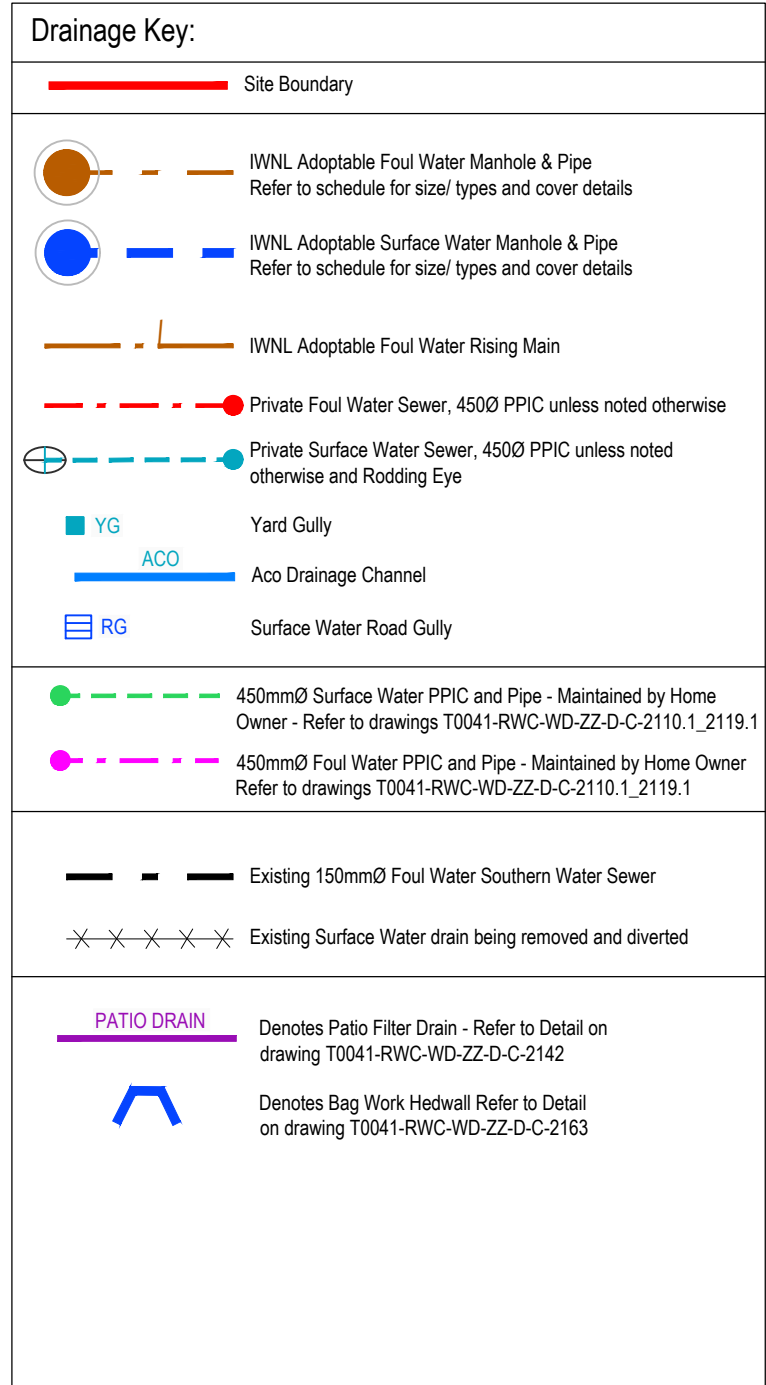
Drawing No. 8210962 - 1101 Rev P8

Appendix B –Detailed Design Drainage Drawings (Basin 1 Sub-catchment)



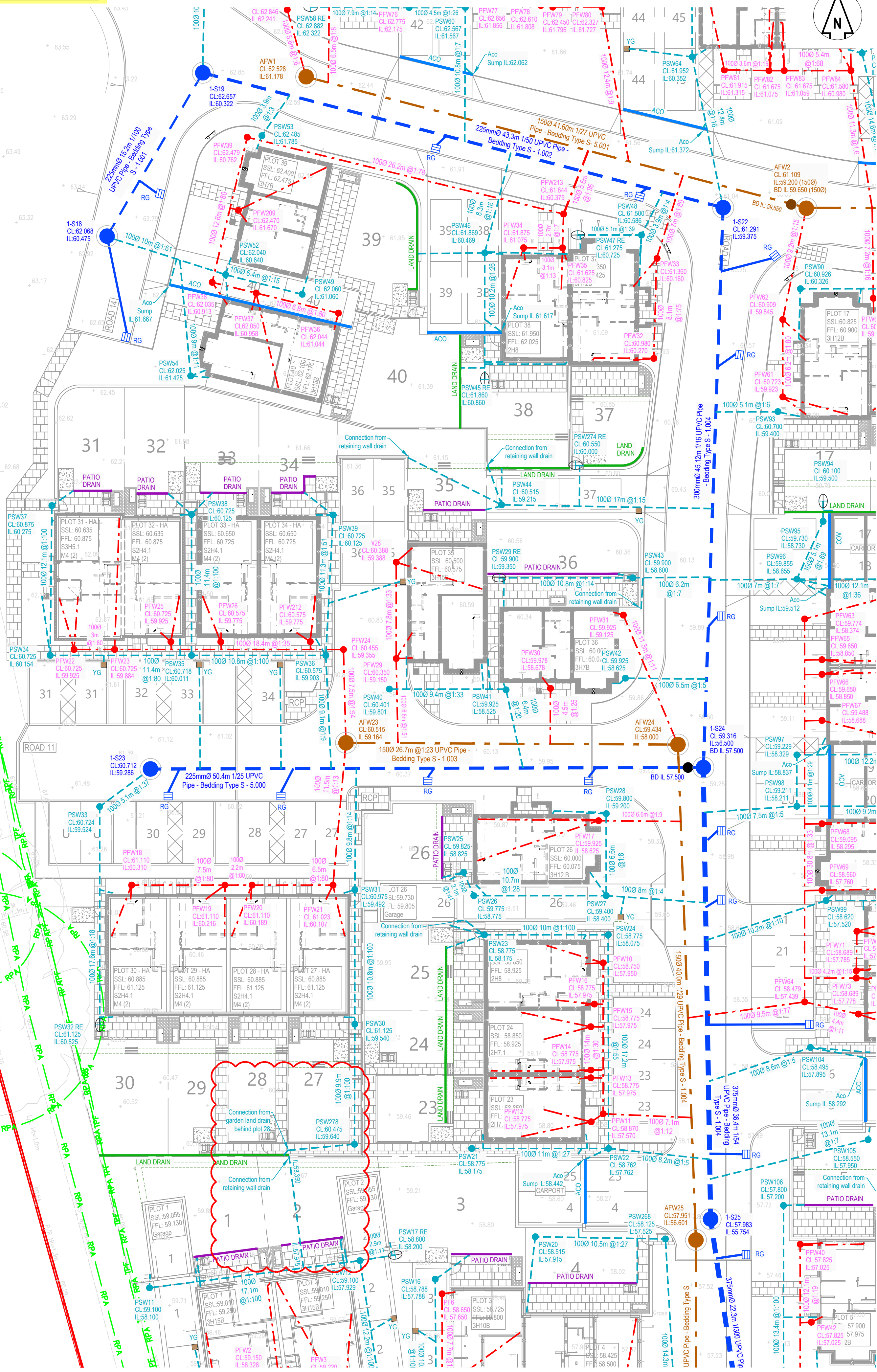


For continuation refer to drawing H093-RWC-WD-ZZ-D-C-2114



Scale 1:200 @ A1 - 1:400 @ A3
4m 0 4m 8m 12m 16m 20m

For continuation refer to drawing H093-RWC-WD-ZZ-D-C-2110



DO NOT SCALE OFF THIS DRAWING

- GENERAL NOTES:
- All dimensions to be checked on site. All details and dimensions relating to sub-Contractors work must be checked and agreed between the sub-Contractor or supplier and the general Contractor.
 - This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and specification.
 - The main Contractor is responsible for ensuring the stability of the structure whilst the works are in progress.
 - Any information given regarding existing underground services is given in good faith after consultation with the relevant authority. No liability is accepted by the Consultant and the main Contractor is responsible for obtaining and checking all information and taking due care and attention whilst undertaking the works.
- CDM 2015 RESIDUAL RISKS
- All areas of live traffic and pedestrian movements shall be subject to appropriate traffic management barriers and signs.
 - Access points onto live public highway.
 - Unauthorised access to the site must be prevented at all times
 - Existing road drainage to be maintained.
 - Be aware of possible live drainage flows and full efluent during construction.
- The Contractor shall assess and implement a safe working system and equipment (PPE) as necessary.

The above residual risks are for non-standard hazards. It is assumed that a competent contractor familiar with the construction of this type of work will be appointed who will be aware of the standard hazards.

- DRAINAGE NOTES:
- All drainage works to be constructed in strict accordance with specification of the Local Authority, Building Regulations, Design and Construction Guidance (published by Water UK) BS EN 752.
 - Any existing drainage found crossing the site is to be investigated, and if found to be 'live', it should be diverted in consultation with Thakeham.
 - For location and setting out of building drainage points refer to architects drawings.
 - All pipe runs near buildings to comply with the Building Regulations 2015 part H1. Where a pipe is within 1m of a foundation the trench shall be filled with class GEN3 concrete up to the lowest level of the foundation. Where the trench is further than 1m from the foundation, the trench shall be filled with class GEN3 concrete to a level below the lowest level for the foundation equal to the distance from the foundation less 150mm. In both cases the pipe shall be bedded and surrounded in 150mm thick class GEN3 concrete.
 - Where pipes, external to the structures, have a depth to soffit from ground level of less than 450mm they shall have a class GEN3 concrete encasement (150mm thick).
 - Where a pipe, under a carriageway, has a depth of cover of less than 1.2m the pipe shall be laid in a concrete bed and surround.
 - Where a pipe, under a vehicular area other than a carriageway has a depth of cover if less than 0.3m the pipe shall be protected with a concrete slab set above it.
 - In any circumstances where pipes are bedded and surrounded in concrete flexible joints should be provided; compressible boards (fibreglass or polystyrene) shall be provided at a maximum of 8m centres (conforming with pipe joints), the boards shall be pre-cut to pipe diameter and to a height and width equal to the concrete cross section, a board thickness of 18mm for pipes up to 450mm nominal diameter and 36mm for pipes over 450mm nominal diameter.
 - All private building drainage shall be constructed in strict accordance with BS EN 752. Foul drainage beneath the floor slab shall be laid, shall be no flatter than 1:40. Where appropriate specified below ground building drainage external to the building shall be 100mm diameter and shall be laid at a minimum gradient of (1:15 = 1 in 40) to (1:8 = 1 in 80) for foul drains and 1 in 80 for surface water drains.
 - All building drains shall be laid in conjunction with 'non adoptive bedding details' (class d, n or b) unless otherwise specified.
 - All pipes, bends and junction for private building drainage shall be UPVC conforming to BS4660, BS EN13598 and BS EN1401 as appropriate and shall be laid in accordance with the manufacturer's specification.
 - All pipes, bends and junction materials for adoptable drainage shall be UPVC compliant with Clause E2.21 of Design and Construction Guidance for Foul and Surface Water Water Sewers, Sector Guidance Appendix C, June 2022. These should conform to BS4660, BS EN13598 and BS EN1401 as appropriate and shall be laid in accordance with the manufacturer's specification.
 - All back inlet gullies to be roddable or connected to inspection chambers.
 - All gully connections other than at manholes to be 'Y' junctions.
 - All road gully connections to be 150mm diameter.
 - All stub stacks to be fitted with air admittance valves where branch drain exceeds 12m except at the head of the run. Soil vent pipes located at the head of a run to terminate to fresh air.
 - No low point shall be without a method of drainage.
 - All connections to be sufficient to suit unless otherwise noted.
 - All concrete and concrete products to be in accordance with BRE 363 for sulphates.
 - The locations of all building drainage points shall be cross referenced against the architects drawings during setting out and any discrepancies reported immediately.
 - Before connections are made to existing public sewers an application under S106 must be made to relevant sewerage undertaker.
 - The precise depth and location and size of existing pipes, watercourses or manholes where connections or diversion are proposed must be confirmed and reported to the engineer before works commence on site.
 - Any existing drains to be abandoned to be decommissioned in accordance with the Building Regulations by either grubbing, infilling or sealing.
 - Should ground water be encountered on site during construction Thakeham shall be informed to determine if additional measures are required.
 - The drainage system shall be fully cleaned on completion of the project using methods that ensure pollution off site does not occur.
 - Any existing land drains severed during construction shall be reinstated.

Revision History

Rev	Comment	By	Chkd	Appr	Date
C02	DRAINAGE AMENDED AS CLOUDED. ISSUED FOR CONSTRUCTION	SK	CR	SB	18.10.2023
C03	RAW EXTENDED AS CLOUDED PRIVATE DRAINAGE AMENDED AS REVISED ON ICH SCHEDULE	SK	CR	SB	10.11.2023
C04	DRAINAGE AMENDED AND REVERSED DRAINAGE REVERSED AS CLOUDED FROM ICH SCHEDULE	SK	CR	SB	27.11.2023
C05	DRAINAGE REVERSED TO PLOT 30. CARPORTS A SUBSTATION.	SK	SK	SB	23.01.2024
C06	PSW104 AMENDED TO SUIT ADDITIONAL PATH AND DROPPED KERB	SK	SK	SB	05.03.2024
C07	RODDING EYE ADDED AS CLOUDED.	SK	SK	SB	20.03.2024
C08	DRAINAGE CORRECTED FROM ICH TO PLOT 21. REVERSE DRAINAGE AMENDED	SK	SK	SB	12.06.2024
C09	ADDITIONAL NOTES FOR RETAINING WALL DRAINAGE ADDED AS CLOUDED.	SK	SK	SB	13.06.2024

Current Revision

C10	DRAINAGE AMENDED AS CLOUDED.	SK	SK	SB	19.06.2024
-----	------------------------------	----	----	----	------------

CONSTRUCTION

THAKEHAM HOMES

Robert West

1 Paris Garden
London
SE1 8ND

t: 0203 773 7880
www.robertwest.co.uk

Project
KEYMER ROAD
BURGESS HILL

Drawing Title
PROPOSED DRAINAGE
SHEET 3

RWCL Internal Register reference: 3195-005 Scales @ A1

© Robert West Consulting 2019. All rights reserved

2112-C10

For continuation refer to drawing H093-RWC-WD-ZZ-D-C-2115

DO NOT SCALE OFF THIS DRAWING

GENERAL NOTES:

- All dimensions to be checked on site. All details and dimensions relating to sub-contractors work must be checked and agreed between the sub-contractor or supplier and the general Contractor.
- This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and specification.
- The main Contractor is responsible for ensuring the stability of the structure whilst the works are in progress.
- Any information given regarding existing underground services is given in good faith after consultation with the relevant authority. No liability is accepted by the Consultant and the main Contractor is responsible for obtaining and checking all information and taking due care and attention whilst undertaking the works.
- CDM 2015 RESIDUAL RISKS
- All areas of live traffic and pedestrian movements shall be subject to appropriate traffic management barriers and signs.
- Access points onto live public highway.
- Unauthorised access to the site must be prevented at all times.
- Existing road drainage to be maintained.
- Be aware of possible live drainage flows and foul effluent during construction.
- The Contractor shall assess and implement a safe working system and equipment (PPE) as necessary.

The above residual risks are for non-standard hazards. It is assumed that a competent contractor familiar with the construction of this type of work will be appointed who will be aware of the above hazards.

DRAINAGE NOTES:

- All drainage works to be constructed in strict accordance with specification of the Local Authority, Building Regulations, Design and Construction Guidance (published by Water UK) BS EN 752.
- Any existing drainage found crossing the site is to be investigated, and if found to be 'live', it should be diverted in consultation with Thakeham.
- For location and setting out of building drainage points refer to architects drawings.
- All pipe runs near buildings to comply with the Building Regulations 2015 part H1. Where a pipe is within 1m of a foundation and the boards (flexible joints) shall be provided at the lowest level of the foundation. Where the trench is found to be less than 1m from the foundation, the trench shall be filled with class GEN3 concrete to a level below the lowest level for the foundation equal to the distance from the foundation less 150mm. In both cases the pipe shall be bedded and surrounded in 150mm thick class GEN3 concrete.
- Where pipes, external to the structures, have a depth to soft from ground level of less than 450mm they shall have a class GEN3 concrete encasement (150mm thick).
- Where a pipe, under a carriageway, has a depth of cover of less than 1.2m the pipe shall be laid in a concrete bed and surround.
- Where a pipe, under a vehicular area such as a carriageway has a depth of cover of less than 0.9m the pipe shall be protected with a concrete slab set above it.
- In any circumstances where pipes are bedded and surrounded in concrete flexible joints should be provided, completed as follows: (flexible joints) shall be provided at a maximum of 8m centres (conforming with pipe joints), the boards shall be pre-cut to pipe diameter and to a height and width equal to the concrete cross section, a board thickness of 18mm for pipes up to 450mm nominal diameter and 30mm for pipes over 450mm nominal diameter.
- All private building drains shall be constructed in strict accordance with BS EN 752. Foul drainage beneath the floor slab shall be laid, shall be laid no flatter than 1:40. Unless otherwise specified below ground building drainage external to the building shall be 100mm diameter and shall be laid at a minimum gradient of $(1/10 = 1 \text{ in } 40) / (1/8 = 1 \text{ in } 80)$ for foul drains and 1 in 80 for surface water drains.
- All building drains shall be laid in conjunction with 'non adoptive bedding details' (class d, n or b) unless otherwise specified.
- All pipes, bends and junction for private building drainage shall be UPVC conforming to BS4660, BS EN 12201 and BS EN 12201 as appropriate and shall be laid in accordance with the manufacturer's specification.
- All pipes, bends and junction materials for adoptable drainage shall be UPVC compliant with Clause E2.21 of Design and Construction Guidance for Foul and Surface Water Water Sewers, Sector Guidance Appendix C, June 2022. These should conform to BS4660, BS EN 12201 and BS EN 12201 as appropriate and shall be laid in accordance with the manufacturer's specification.
- All back inlet gullies to be roddable or connected to inspection chambers.
- All gully connections other than at manholes to be 'Y' junctions.
- All road gully connections to be 150mm diameter.
- All stub stacks to be fitted with air admittance valves where branch drain exceeds 12m except at the head of the run. Soil vent pipes located at the head of a run to terminate to fresh air.
- No low point shall be without a method of drainage.
- All connections to be soffit to soffit unless otherwise noted.
- All concrete and concrete products to be in accordance with BRE 363 for sulphates.
- The locations of all building drainage points shall be cross referenced against the architects drawings during setting out and any discrepancies reported immediately.
- Before connections are made to existing public sewers an application under S106 must be made to relevant sewerage undertaker.
- The precise depth and location and size of existing pipes, watercourses or manholes where connections or diversion are proposed must be confirmed and reported to the engineer before works commence on site.
- Any existing drains to be abandoned to be decommissioned in accordance with the Building Regulations by either grubbing, infilling or sealing.
- Should ground water be encountered on site during construction Thakeham shall be informed to determine if additional measures are required.
- The drainage system shall be fully cleaned on completion of the project using methods that ensure pollution off site does not occur.
- Any existing land drains severed during construction shall be reinstated.

Revision History					
Rev	Comment	By	Chkd	Appr	Date
C01	ISSUED FOR CONSTRUCTION	SK	CR	SB	22.09.2023
C02	DRAINAGE AMENDED AS CLOUDED	ISSUED FOR CONSTRUCTION	SK	CR	18.10.2023
C03	MAN EXTENDED AS CLOUDED PRIVATE DRAINAGE AMENDED AS REVISED ON-SITE SCHEDULE	SK	CR	SB	10.11.2023
C04	DRAINAGE AMENDED AND AMENDED: DRAINAGE REVISED AS CLOUDED ON-SITE SCHEDULE	SK	CR	SB	27.11.2023
C05	DRAINAGE REVISED TO PLOT 59 CARPORTS & SUBSTATION	SK	SK	SB	23.01.2024
C06	REVISIONS TO DRAINAGE REVISED TO PLOT 59 CARPORTS & SUBSTATION	SK	SK	SB	20.03.2024
C07	REVISIONS TO DRAINAGE REVISED TO PLOT 59 CARPORTS & SUBSTATION	SK	SK	SB	12.06.2024
C08	ADDITIONAL NOTES FOR RETAINING WALL DRAINAGE ADDED AS CLOUDED	SK	SK	SB	13.06.2024
Current Revision					
C09	DRAINAGE amended as clouded in schedule for plots 108-120	SK	CR	SB	01.11.2024

CONSTRUCTION

THAKEHAM HOMES

Robert West

1 Paris Garden
London
SE1 8ND

T: 0203 773 7880
www.robertwest.co.uk

Project
KEYMER ROAD
BURGESS HILL

Drawing Title
PROPOSED DRAINAGE
SHEET 4

RWCL Internal Register reference: 3195-005

Scales @ A1

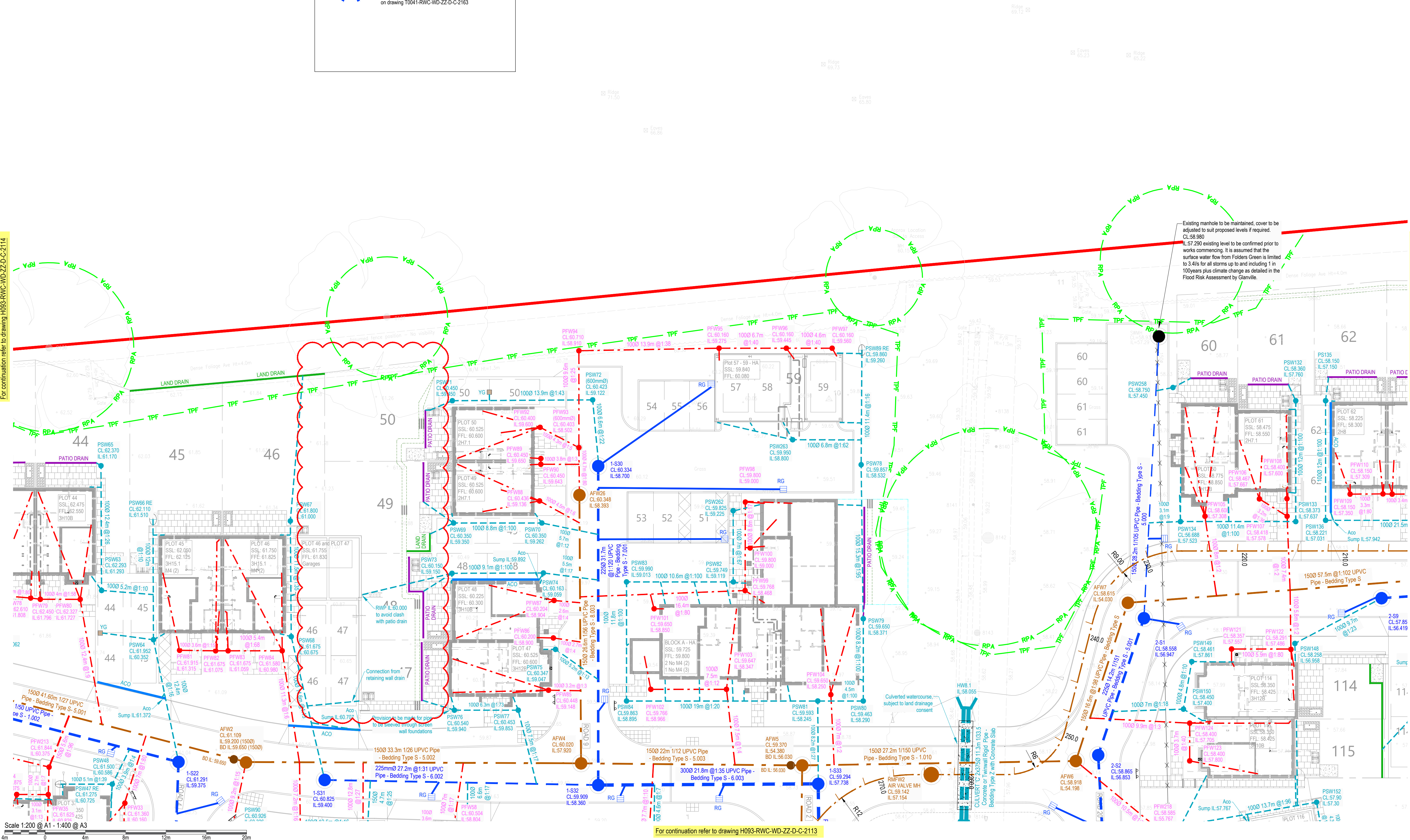
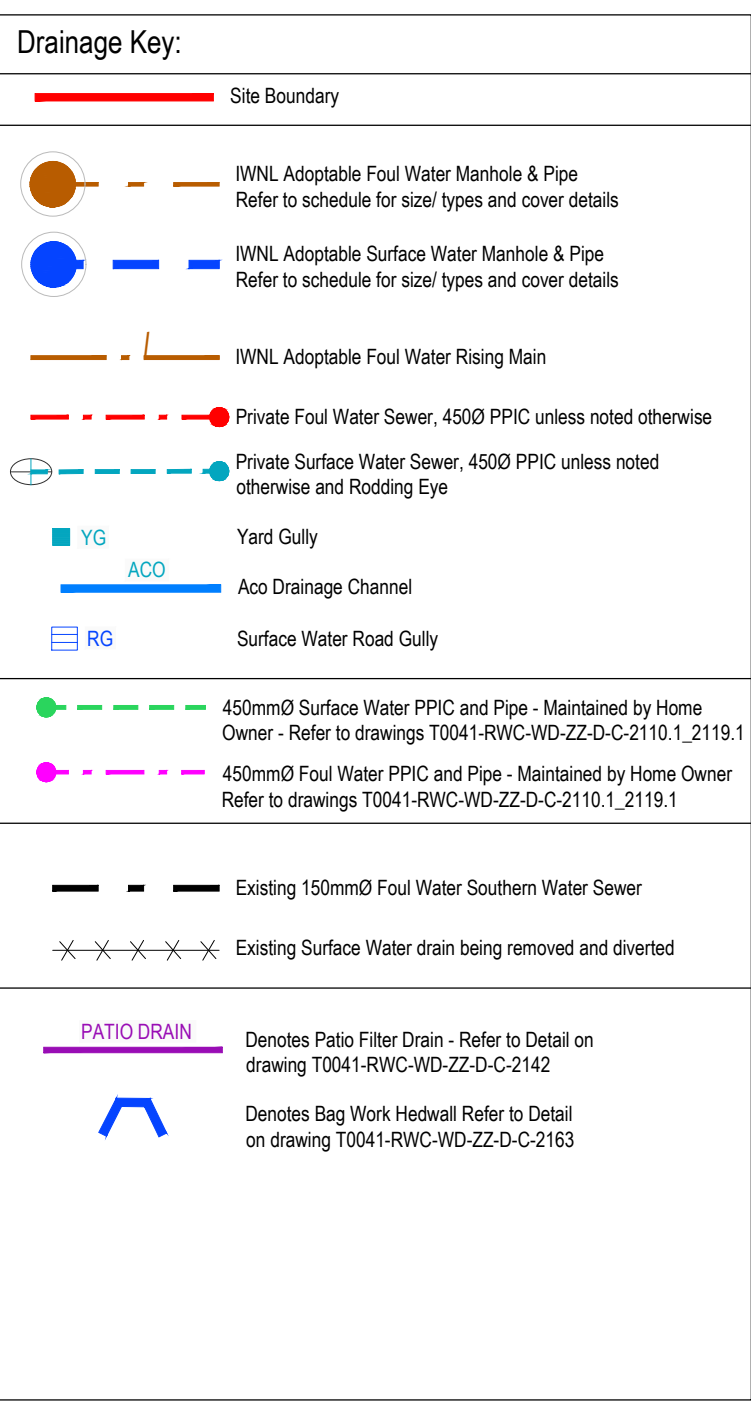
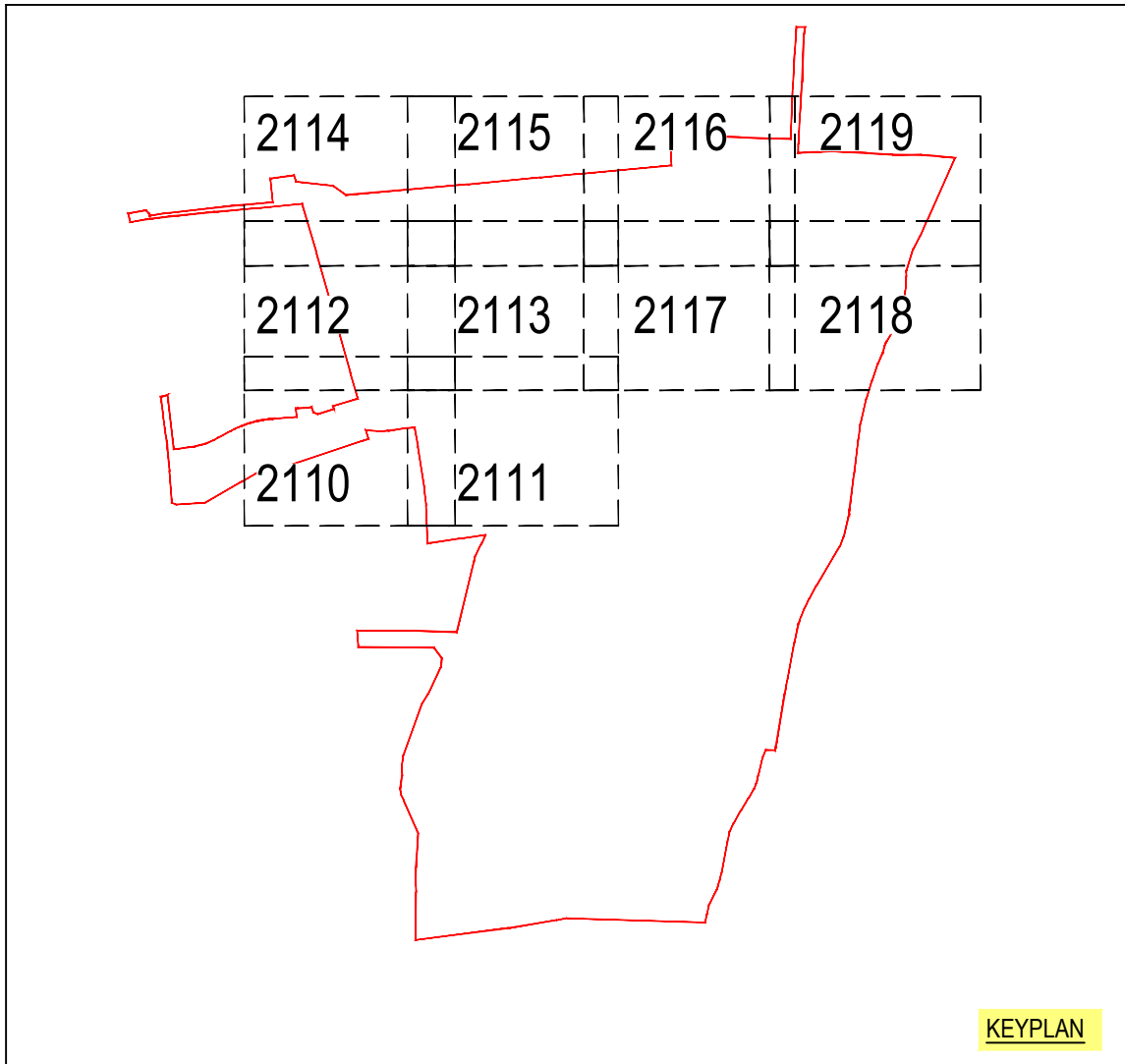
2113-C09

For continuation refer to drawing H093-RWC-WD-ZZ-D-C-2112

For continuation refer to drawing H093-RWC-WD-ZZ-D-C-2117

Scale 1:200 @ A1 - 1:400 @ A3

For continuation refer to drawing H093-RWC-WD-ZZ-D-C-2111



DO NOT SCALE OFF THIS DRAWING

GENERAL NOTES:

- All dimensions to be checked on site. All details and dimensions relating to sub-Contractors work must be checked and agreed between the sub-Contractor or supplier and the general Contractor.
- This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and specification.
- The main Contractor is responsible for ensuring the stability of the structure whilst the works are in progress.
- Any information given regarding existing underground services is given in good faith after consultation with the relevant authority. No liability is accepted by the Consultant and the main Contractor is responsible for obtaining and checking all information and taking due care and attention whilst undertaking the works.

CDM 2015 RESIDUAL RISKS

- All areas of live traffic and pedestrian movements shall be subject to appropriate traffic management barriers and signs.
- Access points onto live public highway.
- Unauthorised access to the site must be prevented at all times.
- Existing road drainage to be maintained.
- Be aware of possible live drainage flows and foul effluent during construction.

The Contractor shall assess and implement a safe working system and equipment (PPE) as necessary.

The above residual risks are for non-standard hazards. It is assumed that a competent contractor familiar with the construction of this type of work will be appointed who will be aware of the standard hazards.

DRAINAGE NOTES:

- All drainage works to be constructed in strict accordance with specification of the Local Authority, Building Regulations, Design and Construction Guidance (published by Water UK) & BS EN 752.
- Any existing drainage found crossing the site is to be investigated, and if found to be 'live', it should be diverted in consultation with Thakeham.
- For location and setting out of building drainage points refer to architects drawings.
- All pipe runs near buildings to comply with the Building Regulations 2015 part H1. Where a pipe is within 1m of a foundation the trench shall be filled with class GEN3 concrete up to the lowest level of the foundation. Where the trench is further than 1m from the foundation, the trench shall be filled with class GEN3 concrete to a level below the lowest level of the foundation equal to the distance from the foundation less 150mm. In both cases the pipe shall be bedded and surrounded in 150mm thick class GEN3 concrete.
- Where pipes, external to the structures, have a depth to soffit from ground level of less than 450mm they shall have a class GEN3 concrete encasement (150mm thick).
- Where a pipe, under a carriageway, has a depth of cover of less than 1.2m the pipe shall be laid in a concrete bed and surround.
- Where a pipe, under a vehicular area other than a carriageway has a depth of cover if less than 0.9m the pipe shall be protected with a concrete slab set above it.
- In any circumstances where pipes are bedded and surrounded in concrete flexible joints should be provided: compressible boards (fibroboard or polythene) shall be provided at a maximum of 8m centres (coinciding with pipe joints), the boards shall be pre-cut to pipe diameter and to a height and width equal to the concrete cross section, a board thickness of 18mm for pipes up to 450mm nominal diameter and 36mm for pipes over 450mm nominal diameter.
- All private building drainage shall be constructed in strict accordance with BS EN 752. Foul drainage beneath the floor slab shall be laid, shall be laid no flatter than 1:40. Otherwise otherwise specified below ground building drainage external to the building shall be 100mm diameter and shall be laid at a minimum gradient of (<1/16 = 1 in 40) 1/16 = 1 in 80 for foul drains and 1 in 80 for surface water drains.
- All building drains shall be laid in conjunction with 'non adoptive bedding details' (class d, n or b) unless otherwise specified.
- All pipes, bends and junction for private building drainage shall be UPVC conforming to BS4660, BS EN 13599 and BS EN 1401 as appropriate and shall be laid in accordance with the manufacturer's specification.
- All pipes, bends and junction materials for adoptable drainage shall be UPVC compliant with Clause E2.21 of Design and Construction Guidance for Foul and Surface Water Water Sewers, Sector Guidance Appendix C, June 2022. These should conform to BS4660, BS EN 13599 and BS EN 1401 as appropriate and shall be laid in accordance with the manufacturer's specification.
- All back inlet gullies to be roddable or connected to inspection chambers.
- All gully connections other than at manholes to be 'Y' junctions.
- All road gully connections to be 150mm diameter.
- All stub stacks to be fitted with air admittance valves where branch drain exceeds 12m except at the head of the run. Soil vent pipes located at the head of a run to terminate to fresh air.
- No low point shall be without a method of drainage.
- All connections to be soffit to soffit unless otherwise noted.
- All concrete and concrete products to be in accordance with BRE 363 for sulphates.
- The locations of all building drainage points shall be cross referenced against the architects drawings during setting out and any discrepancies reported immediately.
- Before connections are made to existing public sewers an application under S106 must be made to relevant sewerage undertaker.
- The precise depth and location and size of existing pipes, watercourses or manholes where connections or diversion are proposed must be confirmed and reported to the engineer before works commence on site.
- Any existing drains to be abandoned to be decommissioned in accordance with the Building Regulations by either grubbing, infilling or sealing.
- Should ground water be encountered on site during construction Thakeham shall be informed to determine if additional measures are required.
- The drainage system shall be fully cleaned on completion of the project using methods that ensure pollution off site does not occur.
- Any existing land drains severed during construction shall be reinstated.

Rev	Comment	By	Chkd	Appr	Date
T01	ISSUED FOR TENDER	SK	CR	SB	03.08.2023
T02	UPDATED TO CLIENT COMMENTS	SK	CR	SB	20.08.2023
C01	ISSUED FOR CONSTRUCTION	SK	CR	SB	22.09.2023
C02	DRAINAGE AMENDED AS CLOUDED. ISSUED FOR CONSTRUCTION	SK	CR	SB	18.10.2023
C03	RAW EXTENDED AS CLOUDED PRIVATE DRAINAGE AMENDED AS REVERSED ON DRAWING	SK	CR	SB	10.11.2023
C04	DRAINAGE AMENDED AS CLOUDED. DRAINAGE REVERSED AS CLOUDED DRAINAGE	SK	CR	SB	27.11.2023
C05	DRAINAGE REVERSED TO PLOT 5A CARPORTS & SUBSTATION	SK	CR	SB	23.01.2024
C06	REVERSE WATER CHANGES REVERSED AND WATER CHANGES REVERSED	SK	CR	SB	20.03.2024
C07	DRAINAGE AMENDED AS CLOUDED	SK	CR	SB	25.09.2024

CONSTRUCTION

THAKEHAM HOMES

Robert West

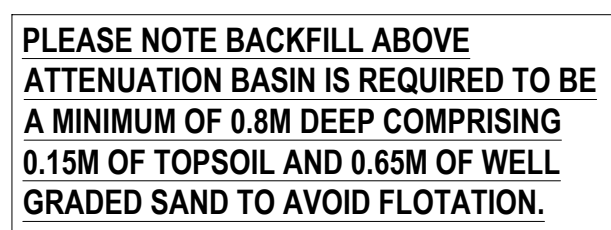
1 Paris Garden
London
SE1 8ND
t: 0203 773 7880
www.robertwest.co.uk

Project
**KEYMER ROAD
BURGESS HILL**

Drawing Title
**PROPOSED DRAINAGE
SHEET 6**

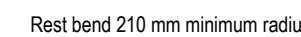
RWCL Internal Register reference: 3195-005 Scales @ A1

2115 - C07



Tumbling bay junction
(actual details will be dependent
on the type of pipe used)

In-situ concrete to be GEN3
(designed to BRE Special Digest 1
Concrete in Aggressive Ground)



Tumbling bay to be a 45° or 55° oblique junction (actual details will be dependent on the type of pipe used)

In-situ concrete to be GEN3 (designed to BRE Special Digest 1 Concrete in Aggressive Ground)

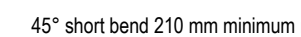
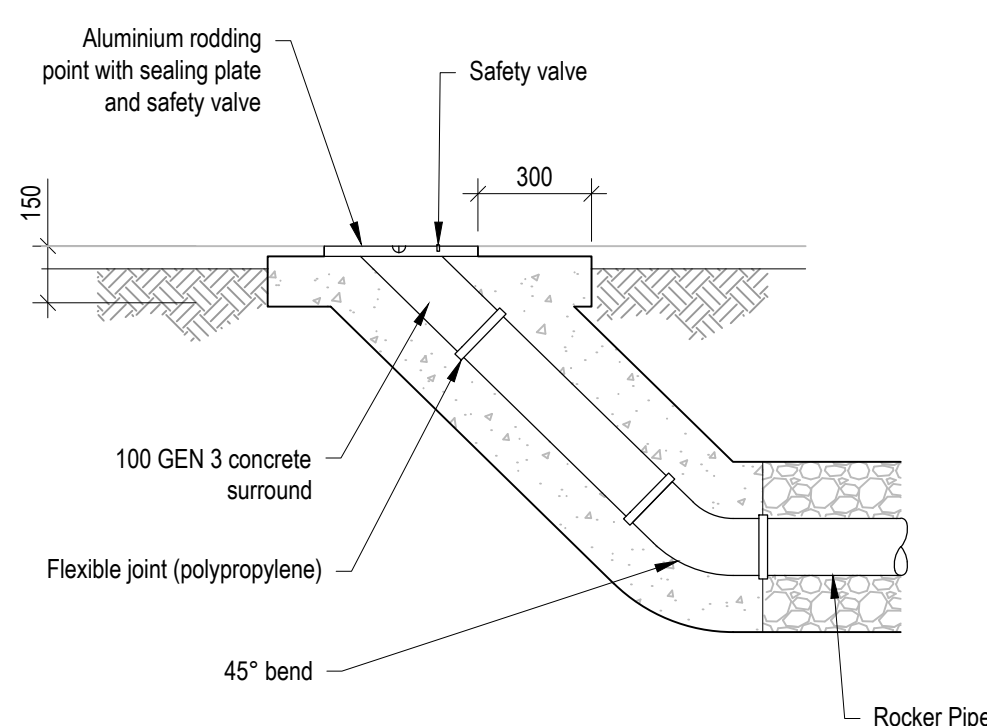
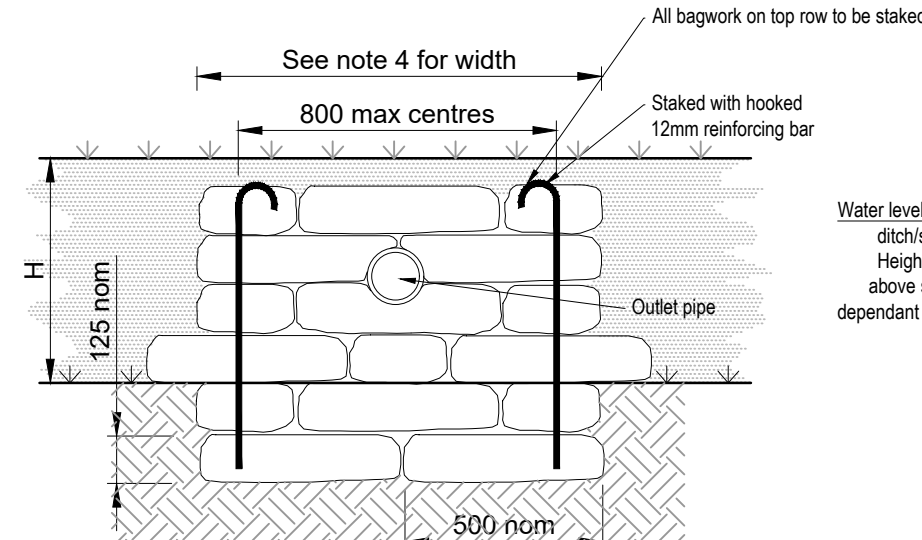


Diagram illustrating the installation of a pipe into a concrete surround (GEN 3). The pipe is laid to specified falls, with an incoming angle of maximum 60° and minimum 0°. Dimensions shown include 150 units for the pipe diameter and 150 units for the concrete surround thickness.

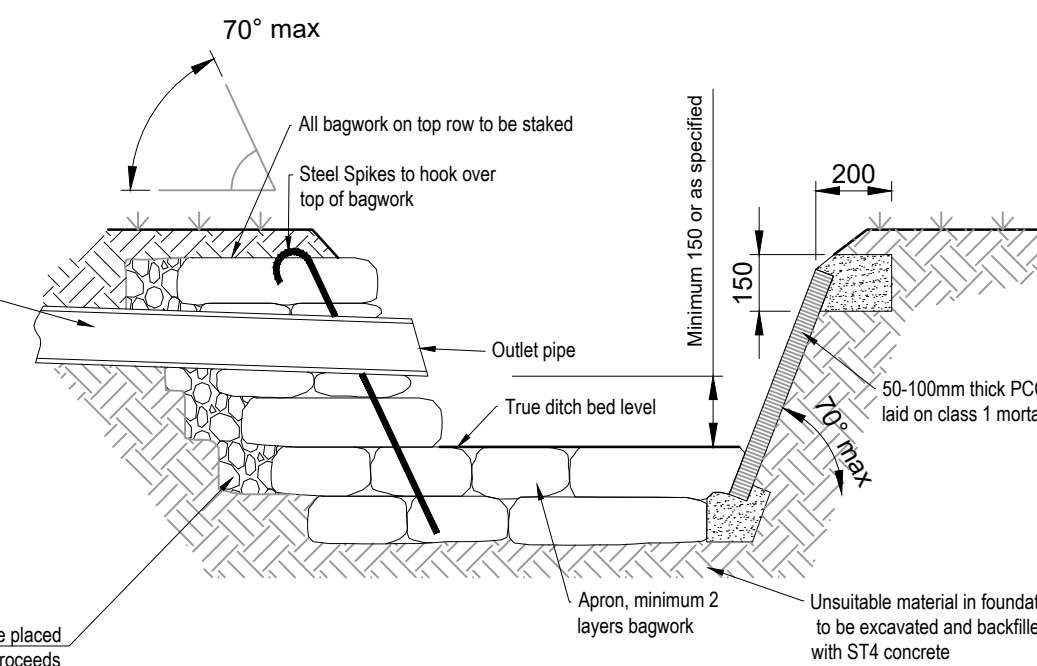
Scale: 1:20



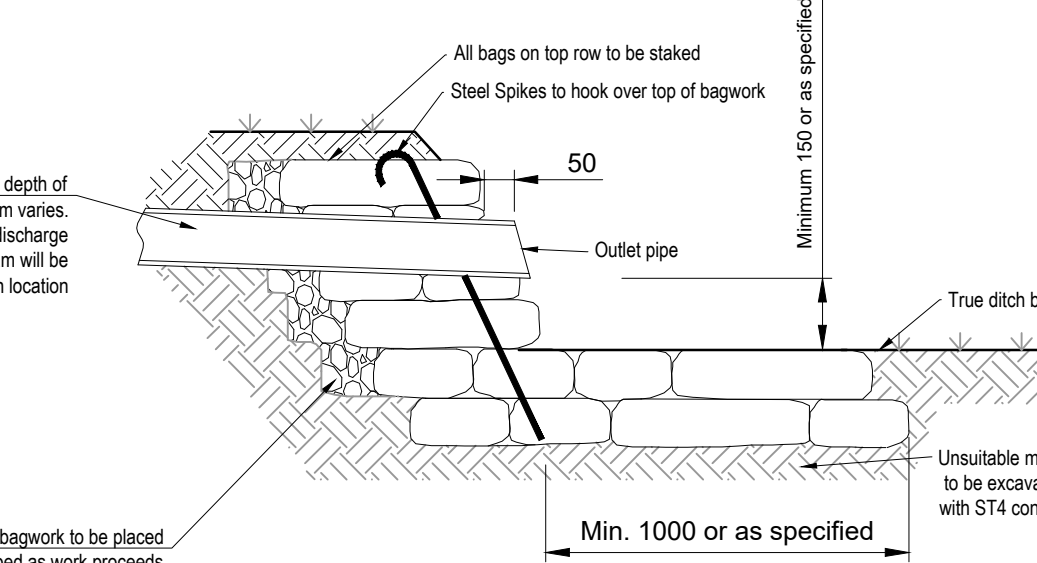
Scale: 1:20



Water level and depth of ditch/stream varies. Height of discharge above stream will be dependant upon location



Water level and
ditch/stre
Height of
above stre
dependant upon



Scale 1:20

1. Bags shall be of Hessian and shall be of a size to provide a wall thickness of 500mm
2. Concrete bagwork shall be to Clause 519 and be three quarter filled with 25mm slump ST4 concrete immediately prior to placing with the ends sewn.
3. The bags shall be placed in a modified Flemish bond so as to 'break joint' with the mouths away from the surface and be tamped into position to form a rectangular block
4. Extent of outlet protection to be the greater of 1500mm or pipe diameter + 1200mm spanning the outlet pipe.
5. Headwall design may need to be adjusted to on site conditions following approval from ADC Engineer.
6. Ditch to be regraded as requested.
7. All exposed pipework to be certified UV stable.
8. Pipe details to be as specified on supporting drawings.
9. All bags on top rows to be steel spiked.
10. True bed level is established in agreement with the Local Authority engineer and needs to take account existing upstream and culvert invert levels and hard bed levels of the watercourse.
11. no part of the headwall structure to encroach into the profile of the watercourse.

CONSTRUCTION

Robert West

Paris Garden
London
E1 8ND
Tel: 0203 773 7880
www.robertwest.co.uk

Drawing Title

PROPOSED DRAINAGE
CONSTRUCTION DETAILS
SHEET 3

RWCL Internal Register reference: 3195-005

sales @ A1

H093-RWC-WD-ZZ-D-C-2163-C02

CDM 2015 RESIDUAL RISKS

1. All areas of live traffic and pedestrian movements shall be subject to appropriate traffic management barriers and signs.
 2. Access points onto live public highway.
 3. Unauthorised access to the site must be prevented at all times
 4. Existing road drainage to be maintained.
 5. Be aware of possible live drainage flows and foul effluent during construction.
- The Contractor shall assess and implement a safe working system and equipment (PPE) as necessary.

The above residual risks are for non-standard hazards. It is assumed that a competent contractor familiar with the construction of this type of work will be appointed who will be aware of the standard hazards.

1. All dimensions to be checked on site. All details and dimensions relating to sub-Contractors work must be checked and agreed between the sub-Contractor or supplier and the general Contractor.
2. This drawing is to be read in conjunction with all relevant Architects' and Engineer's drawings and specification.
3. The main Contractor is responsible for ensuring the stability of the structure whilst the works are in progress.
4. Any information given regarding existing underground services is in good faith after consultation with the relevant authority. No liability is accepted by the Consultant and the main Contractor is responsible for obtaining and checking all information and taking due care and attention whilst undertaking the works.

Appendix C – Construction Photographs



Photo 1 - Pond earthworks



Photo 2 - Pond earthworks



Photo 3 - Pond earthworks



Photo 4 - Pond earthworks



Photo 5 - Pond lining



Photo 6 - Pond lining



Photo 7 - Pond lining



1 Nov 2024 14:16:21

Photo 8 - Pond lining



Photo 9 – Completed pond



Photo 10 – Hydro-brake installed



Photo 11 – Hydro-brake pull handle



Photo 12 – Manhole S44 Hydro-brake



Photo 13 – View of manhole S44 and outfall



Photo 14 – View of outfall



Photo 15 – Culvert A



Photo 16 – Culvert A membrane installation



Photo 17 – Culvert A membrane installation



Photo 18 – Culvert A membrane installation



Photo 19 – Culvert B



Photo 20 – Culvert B installation



Photo 21 – Culvert C installation



Photo 22 – Culvert C installation



Photo 23 – Culvert C installation



Photo 24 – Back drop to manhole S24



Photo 25 – Base of manhole S28



Photo 26 – Base of manhole S29



Photo 27 – Manhole S33



Photo 28 – Manhole S36



Photo 29 – Culvert A



Photo 30 – Manhole S18



8 Aug 2024 09:12:24
2 Guild Place
West Sussex
England

Photo 31 – Manhole S18



Photo 32 – Manhole S19



Photo 33 – Manhole S22



Photo 34 – Pipe between manholes S22-S24



Photo 35 – Manhole S24



Photo 36 – Backdrop to manhole S24



Photo 37 – Manhole S23



Photo 38 – Pipe between manholes S23-S24



Photo 39 – Pipe between manholes S23-S24



Photo 40 – Pipe between manholes S28-S27



Photo 41 – Manholes S29-S28



Photo 42 – Manhole S28



Photo 43 – Manholes S27



Photo 44 – Pipe between manholes S32-S33



Photo 45 – Pipe between manholes S33-S32



Photo 46 – Pipe between manholes S33-S32



Photo 47 – Pipe between manholes S33-S32



Photo 48 – Pipe between manholes S33-S32



Photo 49 – Pipe between manholes S34-S33



Photo 50 – Pipe between manholes S34-S33



Photo 51 – Pipe between manholes S34-S33



Photo 52 – Pipe between manholes S35-S34



Photo 53 – Manholes S35



Photo 54 – Manhole S36



Photo 55 – Manhole S29



Photo 56 – Pipe between manholes S36-S35



Photo 57 – Pipe between manholes S38-S36



Photo 58 –Manhole S44



WORK ALLOCATION SHEET

Customer:	OHB
Project/Address:	Burgess Hill
Commencement Date:	25.10.24
Work description:	Pond installation
Installed pond to drawings Geo textile only installed in Bottom 295 membrane on top Back on a later date to do Header Header walls x2 <i>[Signature]</i>	
M2 Membrane Laid	2,205 m ²
M2 Geotextile laid	1,800 m ²
Top Hats	0

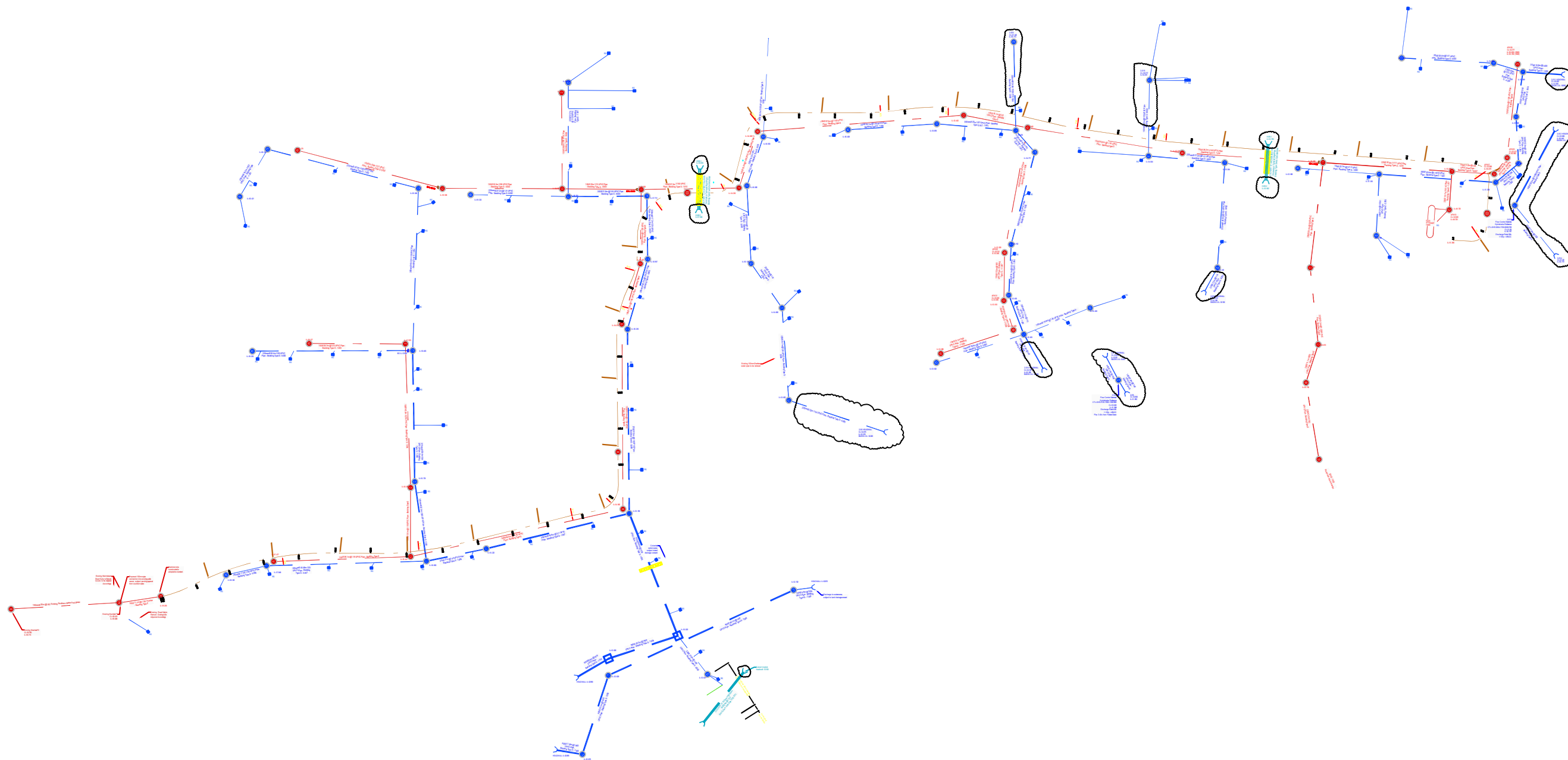
The above works have been carried out as per specifications and construction drawings and handed over to the contractors satisfactorily and hereby signed by both parties.

Subcontractor -	Signature:	Date:
Keytec Installation services	Print Name: James Peters	<i>[Signature]</i>
Main contractor -	Signature: <i>[Signature]</i>	Date: 25/10/24
	Print Name: Tony Pugh	

Comments/Remarks:
GREAT JOB BY THE TEAM

Photo 59 – Certificate of works

Appendix D – As-built



Rev.	Amendments	Date	Dwg
------	------------	------	-----

Revisions

O'Halloran and O'Brien LTD
O'Brien House
197 - 199 Garth Road
Morden
Surrey
SM4 4NE
T: 020 8337 5527
E: info@ohob.co.uk
W: www.ohob.com



BUILDING CONTRACTORS
AND CIVIL ENGINEERS

Drawing AS BUILT DRAINAGE

Scale	NTS	Drawn by	POD
Date	28/05/25		

Project KEYMER ROAD

Sheet 1 Rev. C1

Appendix E – Contractor's Statement



O'HALLORAN & O'BRIEN LTD
BUILDING CONTRACTORS
CIVIL ENGINEERS AND
CONCRETE STRUCTURES

O'Halloran and O'Brien LTD.
O'Brien House, 197-199 Garth Road
Morden, Surrey
SM4 4NE
28th May 2025

Thakeham Homes
Summers Plane, Stane Street
Billingshurst, West Sussex
RH14 9GN

To whom it may concern,

This is to certify that O'Halloran and O'Brien LTD. have completed the construction of drainage system as per the agreed scheme at Thakeham Homes land development Keymer Road, Burgess Hill.

The SuDS has been built in accordance with the drawings provided. The basin as currently installed does not have topsoil, but we are looking to complete this over the next few weeks. We did not encounter any groundwater or find anything unexpected. Subsoil and topsoil were installed to standards and existing soil onsite was re-used.

Yours faithfully,

Paul O'Driscoll

Groundworks and Civil Engineering
O'Halloran and O'Brien LTD
O'Brien House, 197 – 199 Garth Road
Morden, Surrey, SM4 4NE



T: 020 8337 5527
www.ohob.co.uk