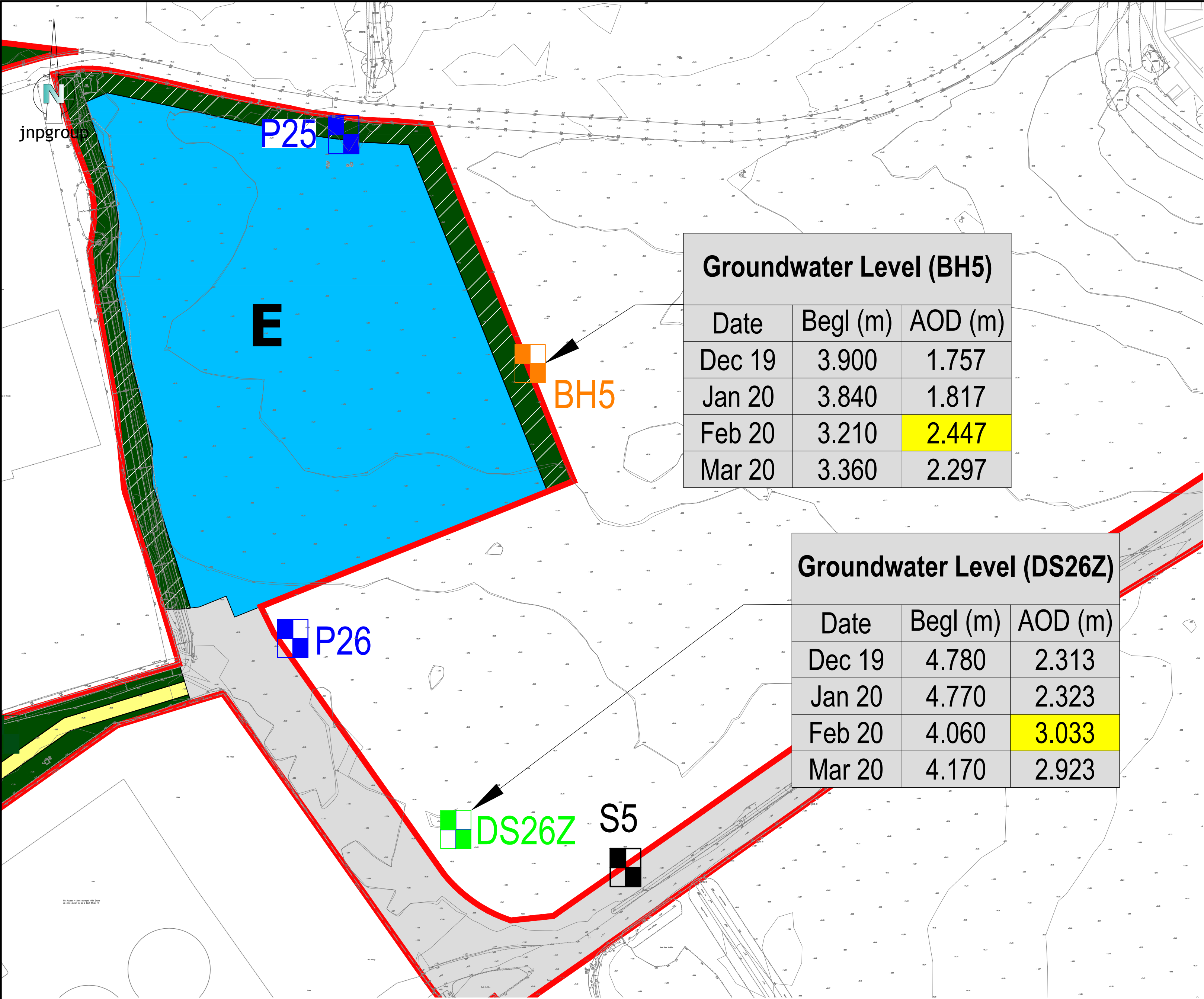


Appendix G

The Employment Zone Infiltration Soakaways



- Notes:-
- Where this drawing has been issued in electronic .dwg format it has been done so in good faith. jnpgroup do not take any responsibility for any inaccuracies in the electronic data, which should be checked against the paper (or .pdf) drawing issue. Any apparent discrepancies should be immediately reported to jnpgroup. The electronic .dwg file should not be assumed to be to scale and should not be used for 'overlying', setting out or checking of any third party information. All dimensions should be taken from the paper (or .pdf) version of the drawing. Electronic drawings may contain third party information. jnpgroup take no responsibility for this information, which should be checked against the originators paper drawing(s).
 - All working dimensions to be checked on site.
 - Do not scale.
 - Any discrepancies between drawings of different scales, and between drawings and specification where appropriate to be notified to The Engineer for decision.
 - Copyright reserved. This drawing may only be used for The Client and location specified in the title block. It may not be copied or disclosed to any third party without the prior written consent of jnpgroup.
 - This drawing should only be used for construction if the drawing status is "Construction". jnpgroup take no responsibility for construction works undertaken to drawings which are not marked with this status.

Health and Safety Note:
The details on this drawing have been prepared on the assumption that a competent contractor will be carrying out the works. If the contractor(s) considers that there is insufficient Health and Safety information on this drawing, this should immediately be brought to the attention of the designer.

Legend
Site Boundary

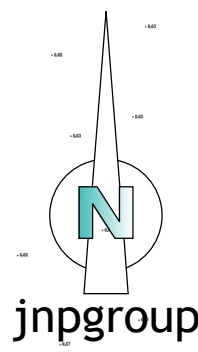
Rev.	Date	Amendment	By	Chk.	
Status					
Indicative					



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

Client	Wates Redrow		
Job	Ford Airfield		
Title	Employment Zone Groundwater Levels		
Scale	1:1000	@ A1	Date October 2020
Drawn by	IS	Checked by	Approved by
    			

Drawing No.	C85228-D160	Rev.	-
-------------	-------------	------	---



Infiltration Test (T25)		
Test no	Depth (m)	Infiltration Rate (m/s)
1	2.100	2.41x10-5
2	2.100	2.22x10-5
3	2.100	1.75x10-5

Infiltration Test (T25A)		
Test no	Depth (m)	Infiltration Rate (m/s)
1	1.200	1.13x10-6
2	1.200	1.62x10-6
3	1.200	1.08x10-6

Infiltration Test (T26)		
Test no	Depth (m)	Infiltration Rate (m/s)
1	3.000	3.73x10-5
2	3.000	8.97x10-6
3	3.000	7.86x10-6

- Notes:-
- Where this drawing has been issued in electronic .dwg format it has been done so in good faith. jnpgroup do not take any responsibility for any inaccuracies in the electronic data, which should be checked against the paper (or .pdf) drawing issue. Any apparent discrepancies should be immediately reported to jnpgroup. The electronic .dwg file should not be assumed to be to scale and should not be used for 'overlying', setting out or checking of any third party information. All dimensions should be taken from the paper (or .pdf) version of the drawing. Electronic drawings may contain third party information. jnpgroup take no responsibility for this information, which should be checked against the originators paper drawing(s).
 - All working dimensions to be checked on site.
 - Do not scale.
 - Any discrepancies between drawings of different scales, and between drawings and specification where appropriate to be notified to The Engineer for decision.
 - Copyright reserved. This drawing may only be used for The Client and location specified in the title block. It may not be copied or disclosed to any third party without the prior written consent of jnpgroup.
 - This drawing should only be used for construction if the drawing status is "Construction". jnpgroup take no responsibility for construction works undertaken to drawings which are not marked with this status.

Health and Safety Note:
The details on this drawing have been prepared on the assumption that a competent contractor will be carrying out the works. If the contractor(s) considers that there is insufficient Health and Safety information on this drawing, this should immediately be brought to the attention of the designer.

Legend

Site Boundary

Soakaway Test carried out by RSK dated February 2020

Rev.	Date	Amendment	By	Chk.	
Status					
Indicative					

john newton & partners

Consulting Engineers

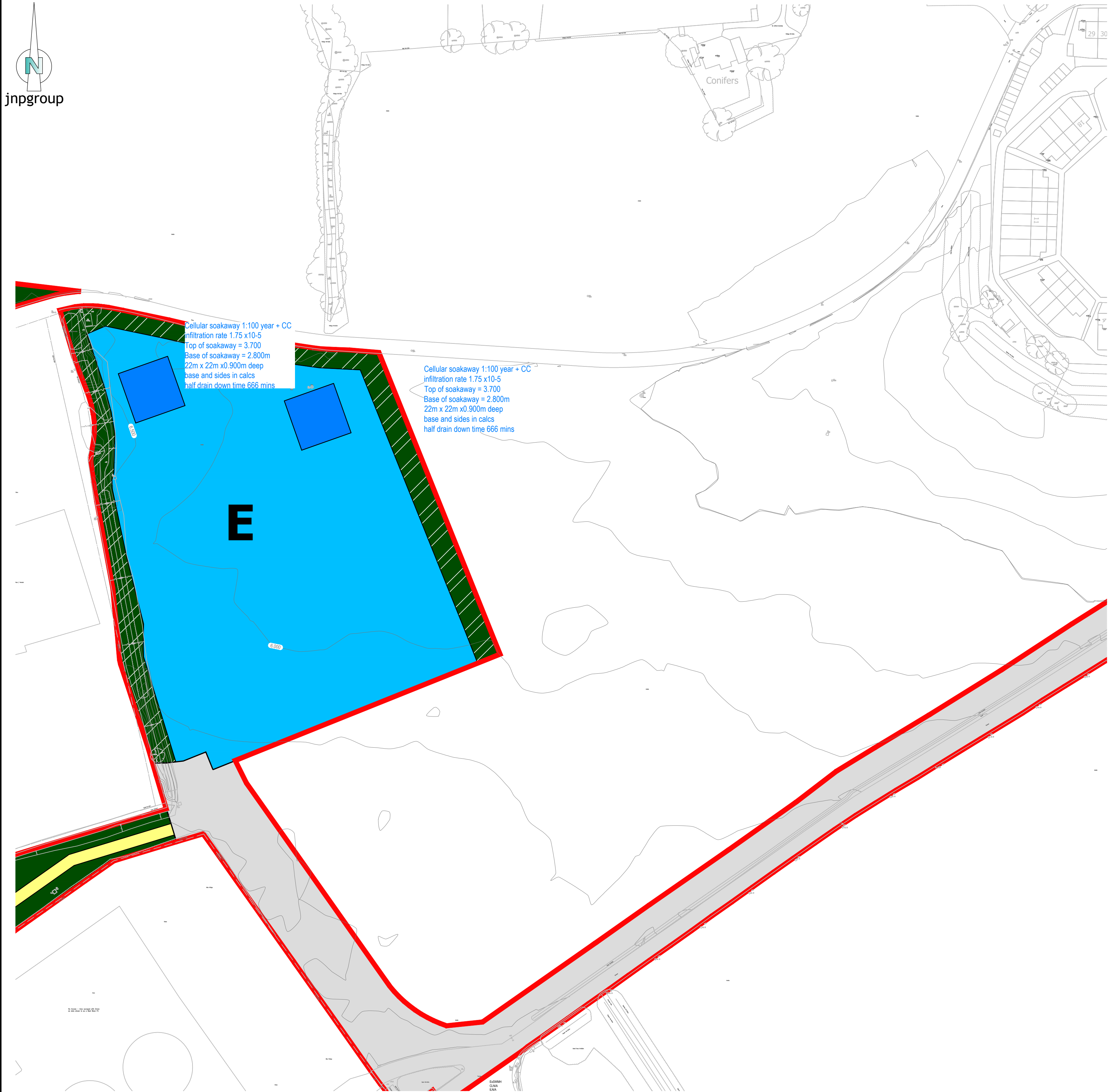
www.jnpgroup.co.uk

Chesham • Brighouse • Hartlepool • Leamington Spa • Sheffield

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

Client	Wates Redrow
Job	Ford Airfield
Title	Employment Zone Infiltration Rates
Scale	1:1000 @ A1 Date October 2020
Drawn by	IS
Checked by	
Approved by	

Drawing No.	C85228-D161	Rev.	-
-------------	-------------	------	---



- Notes:-
- Where this drawing has been issued in electronic .dwg format it has been done so in good faith. jnpgroup do not take any responsibility for any inaccuracies in the electronic data, which should be checked against the paper (or .pdf) drawing issue. Any apparent discrepancies should be immediately reported to jnpgroup. The electronic .dwg file should not be assumed to be to scale and should not be used for 'overlying', setting out or checking of any third party information. All dimensions should be taken from the paper (or .pdf) version of the drawing. Electronic drawings may contain third party information. jnpgroup take no responsibility for this information, which should be checked against the originators paper drawing(s).
 - All working dimensions to be checked on site.
 - Do not scale.
 - Any discrepancies between drawings of different scales, and between drawings and specification where appropriate to be notified to The Engineer for decision.
 - Copyright reserved. This drawing may only be used for The Client and location specified in the title block. It may not be copied or disclosed to any third party without the prior written consent of jnpgroup.
 - This drawing should only be used for construction if the drawing status is "Construction". jnpgroup take no responsibility for construction works undertaken to drawings which are not marked with this status.

Health and Safety Note:
The details on this drawing have been prepared on the assumption that a competent contractor will be carrying out the works. If the contractor(s) considers that there is insufficient Health and Safety information on this drawing, this should immediately be brought to the attention of the designer.

Legend

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

Rev.	Date	Amendment	By	Chk.	
Status					
Indicative					







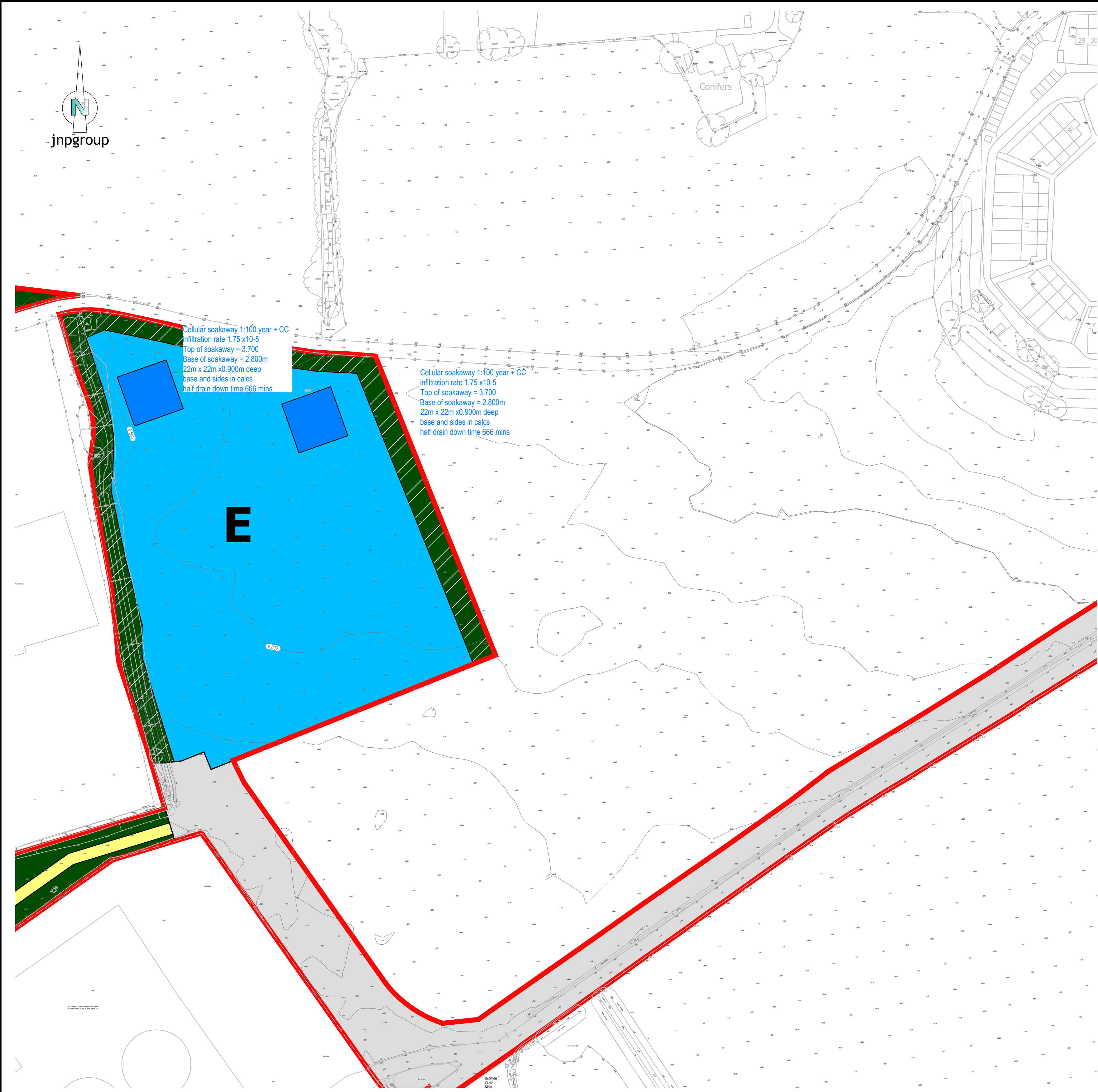
john newton & partners
Consulting Engineers
www.jnpgroup.co.uk

Chesham • Brighouse • Hartlepool • Leamington Spa • Sheffield
Tel: 01494 771221 E-mail: chesham@jnpgroup.co.uk

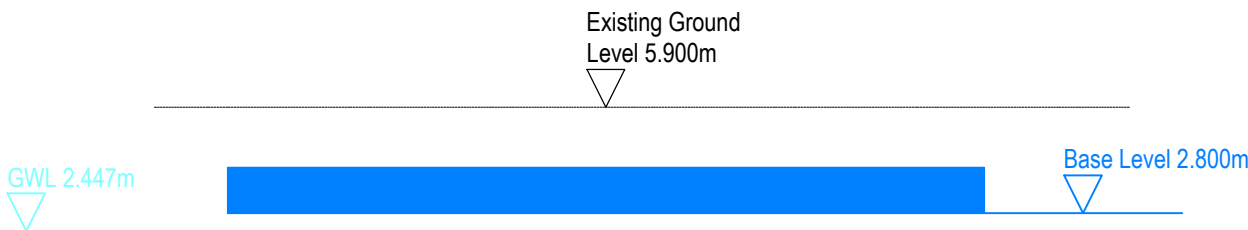
Client	Wates Redrow
Job	Ford Airfield
Title	Employment Zone Indicative Surface Water Drainage Strategy

Scale 1:1000	@ A1	Date October 2020
Drawn by IS	Checked by	Approved by
		
Accredited Contractor	Accredited Contractor	Supplier No. 000020

Drawing No.	C85228-D162	Rev.	-
-------------	-------------	------	---



Employment Zone Geocellular Soakaway Plan Layout
1:1000



Employment Zone Soakaway Section A-A
1:200

- Notes:-
- Where this drawing has been issued in electronic .dwg format it has been done so in good faith. jnp group do not take any responsibility for any inaccuracies in the electronic data, which should be checked against the paper (or .pdf) drawing issue. Any apparent discrepancies should be immediately reported to jnp group. The electronic .dwg file should not be assumed to be to scale and should not be used for 'overlying', setting out or checking of any third party information. All dimensions should be taken from the paper (or .pdf) version of the drawing. Electronic drawings may contain third party information. jnp group take no responsibility for this information, which should be checked against the originators paper drawing(s).
 - All working dimensions to be checked on site.
 - Do not scale.
 - Any discrepancies between drawings of different scales, and between drawings and specification where appropriate to be notified to The Engineer for decision.
 - Copyright reserved. This drawing may only be used for The Client and location specified in the title block. It may not be copied or disclosed to any third party without the prior written consent of jnp group.
 - This drawing should only be used for construction if the drawing status is "Construction". jnp group take no responsibility for construction works undertaken to drawings which are not marked with this status.

Health and Safety Note:
The details on this drawing have been prepared on the assumption that a competent contractor will be carrying out the works. If the contractor(s) considers that there is insufficient Health and Safety information on this drawing, this should immediately be brought to the attention of the designer.

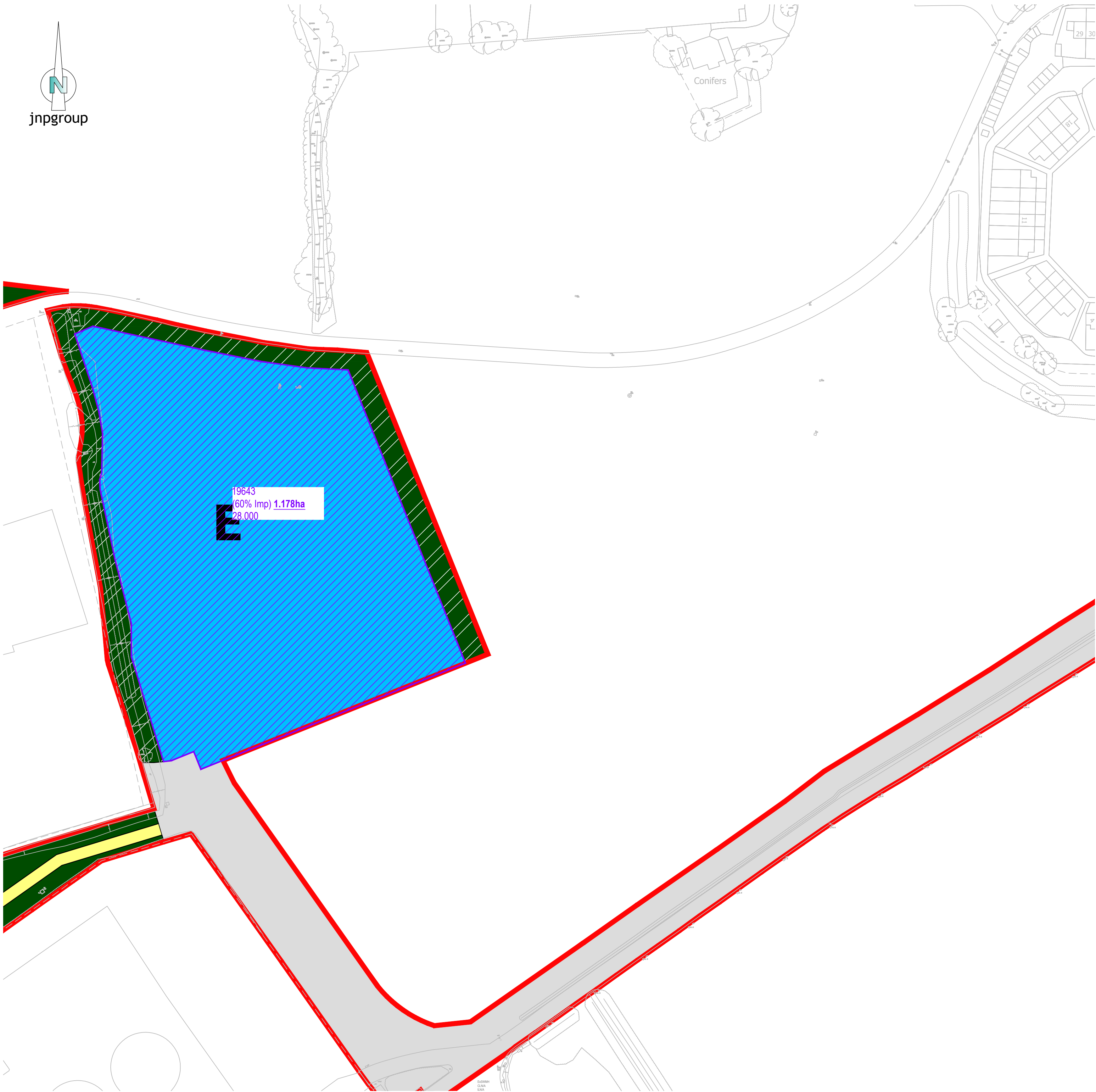
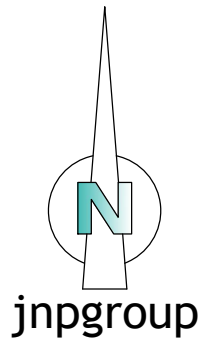
Legend	
	Site boundary
	Surface water sewer
	Existing ground contour
	Proposed road contours

Rev.	Date	Amendment	By	Chk.	
Status					
Indicative					

john newton & partners
Consulting Engineers
www.jnpgroup.co.uk

Chesham • Brighouse • Hartlepool • Leamington Spa • Sheffield
Tel: 01494 771221 E-mail: chesham@jnpgroup.co.uk

Client	Wates Redrow		
Job	Ford Airfield		
Title	Employment Zone Geocellular Soakaway Plan Layout and Sections		
Scale	As Shown	@ A1	Date October 2020
Drawn by	IS	Checked by	Approved by
Drawing No.	C85228-D163		
Rev.	-		



Employment Zone Impermeable Areas
with 10 % urban creep to parcels

Pipe No.	Parcels with 10% urban creep (m²)	Spine Road (ha)	Total (ha)
1.000	0.589	0.000	0.589
2.000	0.589	0.000	0.589
Overall Total =			1.178

- Notes:-
- Where this drawing has been issued in electronic .dwg format it has been done so in good faith. jnpgroup do not take any responsibility for any inaccuracies in the electronic data, which should be checked against the paper (or .pdf) drawing issue. Any apparent discrepancies should be immediately reported to jnpgroup. The electronic .dwg file should not be assumed to be to scale and should not be used for 'overlaying', setting out or checking of any third party information. All dimensions should be taken from the paper (or .pdf) version of the drawing. Electronic drawings may contain third party information. jnpgroup take no responsibility for this information, which should be checked against the originators paper drawing(s).
 - All working dimensions to be checked on site.
 - Do not scale.
 - Any discrepancies between drawings of different scales, and between drawings and specification where appropriate to be notified to The Engineer for decision.
 - Copyright reserved. This drawing may only be used for The Client and location specified in the title block. It may not be copied or disclosed to any third party without the prior written consent of jnpgroup.
 - This drawing should only be used for construction if the drawing status is "Construction". jnpgroup take no responsibility for construction works undertaken to drawings which are not marked with this status.

Health and Safety Note:
The details on this drawing have been prepared on the assumption that a competent contractor will be carrying out the works. If the contractor(s) considers that there is insufficient Health and Safety information on this drawing, this should immediately be brought to the attention of the designer.

Rev.	Date	Amendment	By	Chk.	

Status
Indicative





john newton & partners
jnpgroup
Consulting Engineers
www.jnpgroup.co.uk

Chesham • Brighouse • Hartlepool • Leamington Spa • Sheffield
Tel: 01926 889955 E-mail: leamingtonspa@jnpgroup.co.uk

Client Wates
Redrow

Job Ford Airfield

Title Employment Zone
Surface Water Drainage Areas
with Urban Creep

Scale 1:1000 @ A1 Date November 2020

Drawn by IS Checked by Approved by

Drawing No. C85228-D164 Rev. -

JNP Group					Page 1	
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP			Ford Airfield System 7 Employment Area			
Date 16/12/2020 10:39 File Employment Zone QSE			Designed by IS Checked by AM			
Micro Drainage			Source Control 2018.1.1			
Summary of Results for 100 year Return Period (+40%)						
Half Drain Time : 666 minutes.						
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	
15 min Summer	3.136	0.336	4.5	154.3	0 K	
30 min Summer	3.247	0.447	4.6	205.4	0 K	
60 min Summer	3.360	0.560	4.7	257.7	0 K	
120 min Summer	3.435	0.635	4.7	292.0	Flood Risk	
180 min Summer	3.469	0.669	4.8	307.7	Flood Risk	
240 min Summer	3.485	0.685	4.8	314.7	Flood Risk	
360 min Summer	3.486	0.686	4.8	315.5	Flood Risk	
480 min Summer	3.470	0.670	4.8	307.9	Flood Risk	
600 min Summer	3.448	0.648	4.7	298.1	Flood Risk	
720 min Summer	3.429	0.629	4.7	289.0	Flood Risk	
960 min Summer	3.393	0.593	4.7	272.6	0 K	
1440 min Summer	3.336	0.536	4.6	246.3	0 K	
2160 min Summer	3.265	0.465	4.6	213.7	0 K	
2880 min Summer	3.205	0.405	4.5	186.3	0 K	
4320 min Summer	3.111	0.311	4.5	142.8	0 K	
5760 min Summer	3.038	0.238	4.4	109.5	0 K	
7200 min Summer	2.983	0.183	4.4	84.3	0 K	
8640 min Summer	2.942	0.142	4.3	65.4	0 K	
10080 min Summer	2.911	0.111	4.3	50.9	0 K	
15 min Winter	3.177	0.377	4.5	173.3	0 K	
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)			
15 min Summer	144.480	0.0	26			
30 min Summer	96.880	0.0	41			
60 min Summer	61.880	0.0	70			
120 min Summer	36.470	0.0	128			
180 min Summer	26.599	0.0	186			
240 min Summer	21.175	0.0	246			
360 min Summer	15.237	0.0	362			
480 min Summer	12.017	0.0	480			
600 min Summer	9.983	0.0	528			
720 min Summer	8.575	0.0	586			
960 min Summer	6.743	0.0	708			
1440 min Summer	4.824	0.0	976			
2160 min Summer	3.467	0.0	1384			
2880 min Summer	2.759	0.0	1788			
4320 min Summer	2.030	0.0	2556			
5760 min Summer	1.652	0.0	3288			
7200 min Summer	1.422	0.0	3976			
8640 min Summer	1.267	0.0	4680			
10080 min Summer	1.155	0.0	5352			
15 min Winter	144.480	0.0	26			
©1982-2018 Innovyze						

JNP Group				Page 2	
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP		Ford Airfield System 7 Employment Area			
Date 16/12/2020 10:39 File Employment Zone QSE		Designed by IS Checked by AM			
Micro Drainage		Source Control 2018.1.1			
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	3.303	0.503	4.6	231.1	0 K
60 min Winter	3.432	0.632	4.7	290.5	Flood Risk
120 min Winter	3.520	0.720	4.8	330.9	Flood Risk
180 min Winter	3.562	0.762	4.8	350.4	Flood Risk
240 min Winter	3.583	0.783	4.8	360.1	Flood Risk
360 min Winter	3.593	0.793	4.8	364.5	Flood Risk
480 min Winter	3.582	0.782	4.8	359.4	Flood Risk
600 min Winter	3.562	0.762	4.8	350.2	Flood Risk
720 min Winter	3.537	0.737	4.8	338.8	Flood Risk
960 min Winter	3.491	0.691	4.8	317.7	Flood Risk
1440 min Winter	3.414	0.614	4.7	282.2	Flood Risk
2160 min Winter	3.309	0.509	4.6	234.1	0 K
2880 min Winter	3.218	0.418	4.6	192.3	0 K
4320 min Winter	3.074	0.274	4.4	125.9	0 K
5760 min Winter	2.968	0.168	4.4	77.1	0 K
7200 min Winter	2.895	0.095	4.3	43.5	0 K
8640 min Winter	2.854	0.054	4.3	24.7	0 K
10080 min Winter	2.847	0.047	4.0	21.5	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	96.880	0.0	40		
60 min Winter	61.880	0.0	68		
120 min Winter	36.470	0.0	126		
180 min Winter	26.599	0.0	184		
240 min Winter	21.175	0.0	240		
360 min Winter	15.237	0.0	356		
480 min Winter	12.017	0.0	466		
600 min Winter	9.983	0.0	574		
720 min Winter	8.575	0.0	674		
960 min Winter	6.743	0.0	758		
1440 min Winter	4.824	0.0	1060		
2160 min Winter	3.467	0.0	1500		
2880 min Winter	2.759	0.0	1916		
4320 min Winter	2.030	0.0	2688		
5760 min Winter	1.652	0.0	3408		
7200 min Winter	1.422	0.0	4040		
8640 min Winter	1.267	0.0	4504		
10080 min Winter	1.155	0.0	5144		
©1982-2018 Innovyze					

JNP Group		Page 3																																																						
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield System 7 Employment Area																																																							
Date 16/12/2020 10:39	Designed by IS																																																							
File Employment Zone QSE	Checked by AM																																																							
Micro Drainage		Source Control 2018.1.1																																																						
<u>Rainfall Details</u> <table> <tr> <td>Rainfall Model</td> <td>FEH</td> </tr> <tr> <td>Return Period (years)</td> <td>100</td> </tr> <tr> <td>FEH Rainfall Version</td> <td>2013</td> </tr> <tr> <td>Site Location</td> <td>GB 500450 103100 TQ 00450 03100</td> </tr> <tr> <td>Data Type</td> <td>Catchment</td> </tr> <tr> <td>Summer Storms</td> <td>Yes</td> </tr> <tr> <td>Winter Storms</td> <td>Yes</td> </tr> <tr> <td>Cv (Summer)</td> <td>0.750</td> </tr> <tr> <td>Cv (Winter)</td> <td>0.840</td> </tr> <tr> <td>Shortest Storm (mins)</td> <td>15</td> </tr> <tr> <td>Longest Storm (mins)</td> <td>10080</td> </tr> <tr> <td>Climate Change %</td> <td>+40</td> </tr> </table> <u>Time Area Diagram</u> Total Area (ha) 0.589 <table> <thead> <tr> <th>Time (mins)</th> <th>Area (ha)</th> <th>Time (mins)</th> <th>Area (ha)</th> <th>Time (mins)</th> <th>Area (ha)</th> </tr> <tr> <th>From:</th> <th>To:</th> <th>From:</th> <th>To:</th> <th>From:</th> <th>To:</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>4</td> <td>0.196</td> <td>4</td> <td>8</td> <td>0.196</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>8</td> <td>12</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.196</td> </tr> </tbody> </table>			Rainfall Model	FEH	Return Period (years)	100	FEH Rainfall Version	2013	Site Location	GB 500450 103100 TQ 00450 03100	Data Type	Catchment	Summer Storms	Yes	Winter Storms	Yes	Cv (Summer)	0.750	Cv (Winter)	0.840	Shortest Storm (mins)	15	Longest Storm (mins)	10080	Climate Change %	+40	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	From:	To:	From:	To:	From:	To:	0	4	0.196	4	8	0.196					8	12						0.196
Rainfall Model	FEH																																																							
Return Period (years)	100																																																							
FEH Rainfall Version	2013																																																							
Site Location	GB 500450 103100 TQ 00450 03100																																																							
Data Type	Catchment																																																							
Summer Storms	Yes																																																							
Winter Storms	Yes																																																							
Cv (Summer)	0.750																																																							
Cv (Winter)	0.840																																																							
Shortest Storm (mins)	15																																																							
Longest Storm (mins)	10080																																																							
Climate Change %	+40																																																							
Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)																																																			
From:	To:	From:	To:	From:	To:																																																			
0	4	0.196	4	8	0.196																																																			
				8	12																																																			
					0.196																																																			
©1982-2018 Innovyze																																																								

JNP Group		Page 4																		
3rd Floor, Marlborough House 48 Holly Walk Leamington Spa CV32 4XP	Ford Airfield System 7 Employment Area																			
Date 16/12/2020 10:39 File Employment Zone QSE	Designed by IS Checked by AM																			
Micro Drainage Source Control 2018.1.1																				
<u>Model Details</u> Storage is Online Cover Level (m) 3.700 <u>Cellular Storage Structure</u> Invert Level (m) 2.800 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.06300 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.06300 <table border="1"> <thead> <tr> <th>Depth (m)</th> <th>Area (m²)</th> <th>Inf. Area (m²)</th> <th>Depth (m)</th> <th>Area (m²)</th> <th>Inf. Area (m²)</th> </tr> </thead> <tbody> <tr> <td>0.000</td> <td>484.0</td> <td>484.0</td> <td>1.000</td> <td>0.0</td> <td>563.2</td> </tr> <tr> <td>0.900</td> <td>484.0</td> <td>563.2</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	0.000	484.0	484.0	1.000	0.0	563.2	0.900	484.0	563.2			
Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)															
0.000	484.0	484.0	1.000	0.0	563.2															
0.900	484.0	563.2																		
©1982-2018 Innovyze																				