

Drainage Maintenance Manual



The Civil Engineering Practice
11 Tungsten Building
George Street
Fishergate
Sussex
BN41 1RA

Project	The Laurels, Dappers Lane, Angmering
Project Number	23260

By Martin Kempshall C Eng MICE

Date 24 June 2020

1 Schedule of Maintenance

- 1.1 Upon completion of the development the management of the shared drainage facilities will be passed on to a Management Company who will be appointed by the developer on behalf of the new residents.
- 1.2 The regular and corrective maintenance of all shared elements of the drainage system beneath the road, including the lined voided subbase will be managed by the Management Company on behalf of the residents.
- 1.3 Regular maintenance of all private drainage, channels, gutters, rainwater pipes, driveways and connections will be the responsibility of the individual homeowner and should be undertaken every 3 months.
- 1.4 Driveways and connections will be the responsibility of the individual homeowner and should be undertaken every two years. Driveways which form part of the wider infiltration system include a legal covenant to ensure these remain part of the wider drainage system in perpetuity.
- 1.5 With adequate maintenance the working design life of permeable paving system is approximately 25 years. The extent of the permeable paving is shown on Construction Drawing 201 a copy of which is attached as part of this Drainage Maintenance Manual.
- 1.6 At a minimum interval of 25 years the permeable paving blocks shall be lifted and inspection undertaken as follows:
 - ¿ 3-6mm gravel bedding to be removed and the voided subbase stone inspected.
 - ¿ The subbase shall be replaced as required where blocked or blinded.
 - ¿ The permeable geotextile shall be inspected using a series of hand dug trial holes to assess its general condition, where damaged it should be replaced or repaired.
 - ¿ Upon completion of the inspection the voided stone subbase shall be replaced to the original specification and level.
 - ¿ The 3-6mm bedding shall be replaced with the permeable blocks reinstated after cleaning or where required replaced with new.



2. Following block reinstatement 3-6mm grit shall be swept into the joints between the permeable blocks.

1.7 Provisions will be made to replace any infrastructure that has reached the end of its serviceable design life and will be replaced on a like for like basis as far as reasonably practicable.

1.8 The culvert adjacent to the site is under Riparian Ownership Responsibility and will be maintained in accordance with the Land Drainage Act 1991 as amended by the Flood and Water Management Act 2010. A condition survey will be completed on the section of the culvert at 5-year intervals.

1.9 Drawing 102 shows the drainage ownership responsibilities.

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Remove sediment and debris from silt trap chambers, channel drains and inlet chambers	Monthly or as required
	Litter and debris removal - catch pits	Monthly or as required
	Surface and foul water pipework - jetting / rodding	Every 2 years or as required
	Visual inspection of permeable paving for defects and settlement	Annually, or after leaf fall
	Sweeping / brushing / Vacuuming of permeable paving	Annually, or after leaf fall
	CCTV Inspection of Culvert.	Every 5 years
Corrective Maintenance	Repairs to access chambers / manhole covers	As required
	Replace any broken permeable blocks / surface, remedial works to any depressions or rutting	As required
	Inspect inlet, outlet from downpipe and gullies for blockages, standing water and clear	As required
	Repairs to culvert at western site boundary in accordance with Land Drainage Act.	As required
	Full inspection and service of Permeable Paving System	Minimum of every 25 years

Table 1: Schedule of Regular and Corrective Maintenance

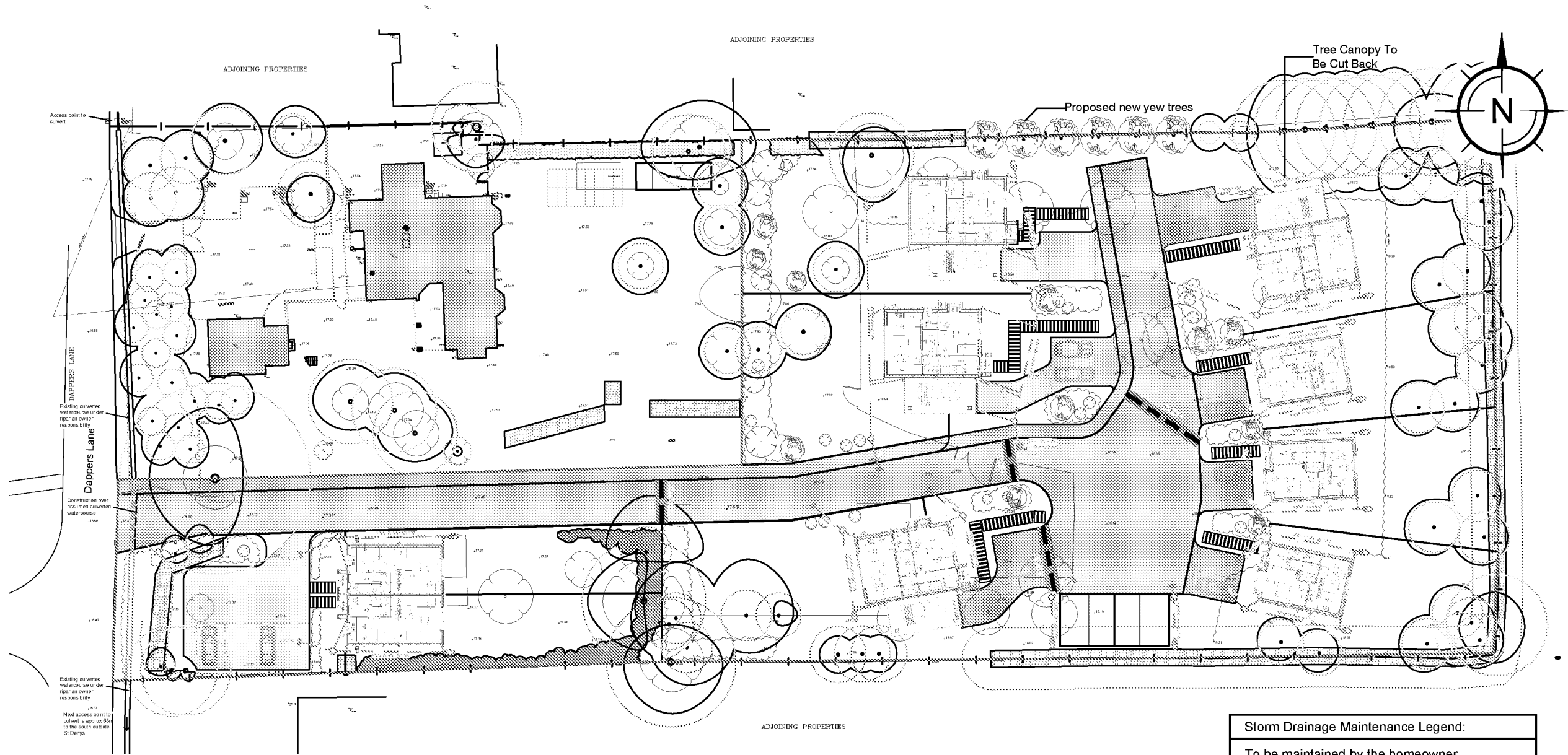
2 Financing

- 2.1 The regular maintenance of all private drainage, channels, gutters, rainwater pipes, driveways and connections will be the responsibility of the individual homeowner.
- 2.2 The regular and corrective maintenance of all shared elements of the drainage system will be managed and funded through the Management Company on behalf of the residents.
- 2.3 In the event that the estate's Management Company becomes unable to discharge its duties within 2 years of first appointment the developer will endeavour to appoint an alternative on behalf of the residents.

3 Maintenance Summary

Inspection / Action Required	Gullies, Channels and Gutters	Silt Traps, Channel Drainage and Inlet Chambers	Catchpit	Permeable Paving / Surfaces	Surface Water Pipework	Culvert
Monthly		V	V			
3 Months	V		V	V		
1 Year				V		
After leaf fall in Autumn	V		V	V		
2 Years					V	
5 Years						V
25 Years				V		

Table 2: Drainage System Maintenance Summary



Storm Drainage Maintenance Legend:

To be maintained by the homeowner

- Type 4 Private Type 4 Storm Water Inspection Chamber
- Private Storm Water Catchpit
- Private Storm Water Rodding Eye
- Fin Drain Fin Drain to Subbase
- Permeable Drives under private ownership. Subject to legal covenant
- Impermeable Drives under private ownership

To be maintained by Management Company

- Property boundary
- Distribution Tanks to Subbase
- Baffle to subbase
- Permeable Drive under management company ownership
- Other hard paved areas including no-dig area at site boundary
- Culverted watercourse within the red line boundary

- 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.

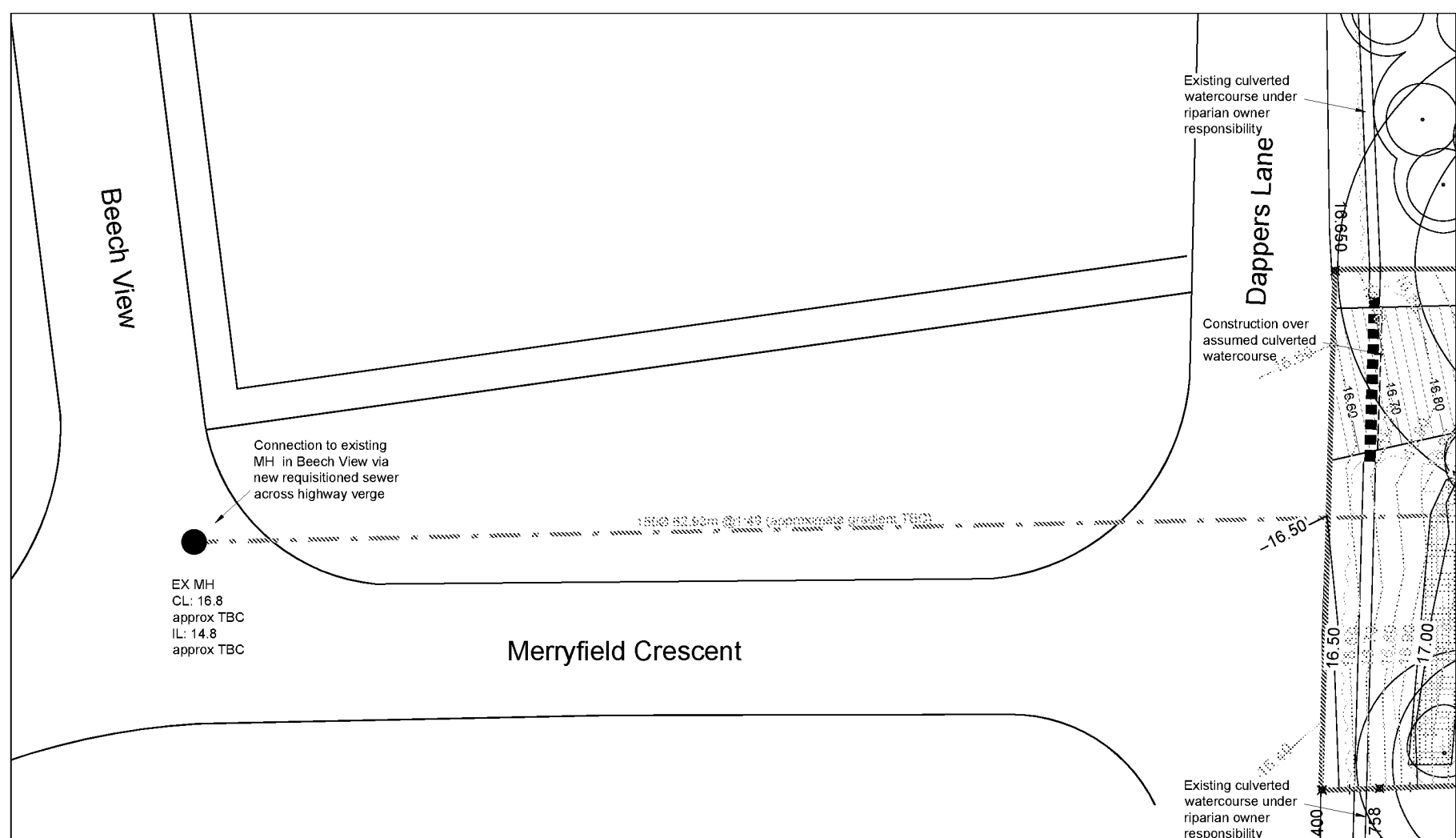
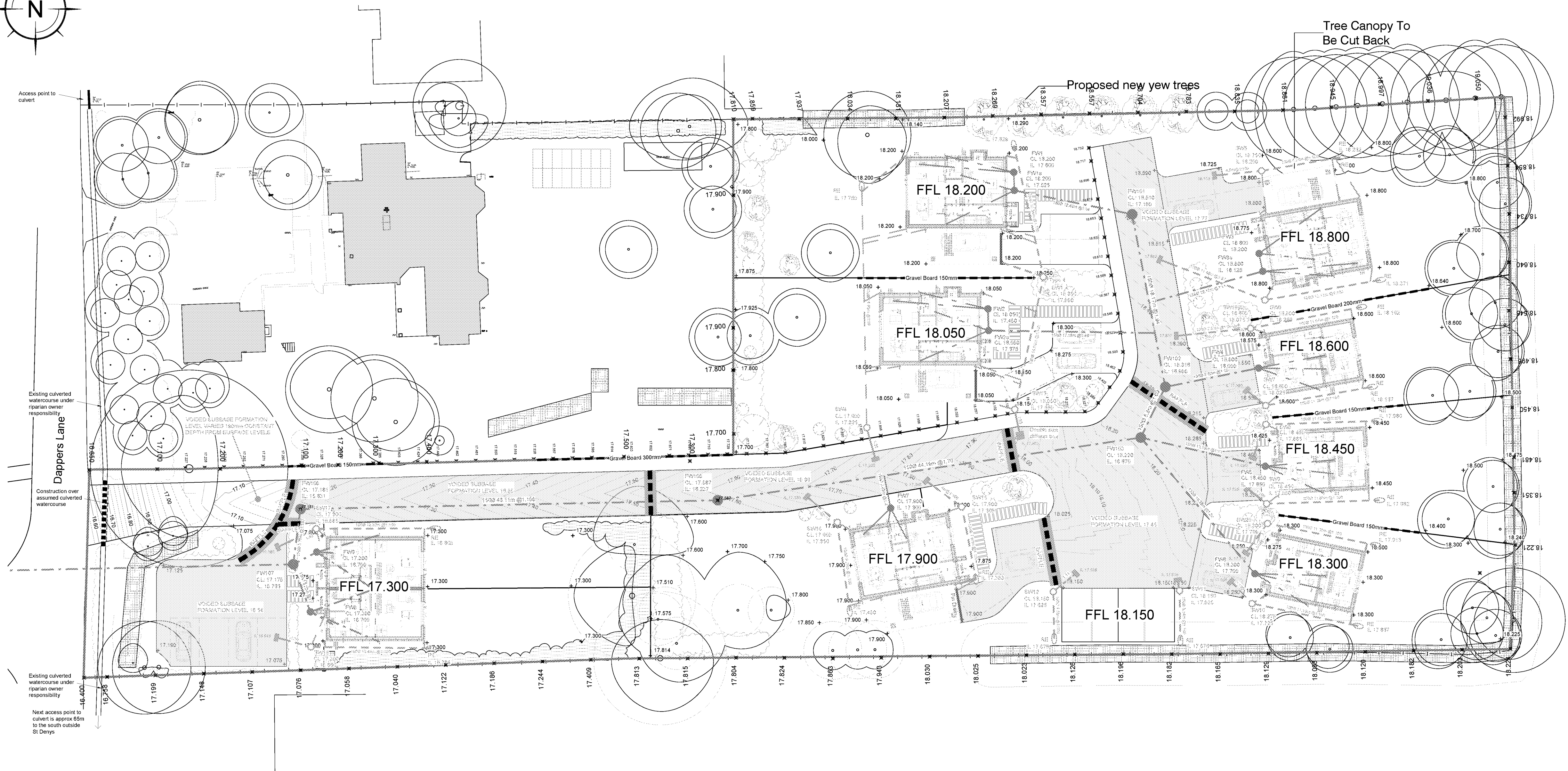
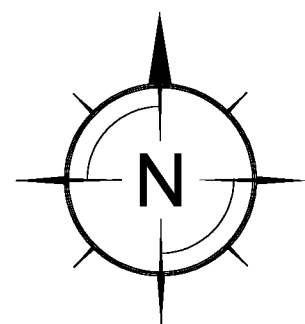
C	01.06.2020	MJP	Invert levels to diffuser tanks	MK
B	22.05.2020	MJP	Drainage Layout updated	MK
A	26.03.2020	MJP	Diffuser tanks to subbase	MK
REV	DATE	INT	DESCRIPTION	CHK

Issue Status **FOR PLANNING**

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CLIENT Oceanview Developments
PROJECT The Laurels
Dappers Lane
Angmering
TITLE Proposed Ownership Plan

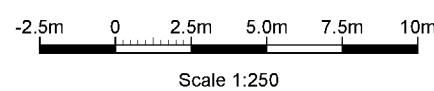
DRAWN M Pacifico	DATE Oct 2019	PROJECT NO. 23260
ENGINEER M Kempshall	CHECKED SFM	102 C
SCALE 1:500 @ A3		



Drainage Legend:	
	Voids subbase for storm water storage and attenuation
	Type 4 Private Type 4 Storm Water Inspection Chamber
	Private Storm Water Catchpit
	Private Storm Water Rodding Eye
	Property boundary
	Distribution Tanks to Subbase
	Fin Drain
	Fin Drain to Subbase
	Baffle to subbase
	Private Foul Water Sewer Type 2 Manhole
	Private Foul Water Sewer Type 4 Inspection Chamber

FOUL WATER MANHOLE SCHEDULE						
MANHOLE REFERENCE	COVER LEVEL	INVERT LEVEL	DEPTH TO INVERT	DIAMETER / SIZE	COVER TYPE	MANHOLE TYPE
FW101	18.510	17.160	1.350	1200mmØ	D400	Type 2
FW102	18.316	16.960	1.356	1200mmØ	D400	Type 2
FW103	18.200	16.870	1.330	1200mmØ	D400	Type 2
FW104	Not Used					
FW105	17.587	16.237	1.350	1200mmØ	D400	Type 2
FW106	17.181	15.831	1.350	1200mmØ	D400	Type 2
FW107	17.175	15.793	1.382	1200mmØ	D400	Type 2
FW1	18.200	17.600	0.600	450mmØ	A15	Type 4
FW1a	18.200	17.525	0.675	450mmØ	A15	Type 4
FW2	18.050	17.450	0.600	450mmØ	A15	Type 4
FW2a	18.050	17.375	0.675	450mmØ	A15	Type 4
FW3	18.800	18.200	0.600	450mmØ	A15	Type 4
FW3a	18.800	18.125	0.675	450mmØ	A15	Type 4
FW4	18.600	18.000	0.600	450mmØ	A15	Type 4
FW5	18.450	17.850	0.600	450mmØ	A15	Type 4
FW6	18.300	17.700	0.600	450mmØ	A15	Type 4
FW7	17.900	17.300	0.600	450mmØ	A15	Type 4
FW8	17.300	16.700	0.600	450mmØ	A15	Type 4
FW9	17.300	16.700	0.600	450mmØ	A15	Type 4

STORM WATER MANHOLE SCHEDULE						
MANHOLE REFERENCE	COVER LEVEL	INVERT LEVEL	DEPTH TO INVERT	DIAMETER / SIZE	COVER TYPE	MANHOLE TYPE
SW1	18.350	17.690	0.660	450mmØ	A15	Type 4
SW2	Not Used					
SW3	Not Used					
SW4	17.900	17.325	0.575	450mmØ	A15	Catchpit
SW5	18.750	18.200	0.550	450mmØ	A15	Catchpit
SW6	18.800	18.250	0.550	450mmØ	A15	Catchpit
SW7	18.600	18.025	0.575	450mmØ	A15	Catchpit
SW8	18.450	17.865	0.585	450mmØ	A15	Catchpit
SW9	18.450	17.850	0.600	450mmØ	A15	Catchpit
SW10	18.275	17.725	0.550	450mmØ	A15	Catchpit
SW11	18.150	17.625	0.525	450mmØ	A15	Catchpit
SW12	18.150	17.625	0.525	450mmØ	A15	Catchpit
SW13	18.050	17.550	0.500	450mmØ	A15	Catchpit
SW14	Not Used					
SW15	17.900	17.306	0.594	450mmØ	A15	Catchpit
SW16	17.900	17.350	0.550	450mmØ	A15	Catchpit
SW17	17.300	16.685	0.615	450mmØ	A15	Catchpit
SW18	17.300	16.660	0.640	450mmØ	A15	Catchpit
SW19	18.600	18.075	0.525	450mmØ	A15	Catchpit
SW20	18.300	17.900	0.400	450mmØ	A15	Catchpit



- NOTES:
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 Architect's 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 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.
 5. All pipes, bends and junctions shall be verified clay to BS EN 295-1, with flexible joints and kitemark certified. Alternatively all pipes and fittings can be UPVC conforming to BS EN 1401-1 and shall be laid in accordance with the manufacturers specification. If UPVC pipes are to be used then the manufacturer shall be approved by the Engineer prior to construction.
 6. All Adoptable sewers shall be in strict accordance with the current edition of Sewers For Adoption. Unless otherwise stated adoptable sewers shall be 150mm diameter and shall be laid in a class S bedding. Where the depth to soffit is less than 1.2m under a public highway or 0.9m elsewhere the pipe shall be laid with a class Z bedding.
 7. All private building drainage shall be constructed in strict accordance with BS EN 752:1996. Unless otherwise specified building drainage shall be 100mm diameter and shall be laid at a minimum gradient of 1 in 40 for foul drains and 1 in 80 for surface water drains. All building drains shall be laid in class B bedding unless otherwise specified.
 8. Where the service trench is near to the foundation of any building, refer to the guidance in Approved Document H, Building Regulations Part H1.
 9. Where pipes, external to the structures, have a depth to soffit from ground level of less than 450mm they shall have a class GEN 3 concrete encasement (150mm thick). In all other cases the pipes shall be bedded and surrounded with 100mm thick granular material.
 10. In any circumstances where pipes are bedded and surrounded in concrete flexible joints should be provided. Compressible boards (fibroboard or polystyrene) 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.
 11. All syps shall have rodding access plates fitted at their bases (ground floor level).
 12. Where existing pipes are to be abandoned they shall be dug out together with any abandoned manholes.

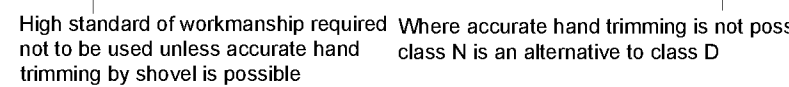
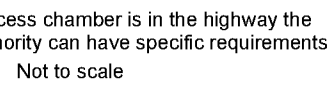
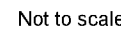
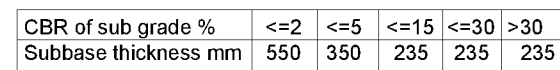
B 24.06.2020 PJR: Baffles added close to site entrance. Voids subbase formation levels added. MK
A 01.06.2020 MJP: Invert levels and gradients to diffuser tanks. MK
REV DATE INT DESCRIPTION CHK

Issue Status FOR CONSTRUCTION

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CLIENT Oceanview Developments Ltd
PROJECT The Laurels
Dappers Lane
Angmering
TITLE Proposed Drainage Layout and Levels Plan

DRAWN M Pacifico DATE May 2020 PROJECT NO. 23260
ENGINEER M Kemshall CHECKED DRG. NO. REV.
SCALE 1:250 @ A1, 1:500 @ A3 201 B



PIPE BORE	BEDDING CLASS	Fields and gardens		Light traffic roads		Heavy traffic roads	
		MIN	MAX	MIN	MAX	MIN	MAX
100mm	D or N F B	0.4	4.2	0.7	4.1	0.7	3.7
		0.3	5.8	0.5	5.8	0.5	5.5
		0.3	7.4	0.4	7.4	0.4	7.2
150mm	D or N F B	0.8	2.7	1.1	2.5	--	--
		0.6	3.9	0.7	3.8	0.7	3.3
		0.6	5.0	0.6	5.0	0.6	4.6
225mm	D or N F B	--	--	--	--	--	--
		0.6	2.5	1.2	2.1	--	--
		0.6	3.3	0.8	3.2	0.9	2.4

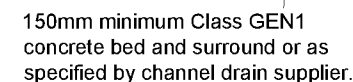
LEGEND:

	Selected fill: free from stones larger than 40mm, lumps of clay over 100mm, timber frozen material and vegetable matter
	Granular material: should conform to BS 882:1983 table 4 or BS8301:1985 Appendix D. Compaction fraction > 0.3 for class N > 0.2 for class F and B.
	Selected fill or granular fill free from stones larger than 40mm

'x' - Denotes external pipe diameter.



PIPE BEDDING DETAILS
(ADOPTABLE DRAINS)
(Not To Scale)



ACO CHANNEL
DRAIN DETAIL
(Scale 1:20)



Issue Status	FOR PLANNING
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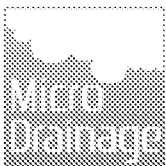
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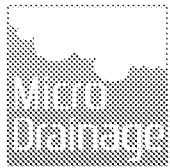
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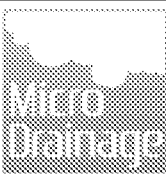
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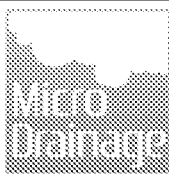
DRAWN		DATE		PROJECT NO.	
M Pacifico		Nov 2019		23260	
ENGINEER		CHECKED		DWG. No.	
M Kempshall		SRM		REV.	
SCALE				501 B	
As Shown @ A1					

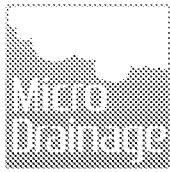
The Civil Engineering Practice					Page 1
11 Tungsten Building George Street Fishersgate BN41 1RA		The Laurels Dappers Lane, Angmering Catchment A			
Date 22/05/2020 File CATCHMENT A.SRCX		Designed by SRD Checked by			
Innovyze		Source Control 2020.1			
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Half Drain Time : 29 minutes.					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	16.714	0.064	0.9	1.7	Flood Risk
30 min Summer	16.727	0.077	0.9	2.0	Flood Risk
60 min Summer	16.733	0.083	0.9	2.2	Flood Risk
120 min Summer	16.728	0.078	0.9	2.0	Flood Risk
180 min Summer	16.718	0.068	0.9	1.8	Flood Risk
240 min Summer	16.709	0.059	0.9	1.5	Flood Risk
360 min Summer	16.697	0.047	0.8	1.2	Flood Risk
480 min Summer	16.691	0.041	0.7	1.1	Flood Risk
600 min Summer	16.686	0.036	0.6	0.9	Flood Risk
720 min Summer	16.683	0.033	0.6	0.8	Flood Risk
960 min Summer	16.677	0.027	0.5	0.7	Flood Risk
1440 min Summer	16.671	0.021	0.4	0.5	Flood Risk
2160 min Summer	16.666	0.016	0.3	0.4	Flood Risk
2880 min Summer	16.663	0.013	0.2	0.3	Flood Risk
4320 min Summer	16.659	0.009	0.2	0.2	Flood Risk
5760 min Summer	16.658	0.008	0.1	0.2	Flood Risk
7200 min Summer	16.656	0.006	0.1	0.2	Flood Risk
8640 min Summer	16.656	0.006	0.1	0.1	Flood Risk
10080 min Summer	16.655	0.005	0.1	0.1	Flood Risk
15 min Winter	16.723	0.073	0.9	1.9	Flood Risk
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
15 min Summer	129.682	0.0	18		
30 min Summer	87.133	0.0	28		
60 min Summer	55.837	0.0	46		
120 min Summer	34.509	0.0	78		
180 min Summer	25.637	0.0	110		
240 min Summer	20.604	0.0	140		
360 min Summer	15.169	0.0	198		
480 min Summer	12.185	0.0	260		
600 min Summer	10.272	0.0	320		
720 min Summer	8.930	0.0	380		
960 min Summer	7.152	0.0	502		
1440 min Summer	5.221	0.0	740		
2160 min Summer	3.803	0.0	1104		
2880 min Summer	3.033	0.0	1468		
4320 min Summer	2.201	0.0	2204		
5760 min Summer	1.751	0.0	2896		
7200 min Summer	1.466	0.0	3560		
8640 min Summer	1.270	0.0	4360		
10080 min Summer	1.124	0.0	5136		
15 min Winter	129.682	0.0	18		
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11 Tungsten Building George Street Fishersgate BN41 1RA		The Laurels Dappers Lane, Angmering Catchment A			
Date 22/05/2020 File CATCHMENT A.SRCX		Designed by SRD Checked by			
Innovyze		Source Control 2020.1			
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	16.738	0.088	0.9	2.3	Flood Risk
60 min Winter	16.743	0.093	0.9	2.4	Flood Risk
120 min Winter	16.732	0.082	0.9	2.1	Flood Risk
180 min Winter	16.716	0.066	0.9	1.7	Flood Risk
240 min Winter	16.703	0.053	0.9	1.4	Flood Risk
360 min Winter	16.692	0.042	0.7	1.1	Flood Risk
480 min Winter	16.685	0.035	0.6	0.9	Flood Risk
600 min Winter	16.680	0.030	0.5	0.8	Flood Risk
720 min Winter	16.676	0.026	0.5	0.7	Flood Risk
960 min Winter	16.671	0.021	0.4	0.6	Flood Risk
1440 min Winter	16.666	0.016	0.3	0.4	Flood Risk
2160 min Winter	16.662	0.012	0.2	0.3	Flood Risk
2880 min Winter	16.659	0.009	0.2	0.2	Flood Risk
4320 min Winter	16.657	0.007	0.1	0.2	Flood Risk
5760 min Winter	16.656	0.006	0.1	0.1	Flood Risk
7200 min Winter	16.655	0.005	0.1	0.1	Flood Risk
8640 min Winter	16.654	0.004	0.1	0.1	Flood Risk
10080 min Winter	16.654	0.004	0.1	0.1	Flood Risk
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	87.133	0.0	30		
60 min Winter	55.837	0.0	48		
120 min Winter	34.509	0.0	84		
180 min Winter	25.637	0.0	116		
240 min Winter	20.604	0.0	144		
360 min Winter	15.169	0.0	204		
480 min Winter	12.185	0.0	264		
600 min Winter	10.272	0.0	326		
720 min Winter	8.930	0.0	386		
960 min Winter	7.152	0.0	508		
1440 min Winter	5.221	0.0	750		
2160 min Winter	3.803	0.0	1104		
2880 min Winter	3.033	0.0	1472		
4320 min Winter	2.201	0.0	2204		
5760 min Winter	1.751	0.0	2904		
7200 min Winter	1.466	0.0	3760		
8640 min Winter	1.270	0.0	4504		
10080 min Winter	1.124	0.0	5120		
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The Civil Engineering Practice		Page 4																
11 Tungsten Building George Street Fishersgate BN41 1RA	The Laurels Dappers Lane, Angmering Catchment A																	
Date 22/05/2020 File CATCHMENT A.SRCX	Designed by SRD Checked by																	
Innovyze Source Control 2020.1																		
<u>Model Details</u> Storage is Online Cover Level (m) 16.900 <u>Infiltration Blanket Structure</u> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.05400</td> <td>Diameter/Width (m)</td> <td>9.3</td> </tr> <tr> <td>Safety Factor</td> <td>1.5</td> <td>Length (m)</td> <td>9.3</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>0.150</td> </tr> <tr> <td>Invert Level (m)</td> <td>16.650</td> <td></td> <td></td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.05400	Diameter/Width (m)	9.3	Safety Factor	1.5	Length (m)	9.3	Porosity	0.30	Cap Volume Depth (m)	0.150	Invert Level (m)	16.650		
Infiltration Coefficient Base (m/hr)	0.05400	Diameter/Width (m)	9.3															
Safety Factor	1.5	Length (m)	9.3															
Porosity	0.30	Cap Volume Depth (m)	0.150															
Invert Level (m)	16.650																	
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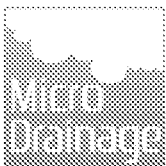
The Civil Engineering Practice				Page 1																																																																																																																																																																																																																			
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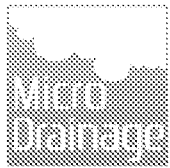
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Date 22/05/2020 File Catchment B.SRCX		Designed by SRD Checked by			
Innovyze		Source Control 2020.1			
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	16.716	0.176	1.6	8.4	O K
60 min Winter	16.737	0.197	1.6	9.4	O K
120 min Winter	16.733	0.193	1.6	9.2	O K
180 min Winter	16.714	0.174	1.6	8.3	O K
240 min Winter	16.692	0.152	1.6	7.2	O K
360 min Winter	16.650	0.110	1.6	5.2	O K
480 min Winter	16.617	0.077	1.6	3.6	O K
600 min Winter	16.594	0.054	1.6	2.6	O K
720 min Winter	16.586	0.046	1.5	2.2	O K
960 min Winter	16.578	0.038	1.2	1.8	O K
1440 min Winter	16.568	0.028	0.9	1.3	O K
2160 min Winter	16.560	0.020	0.6	1.0	O K
2880 min Winter	16.556	0.016	0.5	0.8	O K
4320 min Winter	16.552	0.012	0.4	0.6	O K
5760 min Winter	16.550	0.010	0.3	0.5	O K
7200 min Winter	16.548	0.008	0.3	0.4	O K
8640 min Winter	16.547	0.007	0.2	0.3	O K
10080 min Winter	16.546	0.006	0.2	0.3	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	87.133	0.0	32		
60 min Winter	55.837	0.0	58		
120 min Winter	34.509	0.0	92		
180 min Winter	25.637	0.0	130		
240 min Winter	20.604	0.0	166		
360 min Winter	15.169	0.0	230		
480 min Winter	12.185	0.0	288		
600 min Winter	10.272	0.0	334		
720 min Winter	8.930	0.0	384		
960 min Winter	7.152	0.0	502		
1440 min Winter	5.221	0.0	748		
2160 min Winter	3.803	0.0	1108		
2880 min Winter	3.033	0.0	1472		
4320 min Winter	2.201	0.0	2208		
5760 min Winter	1.751	0.0	2976		
7200 min Winter	1.466	0.0	3656		
8640 min Winter	1.270	0.0	4384		
10080 min Winter	1.124	0.0	5136		
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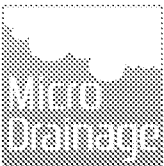
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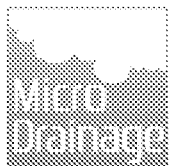
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<u>Model Details</u> Storage is Online Cover Level (m) 17.150 <u>Infiltration Blanket Structure</u> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.05400</td> <td>Diameter/Width (m)</td> <td>12.6</td> </tr> <tr> <td>Safety Factor</td> <td>1.5</td> <td>Length (m)</td> <td>12.6</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>0.200</td> </tr> <tr> <td>Invert Level (m)</td> <td>16.540</td> <td></td> <td></td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.05400	Diameter/Width (m)	12.6	Safety Factor	1.5	Length (m)	12.6	Porosity	0.30	Cap Volume Depth (m)	0.200	Invert Level (m)	16.540		
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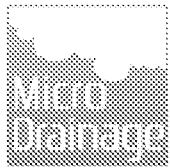
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Date 22/05/2020 File CATCHMENT C.SRCX			Designed by SRD Checked by		
Innovyze			Source Control 2020.1		
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Half Drain Time : 32 minutes.					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	16.934	0.084		1.7	4.4 Flood Risk
30 min Summer	16.953	0.103		1.7	5.4 Flood Risk
60 min Summer	16.963	0.113		1.7	5.9 Flood Risk
120 min Summer	16.959	0.109		1.7	5.7 Flood Risk
180 min Summer	16.948	0.098		1.7	5.1 Flood Risk
240 min Summer	16.936	0.086		1.7	4.5 Flood Risk
360 min Summer	16.916	0.066		1.7	3.4 Flood Risk
480 min Summer	16.903	0.053		1.7	2.7 Flood Risk
600 min Summer	16.896	0.046		1.6	2.4 Flood Risk
720 min Summer	16.891	0.041		1.4	2.2 Flood Risk
960 min Summer	16.885	0.035		1.2	1.8 Flood Risk
1440 min Summer	16.876	0.026		0.9	1.4 Flood Risk
2160 min Summer	16.870	0.020		0.7	1.0 Flood Risk
2880 min Summer	16.866	0.016		0.6	0.8 Flood Risk
4320 min Summer	16.862	0.012		0.4	0.6 Flood Risk
5760 min Summer	16.860	0.010		0.3	0.5 Flood Risk
7200 min Summer	16.858	0.008		0.3	0.4 Flood Risk
8640 min Summer	16.857	0.007		0.3	0.4 Flood Risk
10080 min Summer	16.856	0.006		0.2	0.3 Flood Risk
15 min Winter	16.945	0.095		1.7	5.0 Flood Risk
Storm Event		Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	
15 min Summer		129.682	0.0	18	
30 min Summer		87.133	0.0	30	
60 min Summer		55.837	0.0	48	
120 min Summer		34.509	0.0	82	
180 min Summer		25.637	0.0	114	
240 min Summer		20.604	0.0	146	
360 min Summer		15.169	0.0	206	
480 min Summer		12.185	0.0	262	
600 min Summer		10.272	0.0	320	
720 min Summer		8.930	0.0	380	
960 min Summer		7.152	0.0	500	
1440 min Summer		5.221	0.0	740	
2160 min Summer		3.803	0.0	1104	
2880 min Summer		3.033	0.0	1468	
4320 min Summer		2.201	0.0	2204	
5760 min Summer		1.751	0.0	2928	
7200 min Summer		1.466	0.0	3640	
8640 min Summer		1.270	0.0	4392	
10080 min Summer		1.124	0.0	5136	
15 min Winter		129.682	0.0	19	
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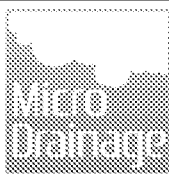
The Civil Engineering Practice				Page 2	
11 Tungsten Building George Street Fishersgate BN41 1RA		The Laurels Dappers Lane, Angmering Catchment C			
Date 22/05/2020 File CATCHMENT C.SRCX		Designed by SRD Checked by			
Innovyze		Source Control 2020.1			
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	16.969	0.119	1.7	6.2	Flood Risk
60 min Winter	16.978	0.128	1.7	6.7	Flood Risk
120 min Winter	16.969	0.119	1.7	6.2	Flood Risk
180 min Winter	16.950	0.100	1.7	5.2	Flood Risk
240 min Winter	16.931	0.081	1.7	4.2	Flood Risk
360 min Winter	16.904	0.054	1.7	2.8	Flood Risk
480 min Winter	16.894	0.044	1.5	2.3	Flood Risk
600 min Winter	16.888	0.038	1.3	2.0	Flood Risk
720 min Winter	16.883	0.033	1.2	1.7	Flood Risk
960 min Winter	16.877	0.027	0.9	1.4	Flood Risk
1440 min Winter	16.870	0.020	0.7	1.0	Flood Risk
2160 min Winter	16.865	0.015	0.5	0.8	Flood Risk
2880 min Winter	16.862	0.012	0.4	0.6	Flood Risk
4320 min Winter	16.859	0.009	0.3	0.4	Flood Risk
5760 min Winter	16.857	0.007	0.2	0.4	Flood Risk
7200 min Winter	16.856	0.006	0.2	0.3	Flood Risk
8640 min Winter	16.855	0.005	0.2	0.3	Flood Risk
10080 min Winter	16.855	0.005	0.2	0.2	Flood Risk
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	87.133	0.0	31		
60 min Winter	55.837	0.0	50		
120 min Winter	34.509	0.0	88		
180 min Winter	25.637	0.0	122		
240 min Winter	20.604	0.0	154		
360 min Winter	15.169	0.0	208		
480 min Winter	12.185	0.0	264		
600 min Winter	10.272	0.0	326		
720 min Winter	8.930	0.0	386		
960 min Winter	7.152	0.0	502		
1440 min Winter	5.221	0.0	744		
2160 min Winter	3.803	0.0	1104		
2880 min Winter	3.033	0.0	1472		
4320 min Winter	2.201	0.0	2164		
5760 min Winter	1.751	0.0	2944		
7200 min Winter	1.466	0.0	3672		
8640 min Winter	1.270	0.0	4280		
10080 min Winter	1.124	0.0	5248		
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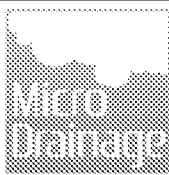
The Civil Engineering Practice		Page 4																
11 Tungsten Building George Street Fishersgate BN41 1RA	The Laurels Dappers Lane, Angmering Catchment C																	
Date 22/05/2020 File CATCHMENT C.SRCX	Designed by SRD Checked by																	
Innovyze Source Control 2020.1																		
<u>Model Details</u> Storage is Online Cover Level (m) 17.100 <u>Infiltration Blanket Structure</u> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.05400</td> <td>Diameter/Width (m)</td> <td>13.2</td> </tr> <tr> <td>Safety Factor</td> <td>1.5</td> <td>Length (m)</td> <td>13.2</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>0.150</td> </tr> <tr> <td>Invert Level (m)</td> <td>16.850</td> <td></td> <td></td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.05400	Diameter/Width (m)	13.2	Safety Factor	1.5	Length (m)	13.2	Porosity	0.30	Cap Volume Depth (m)	0.150	Invert Level (m)	16.850		
Infiltration Coefficient Base (m/hr)	0.05400	Diameter/Width (m)	13.2															
Safety Factor	1.5	Length (m)	13.2															
Porosity	0.30	Cap Volume Depth (m)	0.150															
Invert Level (m)	16.850																	
©1982-2020 Innovyze																		

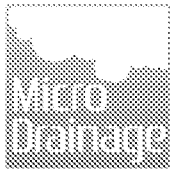
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11 Tungsten Building George Street Fishersgate BN41 1RA		The Laurels Dappers Lane, Angmering Catchment D			
Date 22/05/2020 File CATCHMENT D.SRCX		Designed by SRD Checked by			
Innovyze		Source Control 2020.1			
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Half Drain Time : 46 minutes.					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	17.184	0.194	3.0	9.8	Flood Risk
30 min Summer	17.231	0.241	3.0	12.2	Flood Risk
60 min Summer	17.252	0.262	3.0	13.3	Flood Risk
120 min Summer	17.243	0.253	3.0	12.8	Flood Risk
180 min Summer	17.220	0.230	3.0	11.7	Flood Risk
240 min Summer	17.193	0.203	3.0	10.3	Flood Risk
360 min Summer	17.145	0.155	3.0	7.9	Flood Risk
480 min Summer	17.106	0.116	3.0	5.9	Flood Risk
600 min Summer	17.076	0.086	3.0	4.3	O K
720 min Summer	17.054	0.064	3.0	3.3	O K
960 min Summer	17.037	0.047	2.8	2.4	O K
1440 min Summer	17.025	0.035	2.1	1.8	O K
2160 min Summer	17.016	0.026	1.6	1.3	O K
2880 min Summer	17.011	0.021	1.3	1.0	O K
4320 min Summer	17.005	0.015	0.9	0.8	O K
5760 min Summer	17.002	0.012	0.7	0.6	O K
7200 min Summer	17.000	0.010	0.6	0.5	O K
8640 min Summer	16.999	0.009	0.5	0.4	O K
10080 min Summer	16.998	0.008	0.5	0.4	O K
15 min Winter	17.212	0.222	3.0	11.2	Flood Risk
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
15 min Summer	129.682	0.0	19		
30 min Summer	87.133	0.0	31		
60 min Summer	55.837	0.0	50		
120 min Summer	34.509	0.0	84		
180 min Summer	25.637	0.0	118		
240 min Summer	20.604	0.0	152		
360 min Summer	15.169	0.0	214		
480 min Summer	12.185	0.0	274		
600 min Summer	10.272	0.0	330		
720 min Summer	8.930	0.0	384		
960 min Summer	7.152	0.0	494		
1440 min Summer	5.221	0.0	736		
2160 min Summer	3.803	0.0	1100		
2880 min Summer	3.033	0.0	1468		
4320 min Summer	2.201	0.0	2176		
5760 min Summer	1.751	0.0	2872		
7200 min Summer	1.466	0.0	3600		
8640 min Summer	1.270	0.0	4352		
10080 min Summer	1.124	0.0	5008		
15 min Winter	129.682	0.0	19		
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11 Tungsten Building George Street Fishersgate BN41 1RA		The Laurels Dappers Lane, Angmering Catchment D			
Date 22/05/2020 File CATCHMENT D.SRCX		Designed by SRD Checked by			
Innovyze		Source Control 2020.1			
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	17.268	0.278	3.0	14.1	Flood Risk
60 min Winter	17.293	0.303	3.0	15.4	Flood Risk
120 min Winter	17.277	0.287	3.0	14.5	Flood Risk
180 min Winter	17.238	0.248	3.0	12.6	Flood Risk
240 min Winter	17.196	0.206	3.0	10.5	Flood Risk
360 min Winter	17.123	0.133	3.0	6.7	Flood Risk
480 min Winter	17.068	0.078	3.0	3.9	O K
600 min Winter	17.040	0.050	3.0	2.5	O K
720 min Winter	17.033	0.043	2.6	2.2	O K
960 min Winter	17.025	0.035	2.1	1.8	O K
1440 min Winter	17.016	0.026	1.6	1.3	O K
2160 min Winter	17.009	0.019	1.1	0.9	O K
2880 min Winter	17.005	0.015	0.9	0.8	O K
4320 min Winter	17.001	0.011	0.7	0.6	O K
5760 min Winter	16.999	0.009	0.5	0.4	O K
7200 min Winter	16.997	0.007	0.4	0.4	O K
8640 min Winter	16.996	0.006	0.4	0.3	O K
10080 min Winter	16.996	0.006	0.3	0.3	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	87.133	0.0	32		
60 min Winter	55.837	0.0	54		
120 min Winter	34.509	0.0	92		
180 min Winter	25.637	0.0	128		
240 min Winter	20.604	0.0	162		
360 min Winter	15.169	0.0	226		
480 min Winter	12.185	0.0	278		
600 min Winter	10.272	0.0	316		
720 min Winter	8.930	0.0	378		
960 min Winter	7.152	0.0	492		
1440 min Winter	5.221	0.0	736		
2160 min Winter	3.803	0.0	1104		
2880 min Winter	3.033	0.0	1500		
4320 min Winter	2.201	0.0	2176		
5760 min Winter	1.751	0.0	2912		
7200 min Winter	1.466	0.0	3736		
8640 min Winter	1.270	0.0	4408		
10080 min Winter	1.124	0.0	5064		
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The Civil Engineering Practice		Page 4																
11 Tungsten Building George Street Fishersgate BN41 1RA	The Laurels Dappers Lane, Angmering Catchment D																	
Date 22/05/2020 File CATCHMENT D.SRCX	Designed by SRD Checked by																	
Innovyze Source Control 2020.1																		
<u>Model Details</u> Storage is Online Cover Level (m) 17.400 <u>Infiltration Blanket Structure</u> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.09720</td> <td>Diameter/Width (m)</td> <td>13.0</td> </tr> <tr> <td>Safety Factor</td> <td>1.5</td> <td>Length (m)</td> <td>13.0</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>0.310</td> </tr> <tr> <td>Invert Level (m)</td> <td>16.990</td> <td></td> <td></td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.09720	Diameter/Width (m)	13.0	Safety Factor	1.5	Length (m)	13.0	Porosity	0.30	Cap Volume Depth (m)	0.310	Invert Level (m)	16.990		
Infiltration Coefficient Base (m/hr)	0.09720	Diameter/Width (m)	13.0															
Safety Factor	1.5	Length (m)	13.0															
Porosity	0.30	Cap Volume Depth (m)	0.310															
Invert Level (m)	16.990																	
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11 Tungsten Building George Street Fishersgate BN41 1RA		The Laurels Dappers Lane, Angmering Catchment E																																																																																																																																																																																																																					
Date 22/05/2020 File Catchment E.SRCX		Designed by SRD Checked by																																																																																																																																																																																																																					
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<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 31 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>17.589</td><td>0.139</td><td>6.3</td><td>15.1</td><td>O K</td></tr><tr><td>30 min Summer</td><td>17.621</td><td>0.171</td><td>6.3</td><td>18.5</td><td>O K</td></tr><tr><td>60 min Summer</td><td>17.632</td><td>0.182</td><td>6.3</td><td>19.7</td><td>O K</td></tr><tr><td>120 min Summer</td><td>17.620</td><td>0.170</td><td>6.3</td><td>18.4</td><td>O K</td></tr><tr><td>180 min Summer</td><td>17.598</td><td>0.148</td><td>6.3</td><td>16.0</td><td>O K</td></tr><tr><td>240 min Summer</td><td>17.575</td><td>0.125</td><td>6.3</td><td>13.5</td><td>O K</td></tr><tr><td>360 min Summer</td><td>17.538</td><td>0.088</td><td>6.3</td><td>9.6</td><td>O K</td></tr><tr><td>480 min Summer</td><td>17.513</td><td>0.063</td><td>6.3</td><td>6.9</td><td>O K</td></tr><tr><td>600 min Summer</td><td>17.500</td><td>0.050</td><td>6.2</td><td>5.4</td><td>O K</td></tr><tr><td>720 min Summer</td><td>17.494</td><td>0.044</td><td>5.5</td><td>4.8</td><td>O K</td></tr><tr><td>960 min Summer</td><td>17.486</td><td>0.036</td><td>4.5</td><td>3.9</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>17.477</td><td>0.027</td><td>3.4</td><td>3.0</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>17.470</td><td>0.020</td><td>2.5</td><td>2.2</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>17.466</td><td>0.016</td><td>2.0</td><td>1.7</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>17.462</td><td>0.012</td><td>1.5</td><td>1.3</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>17.460</td><td>0.010</td><td>1.2</td><td>1.0</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>17.458</td><td>0.008</td><td>1.0</td><td>0.9</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>17.457</td><td>0.007</td><td>0.9</td><td>0.8</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>17.456</td><td>0.006</td><td>0.8</td><td>0.7</td><td>O K</td></tr><tr><td>15 min Winter</td><td>17.610</td><td>0.160</td><td>6.3</td><td>17.3</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>129.682</td><td>0.0</td><td>18</td></tr><tr><td>30 min Summer</td><td>87.133</td><td>0.0</td><td>30</td></tr><tr><td>60 min Summer</td><td>55.837</td><td>0.0</td><td>46</td></tr><tr><td>120 min Summer</td><td>34.509</td><td>0.0</td><td>82</td></tr><tr><td>180 min Summer</td><td>25.637</td><td>0.0</td><td>114</td></tr><tr><td>240 min Summer</td><td>20.604</td><td>0.0</td><td>146</td></tr><tr><td>360 min Summer</td><td>15.169</td><td>0.0</td><td>206</td></tr><tr><td>480 min Summer</td><td>12.185</td><td>0.0</td><td>260</td></tr><tr><td>600 min Summer</td><td>10.272</td><td>0.0</td><td>314</td></tr><tr><td>720 min Summer</td><td>8.930</td><td>0.0</td><td>374</td></tr><tr><td>960 min Summer</td><td>7.152</td><td>0.0</td><td>494</td></tr><tr><td>1440 min Summer</td><td>5.221</td><td>0.0</td><td>736</td></tr><tr><td>2160 min Summer</td><td>3.803</td><td>0.0</td><td>1100</td></tr><tr><td>2880 min Summer</td><td>3.033</td><td>0.0</td><td>1444</td></tr><tr><td>4320 min Summer</td><td>2.201</td><td>0.0</td><td>2200</td></tr><tr><td>5760 min Summer</td><td>1.751</td><td>0.0</td><td>2904</td></tr><tr><td>7200 min Summer</td><td>1.466</td><td>0.0</td><td>3624</td></tr><tr><td>8640 min Summer</td><td>1.270</td><td>0.0</td><td>4392</td></tr><tr><td>10080 min Summer</td><td>1.124</td><td>0.0</td><td>5048</td></tr><tr><td>15 min Winter</td><td>129.682</td><td>0.0</td><td>19</td></tr></tbody></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	17.589	0.139	6.3	15.1	O K	30 min Summer	17.621	0.171	6.3	18.5	O K	60 min Summer	17.632	0.182	6.3	19.7	O K	120 min Summer	17.620	0.170	6.3	18.4	O K	180 min Summer	17.598	0.148	6.3	16.0	O K	240 min Summer	17.575	0.125	6.3	13.5	O K	360 min Summer	17.538	0.088	6.3	9.6	O K	480 min Summer	17.513	0.063	6.3	6.9	O K	600 min Summer	17.500	0.050	6.2	5.4	O K	720 min Summer	17.494	0.044	5.5	4.8	O K	960 min Summer	17.486	0.036	4.5	3.9	O K	1440 min Summer	17.477	0.027	3.4	3.0	O K	2160 min Summer	17.470	0.020	2.5	2.2	O K	2880 min Summer	17.466	0.016	2.0	1.7	O K	4320 min Summer	17.462	0.012	1.5	1.3	O K	5760 min Summer	17.460	0.010	1.2	1.0	O K	7200 min Summer	17.458	0.008	1.0	0.9	O K	8640 min Summer	17.457	0.007	0.9	0.8	O K	10080 min Summer	17.456	0.006	0.8	0.7	O K	15 min Winter	17.610	0.160	6.3	17.3	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	129.682	0.0	18	30 min Summer	87.133	0.0	30	60 min Summer	55.837	0.0	46	120 min Summer	34.509	0.0	82	180 min Summer	25.637	0.0	114	240 min 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600 min Summer	17.500	0.050	6.2	5.4	O K																																																																																																																																																																																																																		
720 min Summer	17.494	0.044	5.5	4.8	O K																																																																																																																																																																																																																		
960 min Summer	17.486	0.036	4.5	3.9	O K																																																																																																																																																																																																																		
1440 min Summer	17.477	0.027	3.4	3.0	O K																																																																																																																																																																																																																		
2160 min Summer	17.470	0.020	2.5	2.2	O K																																																																																																																																																																																																																		
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4320 min Summer	17.462	0.012	1.5	1.3	O K																																																																																																																																																																																																																		
5760 min Summer	17.460	0.010	1.2	1.0	O K																																																																																																																																																																																																																		
7200 min Summer	17.458	0.008	1.0	0.9	O K																																																																																																																																																																																																																		
8640 min Summer	17.457	0.007	0.9	0.8	O K																																																																																																																																																																																																																		
10080 min Summer	17.456	0.006	0.8	0.7	O K																																																																																																																																																																																																																		
15 min Winter	17.610	0.160	6.3	17.3	O K																																																																																																																																																																																																																		
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)																																																																																																																																																																																																																				
15 min Summer	129.682	0.0	18																																																																																																																																																																																																																				
30 min Summer	87.133	0.0	30																																																																																																																																																																																																																				
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180 min Summer	25.637	0.0	114																																																																																																																																																																																																																				
240 min Summer	20.604	0.0	146																																																																																																																																																																																																																				
360 min Summer	15.169	0.0	206																																																																																																																																																																																																																				
480 min Summer	12.185	0.0	260																																																																																																																																																																																																																				
600 min Summer	10.272	0.0	314																																																																																																																																																																																																																				
720 min Summer	8.930	0.0	374																																																																																																																																																																																																																				
960 min Summer	7.152	0.0	494																																																																																																																																																																																																																				
1440 min Summer	5.221	0.0	736																																																																																																																																																																																																																				
2160 min Summer	3.803	0.0	1100																																																																																																																																																																																																																				
2880 min Summer	3.033	0.0	1444																																																																																																																																																																																																																				
4320 min Summer	2.201	0.0	2200																																																																																																																																																																																																																				
5760 min Summer	1.751	0.0	2904																																																																																																																																																																																																																				
7200 min Summer	1.466	0.0	3624																																																																																																																																																																																																																				
8640 min Summer	1.270	0.0	4392																																																																																																																																																																																																																				
10080 min Summer	1.124	0.0	5048																																																																																																																																																																																																																				
15 min Winter	129.682	0.0	19																																																																																																																																																																																																																				
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The Civil Engineering Practice					Page 2	
11 Tungsten Building George Street Fishersgate BN41 1RA			The Laurels Dappers Lane, Angmering Catchment E			
Date 22/05/2020 File Catchment E.SRCX			Designed by SRD Checked by			
Innovyze			Source Control 2020.1			
<u>Summary of Results for 100 year Return Period (+40%)</u>						
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	
30 min Winter	17.647	0.197	6.3	21.3	O K	
60 min Winter	17.658	0.208	6.3	22.5	O K	
120 min Winter	17.635	0.185	6.3	20.1	O K	
180 min Winter	17.599	0.149	6.3	16.2	O K	
240 min Winter	17.564	0.114	6.3	12.4	O K	
360 min Winter	17.513	0.063	6.3	6.8	O K	
480 min Winter	17.496	0.046	5.7	4.9	O K	
600 min Winter	17.489	0.039	4.8	4.2	O K	
720 min Winter	17.484	0.034	4.3	3.7	O K	
960 min Winter	17.477	0.027	3.4	3.0	O K	
1440 min Winter	17.470	0.020	2.5	2.2	O K	
2160 min Winter	17.465	0.015	1.8	1.6	O K	
2880 min Winter	17.462	0.012	1.5	1.3	O K	
4320 min Winter	17.459	0.009	1.1	0.9	O K	
5760 min Winter	17.457	0.007	0.8	0.7	O K	
7200 min Winter	17.456	0.006	0.7	0.6	O K	
8640 min Winter	17.455	0.005	0.7	0.5	O K	
10080 min Winter	17.455	0.005	0.6	0.5	O K	
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)			
30 min Winter	87.133	0.0	31			
60 min Winter	55.837	0.0	59			
120 min Winter	34.509	0.0	88			
180 min Winter	25.637	0.0	122			
240 min Winter	20.604	0.0	154			
360 min Winter	15.169	0.0	208			
480 min Winter	12.185	0.0	256			
600 min Winter	10.272	0.0	316			
720 min Winter	8.930	0.0	376			
960 min Winter	7.152	0.0	500			
1440 min Winter	5.221	0.0	738			
2160 min Winter	3.803	0.0	1096			
2880 min Winter	3.033	0.0	1420			
4320 min Winter	2.201	0.0	2220			
5760 min Winter	1.751	0.0	2992			
7200 min Winter	1.466	0.0	3632			
8640 min Winter	1.270	0.0	4432			
10080 min Winter	1.124	0.0	5032			
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11 Tungsten Building George Street Fishersgate BN41 1RA	The Laurels Dappers Lane, Angmering Catchment E	
Date 22/05/2020	Designed by SRD	
File Catchment E.SRCX	Checked by	
Innovyze		Source Control 2020.1

Rainfall Details

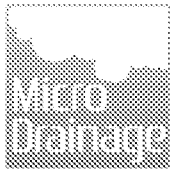
Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.700	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

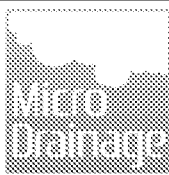
Time Area Diagram

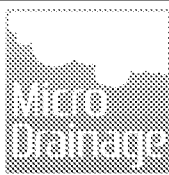
Total Area (ha) 0.082

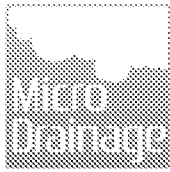
Time (mins)	Area	Time (mins)	Area
From:	To: (ha)	From:	To: (ha)
0	4 0.041	4	8 0.041

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The Civil Engineering Practice		Page 4																
11 Tungsten Building George Street Fishersgate BN41 1RA	The Laurels Dappers Lane, Angmering Catchment E																	
Date 22/05/2020	Designed by SRD																	
File Catchment E.SRCX	Checked by																	
Innovyze	Source Control 2020.1																	
<u>Model Details</u> Storage is Online Cover Level (m) 18.100 <u>Infiltration Blanket Structure</u> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.09360</td> <td>Diameter/Width (m)</td> <td>19.0</td> </tr> <tr> <td>Safety Factor</td> <td>1.5</td> <td>Length (m)</td> <td>19.0</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>0.220</td> </tr> <tr> <td>Invert Level (m)</td> <td>17.450</td> <td></td> <td></td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.09360	Diameter/Width (m)	19.0	Safety Factor	1.5	Length (m)	19.0	Porosity	0.30	Cap Volume Depth (m)	0.220	Invert Level (m)	17.450		
Infiltration Coefficient Base (m/hr)	0.09360	Diameter/Width (m)	19.0															
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The Civil Engineering Practice				Page 1																																																																																																																																																																																																																			
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Innovyze		Source Control 2020.1																																																																																																																																																																																																																					
<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 25 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>17.888</td><td>0.118</td><td>4.0</td><td>8.0</td><td>○ K</td></tr><tr><td>30 min Summer</td><td>17.912</td><td>0.142</td><td>4.0</td><td>9.7</td><td>○ K</td></tr><tr><td>60 min Summer</td><td>17.921</td><td>0.151</td><td>4.0</td><td>10.3</td><td>○ K</td></tr><tr><td>120 min Summer</td><td>17.907</td><td>0.137</td><td>4.0</td><td>9.4</td><td>○ K</td></tr><tr><td>180 min Summer</td><td>17.886</td><td>0.116</td><td>4.0</td><td>7.9</td><td>○ K</td></tr><tr><td>240 min Summer</td><td>17.866</td><td>0.096</td><td>4.0</td><td>6.5</td><td>○ K</td></tr><tr><td>360 min Summer</td><td>17.836</td><td>0.066</td><td>4.0</td><td>4.5</td><td>○ K</td></tr><tr><td>480 min Summer</td><td>17.820</td><td>0.050</td><td>3.9</td><td>3.4</td><td>○ K</td></tr><tr><td>600 min Summer</td><td>17.813</td><td>0.043</td><td>3.4</td><td>3.0</td><td>○ K</td></tr><tr><td>720 min Summer</td><td>17.808</td><td>0.038</td><td>3.0</td><td>2.6</td><td>○ K</td></tr><tr><td>960 min Summer</td><td>17.802</td><td>0.032</td><td>2.5</td><td>2.2</td><td>○ K</td></tr><tr><td>1440 min Summer</td><td>17.794</td><td>0.024</td><td>1.9</td><td>1.6</td><td>○ K</td></tr><tr><td>2160 min Summer</td><td>17.788</td><td>0.018</td><td>1.4</td><td>1.2</td><td>○ K</td></tr><tr><td>2880 min Summer</td><td>17.784</td><td>0.014</td><td>1.1</td><td>1.0</td><td>○ K</td></tr><tr><td>4320 min Summer</td><td>17.780</td><td>0.010</td><td>0.8</td><td>0.7</td><td>○ K</td></tr><tr><td>5760 min Summer</td><td>17.778</td><td>0.008</td><td>0.7</td><td>0.6</td><td>○ K</td></tr><tr><td>7200 min Summer</td><td>17.777</td><td>0.007</td><td>0.5</td><td>0.5</td><td>○ K</td></tr><tr><td>8640 min Summer</td><td>17.776</td><td>0.006</td><td>0.5</td><td>0.4</td><td>○ K</td></tr><tr><td>10080 min Summer</td><td>17.775</td><td>0.005</td><td>0.4</td><td>0.4</td><td>○ K</td></tr><tr><td>15 min Winter</td><td>17.904</td><td>0.134</td><td>4.0</td><td>9.2</td><td>○ 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>129.682</td><td>0.0</td><td>18</td></tr><tr><td>30 min Summer</td><td>87.133</td><td>0.0</td><td>28</td></tr><tr><td>60 min Summer</td><td>55.837</td><td>0.0</td><td>46</td></tr><tr><td>120 min Summer</td><td>34.509</td><td>0.0</td><td>80</td></tr><tr><td>180 min Summer</td><td>25.637</td><td>0.0</td><td>112</td></tr><tr><td>240 min Summer</td><td>20.604</td><td>0.0</td><td>142</td></tr><tr><td>360 min Summer</td><td>15.169</td><td>0.0</td><td>200</td></tr><tr><td>480 min Summer</td><td>12.185</td><td>0.0</td><td>254</td></tr><tr><td>600 min Summer</td><td>10.272</td><td>0.0</td><td>314</td></tr><tr><td>720 min Summer</td><td>8.930</td><td>0.0</td><td>374</td></tr><tr><td>960 min Summer</td><td>7.152</td><td>0.0</td><td>494</td></tr><tr><td>1440 min Summer</td><td>5.221</td><td>0.0</td><td>736</td></tr><tr><td>2160 min Summer</td><td>3.803</td><td>0.0</td><td>1100</td></tr><tr><td>2880 min Summer</td><td>3.033</td><td>0.0</td><td>1460</td></tr><tr><td>4320 min Summer</td><td>2.201</td><td>0.0</td><td>2160</td></tr><tr><td>5760 min Summer</td><td>1.751</td><td>0.0</td><td>2880</td></tr><tr><td>7200 min Summer</td><td>1.466</td><td>0.0</td><td>3672</td></tr><tr><td>8640 min Summer</td><td>1.270</td><td>0.0</td><td>4288</td></tr><tr><td>10080 min Summer</td><td>1.124</td><td>0.0</td><td>5032</td></tr><tr><td>15 min Winter</td><td>129.682</td><td>0.0</td><td>18</td></tr></tbody></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	17.888	0.118	4.0	8.0	○ K	30 min Summer	17.912	0.142	4.0	9.7	○ K	60 min Summer	17.921	0.151	4.0	10.3	○ K	120 min Summer	17.907	0.137	4.0	9.4	○ K	180 min Summer	17.886	0.116	4.0	7.9	○ K	240 min Summer	17.866	0.096	4.0	6.5	○ K	360 min Summer	17.836	0.066	4.0	4.5	○ K	480 min Summer	17.820	0.050	3.9	3.4	○ K	600 min Summer	17.813	0.043	3.4	3.0	○ K	720 min Summer	17.808	0.038	3.0	2.6	○ K	960 min Summer	17.802	0.032	2.5	2.2	○ K	1440 min Summer	17.794	0.024	1.9	1.6	○ K	2160 min Summer	17.788	0.018	1.4	1.2	○ K	2880 min Summer	17.784	0.014	1.1	1.0	○ K	4320 min Summer	17.780	0.010	0.8	0.7	○ K	5760 min Summer	17.778	0.008	0.7	0.6	○ K	7200 min Summer	17.777	0.007	0.5	0.5	○ K	8640 min Summer	17.776	0.006	0.5	0.4	○ K	10080 min Summer	17.775	0.005	0.4	0.4	○ K	15 min Winter	17.904	0.134	4.0	9.2	○ K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	129.682	0.0	18	30 min Summer	87.133	0.0	28	60 min Summer	55.837	0.0	46	120 min Summer	34.509	0.0	80	180 min Summer	25.637	0.0	112	240 min Summer	20.604	0.0	142	360 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480 min Summer	12.185	0.0	254																																																																																																																																																																																																																				
600 min Summer	10.272	0.0	314																																																																																																																																																																																																																				
720 min Summer	8.930	0.0	374																																																																																																																																																																																																																				
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7200 min Summer	1.466	0.0	3672																																																																																																																																																																																																																				
8640 min Summer	1.270	0.0	4288																																																																																																																																																																																																																				
10080 min Summer	1.124	0.0	5032																																																																																																																																																																																																																				
15 min Winter	129.682	0.0	18																																																																																																																																																																																																																				
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11 Tungsten Building George Street Fishersgate BN41 1RA		The Laurels Dappers Lane, Angmering Catchment F			
Date 22/05/2020 File Catchment F.SRCX		Designed by SRD Checked by			
Innovyze		Source Control 2020.1			
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	17.934	0.164	4.0	11.2	O K
60 min Winter	17.940	0.170	4.0	11.7	O K
120 min Winter	17.915	0.145	4.0	9.9	O K
180 min Winter	17.881	0.111	4.0	7.6	O K
240 min Winter	17.851	0.081	4.0	5.5	O K
360 min Winter	17.818	0.048	3.8	3.3	O K
480 min Winter	17.810	0.040	3.1	2.7	O K
600 min Winter	17.804	0.034	2.7	2.3	O K
720 min Winter	17.800	0.030	2.4	2.0	O K
960 min Winter	17.794	0.024	1.9	1.6	O K
1440 min Winter	17.788	0.018	1.4	1.2	O K
2160 min Winter	17.783	0.013	1.0	0.9	O K
2880 min Winter	17.780	0.010	0.8	0.7	O K
4320 min Winter	17.778	0.008	0.6	0.5	O K
5760 min Winter	17.776	0.006	0.5	0.4	O K
7200 min Winter	17.775	0.005	0.4	0.3	O K
8640 min Winter	17.774	0.004	0.3	0.3	O K
10080 min Winter	17.774	0.004	0.3	0.3	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	87.133	0.0	30		
60 min Winter	55.837	0.0	50		
120 min Winter	34.509	0.0	86		
180 min Winter	25.637	0.0	118		
240 min Winter	20.604	0.0	148		
360 min Winter	15.169	0.0	196		
480 min Winter	12.185	0.0	256		
600 min Winter	10.272	0.0	316		
720 min Winter	8.930	0.0	376		
960 min Winter	7.152	0.0	496		
1440 min Winter	5.221	0.0	736		
2160 min Winter	3.803	0.0	1100		
2880 min Winter	3.033	0.0	1456		
4320 min Winter	2.201	0.0	2236		
5760 min Winter	1.751	0.0	2848		
7200 min Winter	1.466	0.0	3576		
8640 min Winter	1.270	0.0	4408		
10080 min Winter	1.124	0.0	5144		
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