Drainage Report
for
2 Proposed new dwellings at
15 Woodview Heights,
Lucan,
Co. Dublin.

15th January 2021

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1.0 BRIEF

1.1 At the request of our client John Bonass, we were requested to prepare a drainage report to details our proposed drainage solution for the project. We commissioned a percolation test on the site and applied to Irish water for a PCE (Pre Connection Enquiry) and the results of these are attached with this report. We will prepare a drainage report for submission to South Dublin County Council as part of their proposed planning application for the construction of two new dwellings. It is proposed to build two new semi-detached dwellings in the side garden of 15 Woodview Heights, Lucan, Co. Dublin.

2.0 SCOPE

2.1 The site is currently a large side garden to the side of 15 Woodview heights. For the purposes of this report we have conducted a visual survey of the site which is bound by Woodview heights on both sides.

2.2 We obtained the drainage records from South Dublin County Council of the existing drainage systems in the area of the site. This will allow us to tie in all levels to the actual Datum and provide a drainage solution to the council for consideration with the planning application.

2.3 Architectural plans are attached in Appendix A to indicate the location of the site with the footprint of the proposed dwellings for reference.

2.4 We commissioned Trinity Green Environmental to conduct a site suitability test on the soils for percolation purposes.

2.5 Our client applied to Irish Water for a Pre connection enquiry and received a positive response, details will be attached in appendix F.

3.0 EXISTING SITE SERVICES

3.1 The existing house on the site is currently serviced by a 225mm Ø mm foul drain that runs along the front of the site on the far side of the road on Woodview heights. The drainage leaves the existing house through the existing side passage (all combined) and connects into this line on Woodview heights.

Details of the existing drainage system can be seen on the attached council drainage records, in appendix C. The drain on Woodview heights is also indicated on the attached drainage drawing B105-001 rev A in appendix B.

3.2 The new dwellings can be serviced by the existing 125mm Ø water connection on Woodview heights. A new 50mm Ø connection will be required from this existing water main to service each unit. The water main is indicated on the council records, attached in appendix C. We also attached approval email from Irish Water in relation to the site being viable for a water connection.

4.0 PROPOSED SERVICES

4.1 Foul Water

4.2 It is our proposal as part of this proposed development to lay a new independent foul sewer around the proposed new dwellings to collect all the foul sewage from the proposed dwellings. We propose to connect into the existing foul line that runs along the far side of the road directly in front of the site. The new foul drainage from the proposed dwelling will require a road opening licence by the applicant at a later date.

Details of the proposed new foul drainage systems can be reviewed in the attached drainage drawing B105-001 rev A, in appendix B. All foul sewage will be kept separate from the surface water on the proposed sites, as is required by South Dublin County Council.

4.3 Calculations for the foul system are attached in appendix D. A minimum self-cleansing velocity of .75m/s is achieved throughout the site to insure self-cleansing velocity.

4.4 The foul and the surface water will be kept separate at all time on our client's site. The final connection to this existing foul line will have a bacon trap fitted to prevent any surcharge back into the sites. Our investigations into the existing line would indicate that the line is approximately 2.5m deep and therefore the risk of a surcharge event would be extremely low.

4.5 The proposed new drainage system will of course be subject to the council's approval of our proposals, and subject to the relevant building regulations supervised by this office

5.0 SUSTAINABLE URBAN DRAINAGE DESIGN

5.1 We commissioned a site suitability test on the site by Trinity Green Environmental ltd. Their report which is attached in appendix E, the report found that the percolation rate was very slow. As a result of this we have include the parking areas and the roof areas of the house in our attenuation calculations

It is my client's proposal to lay an independent surface water system to collect all the rainwater from the roof areas of the parking areas for each proposed unit and to direct them into an attenuation tank fitted with a flow control device. We can then either connect the flow leaving the site to the surface water system that exists in the main road or into the foul through that proposed connection. We suggest this as the surface water line is 3.5m deep and is quite a large line. We are happy to go either way on this with the guidance of the local authority.

5.3 Details of the proposed surface water system can be found on the site drainage drawing B105/001 rev A, attached in appendix B, along with attenuation calculations sheet.

5.4 All these proposed drainage works are to be carried out in accordance with South Dublin County Council's guidelines for site development works and in accordance with BS 8005 Part 0 to Part 4.

Signed

ROBERT BARRY BA, BAI, MIEI CEng. M.I.Struct.E
Director
for
Robert Barry Consulting Engineers ltd.

Appendix

Appendix B: Site Drainage Drawing B105/001 rev A

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Surface water attenuation calculations

JOB NAME:	JOB NO:	DATE:	Robert Barry Consulting Engineers ltd
15 Woodview Heights	B105	24/07/2020	10 Upper Grand Canal Street Dublin 4
TITLE:	**CALCS BY:**	**CHECK'D:**	087-8380209
Attenuation calcs	RB	RB	w robert@rbce.ie

RCD.	48	ISSUE.	1	REV.	1

SURFACE WATER STORAGE

Storm Return Period =	100	Years		
Total Site Area =	0.0165	Hectares (ha)		
Proposed Impermeable Area				
Roof Area =	0.01	ha	.....@	100% Impermeable
Hard Surface =	0.00	ha	.....@	100% Impermeable
Open Area =	0.01	ha	.....@	10% Impermeable
Total Impermeable Area =	**0.01**	**ha**		

Site Location (Select from tabs below) Maynooth

Allowable Outflow =	2.00	**litres/sec/ha**	(Dublin Corporation, stormwater management Policy)
	0.0	**litres/sec**	

Duration (min)	Rainfall 100 Year (mm)	Intensity (mm/hr)	Discharge Q (= 2.71Ai) (l/s)	Proposed Runoff (m^3)	Contiguous Land Runoff (m^3)	Total Runoff (m^3)	Allowable Outflow (m^3)	Storage Req'd (m^3)
2	0.0	0.0	0	0	0	0	0	0
5	0.0	0.0	0	0	0	0	0	0
10	0.0	0.0	0	0	0	0	0	0
15	22.0	88.0	2	2	0	2	0	2
30	29.0	58.0	1	2	0	2	0	2
60	36.5	36.5	1	3	0	3	0	3
120	42.5	21.3	0	4	0	4	0	3
240	51.0	12.8	0	4	0	4	0	4
360	60.0	10.0	0	5	0	5	1	4
720	72.5	6.0	0	6	0	6	1	5
1440	87.0	3.6	0	7	0	7	3	4
2880	102.0	2.1	0	9	0	9	6	3
4320	0.0	0.0	0	0	0	0	9	-9

Storage required =	5	m^3	**Stormcell Requirement =**	5	m^3

Oversized Pipe Requirements

Pipe dia. (mm)	Length (m)
600	16
900	7
1050	5
1200	4
1500	3

Twin Pipe Requirements

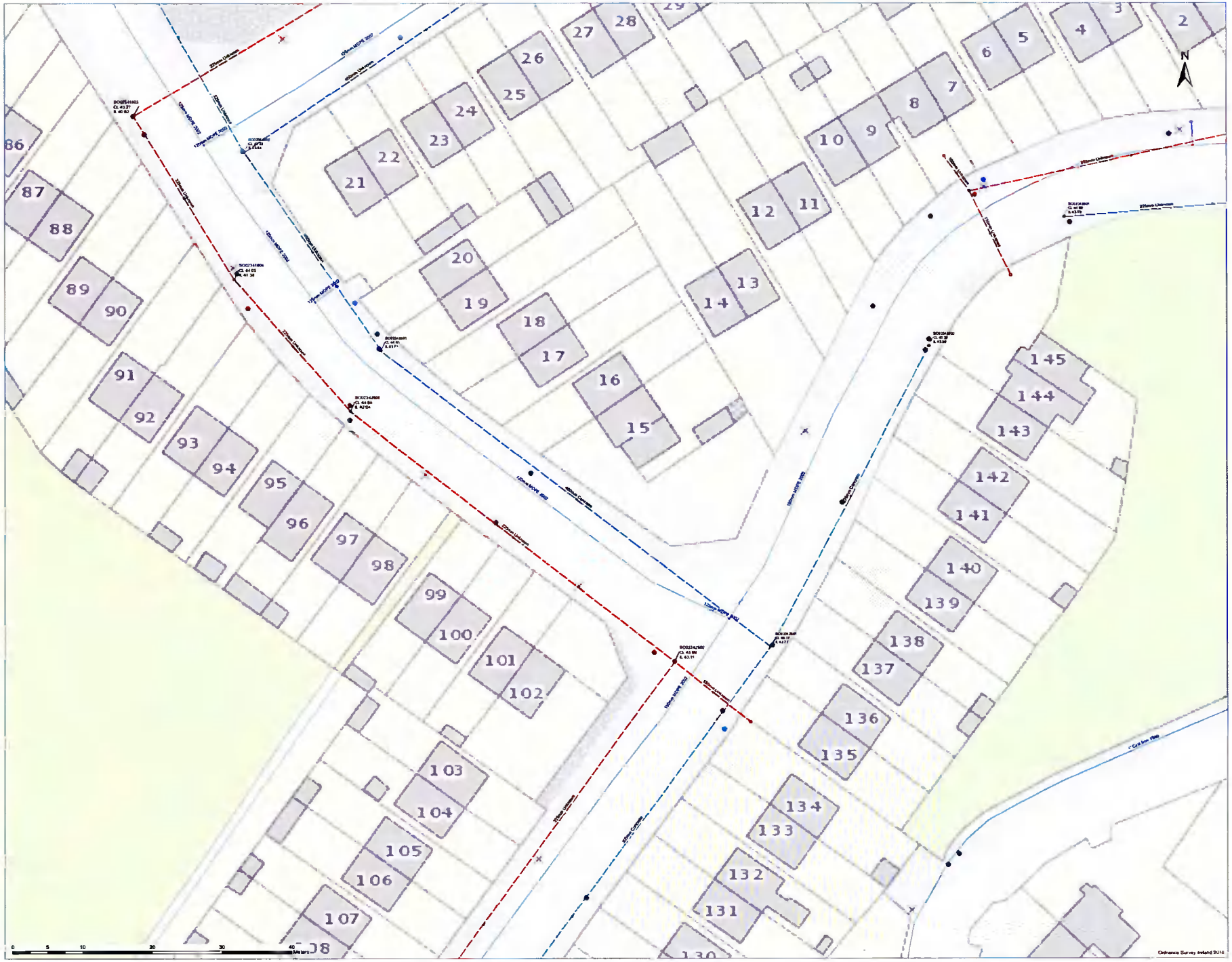
DIA (mm)	AREA/ PIPE (m^2)	TOTAL AREA (m^2)	LENGTH REQ'D (m)
525	0.216	0.433	11
600	0.283	0.565	8
900	0.636	1.272	4
1050	0.866	1.732	3
1200	1.131	2.262	2

Appendix C: Foul sewage calculations.

JOB NAME:	JOB NO:	DATE:	Pipe Ks:	1.5	RB Consulting Engineers ltd 10 Upper Grand Canal Street, Dublin 4 Tel: 6673100 Fax: 6673101
15 Woodview Heights, Lucan, Co. Dublin.	B105	15/01/21	DU / House:	14	
TITLE:	CALCS BY:	CHECK'D			
FOUL SEWER CAPACITY CALCS	RB	JB			

Pipe Section	No. of Houses	Discharge Units	Total Units	Flow (l/s)	Pipe Diameter (mm)	U/S Level (m)	D/S Level (m)	Length (m)	Slope (1:X)	Pipe Capacity (l/s)	Adequate Capacity?	Prop. Velocity (m/s)	Self Cleansing?
FAJ1 to FAJ2	1	42	42	3.30	100	11.30	11.10	14	70.00	6.25	✓	0.80	✓

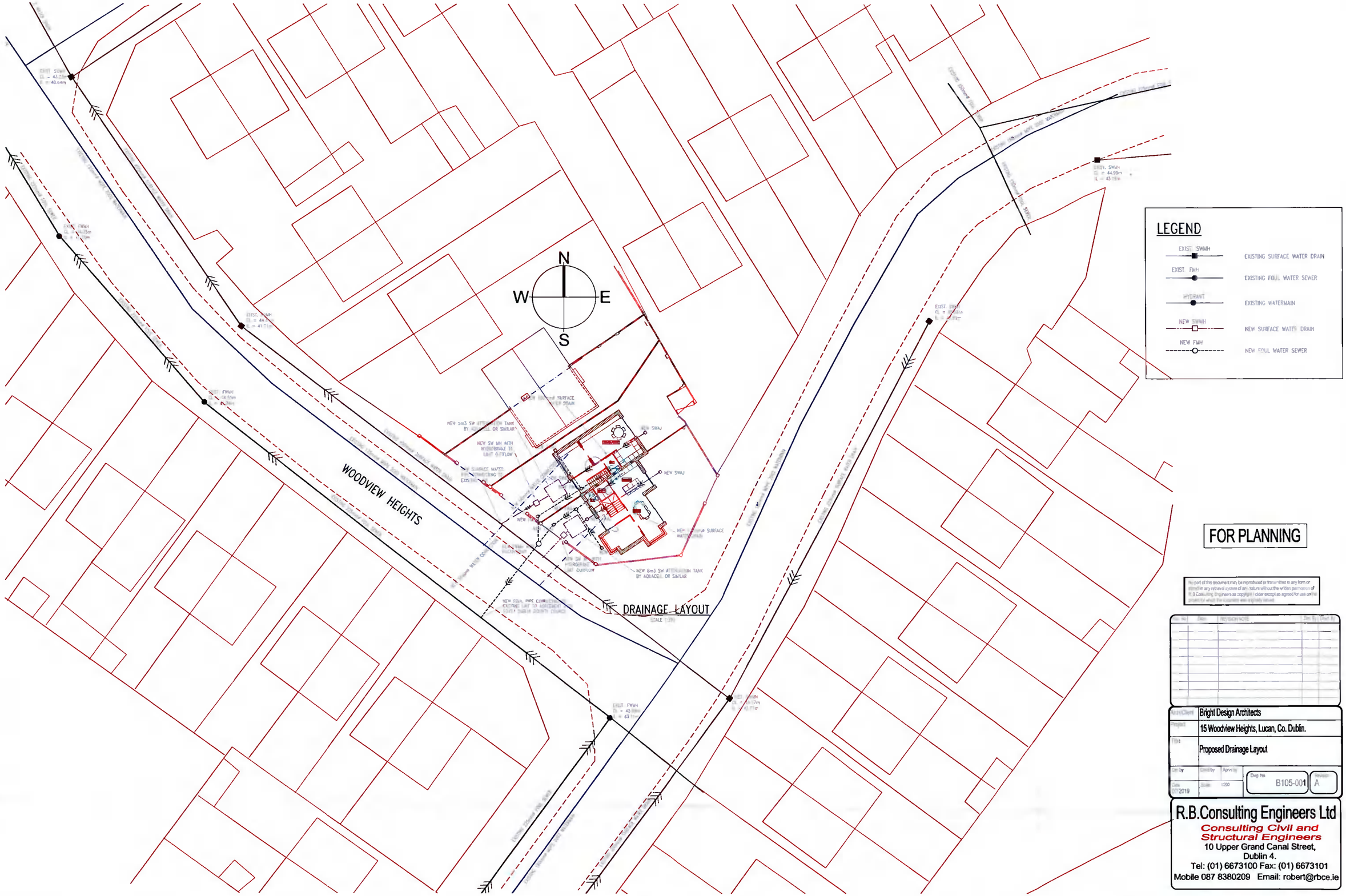
Appendix D: South Dublin County Council Drainage records



UISCE ÉIREANN : IRISH WATER

Legend

- Pump Stations
- Irish Water
- Private
- Irish Water
- Non IW
- Gravity - Combined
- Gravity - Foul
- Gravity - Overflow
- Gravity - Unknown
- Pumping - Combined
- Pumping - Foul
- Pumping - Overflow
- Pumping - Unknown
- Syphon - Combined
- Syphon - Foul
- Syphon - Overflow
- Overflow
- Gravity - Combined
- Gravity - Foul
- Gravity - Overflow
- Gravity - Unknown
- Pumping - Combined
- Pumping - Foul
- Pumping - Overflow
- Pumping - Unknown
- Syphon - Combined
- Syphon - Foul
- Syphon - Overflow
- Overflow
- Surface Gravity Mains
- Surface Gravity Mains Private
- Surface Water Pressurised Mains
- Surface Water Pressurised Mains Private



FOR PLANNING

Client	Bright Design Architects
Project	15 Woodview Heights, Lucan, Co. Dublin.
Title	Proposed Drainage Layout
Drawn by	Checked by / Approved by
Date 07/2019	Scale 1:200
Dwg No.	B105-001
Revision	A

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