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Legend

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

Rev.	Date	Amendment	By	Ch
Status		Indicative		

The image shows two logos side-by-side. On the left is the 'Wates' logo, featuring the word 'Wates' in a blue serif font with a green and yellow leaf-like graphic above the 'e'. On the right is the 'REDROW HOMES' logo, featuring a red stylized flower icon above the word 'REDROW' in a bold red serif font, with 'HOMES' in a smaller black serif font below it.

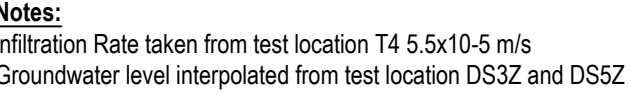
 **john newton & partners**
jnp group
Consulting Engineers
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Chesham • Brighouse • Hartlepool • Leamington Spa • Sheffield
Tel: 01494 771221 E-mail: chesham@jnpgroup.co.uk

Client	Wates Redrow
Job	Ford Airfield
Title	Northern Parcels Indicative Surface Water Drainage Strategy Infiltration Basin

[illegible]

Drawing No.	Rev
C85228-D142	-



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Legend

	Site boundary
	Surface water sewer
	Existing ground contour
	Proposed road contours

Rev.	Date	Amendment	By	Chk.
Status				
Indicative				



Client	Wates Redrow		
Job	Ford Airfield		
Title	Northern Parcels Infiltration Basin Plan Layout and Sections		
Scale	As Shown	@ A1	Date October 2020
Drawn by	IS	Checked by	Approved by
			
			Supplier No. 000026

Drawing No.	Rev.
C85228-D143	-



Overall Total =	8.881
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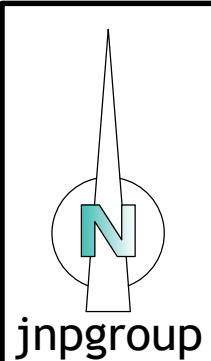
Overall Total =

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Indicative

C85228-D144



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Legend

- Site boundary
- Proposed level difference between existing and proposed ground levels
- Existing ground contour
- Proposed road contours

Rev.	Date	Amendment	By	Chk.
E	16.12.20	Infiltration basin added, North west parcels levels updated	IS	AM
D	10.02.20	Basins revised due to groundwater monitoring results	IS	AM
C	19.12.19	Site boundary revised	IS	AM
B	24.10.19	Land use plan updated	IS	AM
A	11.07.19	Proposed road levels revised to suit updated site layout	IS	AM

Status Indicative

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Client	Wates Redrow
Job	Ford Airfield
Title	Indicative Proposed Ground Levels Sheet 1 of 2
Scale	1:2500
Date	April 2019

Drawn by IS

Checked by

Approved by

Drawing No. C85228-D110

Rev. E

reme.jpg

APRIL DISTRICT COUNCIL PRODUCE

JNP Group		Page 1
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield System 1 Northern Network	
Date 10/12/2020	Designed by IS	
File SW Network 1 Infiltratio...	Checked by AM	
Micro Drainage		Network 2018.1.1

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for JNP Surface Water Network 1 - Northern Parcel REV F
2020.11.05

Pipe Sizes Standard Manhole Sizes STANDARD

FEH Rainfall Model	
Return Period (years)	100
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 (%)	40
Minimum Backdrop Height (m)	0.200
Maximum Backdrop Height (m)	1.500
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 1 - Northern Parcel REV F
2020.11.05

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	2.309	4-8	10.125	8-12	6.350	12-16	0.553

Total Area Contributing (ha) = 19.338

Total Pipe Volume (m³) = 2360.121

Network Design Table for JNP Surface Water Network 1 - Northern Parcel REV F
2020.11.05

« - Indicates pipe capacity < flow

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
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JNP Group		Page 2								
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield System 1 Northern Network									
Date 10/12/2020	Designed by IS									
File SW Network 1 Infiltratio...	Checked by AM									
Micro Drainage	Network 2018.1.1									
<u>Network Design Table for JNP Surface Water Network 1 - Northern Parcel REV F</u> <u>2020.11.05</u>										
<u>Network Results Table</u>										
PN	Rain	T.C.	US/IL	Σ I.Area	Σ Base	Foul	Add Flow	Vel	Cap	Flow
	(mm/hr)	(mins)	(m)	(ha)	Flow (l/s)	(l/s)	(l/s)	(m/s)	(l/s)	(l/s)

JNP Group		Page 3
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield System 1 Northern Network	
Date 10/12/2020	Designed by IS	
File SW Network 1 Infiltratio...	Checked by AM	
Micro Drainage		Network 2018.1.1

Network Design Table for JNP Surface Water Network 1 - Northern Parcel REV F
2020.11.05

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	85.979	0.287	300.0	0.687	5.00	0.0	0.600	o	600	Pipe/Conduit	
1.001	50.362	0.168	300.0	0.315	0.00	0.0	0.600	o	600	Pipe/Conduit	
1.002	67.936	0.136	500.0	0.000	0.00	0.0	0.600	o	750	Pipe/Conduit	
1.003	73.977	0.148	500.0	1.046	0.00	0.0	0.600	o	900	Pipe/Conduit	
2.000	83.435	0.278	300.0	0.212	5.00	0.0	0.600	o	450	Pipe/Conduit	
2.001	8.323	0.028	300.0	0.087	0.00	0.0	0.600	o	450	Pipe/Conduit	
2.002	66.554	0.222	300.0	0.201	0.00	0.0	0.600	o	450	Pipe/Conduit	
2.003	96.837	0.323	300.0	0.194	0.00	0.0	0.600	o	600	Pipe/Conduit	
1.004	83.219	0.166	500.0	0.273	0.00	0.0	0.600	o	900	Pipe/Conduit	
3.000	55.718	0.186	300.0	0.194	5.00	0.0	0.600	o	450	Pipe/Conduit	
3.001	27.957	0.093	300.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
3.002	57.474	0.192	300.0	0.262	0.00	0.0	0.600	o	600	Pipe/Conduit	
3.003	30.996	0.103	300.0	0.188	0.00	0.0	0.600	o	600	Pipe/Conduit	
4.000	59.383	0.198	300.0	0.251	5.00	0.0	0.600	o	450	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	6.02	5.235	0.687	0.0	0.0	37.2	1.40	396.0	130.2
1.001	50.00	6.62	4.948	1.002	0.0	0.0	54.3	1.40	396.0	190.0
1.002	50.00	7.53	4.630	1.002	0.0	0.0	54.3	1.24	549.9	190.0
1.003	50.00	8.42	4.344	2.048	0.0	0.0	110.9	1.39	887.1	388.3
2.000	50.00	6.19	5.497	0.212	0.0	0.0	11.5	1.17	185.8	40.2
2.001	50.00	6.31	5.219	0.299	0.0	0.0	16.2	1.17	185.8	56.7
2.002	50.00	7.26	5.191	0.500	0.0	0.0	27.1	1.17	185.8	94.8
2.003	50.00	8.41	4.819	0.694	0.0	0.0	37.6	1.40	396.0	131.6
1.004	50.00	9.41	4.196	3.015	0.0	0.0	163.3	1.39	887.1	571.6
3.000	50.00	5.79	5.430	0.194	0.0	0.0	10.5	1.17	185.8	36.8
3.001	50.00	6.19	5.244	0.194	0.0	0.0	10.5	1.17	185.8	36.8
3.002	50.00	6.88	5.001	0.456	0.0	0.0	24.7	1.40	396.0	86.4
3.003	50.00	7.25	4.809	0.644	0.0	0.0	34.9	1.40	396.0	122.1
4.000	50.00	5.85	5.054	0.251	0.0	0.0	13.6	1.17	185.8	47.6

JNP Group										Page 4	
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP						Ford Airfield System 1 Northern Network					
Date 10/12/2020						Designed by IS					
File SW Network 1 Infiltratio...						Checked by AM					
Micro Drainage						Network 2018.1.1					
Network Design Table for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05											
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
3.004	17.222	0.057	300.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
5.000	51.037	0.638	80.0	0.237	5.00	0.0	0.600	o	300	Pipe/Conduit	
3.005	95.552	0.319	300.0	0.118	0.00	0.0	0.600	o	600	Pipe/Conduit	
6.000	84.243	0.421	200.0	0.184	5.00	0.0	0.600	o	450	Pipe/Conduit	
1.005	49.398	0.099	500.0	0.691	0.00	0.0	0.600	o	1200	Pipe/Conduit	
1.006	55.876	0.112	500.0	0.421	0.00	0.0	0.600	o	1200	Pipe/Conduit	
1.007	33.340	0.067	500.0	0.142	0.00	0.0	0.600	o	1200	Pipe/Conduit	
1.008	103.033	0.206	500.0	0.000	0.00	0.0	0.600	o	1200	Pipe/Conduit	
1.009	19.047	0.038	500.0	0.606	0.00	0.0	0.600	o	1200	Pipe/Conduit	
7.000	54.020	0.360	150.0	0.185	5.00	0.0	0.600	o	300	Pipe/Conduit	
1.010	49.651	0.099	500.0	0.000	0.00	0.0	0.600	o	1200	Pipe/Conduit	
1.011	29.124	0.058	500.0	0.000	0.00	0.0	0.600	o	1200	Pipe/Conduit	
1.012	29.014	0.058	500.0	0.130	0.00	0.0	0.600	o	1200	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)	
3.004	50.00	7.45	4.706	0.895	0.0	0.0	48.5	1.40	396.0	169.7	
5.000	50.00	5.48	5.587	0.237	0.0	0.0	12.8	1.76	124.4	44.9	
3.005	50.00	8.59	4.649	1.250	0.0	0.0	67.7	1.40	396.0	237.0	
6.000	50.00	5.98	4.901	0.184	0.0	0.0	10.0	1.43	228.1	34.9	
1.005	50.00	9.91	3.730	5.140	0.0	0.0	278.4	1.67	1884.5	974.4	
1.006	50.00	10.46	3.631	5.561	0.0	0.0	301.2	1.67	1884.5	1054.2	
1.007	50.00	10.80	3.519	5.703	0.0	0.0	308.9	1.67	1884.5	1081.2	
1.008	50.00	11.83	3.452	5.703	0.0	0.0	308.9	1.67	1884.5	1081.2	
1.009	50.00	12.02	3.246	6.309	0.0	0.0	341.7	1.67	1884.5	1196.0	
7.000	50.00	5.70	4.468	0.185	0.0	0.0	10.0	1.28	90.6	35.1	
1.010	50.00	12.52	3.208	6.494	0.0	0.0	351.7	1.67	1884.5	1231.1	
1.011	50.00	12.81	3.109	6.494	0.0	0.0	351.7	1.67	1884.5	1231.1	
1.012	50.00	13.10	3.051	6.624	0.0	0.0	358.8	1.67	1884.5	1255.8	
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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP					Ford Airfield System 1 Northern Network						
Date 10/12/2020					Designed by IS						
File SW Network 1 Infiltratio...					Checked by AM						
Micro Drainage					Network 2018.1.1						
Network Design Table for JNP Surface Water Network 1 - Northern Parcel REV F											
2020.11.05											
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
1.013	70.497	0.141	500.0	0.000	0.00	0.0	0.600	o	1350	Pipe/Conduit	
8.000	94.054	0.314	300.0	0.085	5.00	0.0	0.600	o	450	Pipe/Conduit	
8.001	119.819	0.399	300.0	0.106	0.00	0.0	0.600	o	750	Pipe/Conduit	
9.000	50.699	0.338	150.0	0.251	5.00	0.0	0.600	o	450	Pipe/Conduit	
8.002	28.399	0.057	500.0	0.778	0.00	0.0	0.600	o	900	Pipe/Conduit	
10.000	91.723	0.306	300.0	0.117	5.00	0.0	0.600	o	450	Pipe/Conduit	
10.001	86.168	0.287	300.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
10.002	26.117	0.087	300.0	0.255	0.00	0.0	0.600	o	600	Pipe/Conduit	
11.000	44.325	0.887	50.0	0.140	5.00	0.0	0.600	o	450	Pipe/Conduit	
10.003	58.131	0.194	300.0	0.525	0.00	0.0	0.600	o	750	Pipe/Conduit	
8.003	77.728	0.155	500.0	0.000	0.00	0.0	0.600	o	900	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)	
1.013	50.00	13.75	2.843	6.624	0.0	0.0	358.8	1.79	2564.5	1255.8	
8.000	50.00	6.34	5.369	0.085	0.0	0.0	4.6	1.17	185.8	16.1	
8.001	50.00	7.58	4.755	0.191	0.0	0.0	10.3	1.61	711.5	36.2	
9.000	50.00	5.51	4.994	0.251	0.0	0.0	13.6	1.66	263.6	47.6	
8.002	50.00	7.92	4.206	1.220	0.0	0.0	66.1	1.39	887.1	231.3	
10.000	50.00	6.31	5.473	0.117	0.0	0.0	6.3	1.17	185.8	22.2	
10.001	50.00	7.54	5.167	0.117	0.0	0.0	6.3	1.17	185.8	22.2	
10.002	50.00	7.85	4.730	0.372	0.0	0.0	20.1	1.40	396.0	70.5	
11.000	50.00	5.26	5.679	0.140	0.0	0.0	7.6	2.88	458.1	26.5	
10.003	50.00	8.45	4.493	1.037	0.0	0.0	56.2	1.61	711.5	196.6	
8.003	50.00	9.38	4.149	2.257	0.0	0.0	122.3	1.39	887.1	427.9	
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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP					Ford Airfield System 1 Northern Network						
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Network Design Table for JNP Surface Water Network 1 - Northern Parcel REV F											
2020.11.05											
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
12.000	65.849	0.329	200.0	0.233	5.00	0.0	0.600	o	300	Pipe/Conduit	
8.004	24.055	0.048	500.0	0.433	0.00	0.0	0.600	o	900	Pipe/Conduit	
8.005	8.191	0.016	500.0	0.000	0.00	0.0	0.600	o	900	Pipe/Conduit	
13.000	80.242	0.802	100.0	0.067	5.00	0.0	0.600	o	450	Pipe/Conduit	
13.001	80.418	0.804	100.0	0.172	0.00	0.0	0.600	o	450	Pipe/Conduit	
8.006	67.902	0.136	500.0	0.267	0.00	0.0	0.600	o	900	Pipe/Conduit	
14.000	28.937	0.145	200.0	0.171	5.00	0.0	0.600	o	300	Pipe/Conduit	
14.001	62.150	0.311	200.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
15.000	62.150	0.311	200.0	0.319	5.00	0.0	0.600	o	450	Pipe/Conduit	
8.007	91.081	0.182	500.0	0.466	0.00	0.0	0.600	o	1200	Pipe/Conduit	
16.000	83.741	0.419	200.0	0.265	5.00	0.0	0.600	o	450	Pipe/Conduit	
16.001	113.115	0.377	300.0	0.000	0.00	0.0	0.600	o	600	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)	
12.000	50.00	5.99	4.923	0.233	0.0	0.0	12.6	1.11	78.3	44.2	
8.004	50.00	9.67	3.994	2.923	0.0	0.0	158.3	1.39	887.1	554.1	
8.005	50.00	9.76	3.946	2.923	0.0	0.0	158.3	1.39	887.1	554.1	
13.000	50.00	5.66	5.986	0.067	0.0	0.0	3.6	2.03	323.4	12.7	
13.001	50.00	6.32	5.184	0.239	0.0	0.0	12.9	2.03	323.4	45.3	
8.006	50.00	10.58	3.930	3.429	0.0	0.0	185.7	1.39	887.1	650.1	
14.000	50.00	5.44	4.850	0.171	0.0	0.0	9.3	1.11	78.3	32.4	
14.001	50.00	6.37	4.705	0.171	0.0	0.0	9.3	1.11	78.3	32.4	
15.000	50.00	5.72	4.555	0.319	0.0	0.0	17.3	1.43	228.1	60.5	
8.007	50.00	11.49	3.494	4.385	0.0	0.0	237.5	1.67	1884.5	831.3	
16.000	50.00	5.97	5.547	0.265	0.0	0.0	14.4	1.43	228.1	50.2	
16.001	50.00	7.32	4.978	0.265	0.0	0.0	14.4	1.40	396.0	50.2	
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Network Design Table for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05											
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
17.000	40.403	0.505	80.0	0.069	5.00	0.0	0.600	o	300	Pipe/Conduit	
16.002	44.754	0.090	500.0	0.289	0.00	0.0	0.600	o	750	Pipe/Conduit	
18.000	48.995	0.612	80.0	0.307	5.00	0.0	0.600	o	300	Pipe/Conduit	
16.003	79.278	0.159	500.0	0.409	0.00	0.0	0.600	o	900	Pipe/Conduit	
19.000	48.001	0.480	100.0	0.243	5.00	0.0	0.600	o	300	Pipe/Conduit	
16.004	92.445	0.185	500.0	0.417	0.00	0.0	0.600	o	900	Pipe/Conduit	
16.005	66.569	0.133	500.0	0.400	0.00	0.0	0.600	o	900	Pipe/Conduit	
20.000	77.186	0.515	150.0	0.062	5.00	0.0	0.600	o	300	Pipe/Conduit	
16.006	61.152	0.122	500.0	0.170	0.00	0.0	0.600	o	900	Pipe/Conduit	
8.008	60.466	0.121	500.0	0.553	0.00	0.0	0.600	o	1200	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)	
17.000	50.00	5.38	5.406	0.069	0.0	0.0	3.7	1.76	124.4	13.1	
16.002	50.00	7.92	4.451	0.623	0.0	0.0	33.7	1.24	549.9	118.1	
18.000	50.00	5.46	5.423	0.307	0.0	0.0	16.6	1.76	124.4	58.2	
16.003	50.00	8.87	4.211	1.339	0.0	0.0	72.5	1.39	887.1	253.8	
19.000	50.00	5.51	5.132	0.243	0.0	0.0	13.2	1.57	111.1	46.1	
16.004	50.00	9.97	4.052	1.999	0.0	0.0	108.3	1.39	887.1	379.0	
16.005	50.00	10.77	3.867	2.399	0.0	0.0	129.9	1.39	887.1	454.8	
20.000	50.00	6.00	4.849	0.062	0.0	0.0	3.4	1.28	90.6	11.8	
16.006	50.00	11.50	3.734	2.631	0.0	0.0	142.5	1.39	887.1	498.8	
8.008	50.00	12.10	3.312	7.569	0.0	0.0	410.0	1.67	1884.5	1434.9	
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Network Design Table for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05											
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
8.009	12.418	0.025	500.0	0.146	0.00	0.0	0.600	o	1350	Pipe/Conduit	
21.000	103.211	0.516	200.0	0.132	5.00	0.0	0.600	o	300	Pipe/Conduit	
21.001	35.354	0.118	300.0	0.138	0.00	0.0	0.600	o	450	Pipe/Conduit	
22.000	36.904	0.123	300.0	0.024	5.00	0.0	0.600	o	450	Pipe/Conduit	
22.001	83.039	0.166	500.0	0.305	0.00	0.0	0.600	o	900	Pipe/Conduit	
21.002	79.234	0.158	500.0	0.493	0.00	0.0	0.600	o	900	Pipe/Conduit	
23.000	45.450	0.568	80.0	0.046	5.00	0.0	0.600	o	300	Pipe/Conduit	
21.003	28.995	0.058	500.0	0.230	0.00	0.0	0.600	o	900	Pipe/Conduit	
24.000	77.867	0.260	300.0	0.045	5.00	0.0	0.600	o	300	Pipe/Conduit	
24.001	40.176	0.134	300.0	0.041	0.00	0.0	0.600	o	450	Pipe/Conduit	
24.002	31.074	0.104	300.0	0.221	0.00	0.0	0.600	o	450	Pipe/Conduit	
21.004	26.563	0.053	500.0	0.202	0.00	0.0	0.600	o	900	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)	
8.009	50.00	12.22	3.041	7.715	0.0	0.0	417.9	1.79	2564.5	1462.6	
21.000	50.00	6.55	5.499	0.132	0.0	0.0	7.1	1.11	78.3	25.0	
21.001	50.00	7.06	4.833	0.270	0.0	0.0	14.6	1.17	185.8	51.2	
22.000	50.00	5.53	5.004	0.024	0.0	0.0	1.3	1.17	185.8	4.5	
22.001	50.00	6.52	4.431	0.329	0.0	0.0	17.8	1.39	887.1	62.4	
21.002	50.00	8.00	4.265	1.092	0.0	0.0	59.1	1.39	887.1	207.0	
23.000	50.00	5.43	5.275	0.046	0.0	0.0	2.5	1.76	124.4	8.7	
21.003	50.00	8.35	4.107	1.368	0.0	0.0	74.1	1.39	887.1	259.3	
24.000	50.00	6.44	5.147	0.045	0.0	0.0	2.4	0.90	63.8	8.5	
24.001	50.00	7.01	4.737	0.086	0.0	0.0	4.7	1.17	185.8	16.3	
24.002	50.00	7.45	4.603	0.307	0.0	0.0	16.6	1.17	185.8	58.2	
21.004	50.00	8.67	4.049	1.877	0.0	0.0	101.7	1.39	887.1	355.8	
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Network Design Table for JNP Surface Water Network 1 - Northern Parcel REV F											
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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
21.005	91.765	0.184	500.0	0.000	0.00	0.0	0.600	o	1200	Pipe/Conduit	
25.000	98.750	0.658	150.0	0.073	5.00	0.0	0.600	o	300	Pipe/Conduit	
26.000	56.000	0.373	150.0	0.046	5.00	0.0	0.600	o	300	Pipe/Conduit	
21.006	69.097	0.138	500.0	0.979	0.00	0.0	0.600	o	1200	Pipe/Conduit	
21.007	33.907	0.068	500.0	0.139	0.00	0.0	0.600	o	1200	Pipe/Conduit	
27.000	61.421	0.409	150.0	0.073	5.00	0.0	0.600	o	300	Pipe/Conduit	
27.001	20.056	0.067	300.0	0.223	0.00	0.0	0.600	o	600	Pipe/Conduit	
21.008	69.976	0.140	500.0	0.307	0.00	0.0	0.600	o	1200	Pipe/Conduit	
8.010	70.511	0.141	500.0	0.537	0.00	0.0	0.600	o	1350	Pipe/Conduit	
8.011	87.893	0.176	500.0	0.745	0.00	0.0	0.600	o	1350	Pipe/Conduit	
1.014	10.000	0.020	500.0	0.000	0.00	0.0	0.600	o	1350	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)	
21.005	50.00	9.59	3.696	1.877	0.0	0.0	101.7	1.67	1884.5	355.8	
25.000	50.00	6.28	5.070	0.073	0.0	0.0	4.0	1.28	90.6	13.8	
26.000	50.00	5.73	4.785	0.046	0.0	0.0	2.5	1.28	90.6	8.7	
21.006	50.00	10.28	3.512	2.975	0.0	0.0	161.1	1.67	1884.5	564.0	
21.007	50.00	10.62	3.374	3.114	0.0	0.0	168.7	1.67	1884.5	590.3	
27.000	50.00	5.80	4.682	0.073	0.0	0.0	4.0	1.28	90.6	13.8	
27.001	50.00	6.04	3.973	0.296	0.0	0.0	16.0	1.40	396.0	56.1	
21.008	50.00	11.32	3.306	3.717	0.0	0.0	201.3	1.67	1884.5	704.7	
8.010	50.00	12.87	3.016	11.969	0.0	0.0	648.3	1.79	2564.5	2269.1	
8.011	50.00	13.69	2.875	12.714	0.0	0.0	688.7	1.79	2564.5	2410.3	
1.014	50.00	13.85	2.400	19.338	0.0	0.0	1047.4	1.79	2564.5«	3666.0	
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<u>Manhole Schedules for JNP Surface Water Network 1 - Northern Parcel REV F</u> <u>2020.11.05</u>											
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)	
100	7.890	2.655	Open Manhole	1500	1.000	5.235	600				
101	7.753	2.805	Open Manhole	1500	1.001	4.948	600	1.000	4.948	600	
102	7.712	3.082	Open Manhole	1800	1.002	4.630	750	1.001	4.780	600	
103	7.466	3.122	Open Manhole	1800	1.003	4.344	900	1.002	4.494	750	
105	7.960	2.463	Open Manhole	1500	2.000	5.497	450				
106	6.998	1.779	Open Manhole	1500	2.001	5.219	450	2.000	5.219	450	
107	6.996	1.805	Open Manhole	1500	2.002	5.191	450	2.001	5.191	450	
108	7.904	3.085	Open Manhole	1500	2.003	4.819	600	2.002	4.969	450	
104	7.504	3.308	Open Manhole	1800	1.004	4.196	900	1.003	4.196	900	
								2.003	4.496	600	
110	7.150	1.720	Open Manhole	1500	3.000	5.430	450				
111	7.914	2.670	Open Manhole	1500	3.001	5.244	450	3.000	5.244	450	
112	7.854	2.853	Open Manhole	1500	3.002	5.001	600	3.001	5.151	450	
113	7.752	2.943	Open Manhole	1500	3.003	4.809	600	3.002	4.809	600	
115	7.168	2.114	Open Manhole	1500	4.000	5.054	450				
114	7.976	3.270	Open Manhole	1500	3.004	4.706	600	3.003	4.706	600	
								4.000	4.856	450	
117	8.209	2.622	Open Manhole	1200	5.000	5.587	300				
116	7.780	3.131	Open Manhole	1500	3.005	4.649	600	3.004	4.649	600	
								5.000	4.949	300	
118	6.680	1.779	Open Manhole	1500	6.000	4.901	450				
109	7.136	3.406	Open Manhole	2100	1.005	3.730	1200	1.004	4.030	900	
								3.005	4.330	600	
								6.000	4.480	450	
119	7.002	3.371	Open Manhole	2100	1.006	3.631	1200	1.005	3.631	1200	
120	6.800	3.281	Open Manhole	2100	1.007	3.519	1200	1.006	3.519	1200	
121	6.774	3.322	Open Manhole	2100	1.008	3.452	1200	1.007	3.452	1200	
122	6.496	3.250	Open Manhole	2100	1.009	3.246	1200	1.008	3.246	1200	
124	6.295	1.827	Open Manhole	1200	7.000	4.468	300				
123	6.383	3.175	Open Manhole	2100	1.010	3.208	1200	1.009	3.208	1200	
								7.000	4.108	300	
125	5.543	2.434	Open Manhole	2100	1.011	3.109	1200	1.010	3.109	1200	
126	5.793	2.742	Open Manhole	2100	1.012	3.051	1200	1.011	3.051	1200	
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<u>Manhole Schedules for JNP Surface Water Network 1 - Northern Parcel REV F</u> <u>2020.11.05</u>											
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)
127	5.396	2.553	Open Manhole	2400	1.013	2.843	1350	1.012	2.993	1200	
128	7.032	1.663	Open Manhole	1500	8.000	5.369	450				
129	6.742	1.987	Open Manhole	1800	8.001	4.755	750	8.000	5.055	450	
131	7.231	2.237	Open Manhole	1500	9.000	4.994	450				
130	7.890	3.684	Open Manhole	1800	8.002	4.206	900	8.001	4.356	750	
								9.000	4.656	450	
133	7.102	1.629	Open Manhole	1500	10.000	5.473	450				
134	7.336	2.169	Open Manhole	1500	10.001	5.167	450	10.000	5.167	450	
135	7.776	3.046	Open Manhole	1500	10.002	4.730	600	10.001	4.880	450	
137	8.038	2.359	Open Manhole	1500	11.000	5.679	450				
136	8.236	3.743	Open Manhole	1800	10.003	4.493	750	10.002	4.643	600	
								11.000	4.793	450	
132	8.259	4.110	Open Manhole	1800	8.003	4.149	900	8.002	4.149	900	
								10.003	4.299	750	
139	7.239	2.316	Open Manhole	1200	12.000	4.923	300				
138	6.719	2.725	Open Manhole	1800	8.004	3.994	900	8.003	3.994	900	
								12.000	4.594	300	
140	6.904	2.958	Open Manhole	1800	8.005	3.946	900	8.004	3.946	900	
142	8.169	2.183	Open Manhole	1500	13.000	5.986	450				
143	7.129	1.945	Open Manhole	1500	13.001	5.184	450	13.000	5.184	450	
141	7.005	3.075	Open Manhole	1800	8.006	3.930	900	8.005	3.930	900	
								13.001	4.380	450	
145	7.362	2.512	Open Manhole	1200	14.000	4.850	300				
146	7.391	2.686	Open Manhole	1200	14.001	4.705	300	14.000	4.705	300	
147	6.922	2.367	Open Manhole	1500	15.000	4.555	450				
144	6.850	3.356	Open Manhole	2100	8.007	3.494	1200	8.006	3.794	900	
								14.001	4.394	300	
								15.000	4.244	450	
149	7.409	1.862	Open Manhole	1500	16.000	5.547	450				
150	7.455	2.477	Open Manhole	1500	16.001	4.978	600	16.000	5.128	450	
152	8.130	2.724	Open Manhole	1200	17.000	5.406	300				
151	7.598	3.147	Open Manhole	1800	16.002	4.451	750	16.001	4.601	600	
								17.000	4.901	300	
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<u>Manhole Schedules for JNP Surface Water Network 1 - Northern Parcel REV F</u> <u>2020.11.05</u>										
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)
154	7.952	2.529	Open Manhole	1200	18.000	5.423	300			
153	8.156	3.945	Open Manhole	1800	16.003	4.211	900	16.002	4.361	750
								18.000	4.811	300
156	7.092	1.960	Open Manhole	1200	19.000	5.132	300			
155	7.920	3.868	Open Manhole	1800	16.004	4.052	900	16.003	4.052	900
								19.000	4.652	300
157	7.288	3.421	Open Manhole	1800	16.005	3.867	900	16.004	3.867	900
159	7.158	2.309	Open Manhole	1200	20.000	4.849	300			
158	7.044	3.310	Open Manhole	1800	16.006	3.734	900	16.005	3.734	900
								20.000	4.334	300
148	6.246	2.934	Open Manhole	2100	8.008	3.312	1200	8.007	3.312	1200
								16.006	3.612	900
160	6.010	2.969	Open Manhole	2400	8.009	3.041	1350	8.008	3.191	1200
162	7.637	2.138	Open Manhole	1200	21.000	5.499	300			
163	8.251	3.418	Open Manhole	1500	21.001	4.833	450	21.000	4.983	300
165a	6.150	1.146	Open Manhole	1500	22.000	5.004	450			
165	6.400	1.969	Open Manhole	1800	22.001	4.431	900	22.000	4.881	450
164	7.563	3.298	Open Manhole	1800	21.002	4.265	900	21.001	4.715	450
								22.001	4.265	900
167	7.977	2.702	Open Manhole	1200	23.000	5.275	300			
166	7.804	3.697	Open Manhole	1800	21.003	4.107	900	21.002	4.107	900
								23.000	4.707	300
169a	6.200	1.053	Open Manhole	1200	24.000	5.147	300			
169	7.271	2.534	Open Manhole	1500	24.001	4.737	450	24.000	4.887	300
170	7.281	2.678	Open Manhole	1500	24.002	4.603	450	24.001	4.603	450
168	7.704	3.655	Open Manhole	1800	21.004	4.049	900	21.003	4.049	900
								24.002	4.499	450
171	7.372	3.676	Open Manhole	2100	21.005	3.696	1200	21.004	3.996	900
173	6.715	1.645	Open Manhole	1200	25.000	5.070	300			
174	7.027	2.242	Open Manhole	1200	26.000	4.785	300			
172	6.984	3.472	Open Manhole	2100	21.006	3.512	1200	21.005	3.512	1200
								25.000	4.412	300
								26.000	4.412	300
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<u>Manhole Schedules for JNP Surface Water Network 1 - Northern Parcel REV F</u> <u>2020.11.05</u>										
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)
175	6.673	3.299	Open Manhole	2100	21.007	3.374	1200	21.006	3.374	1200
177	6.048	1.366	Open Manhole	1200	27.000	4.682	300			
178	6.190	2.217	Open Manhole	1500	27.001	3.973	600	27.000	4.273	300
176	6.297	2.991	Open Manhole	2100	21.008	3.306	1200	21.007	3.306	1200
								27.001	3.906	600
161	5.866	2.850	Open Manhole	2400	8.010	3.016	1350	8.009	3.016	1350
								21.008	3.166	1200
179	5.344	2.469	Open Manhole	2400	8.011	2.875	1350	8.010	2.875	1350
29	4.700	2.300	Open Manhole	2400	1.014	2.400	1350	1.013	2.702	1350
								8.011	2.699	1350
183	4.700	2.320	Open Manhole	3000		OUTFALL		1.014	2.380	1350
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**PIPELINE SCHEDULES for JNP Surface Water Network 1 - Northern Parcel REV F
2020.11.05**

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	600	100	7.890	5.235	2.055	Open Manhole	1500
1.001	o	600	101	7.753	4.948	2.205	Open Manhole	1500
1.002	o	750	102	7.712	4.630	2.332	Open Manhole	1800
1.003	o	900	103	7.466	4.344	2.222	Open Manhole	1800
2.000	o	450	105	7.960	5.497	2.013	Open Manhole	1500
2.001	o	450	106	6.998	5.219	1.329	Open Manhole	1500
2.002	o	450	107	6.996	5.191	1.355	Open Manhole	1500
2.003	o	600	108	7.904	4.819	2.485	Open Manhole	1500
1.004	o	900	104	7.504	4.196	2.408	Open Manhole	1800
3.000	o	450	110	7.150	5.430	1.270	Open Manhole	1500
3.001	o	450	111	7.914	5.244	2.220	Open Manhole	1500
3.002	o	600	112	7.854	5.001	2.253	Open Manhole	1500
3.003	o	600	113	7.752	4.809	2.343	Open Manhole	1500
4.000	o	450	115	7.168	5.054	1.664	Open Manhole	1500

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	85.979	300.0	101	7.753	4.948	2.205	Open Manhole	1500
1.001	50.362	300.0	102	7.712	4.780	2.332	Open Manhole	1800
1.002	67.936	500.0	103	7.466	4.494	2.222	Open Manhole	1800
1.003	73.977	500.0	104	7.504	4.196	2.408	Open Manhole	1800
2.000	83.435	300.0	106	6.998	5.219	1.329	Open Manhole	1500
2.001	8.323	300.0	107	6.996	5.191	1.355	Open Manhole	1500
2.002	66.554	300.0	108	7.904	4.969	2.485	Open Manhole	1500
2.003	96.837	300.0	104	7.504	4.496	2.408	Open Manhole	1800
1.004	83.219	500.0	109	7.136	4.030	2.206	Open Manhole	2100
3.000	55.718	300.0	111	7.914	5.244	2.220	Open Manhole	1500
3.001	27.957	300.0	112	7.854	5.151	2.253	Open Manhole	1500
3.002	57.474	300.0	113	7.752	4.809	2.343	Open Manhole	1500
3.003	30.996	300.0	114	7.976	4.706	2.670	Open Manhole	1500
4.000	59.383	300.0	114	7.976	4.856	2.670	Open Manhole	1500

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PIPELINE SCHEDULES for JNP Surface Water Network 1 - Northern Parcel REV F
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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)
3.004	o	600	114	7.976	4.706	2.670	Open Manhole	1500
5.000	o	300	117	8.209	5.587	2.322	Open Manhole	1200
3.005	o	600	116	7.780	4.649	2.531	Open Manhole	1500
6.000	o	450	118	6.680	4.901	1.329	Open Manhole	1500
1.005	o	1200	109	7.136	3.730	2.206	Open Manhole	2100
1.006	o	1200	119	7.002	3.631	2.171	Open Manhole	2100
1.007	o	1200	120	6.800	3.519	2.081	Open Manhole	2100
1.008	o	1200	121	6.774	3.452	2.122	Open Manhole	2100
1.009	o	1200	122	6.496	3.246	2.050	Open Manhole	2100
7.000	o	300	124	6.295	4.468	1.527	Open Manhole	1200
1.010	o	1200	123	6.383	3.208	1.975	Open Manhole	2100

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)
3.004	17.222	300.0	116	7.780	4.649	2.531	Open Manhole	1500
5.000	51.037	80.0	116	7.780	4.949	2.531	Open Manhole	1500
3.005	95.552	300.0	109	7.136	4.330	2.206	Open Manhole	2100
6.000	84.243	200.0	109	7.136	4.480	2.206	Open Manhole	2100
1.005	49.398	500.0	119	7.002	3.631	2.171	Open Manhole	2100
1.006	55.876	500.0	120	6.800	3.519	2.081	Open Manhole	2100
1.007	33.340	500.0	121	6.774	3.452	2.122	Open Manhole	2100
1.008	103.033	500.0	122	6.496	3.246	2.050	Open Manhole	2100
1.009	19.047	500.0	123	6.383	3.208	1.975	Open Manhole	2100
7.000	54.020	150.0	123	6.383	4.108	1.975	Open Manhole	2100
1.010	49.651	500.0	125	5.543	3.109	1.234	Open Manhole	2100

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<u>PIPELINE SCHEDULES for JNP Surface Water Network 1 - Northern Parcel REV F</u> <u>2020.11.05</u>									
<u>Upstream Manhole</u>									
PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)	
1.011	o	1200	125	5.543	3.109	1.234	Open Manhole	2100	
1.012	o	1200	126	5.793	3.051	1.542	Open Manhole	2100	
1.013	o	1350	127	5.396	2.843	1.203	Open Manhole	2400	
8.000	o	450	128	7.032	5.369	1.213	Open Manhole	1500	
8.001	o	750	129	6.742	4.755	1.237	Open Manhole	1800	
9.000	o	450	131	7.231	4.994	1.787	Open Manhole	1500	
8.002	o	900	130	7.890	4.206	2.784	Open Manhole	1800	
10.000	o	450	133	7.102	5.473	1.179	Open Manhole	1500	
10.001	o	450	134	7.336	5.167	1.719	Open Manhole	1500	
10.002	o	600	135	7.776	4.730	2.446	Open Manhole	1500	
11.000	o	450	137	8.038	5.679	1.909	Open Manhole	1500	
10.003	o	750	136	8.236	4.493	2.993	Open Manhole	1800	
<u>Downstream Manhole</u>									
PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)	
1.011	29.124	500.0	126	5.793	3.051	1.542	Open Manhole	2100	
1.012	29.014	500.0	127	5.396	2.993	1.203	Open Manhole	2400	
1.013	70.497	500.0	29	4.700	2.702	0.648	Open Manhole	2400	
8.000	94.054	300.0	129	6.742	5.055	1.237	Open Manhole	1800	
8.001	119.819	300.0	130	7.890	4.356	2.784	Open Manhole	1800	
9.000	50.699	150.0	130	7.890	4.656	2.784	Open Manhole	1800	
8.002	28.399	500.0	132	8.259	4.149	3.210	Open Manhole	1800	
10.000	91.723	300.0	134	7.336	5.167	1.719	Open Manhole	1500	
10.001	86.168	300.0	135	7.776	4.880	2.446	Open Manhole	1500	
10.002	26.117	300.0	136	8.236	4.643	2.993	Open Manhole	1800	
11.000	44.325	50.0	136	8.236	4.793	2.994	Open Manhole	1800	
10.003	58.131	300.0	132	8.259	4.299	3.210	Open Manhole	1800	
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PIPELINE SCHEDULES for JNP Surface Water Network 1 - Northern Parcel REV F

2020.11.05

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)
8.003	o	900	132	8.259	4.149	3.210	Open Manhole	1800
12.000	o	300	139	7.239	4.923	2.016	Open Manhole	1200
8.004	o	900	138	6.719	3.994	1.825	Open Manhole	1800
8.005	o	900	140	6.904	3.946	2.058	Open Manhole	1800
13.000	o	450	142	8.169	5.986	1.733	Open Manhole	1500
13.001	o	450	143	7.129	5.184	1.495	Open Manhole	1500
8.006	o	900	141	7.005	3.930	2.175	Open Manhole	1800
14.000	o	300	145	7.362	4.850	2.212	Open Manhole	1200
14.001	o	300	146	7.391	4.705	2.386	Open Manhole	1200
15.000	o	450	147	6.922	4.555	1.917	Open Manhole	1500

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)
8.003	77.728	500.0	138	6.719	3.994	1.825	Open Manhole	1800
12.000	65.849	200.0	138	6.719	4.594	1.825	Open Manhole	1800
8.004	24.055	500.0	140	6.904	3.946	2.058	Open Manhole	1800
8.005	8.191	500.0	141	7.005	3.930	2.175	Open Manhole	1800
13.000	80.242	100.0	143	7.129	5.184	1.495	Open Manhole	1500
13.001	80.418	100.0	141	7.005	4.380	2.175	Open Manhole	1800
8.006	67.902	500.0	144	6.850	3.794	2.156	Open Manhole	2100
14.000	28.937	200.0	146	7.391	4.705	2.386	Open Manhole	1200
14.001	62.150	200.0	144	6.850	4.394	2.156	Open Manhole	2100
15.000	62.150	200.0	144	6.850	4.244	2.156	Open Manhole	2100

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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)
8.007	o	1200	144	6.850	3.494	2.156	Open Manhole	2100
16.000	o	450	149	7.409	5.547	1.412	Open Manhole	1500
16.001	o	600	150	7.455	4.978	1.877	Open Manhole	1500
17.000	o	300	152	8.130	5.406	2.424	Open Manhole	1200
16.002	o	750	151	7.598	4.451	2.397	Open Manhole	1800
18.000	o	300	154	7.952	5.423	2.229	Open Manhole	1200
16.003	o	900	153	8.156	4.211	3.045	Open Manhole	1800
19.000	o	300	156	7.092	5.132	1.660	Open Manhole	1200
16.004	o	900	155	7.920	4.052	2.968	Open Manhole	1800
16.005	o	900	157	7.288	3.867	2.521	Open Manhole	1800

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)
8.007	91.081	500.0	148	6.246	3.312	1.734	Open Manhole	2100
16.000	83.741	200.0	150	7.455	5.128	1.877	Open Manhole	1500
16.001	113.115	300.0	151	7.598	4.601	2.397	Open Manhole	1800
17.000	40.403	80.0	151	7.598	4.901	2.397	Open Manhole	1800
16.002	44.754	500.0	153	8.156	4.361	3.045	Open Manhole	1800
18.000	48.995	80.0	153	8.156	4.811	3.045	Open Manhole	1800
16.003	79.278	500.0	155	7.920	4.052	2.968	Open Manhole	1800
19.000	48.001	100.0	155	7.920	4.652	2.968	Open Manhole	1800
16.004	92.445	500.0	157	7.288	3.867	2.521	Open Manhole	1800
16.005	66.569	500.0	158	7.044	3.734	2.410	Open Manhole	1800

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PIPELINE SCHEDULES for JNP Surface Water Network 1 - Northern Parcel REV F
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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)
20.000	o	300	159	7.158	4.849	2.009	Open Manhole	1200
16.006	o	900	158	7.044	3.734	2.410	Open Manhole	1800
8.008	o	1200	148	6.246	3.312	1.734	Open Manhole	2100
8.009	o	1350	160	6.010	3.041	1.619	Open Manhole	2400
21.000	o	300	162	7.637	5.499	1.838	Open Manhole	1200
21.001	o	450	163	8.251	4.833	2.968	Open Manhole	1500
22.000	o	450	165a	6.150	5.004	0.696	Open Manhole	1500
22.001	o	900	165	6.400	4.431	1.069	Open Manhole	1800
21.002	o	900	164	7.563	4.265	2.398	Open Manhole	1800
23.000	o	300	167	7.977	5.275	2.402	Open Manhole	1200
21.003	o	900	166	7.804	4.107	2.797	Open Manhole	1800

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)
20.000	77.186	150.0	158	7.044	4.334	2.410	Open Manhole	1800
16.006	61.152	500.0	148	6.246	3.612	1.734	Open Manhole	2100
8.008	60.466	500.0	160	6.010	3.191	1.619	Open Manhole	2400
8.009	12.418	500.0	161	5.866	3.016	1.500	Open Manhole	2400
21.000	103.211	200.0	163	8.251	4.983	2.968	Open Manhole	1500
21.001	35.354	300.0	164	7.563	4.715	2.398	Open Manhole	1800
22.000	36.904	300.0	165	6.400	4.881	1.069	Open Manhole	1800
22.001	83.039	500.0	164	7.563	4.265	2.398	Open Manhole	1800
21.002	79.234	500.0	166	7.804	4.107	2.797	Open Manhole	1800
23.000	45.450	80.0	166	7.804	4.707	2.797	Open Manhole	1800
21.003	28.995	500.0	168	7.704	4.049	2.755	Open Manhole	1800

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PIPELINE SCHEDULES for JNP Surface Water Network 1 - Northern Parcel REV F
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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)
24.000	o	300	169a	6.200	5.147	0.753	Open Manhole	1200
24.001	o	450	169	7.271	4.737	2.084	Open Manhole	1500
24.002	o	450	170	7.281	4.603	2.228	Open Manhole	1500
21.004	o	900	168	7.704	4.049	2.755	Open Manhole	1800
21.005	o	1200	171	7.372	3.696	2.476	Open Manhole	2100
25.000	o	300	173	6.715	5.070	1.345	Open Manhole	1200
26.000	o	300	174	7.027	4.785	1.942	Open Manhole	1200
21.006	o	1200	172	6.984	3.512	2.272	Open Manhole	2100
21.007	o	1200	175	6.673	3.374	2.099	Open Manhole	2100
27.000	o	300	177	6.048	4.682	1.066	Open Manhole	1200
27.001	o	600	178	6.190	3.973	1.617	Open Manhole	1500

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)
24.000	77.867	300.0	169	7.271	4.887	2.084	Open Manhole	1500
24.001	40.176	300.0	170	7.281	4.603	2.228	Open Manhole	1500
24.002	31.074	300.0	168	7.704	4.499	2.755	Open Manhole	1800
21.004	26.563	500.0	171	7.372	3.996	2.476	Open Manhole	2100
21.005	91.765	500.0	172	6.984	3.512	2.272	Open Manhole	2100
25.000	98.750	150.0	172	6.984	4.412	2.272	Open Manhole	2100
26.000	56.000	150.0	172	6.984	4.412	2.272	Open Manhole	2100
21.006	69.097	500.0	175	6.673	3.374	2.099	Open Manhole	2100
21.007	33.907	500.0	176	6.297	3.306	1.791	Open Manhole	2100
27.000	61.421	150.0	178	6.190	4.273	1.617	Open Manhole	1500
27.001	20.056	300.0	176	6.297	3.906	1.791	Open Manhole	2100

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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)
21.008	o	1200	176	6.297	3.306	1.791	Open Manhole	2100
8.010	o	1350	161	5.866	3.016	1.500	Open Manhole	2400
8.011	o	1350	179	5.344	2.875	1.119	Open Manhole	2400
1.014	o	1350	29	4.700	2.400	0.950	Open Manhole	2400

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)
21.008	69.976	500.0	161	5.866	3.166	1.500	Open Manhole	2400
8.010	70.511	500.0	179	5.344	2.875	1.119	Open Manhole	2400
8.011	87.893	500.0	29	4.700	2.699	0.651	Open Manhole	2400
1.014	10.000	500.0	183	4.700	2.380	0.970	Open Manhole	3000

JNP Group

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Leamington Spa CV32 4XP

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Ford Airfield

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Area Summary for JNP Surface Water Network 1 - Northern Parcel REV F

2020.11.05

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.687	0.687	0.687
1.001	-	-	100	0.315	0.315	0.315
1.002	-	-	100	0.000	0.000	0.000
1.003	-	-	100	1.046	1.046	1.046
2.000	-	-	100	0.212	0.212	0.212
2.001	-	-	100	0.087	0.087	0.087
2.002	-	-	100	0.201	0.201	0.201
2.003	-	-	100	0.194	0.194	0.194
1.004	-	-	100	0.273	0.273	0.273
3.000	-	-	100	0.194	0.194	0.194
3.001	-	-	100	0.000	0.000	0.000
3.002	-	-	100	0.262	0.262	0.262
3.003	-	-	100	0.188	0.188	0.188
4.000	-	-	100	0.251	0.251	0.251
3.004	-	-	100	0.000	0.000	0.000
5.000	-	-	100	0.237	0.237	0.237
3.005	-	-	100	0.118	0.118	0.118
6.000	-	-	100	0.184	0.184	0.184
1.005	-	-	100	0.691	0.691	0.691
1.006	-	-	100	0.421	0.421	0.421
1.007	-	-	100	0.142	0.142	0.142
1.008	-	-	100	0.000	0.000	0.000
1.009	-	-	100	0.606	0.606	0.606
7.000	-	-	100	0.185	0.185	0.185
1.010	-	-	100	0.000	0.000	0.000
1.011	-	-	100	0.000	0.000	0.000
1.012	-	-	100	0.130	0.130	0.130
1.013	-	-	100	0.000	0.000	0.000
8.000	-	-	100	0.085	0.085	0.085
8.001	-	-	100	0.106	0.106	0.106
9.000	-	-	100	0.251	0.251	0.251
8.002	-	-	100	0.778	0.778	0.778
10.000	-	-	100	0.117	0.117	0.117
10.001	-	-	100	0.000	0.000	0.000
10.002	-	-	100	0.255	0.255	0.255
11.000	-	-	100	0.140	0.140	0.140
10.003	-	-	100	0.525	0.525	0.525
8.003	-	-	100	0.000	0.000	0.000
12.000	-	-	100	0.233	0.233	0.233
8.004	-	-	100	0.433	0.433	0.433
8.005	-	-	100	0.000	0.000	0.000
13.000	-	-	100	0.067	0.067	0.067
13.001	-	-	100	0.172	0.172	0.172
8.006	-	-	100	0.267	0.267	0.267
14.000	-	-	100	0.171	0.171	0.171

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Micro Drainage		Network 2018.1.1				
Area Summary for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05						
Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
14.001	-	-	100	0.000	0.000	0.000
15.000	-	-	100	0.319	0.319	0.319
8.007	-	-	100	0.466	0.466	0.466
16.000	-	-	100	0.265	0.265	0.265
16.001	-	-	100	0.000	0.000	0.000
17.000	-	-	100	0.069	0.069	0.069
16.002	-	-	100	0.289	0.289	0.289
18.000	-	-	100	0.307	0.307	0.307
16.003	-	-	100	0.409	0.409	0.409
19.000	-	-	100	0.243	0.243	0.243
16.004	-	-	100	0.417	0.417	0.417
16.005	-	-	100	0.400	0.400	0.400
20.000	-	-	100	0.062	0.062	0.062
16.006	-	-	100	0.170	0.170	0.170
8.008	-	-	100	0.553	0.553	0.553
8.009	-	-	100	0.146	0.146	0.146
21.000	-	-	100	0.132	0.132	0.132
21.001	-	-	100	0.138	0.138	0.138
22.000	-	-	100	0.024	0.024	0.024
22.001	-	-	100	0.305	0.305	0.305
21.002	-	-	100	0.493	0.493	0.493
23.000	-	-	100	0.046	0.046	0.046
21.003	-	-	100	0.230	0.230	0.230
24.000	-	-	100	0.045	0.045	0.045
24.001	-	-	100	0.041	0.041	0.041
24.002	-	-	100	0.221	0.221	0.221
21.004	-	-	100	0.202	0.202	0.202
21.005	-	-	100	0.000	0.000	0.000
25.000	-	-	100	0.073	0.073	0.073
26.000	-	-	100	0.046	0.046	0.046
21.006	-	-	100	0.979	0.979	0.979
21.007	-	-	100	0.139	0.139	0.139
27.000	-	-	100	0.073	0.073	0.073
27.001	-	-	100	0.223	0.223	0.223
21.008	-	-	100	0.307	0.307	0.307
8.010	-	-	100	0.537	0.537	0.537
8.011	-	-	100	0.745	0.745	0.745
1.014	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				19.338	19.338	19.338
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Micro Drainage	Network 2018.1.1	

Free Flowing Outfall Details for JNP Surface Water Network 1 - Northern Parcel

REV F 2020.11.05

Outfall Pipe Number	Outfall C. Name	Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.014	183	4.700	2.380	0.000	3000	0

Simulation Criteria for JNP Surface Water Network 1 - Northern Parcel REV F

2020.11.05

Volumetric Runoff Coeff 0.750

Additional Flow - % of Total Flow 0.000

Areal Reduction Factor 1.000

MADD Factor * 10m³/ha Storage 2.000

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 Offline Controls 0

Number of Time/Area Diagrams 0

Number of Online Controls 1

Number of Storage Structures 1

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
Winter Storms	No
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	30

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Micro Drainage Network 2018.1.1		
<u>Online Controls for JNP Surface Water Network 1 - Northern Parcel REV F</u> <u>2020.11.05</u> <u>Weir Manhole: 29, DS/PN: 1.014, Volume (m³): 230.3</u> Discharge Coef 0.544 Width (m) 2.400 Invert Level (m) 4.700		
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Micro Drainage	Network 2018.1.1	

Storage Structures for JNP Surface Water Network 1 - Northern Parcel REV F
2020.11.05

Infiltration Basin Manhole: 29, DS/PN: 1.014

Invert Level (m) 2.400 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.19800 Porosity 1.00
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	4908.0	2.300	9517.0

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Micro Drainage		Network 2018.1.1

**2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for
JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05**

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
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 Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	1	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	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
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	100	15 Winter	2	+0%	100/15 Summer				5.471
1.001	101	15 Winter	2	+0%	100/15 Summer				5.228
1.002	102	15 Winter	2	+0%	100/15 Summer				4.918
1.003	103	15 Winter	2	+0%	100/15 Summer				4.762
2.000	105	15 Winter	2	+0%	100/15 Summer				5.636
2.001	106	15 Winter	2	+0%	100/15 Summer				5.419
2.002	107	15 Winter	2	+0%	100/15 Summer				5.396
2.003	108	15 Winter	2	+0%	100/15 Summer				5.028
1.004	104	15 Winter	2	+0%	100/15 Summer				4.638
3.000	110	15 Winter	2	+0%	100/15 Summer				5.565
3.001	111	15 Winter	2	+0%	100/15 Summer				5.380
3.002	112	15 Winter	2	+0%	100/15 Summer				5.181

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Micro Drainage		Network 2018.1.1

2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for
JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05

PN	US/MH Name	Surcharged		Flooded		Pipe		Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Flow (l/s)	Status	
1.000	100	-0.364	0.000	0.31		111.8	OK	
1.001	101	-0.320	0.000	0.43		150.9	OK	
1.002	102	-0.462	0.000	0.30		144.1	OK	
1.003	103	-0.482	0.000	0.35		265.2	OK	
2.000	105	-0.311	0.000	0.19		34.0	OK	
2.001	106	-0.250	0.000	0.37		45.9	OK	
2.002	107	-0.245	0.000	0.41		71.2	OK	
2.003	108	-0.391	0.000	0.25		93.8	OK	
1.004	104	-0.458	0.000	0.47		366.4	OK	
3.000	110	-0.315	0.000	0.19		32.2	OK	
3.001	111	-0.314	0.000	0.20		31.6	OK	
3.002	112	-0.420	0.000	0.19		65.8	OK	

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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP					Ford Airfield System 1 Northern Network				
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Micro Drainage					Network 2018.1.1				
<u>2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05</u>									
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
3.003	113 15	Winter	2	+0%	100/15	Summer			5.054
4.000	115 15	Winter	2	+0%	100/15	Summer			5.208
3.004	114 15	Winter	2	+0%	100/15	Summer			4.990
5.000	117 15	Winter	2	+0%	100/15	Summer			5.710
3.005	116 15	Winter	2	+0%	100/15	Summer			4.937
6.000	118 15	Winter	2	+0%	100/15	Winter			5.016
1.005	109 15	Winter	2	+0%	100/15	Summer			4.336
1.006	119 15	Winter	2	+0%	100/15	Summer			4.229
1.007	120 15	Winter	2	+0%	100/15	Summer			4.111
1.008	121 15	Winter	2	+0%	100/15	Summer			4.023
1.009	122 15	Winter	2	+0%	100/15	Summer			3.912
7.000	124 15	Winter	2	+0%	100/15	Summer			4.595
1.010	123 30	Winter	2	+0%	100/15	Summer			3.806
1.011	125 30	Winter	2	+0%	100/15	Summer			3.701
1.012	126 30	Winter	2	+0%	100/15	Winter			3.618
1.013	127 30	Winter	2	+0%					3.329
8.000	128 15	Winter	2	+0%	100/15	Winter			5.456
8.001	129 15	Winter	2	+0%	100/15	Summer			4.857
9.000	131 15	Winter	2	+0%	100/15	Summer			5.123
8.002	130 15	Winter	2	+0%	100/15	Summer			4.642
10.000	133 15	Winter	2	+0%	100/15	Winter			5.574
10.001	134 15	Winter	2	+0%	100/15	Summer			5.264
10.002	135 15	Winter	2	+0%	100/15	Summer			4.894
11.000	137 15	Winter	2	+0%	100/15	Winter			5.749
10.003	136 15	Winter	2	+0%	100/15	Summer			4.746
8.003	132 15	Winter	2	+0%	100/15	Summer			4.622
12.000	139 15	Winter	2	+0%	30/15	Summer			5.080
8.004	138 15	Winter	2	+0%	30/15	Winter			4.540
8.005	140 15	Winter	2	+0%	100/15	Summer			4.489
13.000	142 15	Winter	2	+0%					6.043
13.001	143 15	Winter	2	+0%	100/15	Winter			5.287
8.006	141 15	Winter	2	+0%	100/15	Summer			4.378
14.000	145 15	Winter	2	+0%	100/15	Summer			4.985
14.001	146 15	Winter	2	+0%	100/15	Summer			4.834
15.000	147 15	Winter	2	+0%	100/15	Summer			4.711
8.007	144 15	Winter	2	+0%	100/15	Summer			4.023
16.000	149 15	Winter	2	+0%	100/30	Winter			5.688
16.001	150 15	Winter	2	+0%	100/15	Winter			5.118
17.000	152 15	Winter	2	+0%	100/15	Winter			5.470
16.002	151 15	Winter	2	+0%	100/15	Summer			4.684
18.000	154 15	Winter	2	+0%	100/15	Summer			5.565
16.003	153 15	Winter	2	+0%	100/15	Summer			4.548
19.000	156 15	Winter	2	+0%	100/15	Summer			5.264
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Date 10/12/2020 File SW Network 1 Infiltratio...			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) for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05</u>							
PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Level Status Exceeded
3.003	113	-0.355	0.000	0.27		88.3	OK
4.000	115	-0.296	0.000	0.24		41.8	OK
3.004	114	-0.316	0.000	0.43		125.3	OK
5.000	117	-0.177	0.000	0.34		40.3	OK
3.005	116	-0.312	0.000	0.47		172.5	OK
6.000	118	-0.335	0.000	0.15		31.7	OK
1.005	109	-0.594	0.000	0.42		596.1	OK
1.006	119	-0.602	0.000	0.42		610.7	OK
1.007	120	-0.608	0.000	0.46		598.4	OK
1.008	121	-0.629	0.000	0.35		574.3	OK
1.009	122	-0.534	0.000	0.59		572.2	OK
7.000	124	-0.173	0.000	0.37		31.9	OK
1.010	123	-0.602	0.000	0.40		575.6	OK
1.011	125	-0.608	0.000	0.45		570.7	OK
1.012	126	-0.633	0.000	0.45		572.9	OK
1.013	127	-0.864	0.000	0.28		572.8	OK
8.000	128	-0.363	0.000	0.08		14.4	OK
8.001	129	-0.648	0.000	0.04		27.6	OK
9.000	131	-0.321	0.000	0.18		42.8	OK
8.002	130	-0.464	0.000	0.24		154.4	OK
10.000	133	-0.349	0.000	0.11		18.6	OK
10.001	134	-0.353	0.000	0.11		18.6	OK
10.002	135	-0.436	0.000	0.16		51.4	OK
11.000	137	-0.380	0.000	0.06		23.9	OK
10.003	136	-0.497	0.000	0.23		142.6	OK
8.003	132	-0.427	0.000	0.35		270.9	OK
12.000	139	-0.143	0.000	0.54		40.2	OK
8.004	138	-0.354	0.000	0.54		326.6	OK
8.005	140	-0.357	0.000	0.79		327.2	OK
13.000	142	-0.393	0.000	0.04		11.2	OK
13.001	143	-0.347	0.000	0.12		36.3	OK
8.006	141	-0.452	0.000	0.48		366.8	OK
14.000	145	-0.165	0.000	0.41		28.8	OK
14.001	146	-0.171	0.000	0.39		29.0	OK
15.000	147	-0.294	0.000	0.26		55.2	OK
8.007	144	-0.671	0.000	0.27		429.3	OK
16.000	149	-0.309	0.000	0.21		45.7	OK
16.001	150	-0.460	0.000	0.11		42.6	OK
17.000	152	-0.236	0.000	0.10		11.7	OK
16.002	151	-0.517	0.000	0.20		90.2	OK
18.000	154	-0.158	0.000	0.45		52.2	OK
16.003	153	-0.563	0.000	0.24		183.0	OK
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Micro Drainage	Network 2018.1.1	

2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for
JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
19.000	156	-0.168	0.000	0.40		41.5	OK	

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Micro Drainage					Network 2018.1.1				
2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05									
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
16.004	155	15 Winter	2	+0%	100/15 Summer				4.424
16.005	157	15 Winter	2	+0%	100/15 Summer				4.273
20.000	159	15 Winter	2	+0%	100/15 Summer				4.919
16.006	158	15 Winter	2	+0%	100/15 Summer				4.123
8.008	148	15 Winter	2	+0%	100/15 Summer				3.946
8.009	160	15 Winter	2	+0%	100/15 Summer				3.798
21.000	162	15 Winter	2	+0%	100/15 Summer				5.611
21.001	163	15 Winter	2	+0%	100/15 Winter				4.989
22.000	165a	15 Winter	2	+0%					5.052
22.001	165	15 Winter	2	+0%	100/30 Winter				4.625
21.002	164	15 Winter	2	+0%	100/15 Winter				4.567
23.000	167	15 Winter	2	+0%					5.326
21.003	166	15 Winter	2	+0%	100/15 Winter				4.465
24.000	169a	15 Winter	2	+0%					5.218
24.001	169	15 Winter	2	+0%	100/15 Winter				4.831
24.002	170	15 Winter	2	+0%	100/15 Summer				4.763
21.004	168	15 Winter	2	+0%	100/15 Summer				4.412
21.005	171	15 Winter	2	+0%	100/15 Summer				4.040
25.000	173	15 Winter	2	+0%					5.146
26.000	174	15 Winter	2	+0%	100/15 Winter				4.846
21.006	172	15 Winter	2	+0%	100/15 Summer				3.934
21.007	175	30 Winter	2	+0%	100/15 Summer				3.843
27.000	177	15 Winter	2	+0%	100/15 Winter				4.758
27.001	178	15 Winter	2	+0%	100/15 Summer				4.128
21.008	176	30 Winter	2	+0%	100/15 Summer				3.796
8.010	161	30 Winter	2	+0%	100/15 Summer				3.730
8.011	179	30 Winter	2	+0%	100/15 Summer				3.556
1.014	29	180 Winter	2	+0%	100/60 Winter				2.881
PN	US/MH Name	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded	
16.004	155	-0.528	0.000	0.32		249.5	OK		
16.005	157	-0.494	0.000	0.36		273.7	OK		
20.000	159	-0.230	0.000	0.12		10.7	OK		
16.006	158	-0.511	0.000	0.38		281.4	OK		
8.008	148	-0.566	0.000	0.47		707.5	OK		
8.009	160	-0.593	0.000	0.74		708.3	OK		
21.000	162	-0.188	0.000	0.30		22.6	OK		
21.001	163	-0.294	0.000	0.26		41.6	OK		
22.000	165a	-0.402	0.000	0.03		4.1	OK		
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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield System 1 Northern Network	
Date 10/12/2020	Designed by IS	
File SW Network 1 Infiltratio...	Checked by AM	
Micro Drainage		Network 2018.1.1

**2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for
JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05**

PN	US/MH Name	Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)			
22.001	165	-0.706	0.000	0.06		45.1	OK	
21.002	164	-0.598	0.000	0.18		137.7	OK	
23.000	167	-0.249	0.000	0.07		7.8	OK	
21.003	166	-0.542	0.000	0.25		160.8	OK	
24.000	169a	-0.229	0.000	0.13		7.7	OK	
24.001	169	-0.356	0.000	0.08		13.2	OK	
24.002	170	-0.290	0.000	0.27		43.7	OK	
21.004	168	-0.537	0.000	0.34		217.8	OK	
21.005	171	-0.856	0.000	0.13		211.8	OK	
25.000	173	-0.224	0.000	0.14		12.4	OK	
26.000	174	-0.239	0.000	0.09		7.9	OK	
21.006	172	-0.778	0.000	0.20		304.2	OK	
21.007	175	-0.731	0.000	0.22		286.9	OK	
27.000	177	-0.224	0.000	0.15		12.6	OK	
27.001	178	-0.445	0.000	0.15		44.8	OK	
21.008	176	-0.710	0.000	0.21		320.5	OK	
8.010	161	-0.636	0.000	0.51		1039.5	OK	
8.011	179	-0.669	0.000	0.51		1072.7	OK	
1.014	29	-0.869	0.000	0.00		0.0	OK	

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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield System 1 Northern Network	
Date 10/12/2020	Designed by IS	
File SW Network 1 Infiltratio...	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 1 - Northern Parcel REV F 2020.11.05**

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 1 Number of Storage Structures 1 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 DVD Status OFF
 Analysis Timestep Fine Inertia Status OFF
 DTS Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720,
 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640,
 10080
 Return Period(s) (years) 2, 30, 100
 Climate Change (%) 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	100	15 Winter	30	+0%	100/15	Summer			5.607
1.001	101	15 Winter	30	+0%	100/15	Summer			5.422
1.002	102	15 Winter	30	+0%	100/15	Summer			5.137
1.003	103	15 Winter	30	+0%	100/15	Summer			5.027
2.000	105	15 Winter	30	+0%	100/15	Summer			5.709
2.001	106	15 Winter	30	+0%	100/15	Summer			5.566
2.002	107	15 Winter	30	+0%	100/15	Summer			5.544
2.003	108	15 Winter	30	+0%	100/15	Summer			5.155
1.004	104	15 Winter	30	+0%	100/15	Summer			4.907
3.000	110	15 Winter	30	+0%	100/15	Summer			5.634
3.001	111	15 Winter	30	+0%	100/15	Summer			5.451
3.002	112	15 Winter	30	+0%	100/15	Summer			5.326

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Micro Drainage	Network 2018.1.1	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05

PN	US/MH Name	Surcharged		Flooded		Pipe		Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Flow (l/s)	Status	
1.000	100	-0.228	0.000	0.66		240.3	OK	
1.001	101	-0.126	0.000	0.96		332.5	OK	
1.002	102	-0.243	0.000	0.64		309.4	OK	
1.003	103	-0.217	0.000	0.71		542.9	OK	
2.000	105	-0.238	0.000	0.42		73.3	OK	
2.001	106	-0.103	0.000	0.86		106.1	OK	
2.002	107	-0.097	0.000	0.93		160.2	OK	
2.003	108	-0.264	0.000	0.56		207.0	OK	
1.004	104	-0.189	0.000	0.96		748.1	OK	
3.000	110	-0.246	0.000	0.41		69.3	OK	
3.001	111	-0.243	0.000	0.43		67.8	OK	
3.002	112	-0.275	0.000	0.43		150.7	OK	

JNP Group									Page 36
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP					Ford Airfield System 1 Northern Network				
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File SW Network 1 Infiltratio...					Checked by AM				
Micro Drainage					Network 2018.1.1				
<u>30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)</u> <u>for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05</u>									
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
3.003	113 15	Winter	30	+0%	100/15	Summer			5.255
4.000	115 15	Winter	30	+0%	100/15	Summer			5.293
3.004	114 15	Winter	30	+0%	100/15	Summer			5.214
5.000	117 15	Winter	30	+0%	100/15	Summer			5.783
3.005	116 15	Winter	30	+0%	100/15	Summer			5.164
6.000	118 15	Winter	30	+0%	100/15	Winter			5.075
1.005	109 15	Winter	30	+0%	100/15	Summer			4.683
1.006	119 30	Winter	30	+0%	100/15	Summer			4.593
1.007	120 30	Winter	30	+0%	100/15	Summer			4.500
1.008	121 30	Winter	30	+0%	100/15	Summer			4.425
1.009	122 30	Winter	30	+0%	100/15	Summer			4.336
7.000	124 15	Winter	30	+0%	100/15	Summer			4.673
1.010	123 30	Winter	30	+0%	100/15	Summer			4.156
1.011	125 30	Winter	30	+0%	100/15	Summer			4.046
1.012	126 30	Winter	30	+0%	100/15	Winter			3.958
1.013	127 30	Winter	30	+0%					3.576
8.000	128 15	Winter	30	+0%	100/15	Winter			5.497
8.001	129 15	Winter	30	+0%	100/15	Summer			5.026
9.000	131 15	Winter	30	+0%	100/15	Summer			5.189
8.002	130 15	Winter	30	+0%	100/15	Summer			5.016
10.000	133 15	Winter	30	+0%	100/15	Winter			5.625
10.001	134 15	Winter	30	+0%	100/15	Summer			5.311
10.002	135 15	Winter	30	+0%	100/15	Summer			5.048
11.000	137 15	Winter	30	+0%	100/15	Winter			5.785
10.003	136 15	Winter	30	+0%	100/15	Summer			5.030
8.003	132 15	Winter	30	+0%	100/15	Summer			4.992
12.000	139 15	Winter	30	+0%	30/15	Summer			5.312
8.004	138 15	Winter	30	+0%	30/15	Winter			4.896
8.005	140 30	Summer	30	+0%	100/15	Summer			4.846
13.000	142 15	Winter	30	+0%					6.072
13.001	143 15	Winter	30	+0%	100/15	Winter			5.353
8.006	141 30	Winter	30	+0%	100/15	Summer			4.640
14.000	145 15	Winter	30	+0%	100/15	Summer			5.072
14.001	146 15	Winter	30	+0%	100/15	Summer			4.915
15.000	147 15	Winter	30	+0%	100/15	Summer			4.797
8.007	144 30	Winter	30	+0%	100/15	Summer			4.520
16.000	149 15	Winter	30	+0%	100/30	Winter			5.761
16.001	150 15	Winter	30	+0%	100/15	Winter			5.184
17.000	152 15	Winter	30	+0%	100/15	Winter			5.502
16.002	151 15	Winter	30	+0%	100/15	Summer			4.861
18.000	154 15	Winter	30	+0%	100/15	Summer			5.660
16.003	153 15	Winter	30	+0%	100/15	Summer			4.776
19.000	156 15	Winter	30	+0%	100/15	Summer			5.349
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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP			Ford Airfield System 1 Northern Network					
Date 10/12/2020			Designed by IS					
File SW Network 1 Infiltratio...			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 1 - Northern Parcel REV F 2020.11.05</u>								
PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
3.003	113	-0.154	0.000	0.60		194.4	OK	
4.000	115	-0.211	0.000	0.52		89.2	OK	
3.004	114	-0.092	0.000	0.96		276.8	OK	
5.000	117	-0.104	0.000	0.73		85.8	OK	
3.005	116	-0.085	0.000	0.98		360.2	OK	
6.000	118	-0.276	0.000	0.31		67.7	OK	
1.005	109	-0.247	0.000	0.84		1208.6	OK	
1.006	119	-0.238	0.000	0.80		1178.4	OK	
1.007	120	-0.219	0.000	0.89		1160.3	OK	
1.008	121	-0.227	0.000	0.69		1123.0	OK	
1.009	122	-0.110	0.000	1.19		1156.4	OK	
7.000	124	-0.095	0.000	0.80		68.6	OK	
1.010	123	-0.252	0.000	0.81		1165.8	OK	
1.011	125	-0.263	0.000	0.92		1160.5	OK	
1.012	126	-0.293	0.000	0.93		1167.2	OK	
1.013	127	-0.617	0.000	0.57		1166.9	OK	
8.000	128	-0.322	0.000	0.18		30.9	OK	
8.001	129	-0.479	0.000	0.09		62.0	OK	
9.000	131	-0.255	0.000	0.38		90.9	OK	
8.002	130	-0.090	0.000	0.44		283.5	OK	
10.000	133	-0.298	0.000	0.23		39.9	OK	
10.001	134	-0.306	0.000	0.21		37.2	OK	
10.002	135	-0.282	0.000	0.39		121.5	OK	
11.000	137	-0.344	0.000	0.12		51.3	OK	
10.003	136	-0.213	0.000	0.51		315.0	OK	
8.003	132	-0.057	0.000	0.66		510.8	OK	
12.000	139	0.089	0.000	1.10		82.3	SURCHARGED	
8.004	138	0.002	0.000	1.02		618.8	SURCHARGED	
8.005	140	0.000	0.000	1.32		545.8	OK	
13.000	142	-0.364	0.000	0.08		24.2	OK	
13.001	143	-0.281	0.000	0.29		87.6	OK	
8.006	141	-0.190	0.000	0.88		670.6	OK	
14.000	145	-0.078	0.000	0.87		62.0	OK	
14.001	146	-0.090	0.000	0.83		62.2	OK	
15.000	147	-0.208	0.000	0.56		118.5	OK	
8.007	144	-0.174	0.000	0.50		802.0	OK	
16.000	149	-0.236	0.000	0.45		95.9	OK	
16.001	150	-0.394	0.000	0.24		88.3	OK	
17.000	152	-0.204	0.000	0.22		25.1	OK	
16.002	151	-0.340	0.000	0.42		193.6	OK	
18.000	154	-0.063	0.000	0.96		112.1	OK	
16.003	153	-0.335	0.000	0.53		408.9	OK	
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Micro Drainage	Network 2018.1.1	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05

PN	US/MH Name	Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)			
19.000	156	-0.083	0.000	0.85		89.1	OK	

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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP				Ford Airfield System 1 Northern Network					
Date 10/12/2020				Designed by IS					
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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 1 - Northern Parcel REV F 2020.11.05</u>									
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
16.004	155	15 Winter	30	+0%	100/15 Summer				4.670
16.005	157	30 Winter	30	+0%	100/15 Summer				4.592
20.000	159	15 Winter	30	+0%	100/15 Summer				4.954
16.006	158	30 Winter	30	+0%	100/15 Summer				4.541
8.008	148	30 Winter	30	+0%	100/15 Summer				4.481
8.009	160	30 Winter	30	+0%	100/15 Summer				4.350
21.000	162	15 Winter	30	+0%	100/15 Summer				5.675
21.001	163	15 Winter	30	+0%	100/15 Winter				5.083
22.000	165a	15 Winter	30	+0%					5.071
22.001	165	15 Winter	30	+0%	100/30 Winter				4.821
21.002	164	15 Winter	30	+0%	100/15 Winter				4.795
23.000	167	15 Winter	30	+0%					5.351
21.003	166	15 Winter	30	+0%	100/15 Winter				4.720
24.000	169a	15 Winter	30	+0%					5.253
24.001	169	15 Winter	30	+0%	100/15 Winter				4.916
24.002	170	15 Winter	30	+0%	100/15 Summer				4.884
21.004	168	15 Winter	30	+0%	100/15 Summer				4.669
21.005	171	30 Winter	30	+0%	100/15 Summer				4.316
25.000	173	15 Winter	30	+0%					5.184
26.000	174	15 Winter	30	+0%	100/15 Winter				4.876
21.006	172	30 Winter	30	+0%	100/15 Summer				4.270
21.007	175	30 Winter	30	+0%	100/15 Summer				4.211
27.000	177	15 Winter	30	+0%	100/15 Winter				4.797
27.001	178	15 Winter	30	+0%	100/15 Summer				4.230
21.008	176	30 Winter	30	+0%	100/15 Summer				4.177
8.010	161	30 Winter	30	+0%	100/15 Summer				4.126
8.011	179	30 Winter	30	+0%	100/15 Summer				3.937
1.014	29	180 Winter	30	+0%	100/60 Winter				3.381
PN	US/MH Name	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded	
16.004	155	-0.282	0.000	0.70		551.7	OK		
16.005	157	-0.175	0.000	0.70		527.7	OK		
20.000	159	-0.195	0.000	0.26		23.1	OK		
16.006	158	-0.093	0.000	0.70		525.7	OK		
8.008	148	-0.031	0.000	0.86		1286.5	OK		
8.009	160	-0.041	0.000	1.29		1228.6	OK		
21.000	162	-0.124	0.000	0.58		44.3	OK		
21.001	163	-0.200	0.000	0.58		93.8	OK		
22.000	165a	-0.383	0.000	0.05		8.8	OK		
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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield System 1 Northern Network	
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Micro Drainage		Network 2018.1.1

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05

PN	US/MH Name	Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)			
22.001	165	-0.510	0.000	0.15		116.2	OK	
21.002	164	-0.370	0.000	0.42		323.9	OK	
23.000	167	-0.224	0.000	0.14		16.7	OK	
21.003	166	-0.287	0.000	0.58		379.7	OK	
24.000	169a	-0.194	0.000	0.27		16.5	OK	
24.001	169	-0.271	0.000	0.18		30.1	OK	
24.002	170	-0.169	0.000	0.69		110.6	OK	
21.004	168	-0.280	0.000	0.81		511.9	OK	
21.005	171	-0.580	0.000	0.28		445.8	OK	
25.000	173	-0.186	0.000	0.30		26.7	OK	
26.000	174	-0.209	0.000	0.20		17.0	OK	
21.006	172	-0.442	0.000	0.41		627.1	OK	
21.007	175	-0.363	0.000	0.47		619.3	OK	
27.000	177	-0.185	0.000	0.31		27.2	OK	
27.001	178	-0.343	0.000	0.38		112.6	OK	
21.008	176	-0.329	0.000	0.44		680.2	OK	
8.010	161	-0.240	0.000	0.97		1973.7	OK	
8.011	179	-0.288	0.000	0.98		2064.7	OK	
1.014	29	-0.369	0.000	0.00		0.0	OK	

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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP		Ford Airfield System 1 Northern Network						
Date 10/12/2020 File SW Network 1 Infiltratio...		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 1 - Northern Parcel REV F 2020.11.05								
Simulation Criteria Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000 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 Offline Controls 0 Number of Time/Area Diagrams 0 Number of Online Controls 1 Number of Storage Structures 1 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 DVD Status OFF Analysis Timestep Fine Inertia Status OFF DTS Status ON Profile(s) Summer and Winter Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080 Return Period(s) (years) 2, 30, 100 Climate Change (%) 0, 0, 40								
	US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Water
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Level
							Overflow Act.	(m)
1.000	100	15 Winter	100	+40%	100/15 Summer			6.484
1.001	101	30 Winter	100	+40%	100/15 Summer			6.327
1.002	102	30 Winter	100	+40%	100/15 Summer			6.195
1.003	103	30 Winter	100	+40%	100/15 Summer			6.134
2.000	105	30 Winter	100	+40%	100/15 Summer			6.299
2.001	106	30 Winter	100	+40%	100/15 Summer			6.259
2.002	107	30 Winter	100	+40%	100/15 Summer			6.239
2.003	108	30 Winter	100	+40%	100/15 Summer			6.101
1.004	104	30 Winter	100	+40%	100/15 Summer			6.013
3.000	110	15 Winter	100	+40%	100/15 Summer			6.303
3.001	111	15 Winter	100	+40%	100/15 Summer			6.248
3.002	112	15 Winter	100	+40%	100/15 Summer			6.207
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3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield System 1 Northern Network	
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File SW Network 1 Infiltratio...	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 1 - Northern Parcel REV F 2020.11.05

PN	US/MH Name	Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)			
1.000	100	0.649	0.000	1.09		396.8	SURCHARGED	
1.001	101	0.779	0.000	1.31		455.7	SURCHARGED	
1.002	102	0.815	0.000	0.88		427.5	SURCHARGED	
1.003	103	0.890	0.000	1.09		838.1	SURCHARGED	
2.000	105	0.352	0.000	0.59		102.9	SURCHARGED	
2.001	106	0.590	0.000	1.10		135.4	SURCHARGED	
2.002	107	0.598	0.000	1.28		221.4	SURCHARGED	
2.003	108	0.682	0.000	0.71		261.3	SURCHARGED	
1.004	104	0.917	0.000	1.47		1139.5	SURCHARGED	
3.000	110	0.423	0.000	0.64		109.2	SURCHARGED	
3.001	111	0.554	0.000	0.62		97.4	SURCHARGED	
3.002	112	0.606	0.000	0.59		208.6	SURCHARGED	

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<u>100 year Return Period Summary of Critical Results by Maximum Level (Rank 1)</u> <u>for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05</u>									
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
3.003	113	15 Winter	100	+40%	100/15 Summer				6.142
4.000	115	15 Winter	100	+40%	100/15 Summer				6.163
3.004	114	30 Winter	100	+40%	100/15 Summer				6.087
5.000	117	15 Winter	100	+40%	100/15 Summer				6.691
3.005	116	30 Winter	100	+40%	100/15 Summer				6.035
6.000	118	30 Winter	100	+40%	100/15 Winter				5.798
1.005	109	30 Winter	100	+40%	100/15 Summer				5.777
1.006	119	30 Winter	100	+40%	100/15 Summer				5.667
1.007	120	30 Winter	100	+40%	100/15 Summer				5.523
1.008	121	30 Winter	100	+40%	100/15 Summer				5.398
1.009	122	30 Winter	100	+40%	100/15 Summer				5.153
7.000	124	15 Winter	100	+40%	100/15 Summer				5.087
1.010	123	30 Winter	100	+40%	100/15 Summer				4.912
1.011	125	30 Winter	100	+40%	100/15 Summer				4.657
1.012	126	30 Winter	100	+40%	100/15 Winter				4.398
1.013	127	240 Winter	100	+40%					4.039
8.000	128	30 Winter	100	+40%	100/15 Winter				6.339
8.001	129	30 Winter	100	+40%	100/15 Summer				6.321
9.000	131	30 Winter	100	+40%	100/15 Summer				6.351
8.002	130	30 Winter	100	+40%	100/15 Summer				6.310
10.000	133	30 Winter	100	+40%	100/15 Winter				6.395
10.001	134	30 Winter	100	+40%	100/15 Summer				6.372
10.002	135	30 Winter	100	+40%	100/15 Summer				6.348
11.000	137	30 Winter	100	+40%	100/15 Winter				6.349
10.003	136	30 Winter	100	+40%	100/15 Summer				6.328
8.003	132	30 Winter	100	+40%	100/15 Summer				6.277
12.000	139	30 Winter	100	+40%	30/15 Summer				6.491
8.004	138	30 Winter	100	+40%	30/15 Winter				6.144
8.005	140	30 Winter	100	+40%	100/15 Summer				6.038
13.000	142	15 Winter	100	+40%					6.099
13.001	143	30 Winter	100	+40%	100/15 Winter				6.000
8.006	141	30 Winter	100	+40%	100/15 Summer				5.965
14.000	145	30 Winter	100	+40%	100/15 Summer				5.936
14.001	146	30 Winter	100	+40%	100/15 Summer				5.859
15.000	147	30 Winter	100	+40%	100/15 Summer				5.770
8.007	144	30 Winter	100	+40%	100/15 Summer				5.707
16.000	149	30 Winter	100	+40%	100/30 Winter				6.099
16.001	150	30 Winter	100	+40%	100/15 Winter				6.042
17.000	152	30 Winter	100	+40%	100/15 Winter				6.039
16.002	151	30 Winter	100	+40%	100/15 Summer				6.010
18.000	154	15 Winter	100	+40%	100/15 Summer				6.744
16.003	153	30 Winter	100	+40%	100/15 Summer				5.985
19.000	156	30 Winter	100	+40%	100/15 Summer				6.213
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<u>100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05</u>								
PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
3.003	113	0.733	0.000	0.89		290.0	SURCHARGED	
4.000	115	0.659	0.000	0.79		135.5	SURCHARGED	
3.004	114	0.781	0.000	1.25		360.4	SURCHARGED	
5.000	117	0.804	0.000	1.16		136.6	SURCHARGED	
3.005	116	0.786	0.000	1.35		497.5	SURCHARGED	
6.000	118	0.447	0.000	0.43		93.1	SURCHARGED	
1.005	109	0.847	0.000	1.32		1897.8	SURCHARGED	
1.006	119	0.836	0.000	1.34		1969.7	SURCHARGED	
1.007	120	0.804	0.000	1.51		1978.6	SURCHARGED	
1.008	121	0.746	0.000	1.18		1912.7	SURCHARGED	
1.009	122	0.707	0.000	2.11		2042.2	SURCHARGED	
7.000	124	0.319	0.000	1.37		117.3	SURCHARGED	
1.010	123	0.504	0.000	1.43		2049.6	SURCHARGED	
1.011	125	0.348	0.000	1.61		2034.6	SURCHARGED	
1.012	126	0.147	0.000	1.63		2052.3	SURCHARGED	
1.013	127	-0.154	0.000	0.39		796.3	OK	
8.000	128	0.520	0.000	0.24		42.7	SURCHARGED	
8.001	129	0.816	0.000	0.16		103.4	SURCHARGED	
9.000	131	0.907	0.000	0.51		122.6	SURCHARGED	
8.002	130	1.204	0.000	0.66		427.1	SURCHARGED	
10.000	133	0.472	0.000	0.33		57.7	SURCHARGED	
10.001	134	0.755	0.000	0.53		93.1	SURCHARGED	
10.002	135	1.018	0.000	0.55		174.3	SURCHARGED	
11.000	137	0.220	0.000	0.18		72.8	SURCHARGED	
10.003	136	1.085	0.000	0.61		372.6	SURCHARGED	
8.003	132	1.228	0.000	0.95		730.5	SURCHARGED	
12.000	139	1.268	0.000	1.44		107.8	SURCHARGED	
8.004	138	1.250	0.000	1.59		967.9	SURCHARGED	
8.005	140	1.192	0.000	2.30		953.5	SURCHARGED	
13.000	142	-0.337	0.000	0.14		42.4	OK	
13.001	143	0.366	0.000	0.41		124.0	SURCHARGED	
8.006	141	1.135	0.000	1.42		1079.3	SURCHARGED	
14.000	145	0.786	0.000	1.21		85.9	SURCHARGED	
14.001	146	0.854	0.000	1.04		77.4	SURCHARGED	
15.000	147	0.765	0.000	0.77		161.8	SURCHARGED	
8.007	144	1.013	0.000	0.87		1392.1	SURCHARGED	
16.000	149	0.102	0.000	0.63		134.4	SURCHARGED	
16.001	150	0.464	0.000	0.32		120.1	SURCHARGED	
17.000	152	0.333	0.000	0.31		35.8	SURCHARGED	
16.002	151	0.809	0.000	0.57		259.0	SURCHARGED	
18.000	154	1.021	0.000	1.59		186.4	SURCHARGED	
16.003	153	0.874	0.000	0.65		500.3	SURCHARGED	
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PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
19.000	156	0.781	0.000	1.16		121.4	SURCHARGED	

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<u>100 year Return Period Summary of Critical Results by Maximum Level (Rank 1)</u> <u>for JNP Surface Water Network 1 - Northern Parcel REV F 2020.11.05</u>									
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
16.004	155	30 Winter	100	+40%	100/15 Summer				5.941
16.005	157	30 Winter	100	+40%	100/15 Summer				5.841
20.000	159	30 Winter	100	+40%	100/15 Summer				5.756
16.006	158	30 Winter	100	+40%	100/15 Summer				5.723
8.008	148	30 Winter	100	+40%	100/15 Summer				5.580
8.009	160	30 Winter	100	+40%	100/15 Summer				5.226
21.000	162	15 Winter	100	+40%	100/15 Summer				5.916
21.001	163	30 Winter	100	+40%	100/15 Winter				5.465
22.000	165a	30 Winter	100	+40%					5.443
22.001	165	30 Winter	100	+40%	100/30 Winter				5.441
21.002	164	30 Winter	100	+40%	100/15 Winter				5.431
23.000	167	30 Winter	100	+40%					5.418
21.003	166	30 Winter	100	+40%	100/15 Winter				5.399
24.000	169a	30 Winter	100	+40%					5.431
24.001	169	30 Winter	100	+40%	100/15 Winter				5.409
24.002	170	30 Winter	100	+40%	100/15 Summer				5.400
21.004	168	30 Winter	100	+40%	100/15 Summer				5.369
21.005	171	30 Winter	100	+40%	100/15 Summer				5.330
25.000	173	30 Winter	100	+40%					5.343
26.000	174	30 Winter	100	+40%	100/15 Winter				5.321
21.006	172	30 Winter	100	+40%	100/15 Summer				5.301
21.007	175	30 Winter	100	+40%	100/15 Summer				5.250
27.000	177	30 Winter	100	+40%	100/15 Winter				5.254
27.001	178	30 Winter	100	+40%	100/15 Summer				5.221
21.008	176	30 Winter	100	+40%	100/15 Summer				5.206
8.010	161	30 Winter	100	+40%	100/15 Summer				5.127
8.011	179	30 Winter	100	+40%	100/15 Summer				4.586
1.014	29	240 Winter	100	+40%	100/60 Winter				4.029
PN	US/MH Name		Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
16.004	155		0.989	0.000	0.88		692.6	SURCHARGED	
16.005	157		1.074	0.000	1.08		814.4	SURCHARGED	
20.000	159		0.607	0.000	0.36		31.5	SURCHARGED	
16.006	158		1.089	0.000	1.16		865.1	SURCHARGED	
8.008	148		1.068	0.000	1.62		2426.8	SURCHARGED	
8.009	160		0.835	0.000	2.58		2456.3	SURCHARGED	
21.000	162		0.117	0.000	1.02		77.9	SURCHARGED	
21.001	163		0.182	0.000	0.82		132.9	SURCHARGED	
22.000	165a		-0.011	0.000	0.07		12.1	OK	
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PN	US/MH Name	Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)			
22.001	165	0.110	0.000	0.20		156.2	SURCHARGED	
21.002	164	0.266	0.000	0.58		446.0	SURCHARGED	
23.000	167	-0.157	0.000	0.20		23.9	OK	
21.003	166	0.392	0.000	0.81		528.2	SURCHARGED	
24.000	169a	-0.016	0.000	0.37		22.5	OK	
24.001	169	0.222	0.000	0.29		48.5	SURCHARGED	
24.002	170	0.347	0.000	0.92		147.1	SURCHARGED	
21.004	168	0.420	0.000	1.15		731.8	SURCHARGED	
21.005	171	0.434	0.000	0.40		636.2	SURCHARGED	
25.000	173	-0.027	0.000	0.43		37.5	OK	
26.000	174	0.236	0.000	0.28		23.9	SURCHARGED	
21.006	172	0.589	0.000	0.64		975.0	SURCHARGED	
21.007	175	0.676	0.000	0.76		997.0	SURCHARGED	
27.000	177	0.272	0.000	0.44		38.0	SURCHARGED	
27.001	178	0.648	0.000	0.51		152.8	SURCHARGED	
21.008	176	0.700	0.000	0.73		1123.8	SURCHARGED	
8.010	161	0.761	0.000	1.81		3680.9	SURCHARGED	
8.011	179	0.361	0.000	1.85		3906.9	SURCHARGED	
1.014	29	0.279	0.000	0.00		0.0	SURCHARGED	