



Flood Risk Assessment

Addendum Report

Ford Lane, Yapton, BN18 0DS

Client

Redrow Homes Limited

Redrow House
Unit 1, Faraday Office Park
Rankine Road
Basingstoke
RG24 8QB

Ref: 11286

Date: February 2022

Consulting Engineers

GTA Civils & Transport Ltd

Gloucester House
66a Church Walk
Burgess Hill
West Sussex
RH15 9AS

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- A Site Location Maps, Aerial Photo & Topographic Survey
- B Environment Agency Surface Water Flood Maps
- C BRE365 Soakage Testing
- D Proposed Drainage Layouts & Micro Drainage Calculation Sheets

Issue	Issue date	Compiled	Checked
Preliminary/Planning Issue	24 February 2022	JP	MR

Introduction

- 1.1 This FRA Addendum has been prepared for Redrow Homes Ltd in relation to the proposed development at Ford Lane, Yapton, BN18 0DS (nearest postcode). No responsibility is accepted to any third party for all or part of this study in connection with this or any other development.
- 1.2 GTA Civils & Transport Ltd. was appointed by the client to provide a Flood Risk Assessment (FRA) Addendum report as required by Arun District Council (ADC) to support the planning application for the proposed development.
- 1.3 Redrow Homes Ltd submitted an application for Outline Planning Permission in 2016 for up to 100 dwelling units, including internal access roads, parking, public open spaces and landscaping; associated drainage and earthworks. The original application was supported by a FRA report prepared by Odyssey – which was appended to the original Planning Statement – refer to Appendix D.
- 1.4 This FRA addendum has been prepared in accordance with the 2021 National Planning Policy Framework (NPPF) and the associated planning practice guidance (PPG).
- 1.5 The supporting Flood Risk Assessment and (separate) Drainage Strategy, dated April 21, are valid. Most of the subject items are not repeated in this Addendum. The EA's surface water flood maps have been updated and so these have been assessed for this particular site – refer to Section 2.3 and Appendix B.

2 Existing Site and Flood Conditions

- 2.1 Soil soakage testing was carried out in accordance with BRE Digest 365. This is covered in Odyssey's Surface Water Strategy – refer to section 1.5 above. The nearest test was carried out at SA5 – refer to Odyssey's report and Appendix C for an excerpt of the layout of this part of the . The shallow test yielded a result of 4.8×10^{-6} m/s.
- 2.2 A groundwater monitoring exercise was carried out in October 19. This is covered in Odyssey's Surface Water Strategy – refer to section 1.5 above. The nearest borehole to this development is BH103 – refer to the graph in Appendix C. As the shallowest recorded level was over 3.2m bgl, it is clear that infiltration up to 2.2m bgl is possible here (to allow for 1m of standoff).
- 2.3 Surface Water flooding: this can occur when excess rainwater does not infiltrate into the ground or is not intercepted by urban drainage systems and instead flows across the surface. The EA's 3 maps for the High, Medium and Low Risk scenarios are shown in Appendix B. The site is removed from flooding in both the High and Medium Risk events (1 in 30 years and 1 in 100 years respectively). Only a very small area at the NE corner is liable to flood in the Low Risk scenario (1000 years). As this area is not impacted by the proposed development, it can be dismissed/ignored.
- 2.4 The other sources of flooding and groundwater analysis are contained in Odyssey's FRA report.
- 2.5 In conclusion, the site's flood risk profile is **Low**.

3 Proposed Development & Drainage Strategy

3.1 Redrow Homes Ltd is applying for Full Planning Permission for the following:

“the erection of 15no. dwellings (including 4no. affordable units) with associated access, parking, landscaping, drainage and public open space (additional units to those approved under application Y/82/20/RES)”

3.2 As the site’s flood risk profile is Low – as concluded in section 2.5 above – there is no need for flood mitigation. The units’ minimum floor level does not have to be set above any particular level.

3.3 A drainage design strategy has been prepared, with consideration to the SuDS hierarchy. Infiltration is possible, given the favourable soil type, ie chalk.

3.4 2 distinct areas of permeable paving have been designed to convey the roofs’ surface water to ground. The sub-bases of these will act as infiltration blankets. The soakage test rate of 4.8×10^{-6} m/s (as set out in section 2.1 above) was used to size these infiltration blanket sub-bases.

3.5 These features will provide a filtration treatment stage to protect the aquifer.

3.6 The drainage strategy layout is included in Appendix D. Micro Drainage calculation sheets for the areas of permeable paving are included in Appendix D, which demonstrate that the scheme will hold the volume in the critical 1 in 100 years + 40% storm event.

3.7 It is acknowledged that the soil soakage rate is not accurate enough for a detailed design. Further soakage tests in accordance with BRE365 will be undertaken at each of the 4 areas – to the same depth as per the strategy. The design will be amended in light of the revised calculated rates.

3.8 Exceedance: exceedance arrows are shown on the overland flow routes layout in Appendix D.

3.9 A protective earth bund running along the south boundary will protect the houses south of this development from any groundwater/overland flows (refer to the layouts in Appendix D).

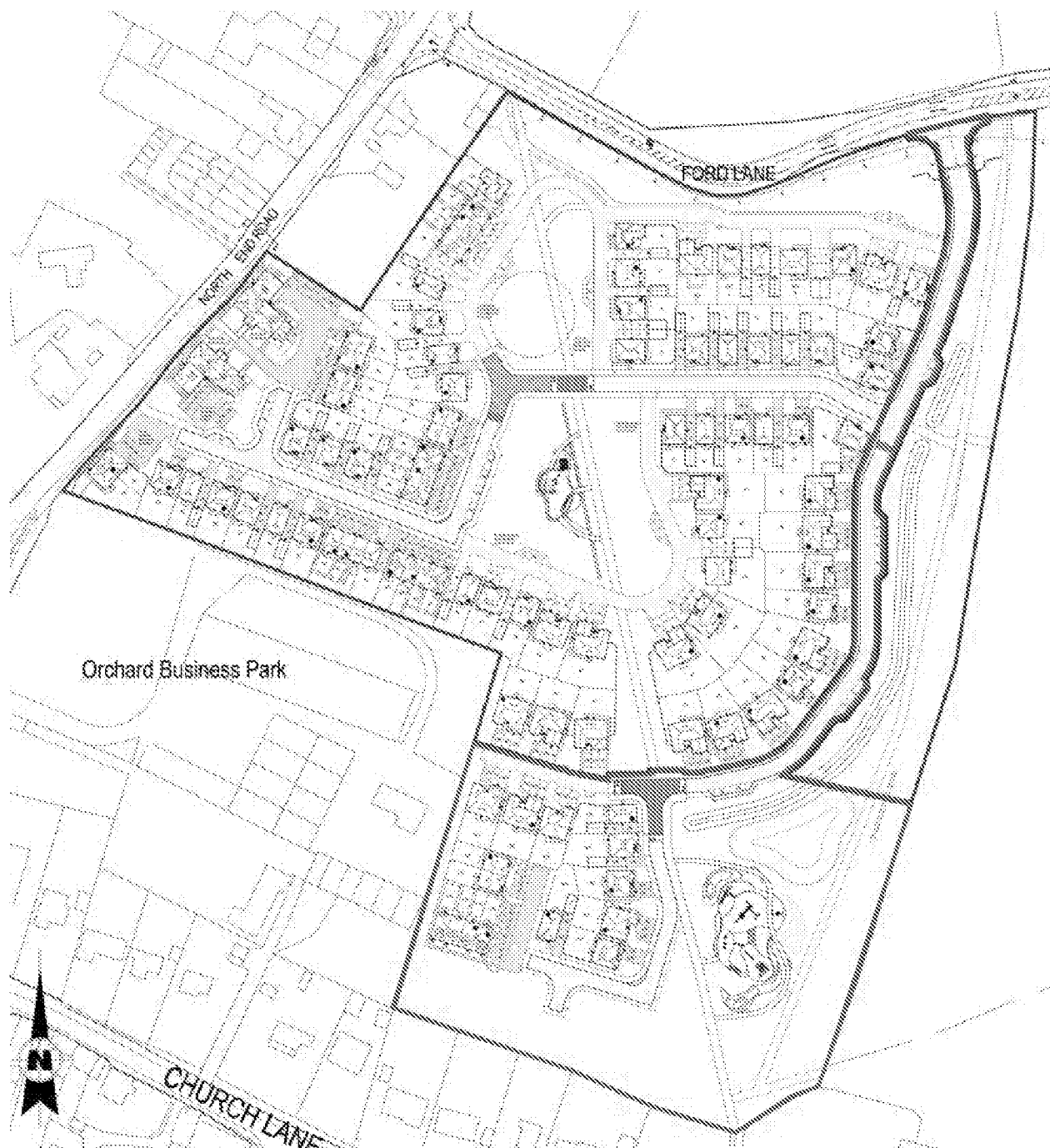
3.10 Responsibility for maintenance of the drainage network will be identical to the previous application. The private / communal drainage features will be owned and maintained by the Estate Management Company commissioned for the earlier phase of development.

- End of Report -

Appendix A

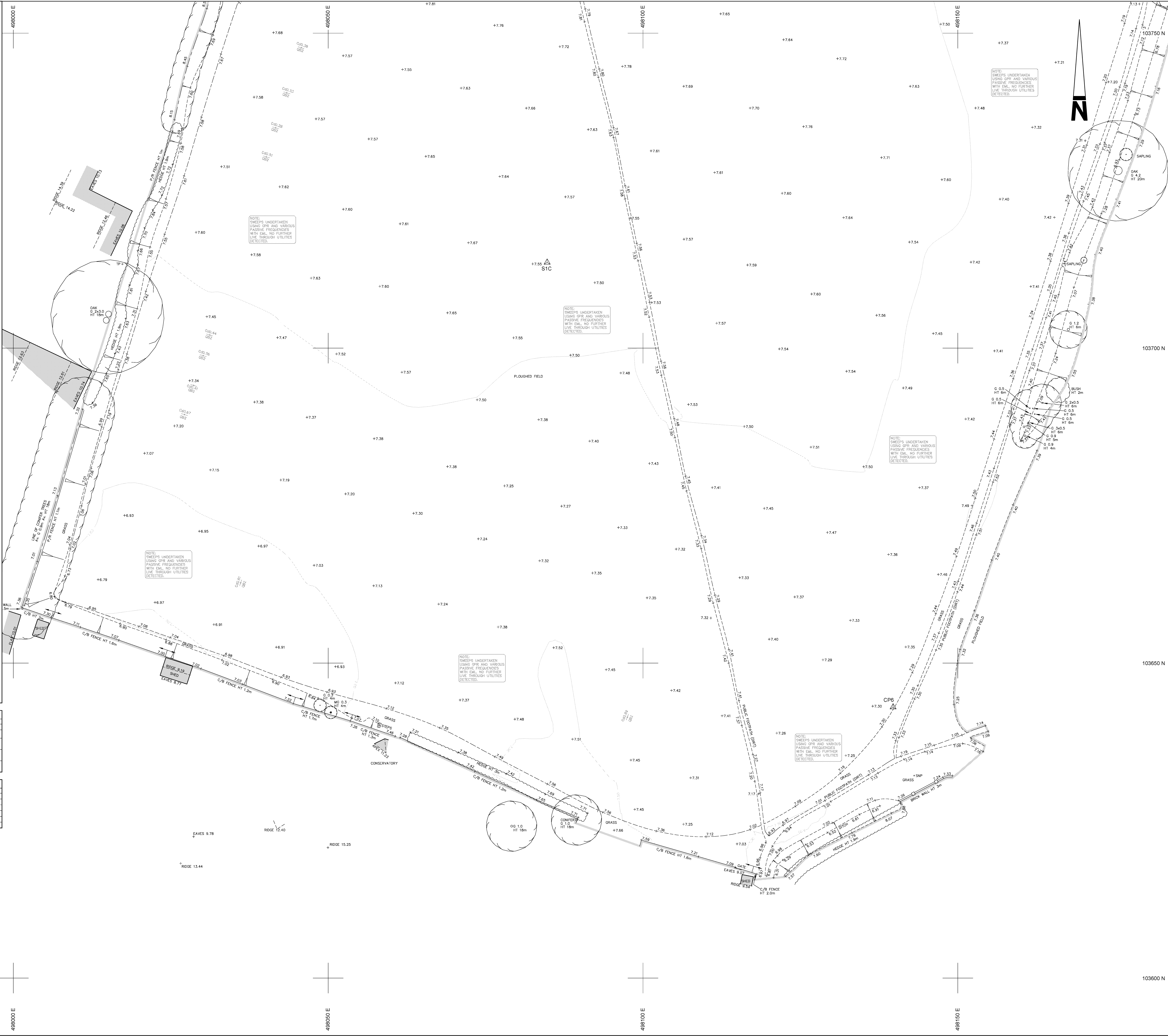
Site Location Maps, Aerial Photo & Topographic Survey

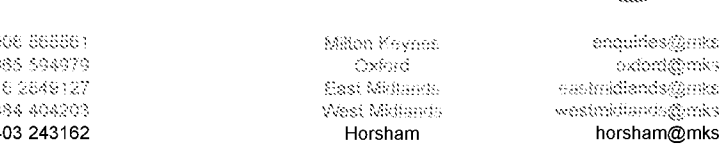












Tel:01464 802881
 250/0405 54079
 Tel:01464 802812

William Poynter
 Chris J
 Ewan Smith
 David Williams
 Harsham

enquiries@mksurveys.co.uk
 info@mksurveys.co.uk
 www.standishmksurveys.co.uk
 www.burnhammksurveys.co.uk
 london@mksurveys.co.uk

www.mksurveys.com

www.surveys4btim.co.uk



North End Road
 Yapton
 West Sussex

Topographical and PAS 128:2014 Utility Survey

Scale	Sheet Size	Sheet Number	Date
1:200	A0	8	January 2019
Project Number:	Rev	Surveyed By	Approved By
26436	9	JL	AJ / CP



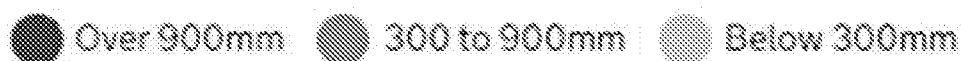



Appendix B

Environment Agency Surface Water Flood Maps



Surface water flood risk: water depth in a high risk scenario
Flood depth (millimetres)



EA's Online Surface Water Flood Depth Map in a 'High Risk Scenario'
(1 in 30 years storm event)



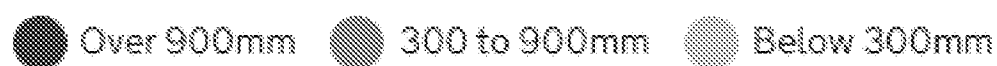
Surface water flood risk: water depth in a medium risk scenario
Flood depth (millimetres)



EA's Online Surface Water Flood Depth Map in a 'Medium Risk Scenario'
(1 in 100 years storm event)



Surface water flood risk: water depth in a low risk scenario
Flood depth (millimetres)



EA's Online Surface Water Flood Depth Map in a 'Low Risk Scenario'
(1 in 1000 years storm event)

Appendix C

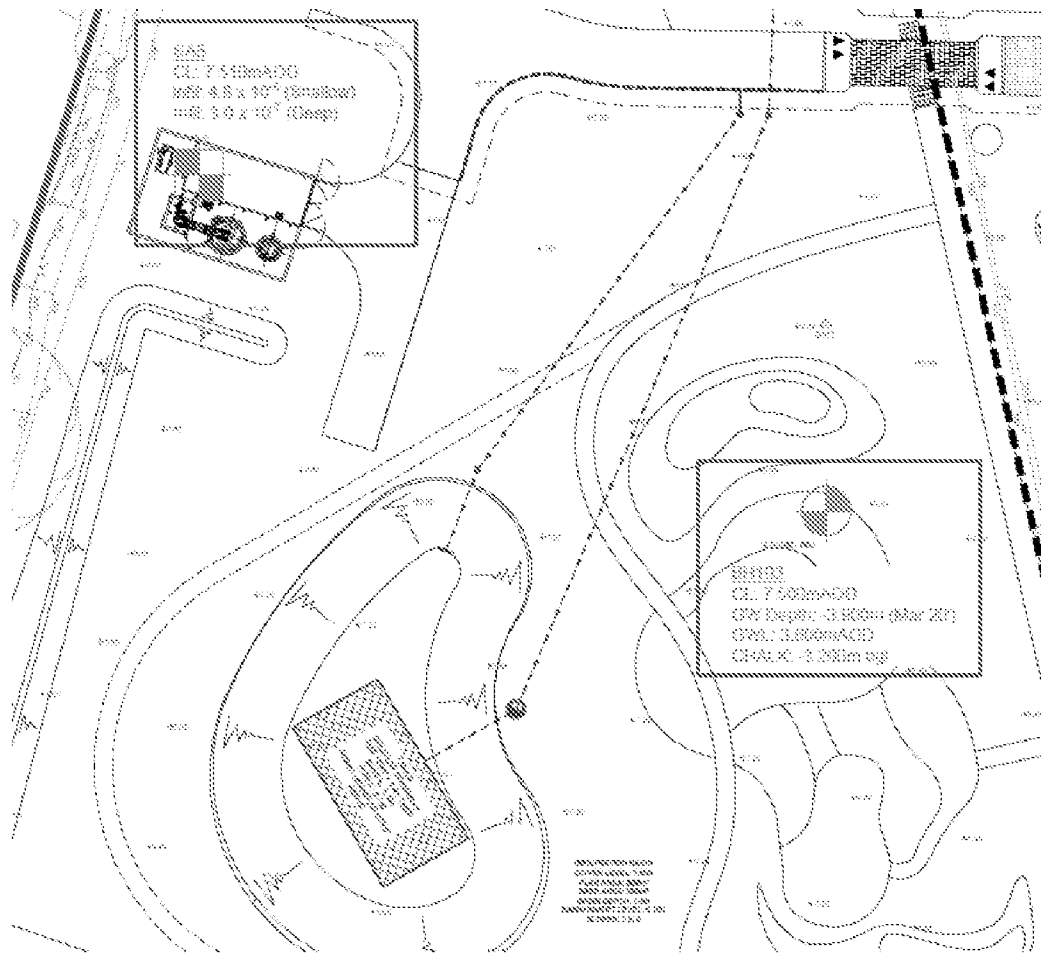
BRE365 Soakage Testing & Groundwater Monitoring Graph

Two infiltration tests, one shallow and one deep, were undertaken at each test location. The shallow tests are referenced A (i.e. SA1A) and had a base depth of around 1 m. The material at the base of these soakaway pits typically comprised clayey silt or silty clay. The deep tests are referenced B (i.e. SA1B) and had a base depth of around 3 m. The base material typically comprised silty sandy clay; structureless chalk was encountered at the base of three pits on the North End Road site (SA2B, SA4B and SA5B).

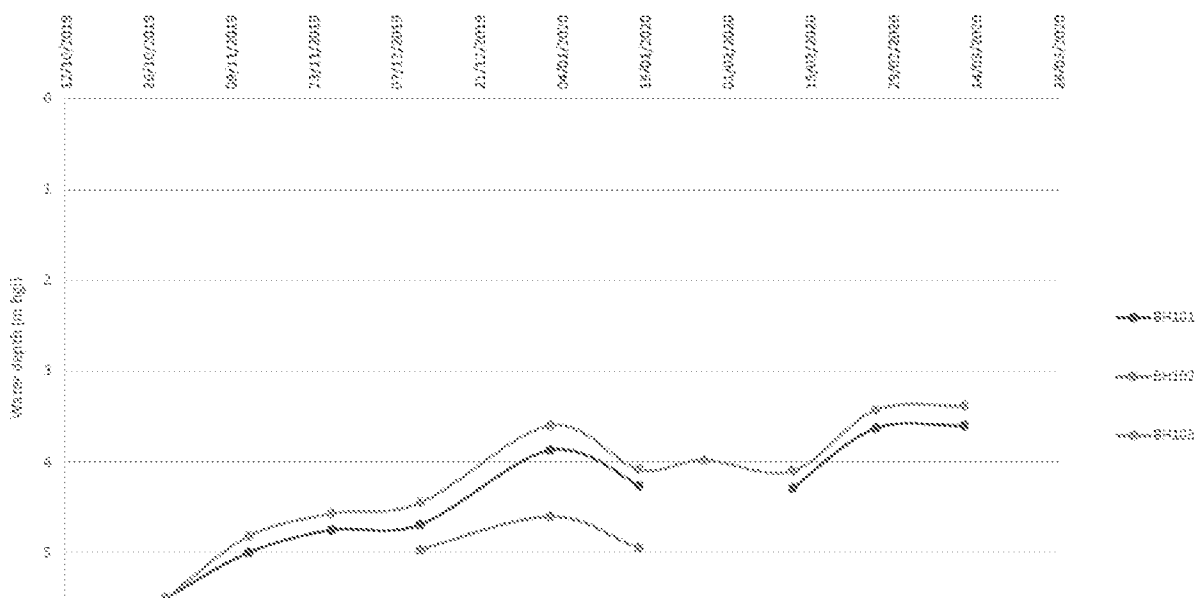
Pits were filled with around 500 mm of water and left to drain for at least 3 hours. A number of pits suffered from minor side collapses due to heavy rainfall which occurred during the test, causing the depth of the water in the pit to rise. This has been accounted for during the calculation of the infiltration rates. The results and calculations are appended to this report, and are summarised in the tables below.

Location	Shallow Infiltration Rate (m/s x10 ⁻⁶)	Deep Infiltration Rate (m/s x10 ⁻⁶)
FORD LANE		
SA1	5.5	1.6
SA2	3.3	4.1
SA3	4.0	0.38
SA4	0.31	0.65
SA5	4.8	0.3
SA6	0.86	0.13
SA7	1.7	0.83
SA8	2.5	N/A*
SA9	1.7	N/A*
NORTH END ROAD		
SA1	0.86	0.34
SA2	1.7	N/A*
SA3	0.92	N/A*
SA4	0.55	5.6
SA5	0.76	0.39

*No drop in water level was recorded before heavy rain caused water level to rise.

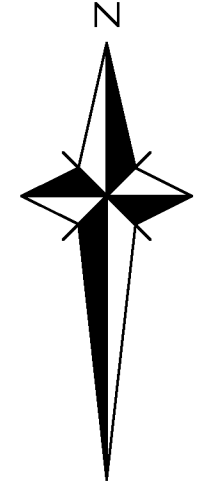


Graph of water level at North End Road



Appendix D

Proposed Drainage Layouts & Micro Drainage Calculations



DESIGN NOTES

1. STORAGE DESIGN BASED ON 1 IN 100 YR STORM + 40%.
2. DRAIN POINTS AND LOCATIONS TO BE CONFIRMED BY ARCHITECT.
3. CONTRACTOR TO ESTABLISH LOCATIONS OF ALL EXISTING SERVICES PRIOR TO COMMENCING.
4. EXISTING TREES TO BE PROTECTED WHERE EXCAVATIONS RUN CLOSE.
5. DESIGN SUBJECT TO APPROVAL FROM SOUTHERN WATER FOR CONNECTIONS TO SEWERS AND ADOPTION OF SEWERS.
6. PERMEABLE PAVING DESIGN BASED ON AN INFILTRATION RATE OF 4.8 x 10³ M/S. TESTS TO BE CARRIED OUT ON SITE BY THE CONTRACTOR TO CONFIRM THE RATES.

GENERAL NOTES

1. The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non-intrusive observations, record drawings or the like. The contractor shall satisfy carry out intrusive investigations, trial holes or soundings prior to commencing work to satisfy himself that it is safe to proceed and that the assessments are accurate. Any discrepancies shall be notified to gta prior to works commencing.
2. Tender or billing drawings shall not be used for construction or the ordering of materials.
3. Do not scale. All dimensions and levels to be site confirmed.
4. This drawing shall be read in conjunction with all relevant architects, consultants drawings and specifications, together with H&S plan requirements.
5. Copyright: This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.
6. All drawings specifications and recommendations made by gta are subject to Local Authority and other relevant Statutory Authorities approval. Any works or services made adoptive due to the client proceeding prior to these approvals is considered wholly at the Client's risk and no responsibility for resulting abortive works or costs.

KEY

- Private surface water drain
- Private foul drain
- Adoptable foul sewer
- FIC Foul Plastic Inspection Chamber - D002.6
- SIC Surface Water Plastic Inspection Chamber - D002.6
- 300mm diameter Surface Water Access Chamber - D002.18
- 300mm diameter Foul Water Access Chamber - D002.18
- YG Yard gully - 300 x 600mm deep
- RG Private road gully
- FWMH Adoptable Foul Water Sewer Manhole

- Foul drain point D007.0
- Drain ending point
- SW Drain point for RWP D003.5
- Drainage channel
- 300mm wide x 450mm deep gravel filled trench drain

- Area of voided stone under permeable paving - refer to external works report for details
- Service margin
- Distribution tank (trial) from roof drainage in permeable paving sub-base
- DT

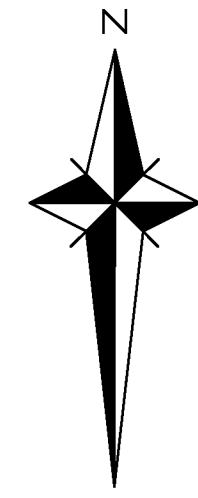
- PROPOSED PERMEABLE PAVING SUB-BASE INVERT LEVELS
- CHECK DAM

ABBREVIATIONS

- D007.0 DETAIL NUMBER - SEE DRAINAGE DETAIL SHEET
- FD FOUL DRAIN
- SWD SURFACE WATER DRAIN
- FWS ADAPTABLE FOUL WATER SEWER
- SWS ADAPTABLE SURFACE WATER SEWER
- PH MANHOLE
- IC INSPECTION CHAMBER
- SA SKAWAY
- FIC 400mm DIA FOUL INSPECTION CHAMBER - D002.6
- SIC 400mm DIA SURFACE WATER INSPECTION CHAMBER - D002.6
- PAC 300mm DIA FOUL ACCESS CHAMBER - D002.18
- SAC 300mm DIA SURFACE WATER ACCESS CHAMBER - D002.18
- CI CAST IRON
- VC VITRIFIED CLAY
- CONC CONCRETE
- PVC-U POLY(VINYL CHLORIDE) - UNPLASTICISED
- G SMALL GULLY - D009.1
- YG YARD GULLY - D009.2
- RG ROAD GULLY - D009.3
- CPG CAR PARK GULLY - D009.2
- BP BELOW GROUND DRAIN POINT
- SVP SOIL VENT PIPE DROP
- RP RAINWATER DRAINAGE POINT
- DT DISTRIBUTION TANK
- FFL FINISHED FLOOR LEVEL
- SFL STRUCTURAL S.A. LEVEL
- GL GROUND LEVEL
- CL COVER LEVEL
- IL INVERT LEVEL
- SL SUMP LEVEL
- HL HIGH LEVEL
- BD BACKDROP
- CBS CONCRETE BED & SURROUND
- CLASS GRANULAR BED & SURROUND
- CLASS GRANULAR BED



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LEGEND

- SITE BOUNDARY**
- FFL 8.000**
PROPOSED FINISHED FLOOR LEVEL
- FGL 7.925**
PROPOSED GARAGE LEVEL
- INDICATIVE DIRECTION OF OVERLAND FLOW
- x HP** HIGH POINT
- x LP** LOW POINT

PI	INITIAL ISSUE	24.02.22	S	3P
Rev	Amendments	Date	Dwn	Chn
Status	PRELIMINARY			
Client	 REDROW			
Architect	RHP			
Project	FORD LANE, YAPTON ADDITIONAL UNITS SCHEME			
Title	OVERLAND FLOW ROUTES			
Date	FEBRUARY 2022	Scale @ A0	1:200	
Client Ref.	Project Ref.		11286	
 Gloucester House, 66a Church Walk, Burgess Hill, West Sussex, BN15 5AS Tel: 01444 871444 Web: www.gtacivils.co.uk				
Drawing Number			Rev.	
20160-GS-Z1-XX-DR-C-3107			P1	

GTA Civils Ltd				Page 1																																																																																																																																																																																																																			
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min Summer</td><td>9.965</td><td>0.0</td><td>428</td></tr><tr><td>720 min Summer</td><td>8.574</td><td>0.0</td><td>496</td></tr><tr><td>960 min Summer</td><td>6.754</td><td>0.0</td><td>634</td></tr><tr><td>1440 min Summer</td><td>4.833</td><td>0.0</td><td>908</td></tr><tr><td>2160 min Summer</td><td>3.477</td><td>0.0</td><td>1300</td></tr><tr><td>2880 min Summer</td><td>2.770</td><td>0.0</td><td>1700</td></tr><tr><td>4320 min Summer</td><td>2.040</td><td>0.0</td><td>2460</td></tr><tr><td>5760 min Summer</td><td>1.661</td><td>0.0</td><td>3176</td></tr><tr><td>7200 min Summer</td><td>1.429</td><td>0.0</td><td>3896</td></tr><tr><td>8640 min Summer</td><td>1.273</td><td>0.0</td><td>4664</td></tr><tr><td>10080 min Summer</td><td>1.162</td><td>0.0</td><td>5344</td></tr><tr><td>15 min Winter</td><td>142.619</td><td>0.0</td><td>22</td></tr></tbody></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	0.407	0.407	0.9	23.8	O K	30 min Summer	0.475	0.475	1.1	32.4	O K	60 min Summer	0.536	0.536	1.2	41.3	O K	120 min Summer	0.570	0.570	1.3	46.7	O K	180 min Summer	0.583	0.583	1.3	49.0	O K	240 min Summer	0.588	0.588	1.3	49.7	O K	360 min Summer	0.584	0.584	1.3	49.1	O K	480 min Summer	0.579	0.579	1.3	48.3	O K	600 min Summer	0.574	0.574	1.3	47.5	O K	720 min Summer	0.568	0.568	1.3	46.5	O K	960 min Summer	0.555	0.555	1.3	44.4	O K	1440 min Summer	0.529	0.529	1.2	40.3	O K	2160 min Summer	0.494	0.494	1.1	35.1	O K	2880 min Summer	0.465	0.465	1.1	31.1	O K	4320 min Summer	0.420	0.420	1.0	25.4	O K	5760 min Summer	0.387	0.387	0.9	21.6	O K	7200 min Summer	0.361	0.361	0.8	18.8	O K	8640 min Summer	0.341	0.341	0.8	16.7	O K	10080 min Summer	0.325	0.325	0.8	15.2	O K	15 min Winter	0.433	0.433	1.0	27.0	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	142.619	0.0	22	30 min Summer	95.667	0.0	37	60 min Summer	61.408	0.0	66	120 min Summer	36.199	0.0	124	180 min Summer	26.482	0.0	182	240 min Summer	21.107	0.0	240	360 min Summer	15.154	0.0	306	480 min Summer	11.971	0.0	364	600 min Summer	9.965	0.0	428	720 min Summer	8.574	0.0	496	960 min Summer	6.754	0.0	634	1440 min Summer	4.833	0.0	908	2160 min Summer	3.477	0.0	1300	2880 min Summer	2.770	0.0	1700	4320 min Summer	2.040	0.0	2460	5760 min Summer	1.661	0.0	3176	7200 min Summer	1.429	0.0	3896	8640 min Summer	1.273	0.0	4664	10080 min Summer	1.162	0.0	5344	15 min Winter	142.619	0.0	22
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GTA Civils Ltd					Page 2	
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB			Ford Lane, Yapton			
Date 17/08/2021 File Plot 105-109 PP access			Designed by SDL Checked by			
XP Solutions			Source Control 2020.1			
Summary of Results for 100 year Return Period (+40%)						
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	
30 min Winter	0.505	0.505	1.2	36.8	O K	
60 min Winter	0.570	0.570	1.3	46.8	O K	
120 min Winter	0.609	0.609	1.3	53.2	O K	
180 min Winter	0.626	0.626	1.3	56.1	O K	
240 min Winter	0.633	0.633	1.3	57.3	O K	
360 min Winter	0.630	0.630	1.3	56.8	O K	
480 min Winter	0.622	0.622	1.3	55.4	O K	
600 min Winter	0.614	0.614	1.3	54.1	O K	
720 min Winter	0.606	0.606	1.3	52.7	O K	
960 min Winter	0.586	0.586	1.3	49.4	O K	
1440 min Winter	0.549	0.549	1.3	43.5	O K	
2160 min Winter	0.501	0.501	1.2	36.1	O K	
2880 min Winter	0.461	0.461	1.1	30.6	O K	
4320 min Winter	0.399	0.399	0.9	22.9	O K	
5760 min Winter	0.354	0.354	0.8	18.1	O K	
7200 min Winter	0.321	0.321	0.7	14.8	O K	
8640 min Winter	0.295	0.295	0.7	12.5	O K	
10080 min Winter	0.275	0.275	0.6	10.9	O K	
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)			
30 min Winter	95.667	0.0	36			
60 min Winter	61.408	0.0	64			
120 min Winter	36.199	0.0	122			
180 min Winter	26.482	0.0	180			
240 min Winter	21.107	0.0	236			
360 min Winter	15.154	0.0	342			
480 min Winter	11.971	0.0	390			
600 min Winter	9.965	0.0	464			
720 min Winter	8.574	0.0	540			
960 min Winter	6.754	0.0	686			
1440 min Winter	4.833	0.0	974			
2160 min Winter	3.477	0.0	1388			
2880 min Winter	2.770	0.0	1788			
4320 min Winter	2.040	0.0	2552			
5760 min Winter	1.661	0.0	3288			
7200 min Winter	1.429	0.0	4032			
8640 min Winter	1.273	0.0	4752			
10080 min Winter	1.162	0.0	5448			
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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	Ford Lane, Yapton	
Date 17/08/2021	Designed by SDL	
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XP Solutions		Source Control 2020.1

Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 498037 103893 SU 98037 03893
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+40

Time Area Diagram

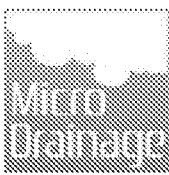
Total Area (ha) 0.102

Time (mins)	Area	Time (mins)	Area
From:	To: (ha)	From:	To: (ha)
0	4 0.051	4	8 0.051

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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	Ford Lane, Yapton																									
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<u>Model Details</u> Storage is Online Cover Level (m) 1.000 <u>Porous Car Park Structure</u> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.01730</td> <td>Width (m)</td> <td>4.8</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>115.0</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>153.3</td> <td>Slope (1:X)</td> <td>200.0</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>0.000</td> <td>Membrane Depth (m)</td> <td>130</td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.01730	Width (m)	4.8	Membrane Percolation (mm/hr)	1000	Length (m)	115.0	Max Percolation (l/s)	153.3	Slope (1:X)	200.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	0.000	Membrane Depth (m)	130
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min Summer	15.154	0.0	360	480 min Summer	11.971	0.0	440	600 min Summer	9.965	0.0	494	720 min Summer	8.574	0.0	554	960 min Summer	6.754	0.0	678	1440 min Summer	4.833	0.0	950	2160 min Summer	3.477	0.0	1344	2880 min Summer	2.770	0.0	1732	4320 min Summer	2.040	0.0	2468	5760 min Summer	1.661	0.0	3168	7200 min Summer	1.429	0.0	3824	8640 min Summer	1.273	0.0	4496	10080 min Summer	1.162	0.0	5240	15 min Winter	142.619	0.0	22
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GTA Civils Ltd				Page 2	
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB		Ford Lane, Yapton			
Date 17/08/2021		Designed by SDL			
File Plot 110-115 PP access		Checked by			
XP Solutions		Source Control 2020.1			
Summary of Results for 100 year Return Period (+40%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	0.416	0.416	0.9	37.6	O K
60 min Winter	0.507	0.507	0.9	48.0	O K
120 min Winter	0.566	0.566	0.9	54.8	O K
180 min Winter	0.596	0.596	0.9	58.2	O K
240 min Winter	0.610	0.610	0.9	59.8	O K
360 min Winter	0.612	0.612	0.9	60.1	O K
480 min Winter	0.604	0.604	0.9	59.1	O K
600 min Winter	0.589	0.589	0.9	57.4	O K
720 min Winter	0.572	0.572	0.9	55.4	O K
960 min Winter	0.542	0.542	0.9	52.0	O K
1440 min Winter	0.481	0.481	0.9	45.0	O K
2160 min Winter	0.399	0.399	0.9	35.6	O K
2880 min Winter	0.330	0.330	0.9	27.7	O K
4320 min Winter	0.228	0.228	0.9	16.1	O K
5760 min Winter	0.174	0.174	0.9	9.9	O K
7200 min Winter	0.154	0.154	0.8	7.7	O K
8640 min Winter	0.139	0.139	0.7	6.3	O K
10080 min Winter	0.128	0.128	0.7	5.3	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	95.667	0.0	36		
60 min Winter	61.408	0.0	66		
120 min Winter	36.199	0.0	122		
180 min Winter	26.482	0.0	180		
240 min Winter	21.107	0.0	238		
360 min Winter	15.354	0.0	352		
480 min Winter	11.971	0.0	462		
600 min Winter	9.965	0.0	564		
720 min Winter	8.574	0.0	594		
960 min Winter	6.754	0.0	736		
1440 min Winter	4.833	0.0	1038		
2160 min Winter	3.477	0.0	1456		
2880 min Winter	2.770	0.0	1848		
4320 min Winter	2.040	0.0	2552		
5760 min Winter	1.661	0.0	3120		
7200 min Winter	1.429	0.0	3824		
8640 min Winter	1.273	0.0	4576		
10080 min Winter	1.162	0.0	5248		
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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	Ford Lane, Yapton	
Date 17/08/2021	Designed by SDL	
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XP Solutions		Source Control 2020.1

Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 498037 103893 SU 98037 03893
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+40

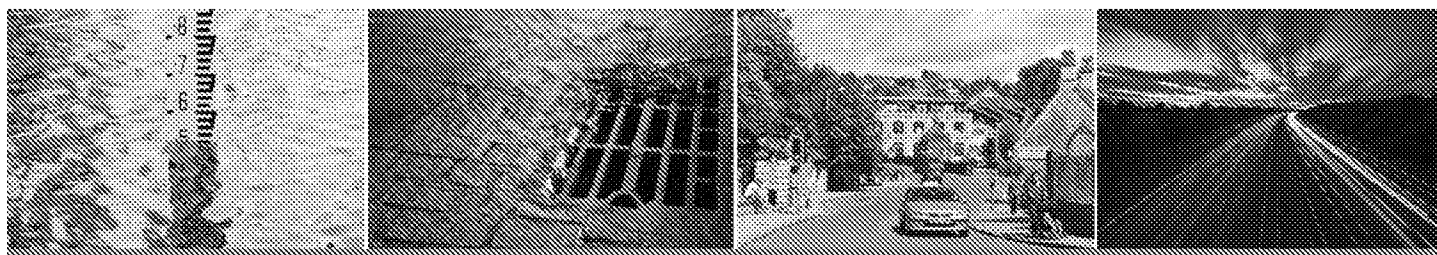
Time Area Diagram

Total Area (ha) 0.102

Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)
0 4	0.051	4 8	0.051

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<u>Model Details</u> Storage is Online Cover Level (m) 1.000 <u>Porous Car Park Structure</u> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.01730</td> <td>Width (m)</td> <td>10.9</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>35.0</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>106.0</td> <td>Slope (1:X)</td> <td>200.0</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>0.000</td> <td>Membrane Depth (m)</td> <td>130</td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.01730	Width (m)	10.9	Membrane Percolation (mm/hr)	1000	Length (m)	35.0	Max Percolation (l/s)	106.0	Slope (1:X)	200.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	0.000	Membrane Depth (m)	130
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Civil Engineering - Transport Planning - Flood Risk

GTA Civils & Transport, Gloucester House, 66a Church Walk, Burgess Hill, West Sussex, RH15 9AS

