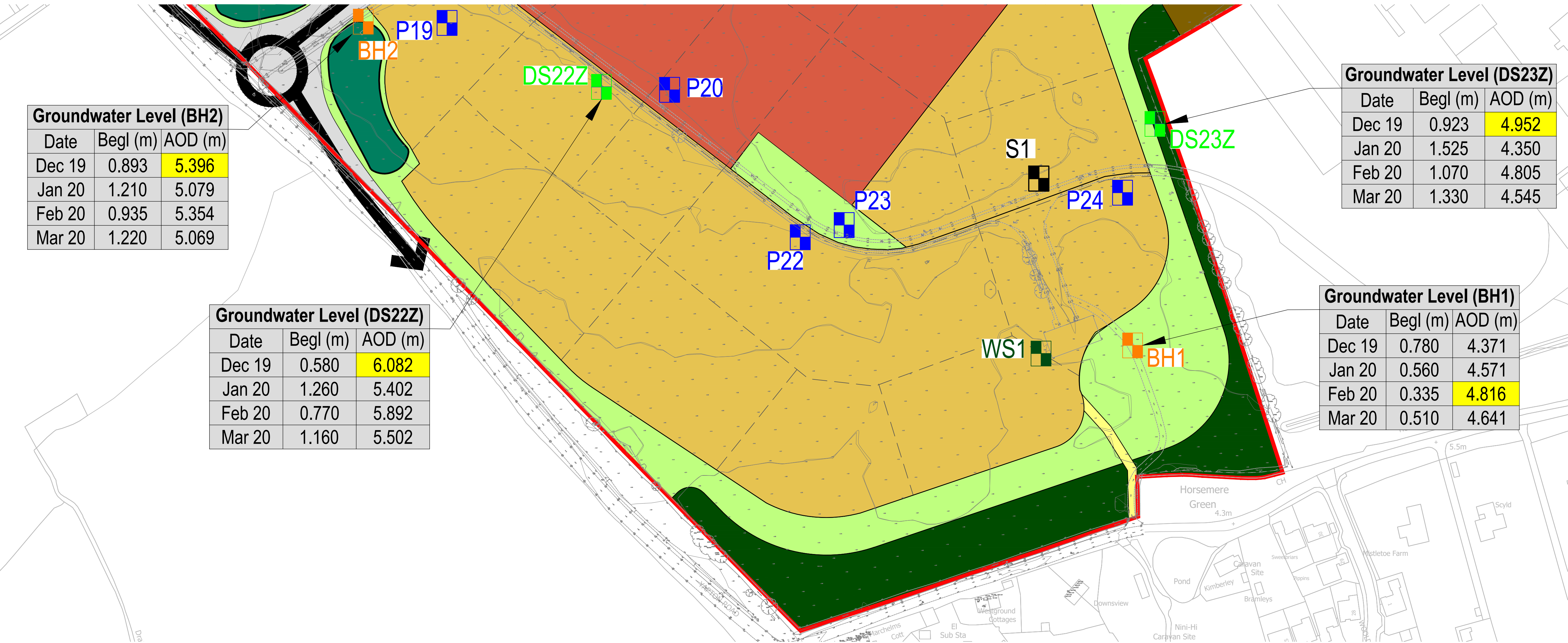


Appendix K

The Southeast Attenuation Tank Sewer and Tank



- Notes:-
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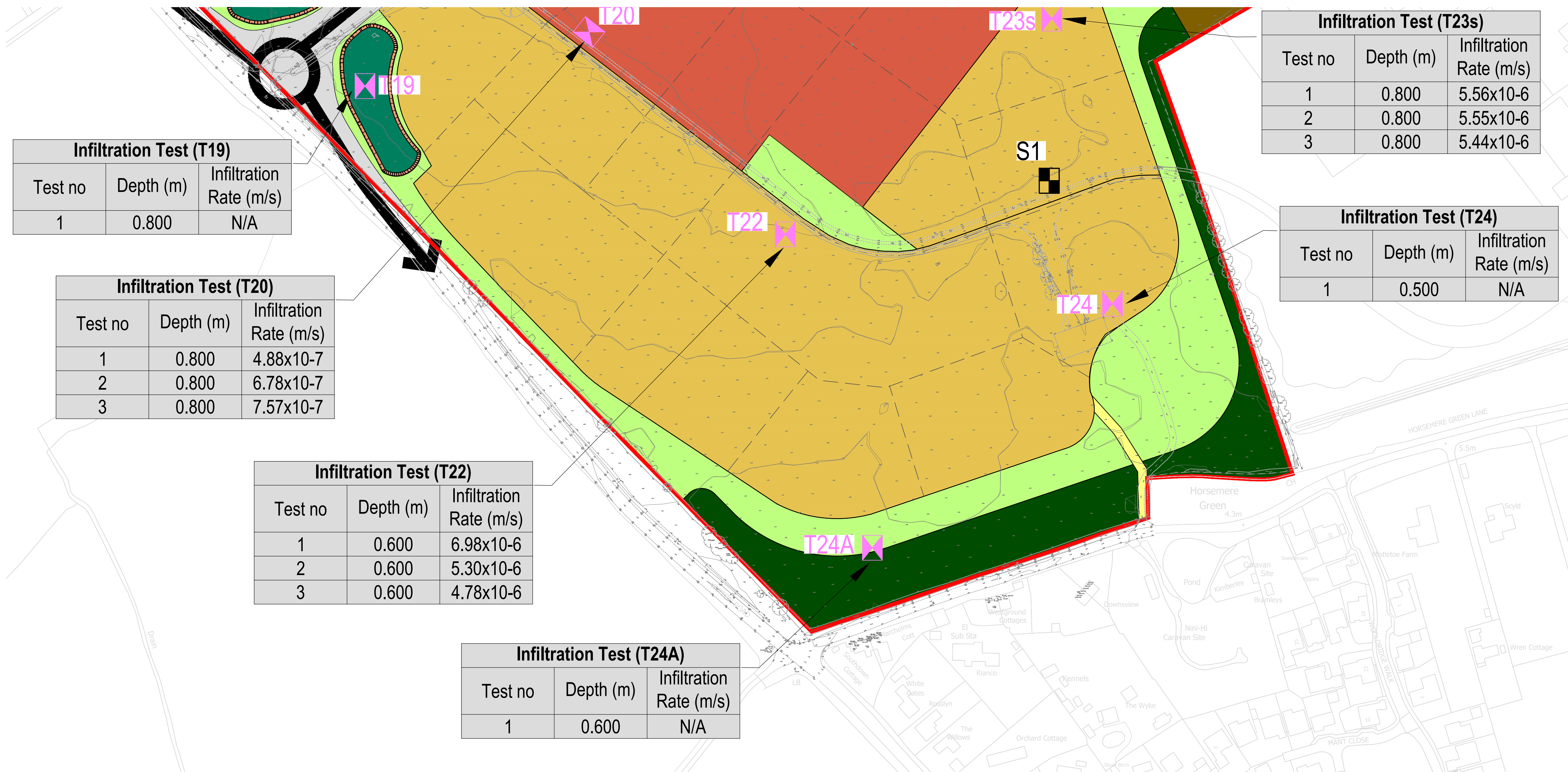
Legend
Site Boundary

Rev.	Date	Amendment	By	Chk.	
Status					

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Tel: 01494 771221 E-mail: chesham@jnpgroup.co.uk

Client	Wates Redrow
Job	Ford Airfield
Title	South East Parcels Groundwater Levels
Scale	1:1250 @ A1 Date December 2020
Drawn by	IS
Checked by	
Approved by	

Drawing No.	C85228-D200	Rev.	-
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 T4 Soakaway Test carried out by RSK dated February 2020

Rev.	Date	Amendment	By	Ch
------	------	-----------	----	----

Status	Indicative
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Client	Wates Redrow
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Job	Ford Airfield
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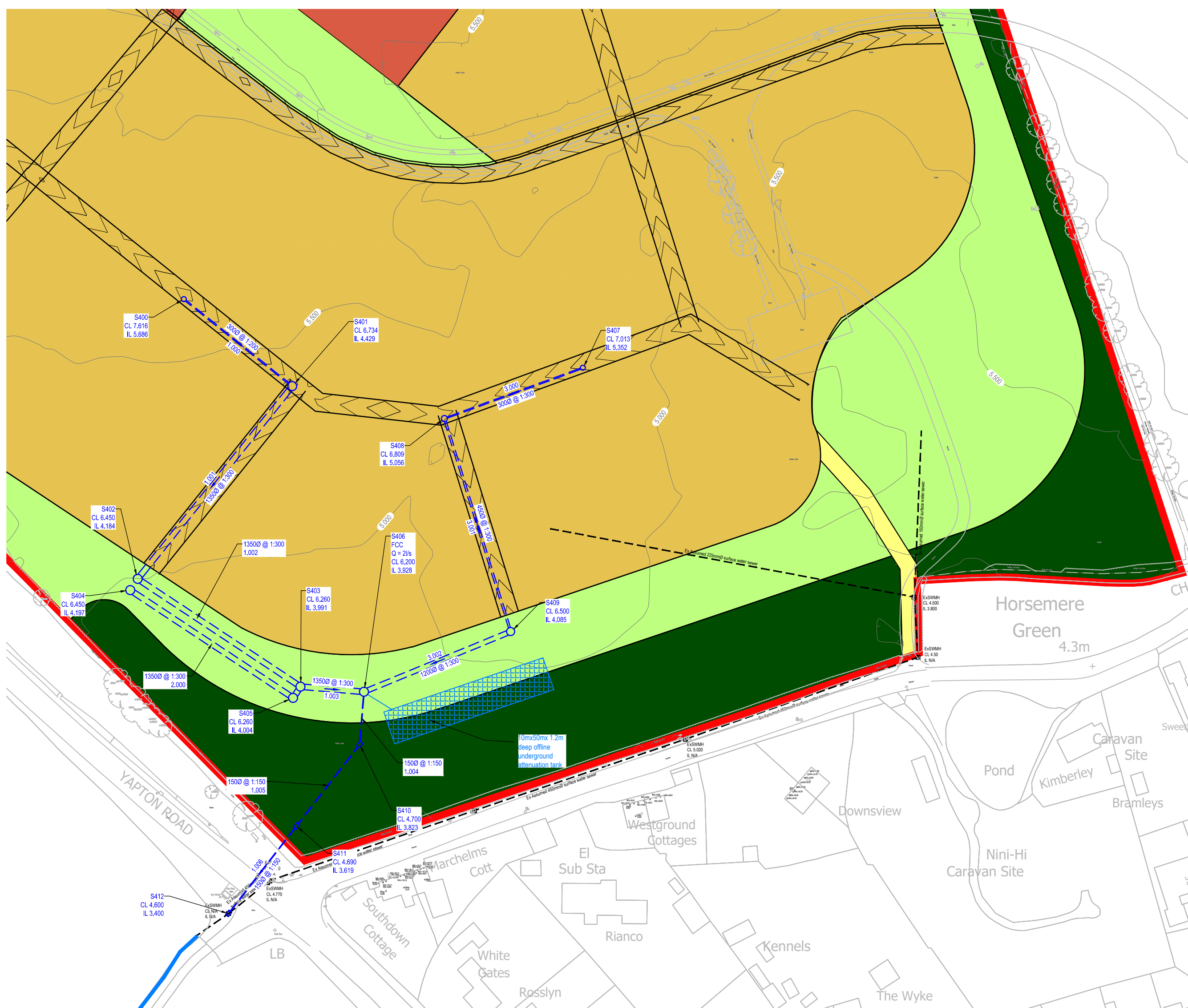
Title	South East Parcels Infiltration Rates
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Scale 1:1250	@ A1	Date December 2020
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Drawn by IS	Checked by	Approved by
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Drawing No.	Rev
C85228-D201	-



Notes:-

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Legend

-  Site boundary
 Surface water sewer
 Existing ground contour
 Proposed road contours

Rev.	Date	Amendment	By	Chk.
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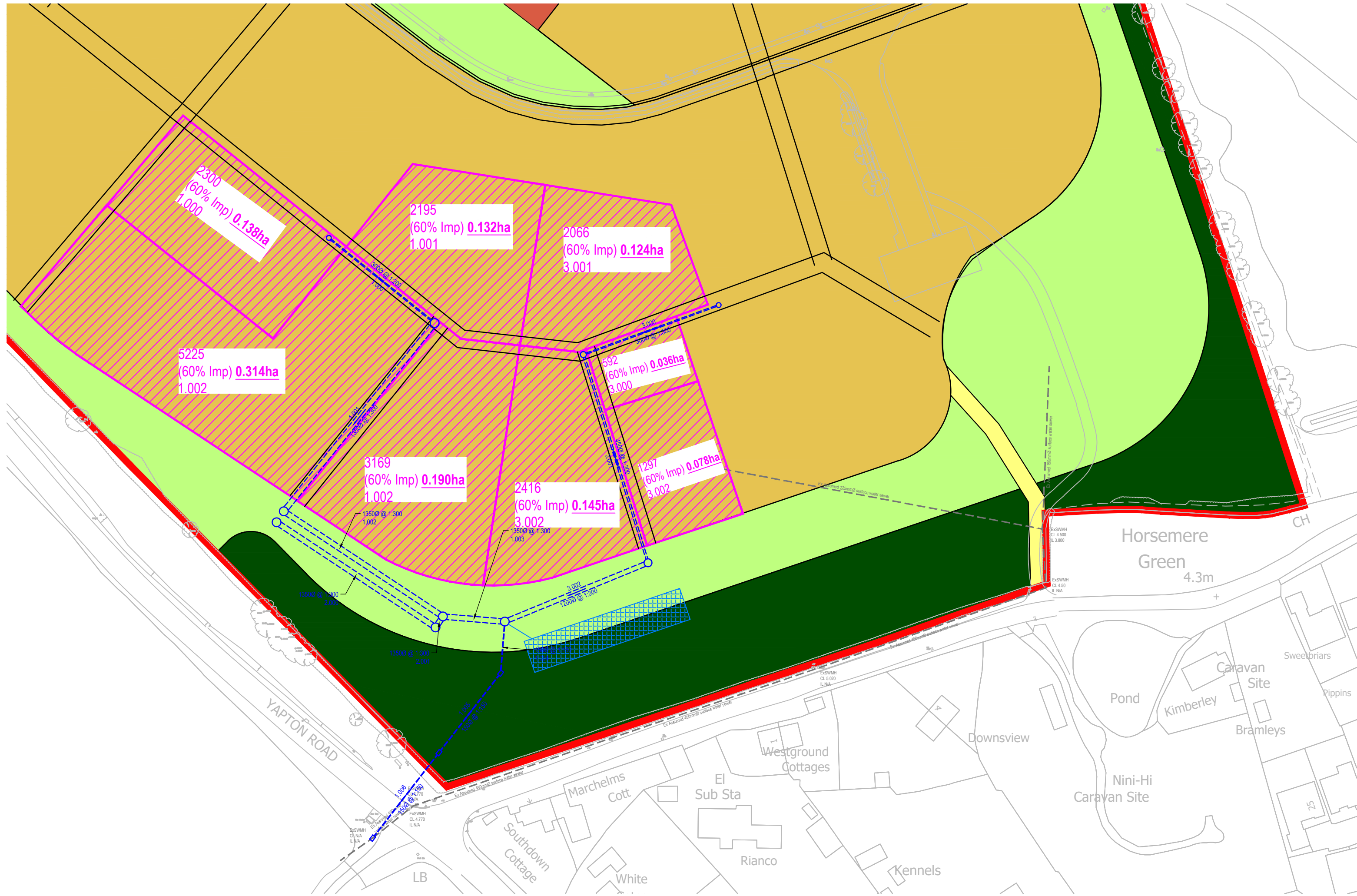
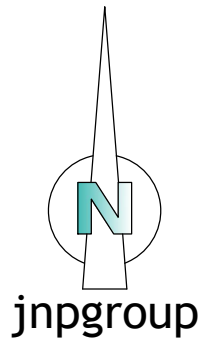
Status	Indicative
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Client	Wates Redrow
Job	Ford Airfield
Title	South East Parcels Indicative Surface Water Drainage Strategy

Scale 1:1000		@ A1	Date December 2020
Drawn by IS		Checked by	Approved by
    	Supplier No. 000026		

Drawing No.	Rev.
C85228-D202	-



South East Catchment Impermeable Areas with 10% Urban Creep to Parcels			
Pipe No.	Parcels with 10% urban creep (m²)	Spine Road (ha)	Total (ha)
1.000	0.152	0.000	0.152
1.001	0.145	0.000	0.145
1.002	0.554	0.000	0.554
2.000	0.000	0.000	0.000
2.001	0.000	0.000	0.000
1.003	0.000	0.000	0.000
3.000	0.040	0.000	0.040
3.001	0.136	0.000	0.136
3.002	0.245	0.000	0.245
1.004	0.000	0.000	0.000
1.005	0.000	0.000	0.000
1.006	0.000	0.000	0.000
Overall Total =			1.272

- Notes:-
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Rev.	Date	Amendment	By	Chk.	

Status
Indicative





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Tel: 01926 889955 E-mail: leamingtonspa@jnpgroup.co.uk

Client	Wates Redrow
Job	Ford Airfield
Title	South East Parcels Drainage Area Plan with Urban Creep

Scale	1:1000	@ A1	Date	December 2020
Drawn by	IS	Checked by		Approved by
				

Drawing No.	C85228-D204	Rev.	-
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JNP Group		Page 1
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield South East Parcels Surface Water Network 5	
Date 11/07/2019 File C85228 Surface Water	Designed by IS Checked by AM	
Micro Drainage Network 2018.1.1		

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for JNP Surface Water Network 5 - South East Parcel Rev A
2019.06.25

Pipe Sizes Standard Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	2
FEH Rainfall Version	2013
Site Location	GB 500450 103100 TQ 00450 03100
Data Type	Catchment
Maximum Rainfall (mm/hr)	50
Maximum Time of Concentration (mins)	30
Foul Sewage (l/s/ha)	0.000
Volumetric Runoff Coeff.	0.750
PIMP (%)	100
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.000
Maximum Backdrop Height (m)	0.000
Min Design Depth for Optimisation (m)	1.200
Min Vel for Auto Design only (m/s)	1.00
Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for JNP Surface Water Network 5 - South East Parcel Rev A
2019.06.25

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.484	4-8	0.772	8-12	0.016

Total Area Contributing (ha) = 1.272

Total Pipe Volume (m³) = 375.369

Network Design Table for JNP Surface Water Network 5 - South East Parcel
Rev A 2019.06.25

« - Indicates pipe capacity < flow

PN (m)	Length (m)	Fall (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
-----------	---------------	---------------	----------------	----------------	--------------------	-----------	-------------	-------------	--------------	----------------

Network Results Table

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JNP Group										Page 3	
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP					Ford Airfield South East Parcels Surface Water Network 5						
Date 11/07/2019 File C85228 Surface Water					Designed by IS Checked by AM						
Micro Drainage					Network 2018.1.1						
Network Design Table for JNP Surface Water Network 5 - South East Parcel											
Rev A 2019.06.25											
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	41.323	0.207	200.0	0.152	5.00	0.0	0.600	o	300	Pipe/Conduit	
1.001	73.433	0.245	300.0	0.145	0.00	0.0	0.600	o	1350	Pipe/Conduit	
1.002	58.046	0.193	300.0	0.554	0.00	0.0	0.600	o	1350	Pipe/Conduit	
2.000	58.046	0.193	300.0	0.000	5.00	0.0	0.600	o	1350	Pipe/Conduit	
2.001	4.000	0.013	300.0	0.000	0.00	0.0	0.600	o	1350	Pipe/Conduit	
1.003	18.915	0.063	300.0	0.000	0.00	0.0	0.600	o	1350	Pipe/Conduit	
3.000	43.851	0.146	300.0	0.040	5.00	0.0	0.600	o	300	Pipe/Conduit	
3.001	66.336	0.221	300.0	0.136	0.00	0.0	0.600	o	450	Pipe/Conduit	
3.002	47.139	0.157	300.0	0.245	0.00	0.0	0.600	o	1200	Pipe/Conduit	
1.004	15.754	0.105	150.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.005	30.624	0.204	150.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.006	32.906	0.219	150.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
Network Results Table											
PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	
1.000	50.00	5.62	5.686	0.152	0.0	0.0	0.0	1.11	78.3	20.6	
1.001	50.00	6.15	4.429	0.297	0.0	0.0	0.0	2.32	3316.1	40.2	
1.002	50.00	6.57	4.184	0.851	0.0	0.0	0.0	2.32	3316.1	115.2	
2.000	50.00	5.42	4.197	0.000	0.0	0.0	0.0	2.32	3316.1	0.0	
2.001	50.00	5.45	4.004	0.000	0.0	0.0	0.0	2.32	3316.1	0.0	
1.003	50.00	6.70	3.991	0.851	0.0	0.0	0.0	2.32	3316.1	115.2	
3.000	50.00	5.81	5.352	0.040	0.0	0.0	0.0	0.90	63.8	5.4	
3.001	50.00	6.76	5.056	0.176	0.0	0.0	0.0	1.17	185.8	23.8	
3.002	50.00	7.12	4.085	0.421	0.0	0.0	0.0	2.15	2437.0	57.0	
1.004	50.00	7.44	3.928	1.272	0.0	0.0	0.0	0.82	14.5«	172.2	
1.005	50.00	8.07	3.823	1.272	0.0	0.0	0.0	0.82	14.5«	172.2	
1.006	50.00	8.74	3.619	1.272	0.0	0.0	0.0	0.82	14.5«	172.2	
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JNP Group		Page 4
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield South East Parcels Surface Water Network 5	
Date 11/07/2019 File C85228 Surface Water	Designed by IS Checked by AM	
Micro Drainage Network 2018.1.1		

Manhole Schedules for JNP Surface Water Network 5 - South East Parcel Rev A 2019.06.25

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
400	7.616	1.930	Open Manhole	1200	1.000	5.686	300				
401	6.734	2.305	Open Manhole	2400	1.001	4.429	1350	1.000	5.479	300	
402	6.450	2.266	Open Manhole	2400	1.002	4.184	1350	1.001	4.184	1350	
404	6.450	2.253	Open Manhole	2400	2.000	4.197	1350				
405	6.260	2.256	Open Manhole	2400	2.001	4.004	1350	2.000	4.004	1350	
403	6.260	2.269	Open Manhole	2400	1.003	3.991	1350	1.002	3.991	1350	
								2.001	3.991	1350	
407	7.013	1.661	Open Manhole	1200	3.000	5.352	300				
408	6.809	1.753	Open Manhole	1500	3.001	5.056	450	3.000	5.206	300	
409	6.500	2.415	Open Manhole	2100	3.002	4.085	1200	3.001	4.835	450	
406	6.200	2.272	Open Manhole	2400	1.004	3.928	150	1.003	3.928	1350	
								3.002	3.928	1200	
410	4.700	0.877	Open Manhole	1200	1.005	3.823	150	1.004	3.823	150	
411	4.690	1.071	Open Manhole	1200	1.006	3.619	150	1.005	3.619	150	
412	4.600	1.200	Open Manhole	1200		OUTFALL		1.006	3.400	150	

JNP Group		Page 5
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield South East Parcels Surface Water Network 5	
Date 11/07/2019 File C85228 Surface Water	Designed by IS Checked by AM	
Micro Drainage	Network 2018.1.1	

PIPELINE SCHEDULES for JNP Surface Water Network 5 - South East Parcel Rev
A 2019.06.25

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	300	400	7.616	5.686	1.630	Open Manhole	1200
1.001	o	1350	401	6.734	4.429	0.955	Open Manhole	2400
1.002	o	1350	402	6.450	4.184	0.916	Open Manhole	2400
2.000	o	1350	404	6.450	4.197	0.903	Open Manhole	2400
2.001	o	1350	405	6.260	4.004	0.906	Open Manhole	2400
1.003	o	1350	403	6.260	3.991	0.919	Open Manhole	2400
3.000	o	300	407	7.013	5.352	1.361	Open Manhole	1200
3.001	o	450	408	6.809	5.056	1.303	Open Manhole	1500
3.002	o	1200	409	6.500	4.085	1.215	Open Manhole	2100
1.004	o	150	406	6.200	3.928	2.122	Open Manhole	2400
1.005	o	150	410	4.700	3.823	0.727	Open Manhole	1200
1.006	o	150	411	4.690	3.619	0.921	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	41.323	200.0	401	6.734	5.479	0.955	Open Manhole	2400
1.001	73.433	300.0	402	6.450	4.184	0.916	Open Manhole	2400
1.002	58.046	300.0	403	6.260	3.991	0.919	Open Manhole	2400
2.000	58.046	300.0	405	6.260	4.004	0.906	Open Manhole	2400
2.001	4.000	300.0	403	6.260	3.991	0.919	Open Manhole	2400
1.003	18.915	300.0	406	6.200	3.928	0.922	Open Manhole	2400
3.000	43.851	300.0	408	6.809	5.206	1.303	Open Manhole	1500
3.001	66.336	300.0	409	6.500	4.835	1.215	Open Manhole	2100
3.002	47.139	300.0	406	6.200	3.928	1.072	Open Manhole	2400
1.004	15.754	150.0	410	4.700	3.823	0.727	Open Manhole	1200
1.005	30.624	150.0	411	4.690	3.619	0.921	Open Manhole	1200
1.006	32.906	150.0	412	4.600	3.400	1.050	Open Manhole	1200

JNP Group		Page 6
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP		
Ford Airfield South East Parcels Surface Water Network 5		
Date 11/07/2019 File C85228 Surface Water		
Designed by IS Checked by AM		
Micro Drainage		Network 2018.1.1

Area Summary for JNP Surface Water Network 5 - South East Parcel Rev A
2019.06.25

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.152	0.152	0.152
1.001	-	-	100	0.145	0.145	0.145
1.002	-	-	100	0.554	0.554	0.554
2.000	-	-	100	0.000	0.000	0.000
2.001	-	-	100	0.000	0.000	0.000
1.003	-	-	100	0.000	0.000	0.000
3.000	-	-	100	0.040	0.040	0.040
3.001	-	-	100	0.136	0.136	0.136
3.002	-	-	100	0.245	0.245	0.245
1.004	-	-	100	0.000	0.000	0.000
1.005	-	-	100	0.000	0.000	0.000
1.006	-	-	100	0.000	0.000	0.000
Total				Total	Total	Total
1.272				1.272	1.272	1.272

Free Flowing Outfall Details for JNP Surface Water Network 5 - South East Parcel Rev A 2019.06.25

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.006	412	4.600	3.400	2.350	1200	0

Simulation Criteria for JNP Surface Water Network 5 - South East Parcel Rev A 2019.06.25

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1
Number of Input Hydrographs	0	Number of Storage Structures	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	2
FEH Rainfall Version	2013
Site Location	GB 500450 103100 TQ 00450 03100
Data Type	Catchment
Summer Storms	Yes

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JNP Group		Page 7
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield South East Parcels Surface Water Network 5	
Date 11/07/2019 File C85228 Surface Water	Designed by IS Checked by AM	
Micro Drainage Network 2018.1.1		
<u>Synthetic Rainfall Details</u> Winter Storms No Cv (Summer) 0.750 Cv (Winter) 0.840 Storm Duration (mins) 30		
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JNP Group		Page 8																																																																								
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield South East Parcels Surface Water Network 5																																																																									
Date 11/07/2019 File C85228 Surface Water	Designed by IS Checked by AM																																																																									
Micro Drainage Network 2018.1.1																																																																										
<u>Online Controls for JNP Surface Water Network 5 - South East Parcel Rev A</u> <u>2019.06.25</u>																																																																										
<u>Hydro-Brake® Optimum Manhole: 406, DS/PN: 1.004, Volume (m³): 84.7</u>																																																																										
Unit Reference MD-SHE-0060-2000-1598-2000 Design Head (m)1.598 Design Flow (l/s)2.0 Flush-Flo™Calculated ObjectiveMinimise upstream storage ApplicationSurface Sump AvailableYes Diameter (mm)60 Invert Level (m)3.928 Minimum Outlet Pipe Diameter (mm)75 Suggested Manhole Diameter (mm)1200																																																																										
<table><tr><td>Control Points</td><td>Head (m)</td><td>Flow (l/s)</td><td>Control Points</td><td>Head (m)</td><td>Flow (l/s)</td></tr><tr><td>Design Point (Calculated)</td><td>1.598</td><td>2.0</td><td>Kick-Flo®</td><td>0.536</td><td>1.2</td></tr><tr><td>Flush-Flo™</td><td>0.262</td><td>1.5</td><td>Mean Flow over Head Range</td><td>-</td><td>1.5</td></tr></table>			Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)	Design Point (Calculated)	1.598	2.0	Kick-Flo®	0.536	1.2	Flush-Flo™	0.262	1.5	Mean Flow over Head Range	-	1.5																																																						
Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)																																																																					
Design Point (Calculated)	1.598	2.0	Kick-Flo®	0.536	1.2																																																																					
Flush-Flo™	0.262	1.5	Mean Flow over Head Range	-	1.5																																																																					
The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated																																																																										
<table><tr><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td></tr><tr><td>0.100</td><td>1.3</td><td>1.200</td><td>1.8</td><td>3.000</td><td>2.7</td><td>7.000</td><td>4.0</td></tr><tr><td>0.200</td><td>1.5</td><td>1.400</td><td>1.9</td><td>3.500</td><td>2.9</td><td>7.500</td><td>4.1</td></tr><tr><td>0.300</td><td>1.5</td><td>1.600</td><td>2.0</td><td>4.000</td><td>3.0</td><td>8.000</td><td>4.2</td></tr><tr><td>0.400</td><td>1.5</td><td>1.800</td><td>2.1</td><td>4.500</td><td>3.2</td><td>8.500</td><td>4.3</td></tr><tr><td>0.500</td><td>1.3</td><td>2.000</td><td>2.2</td><td>5.000</td><td>3.4</td><td>9.000</td><td>4.4</td></tr><tr><td>0.600</td><td>1.3</td><td>2.200</td><td>2.3</td><td>5.500</td><td>3.5</td><td>9.500</td><td>4.6</td></tr><tr><td>0.800</td><td>1.5</td><td>2.400</td><td>2.4</td><td>6.000</td><td>3.7</td><td></td><td></td></tr><tr><td>1.000</td><td>1.6</td><td>2.600</td><td>2.5</td><td>6.500</td><td>3.8</td><td></td><td></td></tr></table>			Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	0.100	1.3	1.200	1.8	3.000	2.7	7.000	4.0	0.200	1.5	1.400	1.9	3.500	2.9	7.500	4.1	0.300	1.5	1.600	2.0	4.000	3.0	8.000	4.2	0.400	1.5	1.800	2.1	4.500	3.2	8.500	4.3	0.500	1.3	2.000	2.2	5.000	3.4	9.000	4.4	0.600	1.3	2.200	2.3	5.500	3.5	9.500	4.6	0.800	1.5	2.400	2.4	6.000	3.7			1.000	1.6	2.600	2.5	6.500	3.8		
Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)																																																																			
0.100	1.3	1.200	1.8	3.000	2.7	7.000	4.0																																																																			
0.200	1.5	1.400	1.9	3.500	2.9	7.500	4.1																																																																			
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0.400	1.5	1.800	2.1	4.500	3.2	8.500	4.3																																																																			
0.500	1.3	2.000	2.2	5.000	3.4	9.000	4.4																																																																			
0.600	1.3	2.200	2.3	5.500	3.5	9.500	4.6																																																																			
0.800	1.5	2.400	2.4	6.000	3.7																																																																					
1.000	1.6	2.600	2.5	6.500	3.8																																																																					
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JNP Group		Page 9												
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield South East Parcels Surface Water Network 5													
Date 11/07/2019 File C85228 Surface Water	Designed by IS Checked by AM													
Micro Drainage Network 2018.1.1														
Storage Structures for JNP Surface Water Network 5 - South East Parcel Rev <u>A 2019.06.25</u>														
Tank or Pond Manhole: 406, DS/PN: 1.004														
Invert Level (m) 3.950														
<table><tr><td>Depth (m)</td><td>Area (m²)</td><td>Depth (m)</td><td>Area (m²)</td><td>Depth (m)</td><td>Area (m²)</td></tr><tr><td>0.000</td><td>500.0</td><td>1.200</td><td>500.0</td><td>1.201</td><td>0.0</td></tr></table>			Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	0.000	500.0	1.200	500.0	1.201	0.0
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)									
0.000	500.0	1.200	500.0	1.201	0.0									
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Date 11/07/2019					Designed by IS				
File C85228 Surface Water					Checked by AM				
Micro Drainage					Network 2018.1.1				
<u>2 year Return Period Summary of Critical Results by Maximum Level (Rank 1)</u> <u>for JNP Surface Water Network 5 - South East Parcel Rev A 2019.06.25</u>									
Simulation Criteria									
Areal Reduction Factor 1.000					Additional Flow - % of Total Flow 0.000				
Hot Start (mins) 0					MADD Factor * 10m³/ha Storage 0.000				
Hot Start Level (mm) 0					Inlet Coefficient 0.800				
Manhole Headloss Coeff (Global) 0.500					Flow per Person per Day (l/per/day) 0.000				
Foul Sewage per hectare (l/s) 0.000									
Number of Input Hydrographs 0					Number of Storage Structures 1				
Number of Online Controls 1					Number of Time/Area Diagrams 0				
Number of Offline Controls 0					Number of Real Time Controls 0				
Synthetic Rainfall Details									
Rainfall Model					FEH				
FEH Rainfall Version					2013				
Site Location GB 500450 103100 TQ 00450 03100									
Data Type					Catchment				
Cv (Summer)					0.750				
Cv (Winter)					0.840				
Margin for Flood Risk Warning (mm)					300.0				
Analysis Timestep 2.5 Second Increment (Extended)									
DTS Status					OFF				
DVD Status					ON				
Inertia Status					ON				
Profile(s)					Summer and Winter				
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480									
Return Period(s) (years)					2, 30, 100				
Climate Change (%)					0, 0, 40				
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	400	15 Winter	2	+0%	100/15 Summer				5.811
1.001	401	15 Winter	2	+0%					4.550
1.002	402	480 Winter	2	+0%					4.439
2.000	404	480 Winter	2	+0%					4.439
2.001	405	480 Winter	2	+0%	100/480 Winter				4.439
1.003	403	480 Winter	2	+0%	100/480 Winter				4.439
3.000	407	15 Winter	2	+0%					5.420
3.001	408	15 Winter	2	+0%					5.174
3.002	409	480 Winter	2	+0%	100/360 Winter				4.439
1.004	406	480 Winter	2	+0%	2/15 Summer				4.439
1.005	410	60 Winter	2	+0%					3.856
1.006	411	60 Winter	2	+0%					3.652
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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP			Ford Airfield South East Parcels Surface Water Network 5					
Date 11/07/2019 File C85228 Surface Water			Designed by IS Checked by AM					
Micro Drainage			Network 2018.1.1					
<u>2 year Return Period Summary of Critical Results by Maximum Level (Rank 1)</u> <u>for JNP Surface Water Network 5 - South East Parcel Rev A 2019.06.25</u>								
PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	400	-0.175	0.000	0.36		26.0	OK	
1.001	401	-1.229	0.000	0.02		46.0	OK	
1.002	402	-1.095	0.000	0.01		19.7	OK	
2.000	404	-1.108	0.000	0.00		0.0	OK	
2.001	405	-0.915	0.000	0.00		0.2	OK	
1.003	403	-0.902	0.000	0.01		17.0	OK	
3.000	407	-0.232	0.000	0.12		6.9	OK	
3.001	408	-0.332	0.000	0.15		26.5	OK	
3.002	409	-0.846	0.000	0.01		9.8	OK	
1.004	406	0.361	0.000	0.11		1.5	SURCHARGED	
1.005	410	-0.117	0.000	0.11		1.5	OK	
1.006	411	-0.117	0.000	0.11		1.5	OK	
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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP					Ford Airfield South East Parcels Surface Water Network 5						
Date 11/07/2019					Designed by IS						
File C85228 Surface Water					Checked by AM						
Micro Drainage					Network 2018.1.1						
<u>30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for JNP Surface Water Network 5 - South East Parcel Rev A 2019.06.25</u>											
<u>Simulation Criteria</u>											
Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000											
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000											
Hot Start Level (mm) 0 Inlet Coefficient 0.800											
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000											
Foul Sewage per hectare (l/s) 0.000											
Number of Input Hydrographs 0 Number of Storage Structures 1											
Number of Online Controls 1 Number of Time/Area Diagrams 0											
Number of Offline Controls 0 Number of Real Time Controls 0											
<u>Synthetic Rainfall Details</u>											
Rainfall Model FEH											
FEH Rainfall Version 2013											
Site Location GB 500450 103100 TQ 00450 03100											
Data Type Catchment											
Cv (Summer) 0.750											
Cv (Winter) 0.840											
Margin for Flood Risk Warning (mm) 300.0											
Analysis Timestep 2.5 Second Increment (Extended)											
DTS Status OFF											
DVD Status ON											
Inertia Status ON											
Profile(s) Summer and Winter											
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480											
Return Period(s) (years) 2, 30, 100											
Climate Change (%) 0, 0, 40											

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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield South East Parcels Surface Water Network 5	
Date 11/07/2019 File C85228 Surface Water	Designed by IS Checked by AM	
Micro Drainage		Network 2018.1.1

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for JNP Surface Water Network 5 - South East Parcel Rev A 2019.06.25

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	400	-0.100	0.000	0.77		55.9	OK	
1.001	401	-1.034	0.000	0.00		12.1	OK	
1.002	402	-0.789	0.000	0.01		32.6	OK	
2.000	404	-0.802	0.000	0.00		0.0	OK	
2.001	405	-0.609	0.000	0.00		0.2	OK	
1.003	403	-0.596	0.000	0.01		24.1	OK	
3.000	407	-0.199	0.000	0.24		14.4	OK	
3.001	408	-0.254	0.000	0.39		67.6	OK	
3.002	409	-0.540	0.000	0.01		17.0	OK	
1.004	406	0.667	0.000	0.11		1.5	SURCHARGED	
1.005	410	-0.117	0.000	0.11		1.5	OK	
1.006	411	-0.117	0.000	0.11		1.5	OK	

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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP				Ford Airfield South East Parcels Surface Water Network 5					
Date 11/07/2019				Designed by IS					
File C85228 Surface Water				Checked by AM					
Micro Drainage				Network 2018.1.1					
<u>100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for JNP Surface Water Network 5 - South East Parcel Rev A 2019.06.25</u>									
Simulation Criteria									
Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000									
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000									
Hot Start Level (mm) 0 Inlet Coefficient 0.800									
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000									
Foul Sewage per hectare (l/s) 0.000									
Number of Input Hydrographs 0 Number of Storage Structures 1									
Number of Online Controls 1 Number of Time/Area Diagrams 0									
Number of Offline Controls 0 Number of Real Time Controls 0									
Synthetic Rainfall Details									
Rainfall Model FEH									
FEH Rainfall Version 2013									
Site Location GB 500450 103100 TQ 00450 03100									
Data Type Catchment									
Cv (Summer) 0.750									
Cv (Winter) 0.840									
Margin for Flood Risk Warning (mm) 300.0									
Analysis Timestep 2.5 Second Increment (Extended)									
DTS Status OFF									
DVD Status ON									
Inertia Status ON									
Profile(s) Summer and Winter									
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480									
Return Period(s) (years) 2, 30, 100									
Climate Change (%) 0, 0, 40									
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	400	15 Winter	100	+40%	100/15 Summer				6.152
1.001	401	480 Winter	100	+40%					5.491
1.002	402	480 Winter	100	+40%					5.491
2.000	404	480 Winter	100	+40%					5.490
2.001	405	480 Winter	100	+40%	100/480 Winter				5.490
1.003	403	480 Winter	100	+40%	100/480 Winter				5.490
3.000	407	15 Winter	100	+40%					5.491
3.001	408	480 Winter	100	+40%					5.490
3.002	409	480 Winter	100	+40%	100/360 Winter				5.490
1.004	406	480 Winter	100	+40%	2/15 Summer				5.490
1.005	410	480 Winter	100	+40%					3.860
1.006	411	480 Winter	100	+40%					3.656
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Date 11/07/2019 File C85228 Surface Water	Designed by IS Checked by AM	
Micro Drainage		Network 2018.1.1

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for JNP Surface Water Network 5 - South East Parcel Rev A 2019.06.25

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	400	0.166	0.000	1.36		98.8	SURCHARGED	
1.001	401	-0.288	0.000	0.01		20.5	OK	
1.002	402	-0.043	0.000	0.02		50.1	OK	
2.000	404	-0.057	0.000	0.00		0.1	OK	
2.001	405	0.136	0.000	0.00		0.6	SURCHARGED	
1.003	403	0.149	0.000	0.02		33.1	SURCHARGED	
3.000	407	-0.161	0.000	0.42		25.1	OK	
3.001	408	-0.016	0.000	0.07		12.5	OK	
3.002	409	0.205	0.000	0.02		29.4	SURCHARGED	
1.004	406	1.412	0.000	0.15		2.0	SURCHARGED	
1.005	410	-0.113	0.000	0.14		2.0	OK	
1.006	411	-0.113	0.000	0.14		2.0	OK	