



DRAINAGE TECHNICAL NOTE

Site: Land at Cheriton High Street, Folkestone, Kent

Client: Mountblanc Developments Ltd

Prepared by: DHA Environment
Eclipse House
Eclipse Park
Sittingbourne Road
Maidstone ME14 3EN

Date: January 2020

1.1 Introduction

1.1.1 DHA Environment have been engaged by Mountblanc Developments Ltd to prepare a statement relating to drainage to support a detailed planning application for the construction of 23 residential units located on land adjacent to Cheriton High Street, Folkestone, Kent.

1.1.2 The site can be considered to be major development as set out in Article 2(1) of the Town and Country Planning (Development Management Procedure) (England) Order 2010 and as such this report has been prepared to outline the surface water drainage for the site.

1.2 Summary of existing development

Location

The site is located to the South of Cheriton High Street, Folkestone, Kent and is centred on grid reference 619013, 136969.

Existing Site

1.2.1 A topographical survey of the site is shown on drawing 13894-TS-01 contained in **Appendix A**. The site falls from a high point of 64.93m AOD located in the southern corner of the site to a low point of 63.32m AOD in the northeast corner of the site at the boundary with Cheriton High Street. The site currently consists of Brockman Family Centre buildings and associated parking. The site can be seen to have the following boundary conditions;

- North – Cheriton High Street
- East – Residential dwellings.

- South – Carpark and green land.
- West – Offices.

Existing Drainage

- 1.2.2 A drainage survey was carried out by Omega Geomatics to determine how the existing surface and foul water from the site is drained. The results from this survey have been overlaid on the topographical survey and are shown 13894-TS-01 contained in **Appendix A**.
- 1.2.3 From this survey, it was determined that the surface water from northern part of the building drains to the existing foul water sewer located in the North East corner of the site via a 150mm diameter pipe which in turn connects into the 225mm diameter sewer located in the verge off Cheriton High Street.
- 1.2.4 Based on a surveyed gradient of 1 in 19 this pipe has a maximum capacity of 42l/s although based on a contributing area of 0.035 hectares, flows would range between and 5 and 16l/s for the 1 in 2 to 100 year return periods.
- 1.2.5 The southern part of the building and the existing carpark appears to drain into a separate system discharging into a petrol inceptor within the car park. Given the levels of the interceptor, it is not possible to drain into the foul sewer described above and as such it is thought that this part of the site may discharge to a soakaway.
- 1.2.1 The discharge rates from the site have been calculated by using the Flood Studies Report ICP (SuDS) method based on the total site area of 0.407 hectares. The calculations can be seen in **Appendix B** and have been summarised in table 3-1 below:

<i>Catchment Reference</i>	<i>Qbar (l/s)</i>	<i>1 in 1 year</i>	<i>1 in 30 years</i>	<i>1 in 100 years</i>
<i>Total</i>	0.8	0.7	1.8	2.5

Table 3-1 - Summary of existing runoff rates

- 1.2.2 Southern Water asset plans are shown in **Appendix C** and indicate the location of public foul and surface water sewers in the area. These records do not indicate any private drainage that may be present.
- 1.2.3 In October 2011 the ownership of any private sewer serving more than one property was automatically transferred to the Water Authority although many of these sewers are yet to be recorded on the asset plans.

Surface Water

1.2.4 Southern Water asset plans show there to be no surface water sewers within the site, however there are a number of surface water sewers shown within the surrounding area as follows;

- There is a 225mm diameter sewer running from West to East in the verge adjacent to Cheriton High Street.
- The residential area to the East of the site is collected into a network of sewers before discharging into the 225mm diameter sewer described above.

Foul Water

1.2.5 Southern Water asset plans show there to be no foul water sewers within the site, however there are a number of foul water sewers shown within the surrounding area as follows;

- There is a 225mm diameter sewer running from West to East in the verge adjacent to Cheriton High Street into which foul and surface water from part of the site drains.
- The residential area to the East of the site is collected into a network of sewers before discharging into the 225mm diameter sewer described above.

Geology and Hydrogeology

1.2.6 The online British Geological Survey maps indicate that the site is underlain by bedrock comprising of the Folkstone Formation – interbedded sandstone with no superficial deposits recorded.

1.2.7 Site-specific infiltration testing was carried out by Ground and Environmental Services Limited on the 5th December 2019. A single trial pit was excavated to a depth of 2.85m in the location of the proposed soakaway. This showed the geology to comprise of 0.8m of made ground over 1.0m of sandy clay over fine to medium sand with occasional medium to coarse sandstone. Ground water was not encountered during the Site Investigation.

1.2.8 Infiltration testing provided a moderate infiltration rate of 1.63×10^{-5} m/s (0.059 m/hour) and as such it was considered that use of soakaways would be suitable for the disposal of surface water. A copy of the infiltration testing is included within **Appendix D**.

1.3 Proposed Development

1.3.1 The proposals consist of a development of 23 residential units located on land North of Cheriton High Street, Folkestone, Kent. The proposed masterplan is shown in **Appendix E**.

1.3.2 The site has a total area of 0.407 hectares. The proposed developable areas are summarised on drawing 13894-D-02 contained in **Appendix F**.

Proposed Surface Water Drainage Strategy

- 1.3.3 The principles of the proposed surface water drainage are shown on drawing 13184-D-03 contained in **Appendix F**. Sustainable Urban Drainage (SuDS) techniques will be used to deal with the surface water drainage generated by the development. This will replicate the existing drainage regime by dealing with the surface water at source, so as not to increase the risk of downstream flooding.
- 1.3.4 The proposed buildings and areas of hardstanding are to be collected in a network of surface water sewers before discharging into an underground cellular soakaway. Catchpit manholes and trapped gullies will be provided prior to discharging to the soakaway to contain any silts and contamination.
- 1.3.5 The existing surface water connection currently draining the existing roof will be disconnected from the existing foul sewer which will free up capacity and reduce the risk of downstream flooding.
- 1.3.6 The proposed surface water attenuation has been modelled using Windes to accommodate all return periods up to and including the 1 in 100 year rainfall event with a 20% allowance for climate change. Calculations are contained within **Appendix F**.

Proposed Foul Water Drainage Strategy

- 1.3.7 A peak foul water flow of 1.16 l/s has been calculated for a 23 unit development based a daily flow rate of 4000 litres per unit per day.
- 1.3.8 It is proposed that the foul water from the development is collected in a system of gravity sewers discharging to the existing foul water drainage network in Cheriton High Street.
- 1.3.9 Any reinforcement of the existing network will be covered by the Infrastructure Charge required for the connection of each property.
- 1.3.10 There are no plans to construct treatment works on the site, nor to discharge any effluent treated or not, to ground water.

1.4 Conclusions

- 1.4.1 The detailed planning proposals are to redevelop Brockman Family Centre site of 0.407 hectares with 23 residential dwellings located on land adjacent to Cheriton High Street, Folkestone, Kent.
- 1.4.2 A Sustainable Urban Drainage system has been incorporated as part of the surface water drainage strategy to accommodate the surface water generated by the development. This will be in the form of cellular soakaways. The existing surface water connection into the foul sewer will be removed freeing up capacity and reducing the risk of downstream flooding.
- 1.4.3 It is proposed that the foul water from the development is collected in a system of gravity sewers discharging to the existing foul water drainage network.

APPENDIX A



Topographical survey



DO NOT SCALE

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P1 29.07.19 JM First Issue CS CS

REV	DATE	BY	DESCRIPTION	CHK	APD
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client
MONTBLANC DEVELOPMENTS LTD

project
HNMB BROCKMAN FAMILY CENTRE

title
TOPOGRAPHICAL SURVEY

project	dwg	rev
13894	TS-01	P1

Drawn	Checked	Approved	scale @ A3	date
JM	CS	CS	1:500	29.07.19

status
FOR INFORMATION



Eclipse House, Eclipse Park, Sittingbourne Road
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CAD Reference: A3

5 0 5 10 15 20 25
Metres (1:500)

APPENDIX B

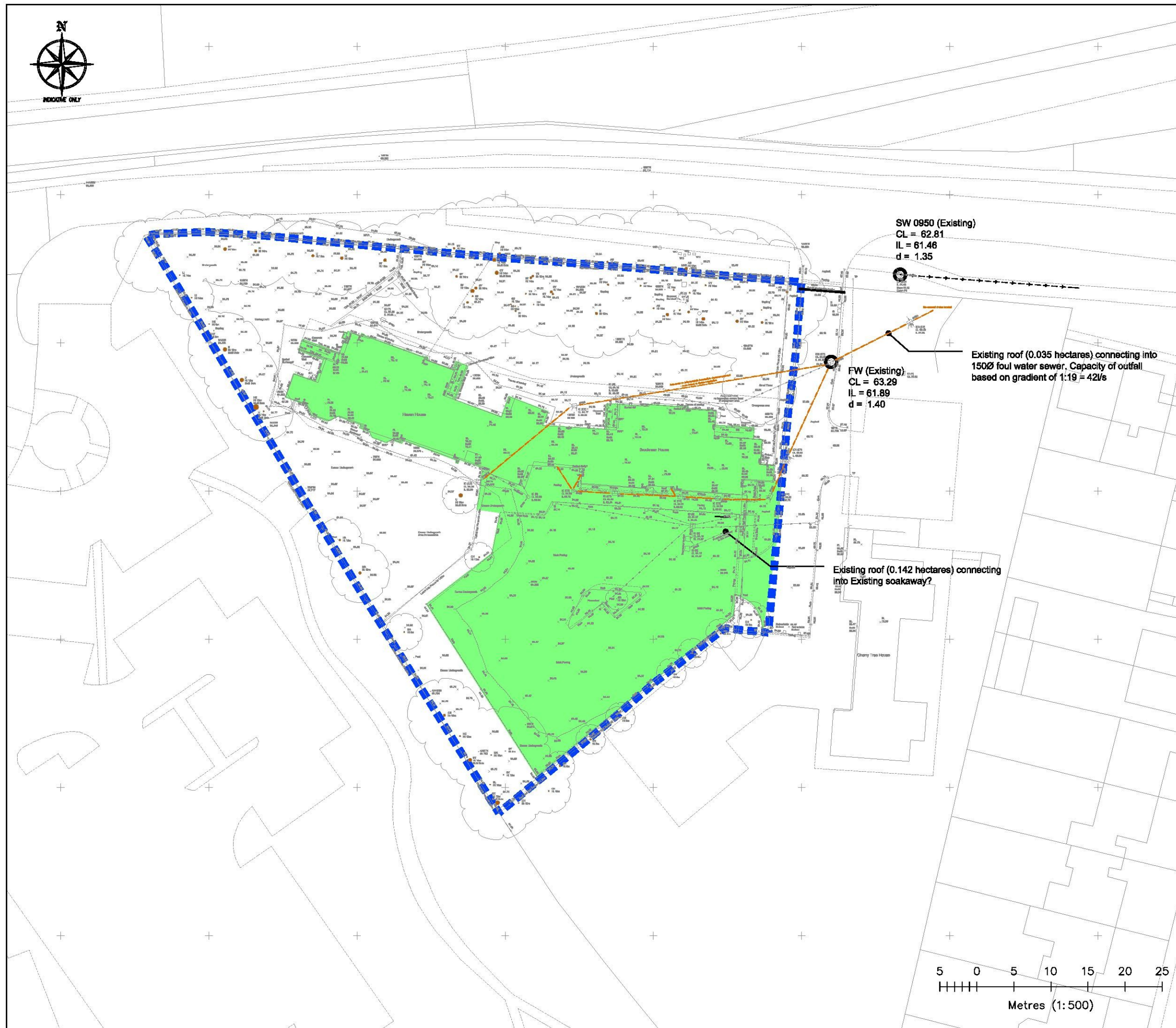


Existing Contributing Areas



DO NOT SCALE

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P1	29.07.19	JM	First Issue	CS	CS
REV	DATE	BY	DESCRIPTION	CHK	APD

client
MONTBLANC DEVELOPMENTS LTD

project
HNMB BROCKMAN FAMILY CENTRE

title
EXISTING SITE AREAS

project 13894		dwg TS-01		rev P1
Drawn JM	Checked CS	Approved CS	scale @ A3 1:500	date 29.07.19

status	FOR INFORMATION	P
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Eclipse House, Eclipse Park, Sittingbourne Road
Maidstone, Kent. ME14 3EN
t: 01622 776226 f: 01622 776227
e: info@dhaplanning.co.uk w: www.dhaplanning.co.uk

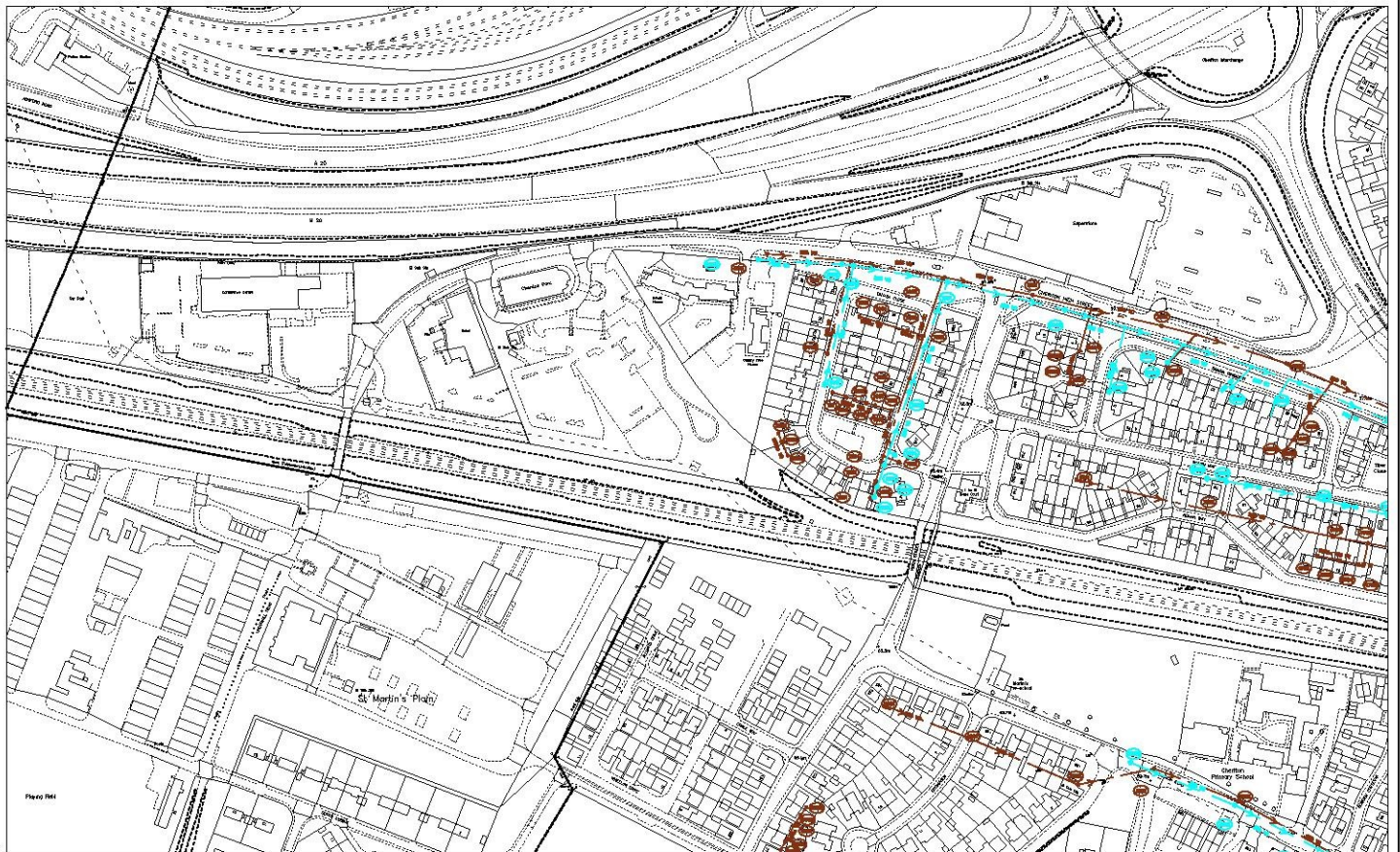
CAD Reference:	A3
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APPENDIX C



Southern Water Asset Plans

SEWER RECORDS PAGE 1 OF 2



O.S. REF.

TR1936NW

Title: 317217_Site at Cheriton High S

Drawn by: yadava

Scale: 1:2500

Date: 19/11/2018

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site.

WARNING: B400 pipes are constructed of Reinforced Absorbable Concrete.

WARNING: Limestone (LNU) manholes may contain Standard Absorbable Concrete.

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Southern Water

137161

136583

SEWER RECORDS PAGE 2 OF 2

Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape
0604X				UNK	VC	0603X			300	VC	CRIC	0601X						0601X					
0502X				UNK	VC	0501X			367DM			0501X						0501X					
0801X				UNK	VC	0801X			4350X	63.3	61.11	0801X						0801X					
0602X				UNK	VC	0602X			4701X			0601X						0601X					
0801X				UNK	VC	0801X			4702X			0801X						0801X					
0510X				UNK	VC	0510X			4703X			0510X						0510X					
0801X	62.58	60.81	220	VC	CRIC	0801X			4704X			0801X						0801X					
0602X	62.38	61.55	220	VC	CRIC	0602X			4705X			0602X						0602X					
0802X	62.29	61.41	220	VC	CRIC	0802X			4706X			0802X						0802X					
0801X	63.95	62.2	225	VC	CRIC	0801X	59.85	57.34	225	VC	CRIC	0801X						0801X					
1801X	66.15	63.3	225	VC	CRIC	1801X			4801X			1801X						1801X					
1802X	63.62	62.8	225	VC	CRIC	1802X			4802X			1802X						1802X					
1801X	64.37	62.35	180	VC	CRIC	1801X			4803X			1801X						1801X					
1802X	64.09	190	190	VC	CRIC	1802X	59.78	58.1	300	VC	CRIC	1802X						1802X					
1803X	63.69	62.14	190	VC	CRIC	1803X	59.27	57.57	300	VC	CRIC	1803X						1803X					
1804X	63.72	62.9	190	VC	CRIC	1804X			4804X			1804X						1804X					
1805X	63.51	61.74	150	VC	CRIC	1805X	58.81	55.77	300	VC	CRIC	1805X						1805X					
1806X			100	VC	CRIC	1806X			4805X			1806X						1806X					
1807X			100	VC	CRIC	1807X	58.49	57.34	300	VC	CRIC	1807X						1807X					
1808X			100	VC	CRIC	1808X						1808X						1808X					
1809X			100	VC	CRIC	1809X						1809X						1809X					
1802X			225	VC	CRIC	1802X						1802X						1802X					
1810X			100	VC	CRIC	1810X						1810X						1810X					
1809X	64.4	62.85	150	VC	CRIC	1809X						1809X						1809X					
1801X	63.74	62.17	225	VC	CRIC	1801X						1801X						1801X					
1802X	62.84	61.58	225	VC	CRIC	1802X						1802X						1802X					
1803X	64.08	62.67	150	VC	CRIC	1803X						1803X						1803X					
1804X	63.95	62.17	190	VC	CRIC	1804X						1804X						1804X					
1805X			225	VC	CRIC	1805X						1805X						1805X					
1001X	62.2	60	225	VC	CRIC	1002X	62.77	61.08	225	VC	CRIC	1003X						1003X					
1803X	61.72	59.25		VC	CRIC	1803X			225	VC	CRIC	1804X						1804X					
1804X				UNK	VC	1804X				UNK	VC	1805X						1805X					
1805X				UNK	VC	1805X				UNK	VC	1806X						1806X					
1806X				UNK	VC	1806X				UNK	VC	1807X						1807X					
1807X				UNK	VC	1807X				UNK	VC	1808X						1808X					
1808X				UNK	VC	1808X				UNK	VC	1809X						1809X					
1809X	62.28	61	225	VC	CRIC	1809X	61.58	59	300	VC	CRIC	1810X						1810X					
1801X	61.48			VC	CRIC	1802X	62.27	61.1	225	VC	CRIC	1803X						1803X					
1803X	63.57			UNK	VC	1804X				UNK	VC	1805X						1805X					
2801X				UNK	UNK	2802X				UNK	UNK	2803X						2803X					
2803X	61	59.47	225	VC	CRIC	2804X	61.73	57.87		UNK	UNK	2805X						2805X					
2806X	61.18	60.54	100	VC	CRIC	2807X	60.81	60.11	150	VC	CRIC	2808X						2808X					
2809X	60.75	59.38	150	VC	CRIC	2810X				UNK	UNK	2811X						2811X					
2801X				UNK	UNK	2802X				UNK	UNK	2803X						2803X					
2804X	60.37	59.22	300	VC	CRIC	2805X	61.38			UNK	UNK	2806X						2806X					
2807X	63.81	61.11	225	VC	CRIC	2808X	63.89	62.01	300	VC	CRIC	2809X						2809X					
2810X	63.8	61.51	300	VC	CRIC	2811X	60.67	58.88	225	VC	CRIC	2812X						2812X					
2813X	60.79	58.82	225	VC	CRIC	2814X	60.36	58.59	225	VC	CRIC	2815X						2815X					
2816X	60.17	58.17		UNK	UNK	2817X	60.17	58.17		UNK	UNK	2818X						2818X					
2819X	60.36	58.59		UNK	UNK	2820X	60.36	58.59		UNK	UNK	2821X						2821X					
2822X	60.18	58.17		UNK	UNK	2823X	60.18	58.17		UNK	UNK	2824X						2824X					
2825X	60.36	58.59		UNK	UNK	2826X	60.36	58.59		UNK	UNK	2827X						2827X					
2828X	60.36	58.59		UNK	UNK	2829X	60.36	58.59		UNK	UNK	2830X						2830X					
2831X	60.36	58.59		UNK	UNK	2832X	60.36	58.59		UNK	UNK	2833X						2833X					
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2861X	60.36	58.59		UNK	UNK	2862X	60.36	58.59		UNK	UNK	2863X						2863X					
2864X	60.36	58.59		UNK	UNK	2865X	60.36	58.59		UNK	UNK	2866X						2866X					
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2870X	60.36	58.59		UNK	UNK	2871X	60.36	58.59		UNK	UNK	2872X						2872X					
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2876X	60.36	58.59		UNK	UNK	2877X	60.36	58.59		UNK	UNK	2878X						2878X					
2879X	60.36	58.59		UNK	UNK	2880X	60.36	58.59		UNK	UNK	2881X						2881X					
2882X	60.36	58.59		UNK	UNK	2883X	60.36	58.59		UNK	UNK	2884X						2884X					
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2891X	60.36	58.59		UNK	UNK	2892X	60.36	58.59		UNK	UNK	2893X						2893X					
2894X	60.36	58.59		UNK	UNK	2895X	60.36	58.59		UNK	UNK	2896X						2896X					
2897X	60.36	58.59		UNK	UNK	2898X	60.36	58.59		UNK	UNK	2899X						2899X					
2900X	60.36	58.59		UNK	UNK	2901X	60.36	58.59		UNK	UNK	2902X						2902X					
2903X	60.36	58.59		UNK	UNK	2904X	60.36	58.59		UNK	UNK	2905X						2905X					
2906X	60.36	58.59		UNK	UNK	2907X	60.36	58.59		UNK	UNK	2908X						2908X					
2909X	60.36	58.59		UNK	UNK	2910X	60.36	58.59		UNK	UNK	2911X						2911X					
2912X	60.36	58.59		UNK	UNK	2913X	60.36	58.59		UNK	UNK	2914X						2914X					
2915X	60.36	58.59		UNK	UNK	2916X																	

[illegible]

Drawn by: yadavse

Title: 317217_Site at Cheriton High S

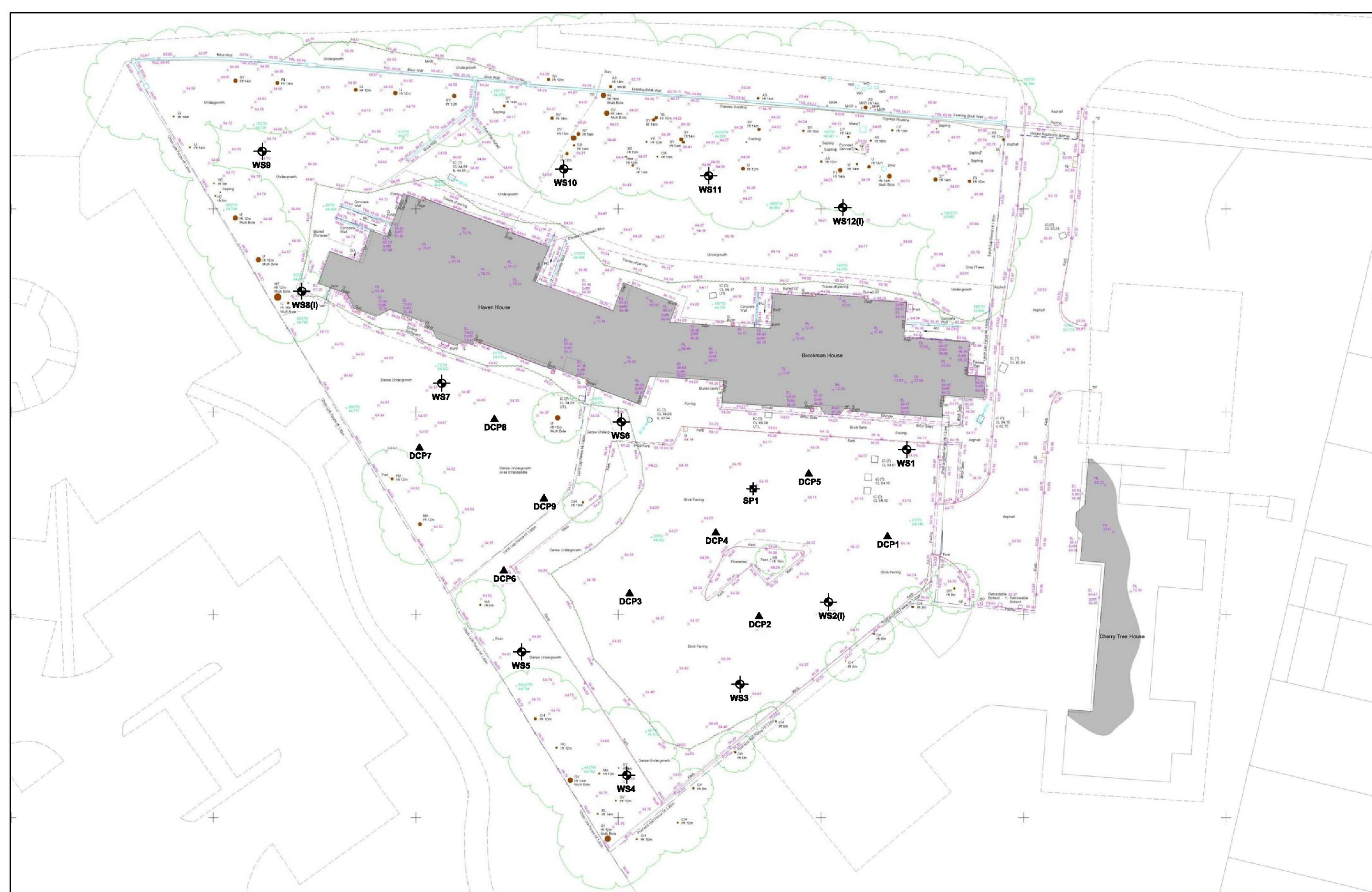
Date: 19/11/2018



APPENDIX D



Infiltration Testing



WS - Window Sample BH - Borehole TP - Trial Pit HDTP - Hand Dug Trial Pit DCP - Dynamic Cone Penetration Test HA - Hand Auger	DP - Dynamic Probe GM - Gas Monitoring Standpipe SP - Soakage Pit PT - Percolation Test S - Sample Location Site: Brockman Haven, Cheriton, Kent, CT18 8AN Title: Figure 1 Exploratory Hole Location Plan	Client: Leath Park Developments Ltd Project: 12324	Drawn: PRJ Date: 12/2019	Rev.: Scale:	 Unit 2 Montpelier Business Park, Dencora Way, Ashford, Kent TN23 4FG Tel: 01233 646 237
---	--	--	--	--	---

**Ground and Environmental Services Limited**Unit 2 Montpelier Business Park
Denoora Way, Ashford
Kent TN23 4FG

Tel: 01233 646237

Trial Pit No. SP 1

Sheet: 1 of 1

Equipment & Methods: JCB 3CX excavator				Project Name: Brockman Haven Project Location: Cheriton Client: Mont Blanc Developments		Job No: 12324		
Co-ordinates: E: N:				Ground Level (m):		Date Started: 05/12/2019 Date Completed: 05/12/2019		
Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.80		D			MADE GROUND : Block paving over mid brown sand base	-0.18		(0.18)
					MADE GROUND : Olive grey Type 1 ballast			0.18
								(0.62)
								0.80
								(0.50)
1.50		D			Soft to firm brown very sandy CLAY	-0.80		0.80
								1.30
		D			Firm olive brown very sandy CLAY	-1.30		1.30
								(0.50)
2.50		D			Olive green fine to medium SAND with occasional medium to coarse sandstone	-1.80		1.80
								(1.05)
						-2.85		2.85
						End of Trial Pit 2.85 m (Thickness of basal layer not proven)		
Remarks:						Logged By:		Checked By:
						STP		
						Scale: 1:20		Approved By:
						FIG No.		

Notes: For explanation of symbols and abbreviations, see Key Sheet.



SOAKAWAY TESTING

Test in accordance with BRE 365 Guidelines

Project Reference Number: 12324 Client: Mont Blanc Developments

Site: Brockman Haven

Location: Cheriton

SP1
Test 1 / 1

Weather: Dry

Date of Test: 05-Dec-19

TRIAL PIT DIMENSIONS

Width (m): 0.5

Length (m): 2.25

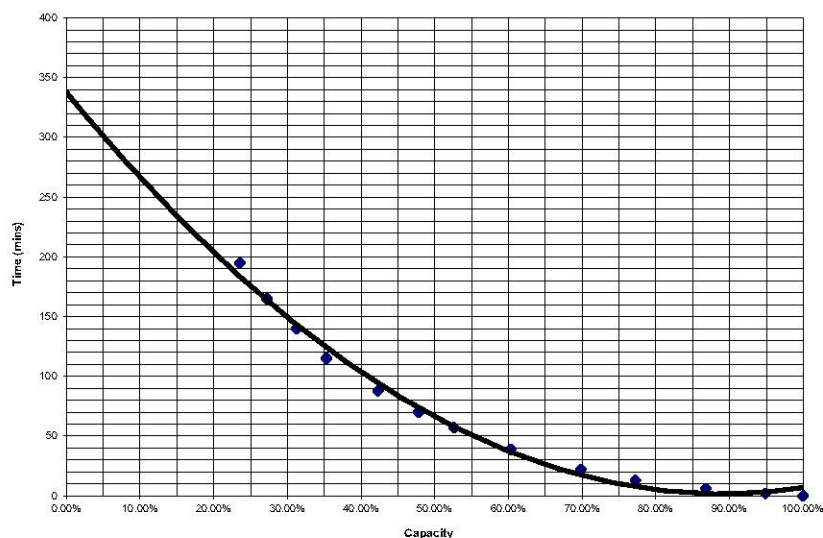
Depth (m): 2.85

Invert Depth (m): 1.49

Drainage time of test (mins): 195 (76% Drained)

SOAKAGE RESULTS

Depth	(%)	Time
1.49	100.00%	0
1.56	94.85%	2
1.67	86.76%	6
1.8	77.21%	13
1.9	69.85%	22
2.03	60.29%	39
2.135	52.57%	57
2.2	47.79%	70
2.275	42.28%	88
2.37	35.29%	115
2.425	31.25%	140
2.48	27.21%	165
2.53	23.53%	195
2.85		



INFILTRATION RATE

Depth (B.G.L.) (m)	Infiltration Rate (m/s)
1.49 - 2.85	1.63E-05

Departures from the specified test method:

moderate soakage potential

Remarks:

Authorised Signatory:

C SPANTON

Date:

9 / 12 / 2019

APPENDIX E



Proposed Masterplan



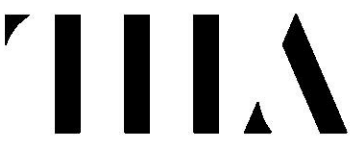
DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS ARE TO BE CHECKED ON SITE. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL CONSULTANTS INFORMATION.

TAYLORHARE ARCHITECTS IS A LIMITED COMPANY REGISTERED IN ENGLAND AND WALES: NO. 10695684.

Accommodation Schedule

1	4b 5p	97sqm
2	3b 4p	84sqm
3	3b 4p	84sqm
4	2b 3p	70sqm
5	2b 3p	70sqm
6	2b 3p	70sqm
7	3b 4p	84sqm
8	3b 4p	84sqm
9	4b 5p	97sqm
10	4b 5p	97sqm
11	3b 4p	84sqm
12	2b 3p	61sqm
13	2b 3p	61sqm
14	1b 2p	50sqm
15	2b 3p	61sqm
16	2b 3p	61sqm
17	2b 3p	61sqm
18	1b 2p	50sqm
19	2b 3p	61sqm
20	2b 3p	61sqm
21	2b 3p	61sqm
22	1b 2p	50sqm
23	2b 3p	61sqm
24	2b 3p	61sqm
25	2b 3p	61sqm

REV	DATE	DESCRIPTION



TaylorHare
Architects

01227 668 073
hello@taylorhare.com
taylorhare.com

The Dovedale
Overland Lane
Ash - CT13 0LE

PROJECT:
Residential Development
at the site of The Brockman Family
Centre, Cheriton High Street

DRAWING TITLE:
Proposed Ground Floor Plan

SCALE: 1:200 @ A1	DRAWN BY: 03
DATE DRAWN: May 2019	CHECKED BY:

STATUS:
PRELIMINARY

DRAWING NUMBER: 1849_100	REVISION:
------------------------------------	-----------

APPENDIX F



Proposed Drainage Plans and Calculations



DO NOT SCALE

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P1	29.07.19	JM	First Issue	CS	CS
REV	DATE	BY	DESCRIPTION	CHK	APD

client
MONTBLANC DEVELOPMENTS LTD

project
HNMB BROCKMAN FAMILY CENTRE

title
PROPOSED CONTRIBUTING AREAS

project	dwg	rev
13894	D-02	P1

Drawn	Checked	Approved	scale @ A3	date
JM	CS	CS	1:500	29.07.19

status	
FOR INFORMATION	P



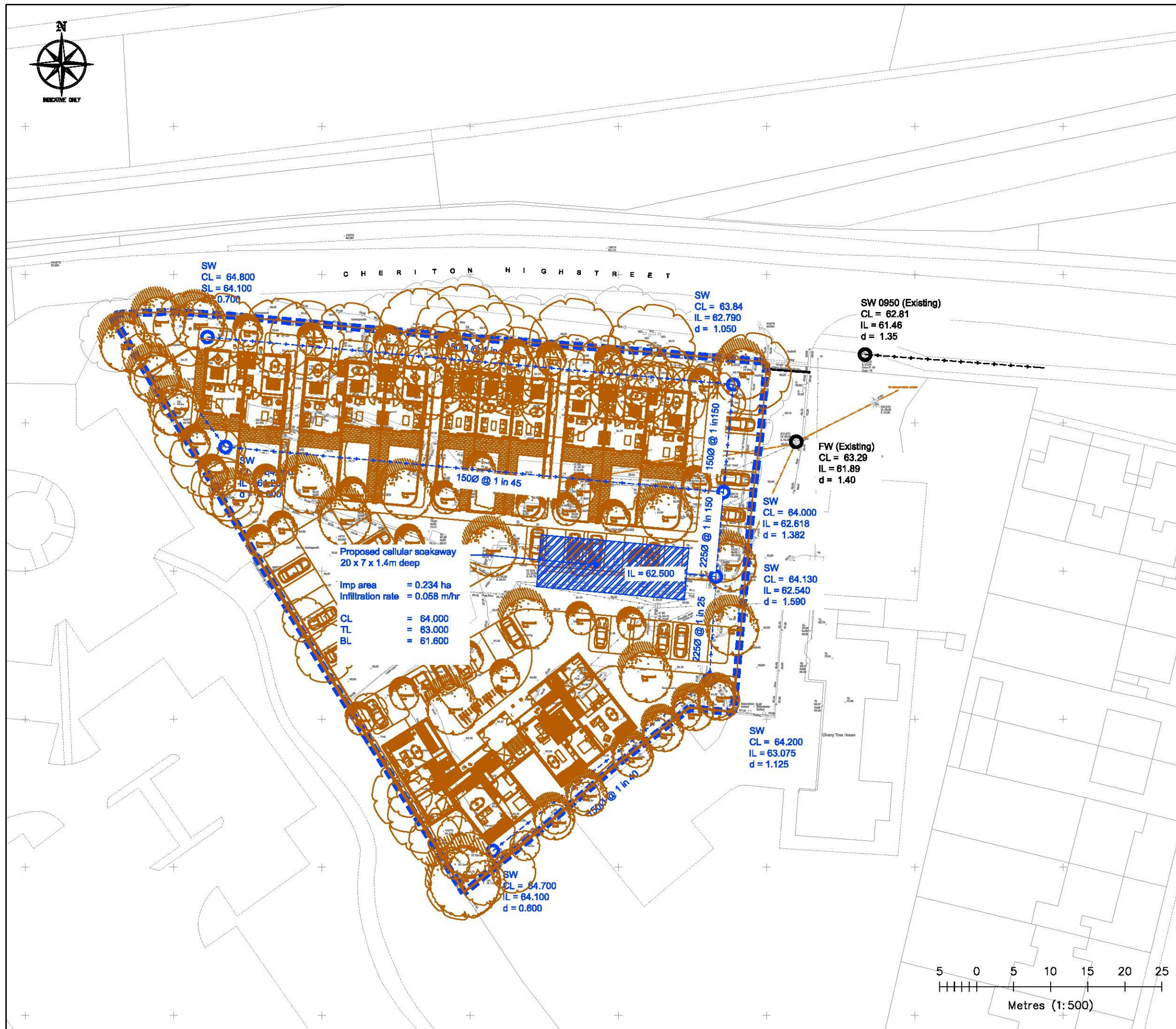
Eclipse House, Eclipse Park, Sittingbourne Road
Maidstone, Kent. ME14 3EN
t: 01622 776226 f: 01622 776227
e: info@dhaplanning.co.uk w: www.dhaplanning.co.uk

CAD Reference:	A3
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DO NOT SCALE

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REV	DATE	BY	DESCRIPTION	CHK	APD
P2	08.01.20	CS	Drainage amended	CS	CS
P1	29.07.19	JM	First Issue	CS	CS
client					
MONTBLANC DEVELOPMENTS LTD					
project					
HNMB BROCKMAN FAMILY CENTRE					
title					
PROPOSED DRAINAGE					
project			drwg	rev	
13894			D-03	P1	
Drawn	Checked	Approved	scale @ A3	date	
JM	CS	CS	1:500	29.07.19	
status					P
FOR INFORMATION					
Eclipse House, Eclipse Park, Sittingbourne Road Maidstone, Kent. ME14 3EN					
t: 01622 776226			f: 01622 776227		
e: info@dhaplanning.co.uk			w: www.dhaplanning.co.uk		
CAD Reference:					A3

DHA Transport Ltd				Page 1																																																																																																																																																																																																																			
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Date 08/01/2020 16:00 File soakway.SRCX			Designed by Chris Checked by																																																																																																																																																																																																																				
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Summary of Results for 100 year Return Period (+20%) Half Drain Time : 1219 minutes. <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>62.116</td><td>0.516</td><td>1.1</td><td>68.6</td><td>O K</td></tr><tr><td>30 min Summer</td><td>62.266</td><td>0.666</td><td>1.1</td><td>88.5</td><td>O K</td></tr><tr><td>60 min Summer</td><td>62.405</td><td>0.805</td><td>1.1</td><td>107.1</td><td>O K</td></tr><tr><td>120 min Summer</td><td>62.523</td><td>0.923</td><td>1.1</td><td>122.8</td><td>O K</td></tr><tr><td>180 min Summer</td><td>62.587</td><td>0.987</td><td>1.1</td><td>131.2</td><td>O K</td></tr><tr><td>240 min Summer</td><td>62.626</td><td>1.026</td><td>1.1</td><td>136.5</td><td>O K</td></tr><tr><td>360 min Summer</td><td>62.668</td><td>1.068</td><td>1.1</td><td>142.1</td><td>O K</td></tr><tr><td>480 min Summer</td><td>62.685</td><td>1.085</td><td>1.1</td><td>144.3</td><td>O K</td></tr><tr><td>600 min Summer</td><td>62.687</td><td>1.087</td><td>1.1</td><td>144.5</td><td>O K</td></tr><tr><td>720 min Summer</td><td>62.680</td><td>1.080</td><td>1.1</td><td>143.6</td><td>O K</td></tr><tr><td>960 min Summer</td><td>62.649</td><td>1.049</td><td>1.1</td><td>139.5</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>62.581</td><td>0.981</td><td>1.1</td><td>130.5</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>62.499</td><td>0.899</td><td>1.1</td><td>119.6</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>62.428</td><td>0.828</td><td>1.1</td><td>110.1</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>62.298</td><td>0.698</td><td>1.1</td><td>92.8</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>62.182</td><td>0.582</td><td>1.1</td><td>77.4</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>62.078</td><td>0.478</td><td>1.1</td><td>63.5</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>61.986</td><td>0.386</td><td>1.1</td><td>51.3</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>61.906</td><td>0.306</td><td>1.1</td><td>40.6</td><td>O K</td></tr><tr><td>15 min Winter</td><td>62.179</td><td>0.579</td><td>1.1</td><td>77.0</td><td>O K</td></tr></tbody></table> <table><thead><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr></thead><tbody><tr><td>15 min Summer</td><td>158.787</td><td>0.0</td><td>19</td></tr><tr><td>30 min Summer</td><td>103.144</td><td>0.0</td><td>34</td></tr><tr><td>60 min Summer</td><td>63.225</td><td>0.0</td><td>64</td></tr><tr><td>120 min Summer</td><td>37.201</td><td>0.0</td><td>124</td></tr><tr><td>180 min Summer</td><td>27.132</td><td>0.0</td><td>182</td></tr><tr><td>240 min Summer</td><td>21.640</td><td>0.0</td><td>242</td></tr><tr><td>360 min Summer</td><td>15.692</td><td>0.0</td><td>362</td></tr><tr><td>480 min Summer</td><td>12.472</td><td>0.0</td><td>482</td></tr><tr><td>600 min Summer</td><td>10.429</td><td>0.0</td><td>602</td></tr><tr><td>720 min Summer</td><td>9.006</td><td>0.0</td><td>720</td></tr><tr><td>960 min Summer</td><td>7.140</td><td>0.0</td><td>950</td></tr><tr><td>1440 min Summer</td><td>5.138</td><td>0.0</td><td>1152</td></tr><tr><td>2160 min Summer</td><td>3.691</td><td>0.0</td><td>1532</td></tr><tr><td>2880 min Summer</td><td>2.916</td><td>0.0</td><td>1932</td></tr><tr><td>4320 min Summer</td><td>2.090</td><td>0.0</td><td>2728</td></tr><tr><td>5760 min Summer</td><td>1.652</td><td>0.0</td><td>3520</td></tr><tr><td>7200 min Summer</td><td>1.377</td><td>0.0</td><td>4256</td></tr><tr><td>8640 min Summer</td><td>1.186</td><td>0.0</td><td>5016</td></tr><tr><td>10080 min Summer</td><td>1.046</td><td>0.0</td><td>5744</td></tr><tr><td>15 min Winter</td><td>158.787</td><td>0.0</td><td>19</td></tr></tbody></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration 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Summer	63.225	0.0	64	120 min Summer	37.201	0.0	124	180 min Summer	27.132	0.0	182	240 min Summer	21.640	0.0	242	360 min Summer	15.692	0.0	362	480 min Summer	12.472	0.0	482	600 min Summer	10.429	0.0	602	720 min Summer	9.006	0.0	720	960 min Summer	7.140	0.0	950	1440 min Summer	5.138	0.0	1152	2160 min Summer	3.691	0.0	1532	2880 min Summer	2.916	0.0	1932	4320 min Summer	2.090	0.0	2728	5760 min Summer	1.652	0.0	3520	7200 min Summer	1.377	0.0	4256	8640 min Summer	1.186	0.0	5016	10080 min Summer	1.046	0.0	5744	15 min Winter	158.787	0.0	19
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DHA Transport Ltd				Page 2	
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN		Cheriton High Street			
Date 08/01/2020 16:00 File soakway.SRCX		Designed by Chris Checked by			
Causeway		Source Control 2019.1			
<u>Summary of Results for 100 year Return Period (+20%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	62.347	0.747	1.1	99.4	O K
60 min Winter	62.505	0.905	1.1	120.4	O K
120 min Winter	62.642	1.042	1.1	138.6	O K
180 min Winter	62.717	1.117	1.1	148.6	O K
240 min Winter	62.765	1.165	1.1	155.0	O K
360 min Winter	62.820	1.220	1.1	162.3	O K
480 min Winter	62.847	1.247	1.1	165.9	O K
600 min Winter	62.857	1.257	1.1	167.2	O K
720 min Winter	62.857	1.257	1.1	167.2	O K
960 min Winter	62.838	1.238	1.1	164.7	O K
1440 min Winter	62.761	1.161	1.1	154.4	O K
2160 min Winter	62.651	1.051	1.1	139.8	O K
2880 min Winter	62.550	0.950	1.1	126.3	O K
4320 min Winter	62.355	0.755	1.1	100.4	O K
5760 min Winter	62.179	0.579	1.1	77.0	O K
7200 min Winter	62.024	0.424	1.1	56.4	O K
8640 min Winter	61.891	0.291	1.1	38.7	O K
10080 min Winter	61.783	0.183	1.1	24.3	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	103.144	0.0	33		
60 min Winter	63.225	0.0	64		
120 min Winter	37.201	0.0	122		
180 min Winter	27.132	0.0	180		
240 min Winter	21.640	0.0	240		
360 min Winter	15.692	0.0	356		
480 min Winter	12.472	0.0	472		
600 min Winter	10.429	0.0	588		
720 min Winter	9.006	0.0	700		
960 min Winter	7.140	0.0	924		
1440 min Winter	5.138	0.0	1340		
2160 min Winter	3.691	0.0	1648		
2880 min Winter	2.916	0.0	2104		
4320 min Winter	2.090	0.0	2980		
5760 min Winter	1.652	0.0	3800		
7200 min Winter	1.377	0.0	4544		
8640 min Winter	1.186	0.0	5264		
10080 min Winter	1.046	0.0	5856		
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DHA Transport Ltd		Page 4
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Cheriton High Street	
Date 08/01/2020 16:00 File soakway.SRCX	Designed by Chris Checked by	
Causeway	Source Control 2019.1	

Model Details

Storage is Online Cover Level (m) 64.000

Cellular Storage Structure

Invert Level (m) 61.600 Safety Factor 2.0

Infiltration Coefficient Base (m/hr) 0.05900 Porosity 0.95

Infiltration Coefficient Side (m/hr) 0.05900

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	140.0	140.0	1.300	140.0	140.0
0.100	140.0	140.0	1.400	140.0	140.0
0.200	140.0	140.0	1.500	140.0	140.0
0.300	140.0	140.0	1.600	140.0	140.0
0.400	140.0	140.0	1.700	140.0	140.0
0.500	140.0	140.0	1.800	140.0	140.0
0.600	140.0	140.0	1.900	140.0	140.0
0.700	140.0	140.0	2.000	140.0	140.0
0.800	140.0	140.0	2.100	140.0	140.0
0.900	140.0	140.0	2.200	140.0	140.0
1.000	140.0	140.0	2.300	140.0	140.0
1.100	140.0	140.0	2.400	140.0	140.0
1.200	140.0	140.0	2.500	140.0	140.0

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