

P/2016/00213  
Received 12/02/2016

**S. A. Consulting**  
Consulting Civil & Structural Engineers

## **Surface water Drainage Calculations**

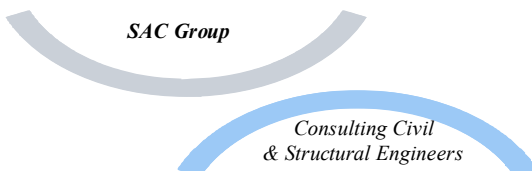
**David Mcphearson**

**New Development  
Abbots Bromley**

**Plot 6**

**Job No. F-088**

**Feb 16**



***S A CONSULTING***  
*Knightley Studio, Knightley Farm,  
Callingwood, Needwood,  
Burton- upon- Trent, Staffs. DE13 9PU  
Tel 01283 565002 Fax 01283 565002  
Email [admin@saconsult.co](mailto:admin@saconsult.co)*

# **S. A. Consulting**

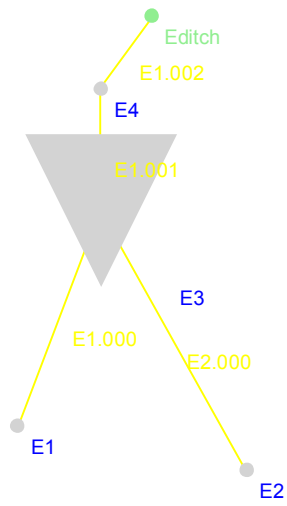
Consulting Civil & Structural Engineers


## **GENERAL NOTES**

The drainage has been modeled using Microdrainage computer software for a 1 in 1 year, 1 in 30 year and a 1 in 100 year storm return period. A 20% climate increase has been included in the calculations.

The design has been undertaken on the principle that water can back up manholes for the 1 in 30 year storm but flooding is not permitted whilst flooding is permitted for a 1 in 100 year storm providing buildings are not affected. In this instance the computer model indicated flooding occurred for any rainfall event.

Soakaways have been adopted on the site. Five soakaway tests were undertaken and the tests results determined a very low infiltration rate in the impermeable clay strata. The soakaways adopted in the design have therefore been used as retention tanks to slow the outflow into the on site pond



Stroud Associates Ltd		Page 1
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Existing Network Details for Existing

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
E1.000	7.564	0.260	29.1	0.012	4.00	0.0	0.600	o	100
E2.000	9.752	0.130	75.0	0.006	4.00	0.0	0.600	o	100
E1.001	4.000	-0.330	-12.1	0.000	0.00	0.0	0.600	o	150
E1.002	2.918	0.070	41.7	0.000	0.00	0.0	0.600	o	150

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
E1.000	12.180	0.012	0.0	1.44	11.3
E2.000	12.050	0.006	0.0	0.89	7.0
E1.001	11.920	0.018	0.0	0.00	0.0
E1.002	12.250	0.018	0.0	1.56	27.6

Suite F, Harkstead Hall Barns  
 Harkstead, Ipswich  
 Suffolk IP9 1DB




Date 08/02/2016 11:21  
 File plot 6.mdx

Designed by user  
 Checked by

Micro Drainage Network 2014.1.1

Manhole Schedules for Existing

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)
E1	12.950	0.770	Open Manhole	450	E1.000	12.180	100				
E2	12.800	0.750	Open Manhole	450	E2.000	12.050	100				
E3	13.200	1.280	Open Manhole	450	E1.001	11.920	150	E1.000	11.920	100	
E4	13.200	0.950	Open Manhole	450	E1.002	12.250	150	E2.000	11.920	100	
Editch	13.000	0.820	Open Manhole	0		OUTFALL		E1.001	12.250	150	
								E1.002	12.180	150	

Stroud Associates Ltd		Page 3
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1


PIPELINE SCHEDULES for Existing

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)
E1.000	o	100	E1	12.950	12.180	0.670	Open Manhole	450
E2.000	o	100	E2	12.800	12.050	0.650	Open Manhole	450
E1.001	o	150	E3	13.200	11.920	1.130	Open Manhole	450
E1.002	o	150	E4	13.200	12.250	0.800	Open Manhole	450

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)
E1.000	7.564	29.1	E3	13.200	11.920	1.180	Open Manhole	450
E2.000	9.752	75.0	E3	13.200	11.920	1.180	Open Manhole	450
E1.001	4.000	-12.1	E4	13.200	12.250	0.800	Open Manhole	450
E1.002	2.918	41.7	Editch	13.000	12.180	0.670	Open Manhole	0

Stroud Associates Ltd		Page 4
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Area Summary for Existing

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.012	0.012	0.012
2.000	-	-	100	0.006	0.006	0.006
1.001	-	-	100	0.000	0.000	0.000
1.002	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.018	0.018	0.018

Free Flowing Outfall Details for Existing

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
E1.002	Editch	13.000	12.180	0.000	0	0

Suite F, Harkstead Hall Barns  
Harkstead, Ipswich  
Suffolk IP9 1DB



Date 08/02/2016 11:21  
File plot 6.mdx

Designed by user  
Checked by

Micro Drainage Network 2014.1.1


Storage Structures for Existing

Cellular Storage Manhole: E3, DS/PN: E1.001

Invert Level (m) 11.200 Safety Factor 5.0  
Infiltration Coefficient Base (m/hr) 0.00001 Porosity 0.95  
Infiltration Coefficient Side (m/hr) 0.00001

Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )
0.000	8.0	8.0	2.100	0.0	32.0
2.000	8.0	32.0			



Stroud Associates Ltd		Page 6
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 15 minute 1 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0 MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m <sup>3</sup> )	Flow / Cap.	Pipe		Status
							O'flow (l/s)	Flow (l/s)	
E1.000	E1	42	12.210	-0.070	0.000	0.20	0.0	2.0	OK
E2.000	E2	46	12.076	-0.074	0.000	0.16	0.0	1.0	OK
E1.001	E3	72	11.355	-0.715	0.000	0.00	0.0	0.0	OK
E1.002	E4	42	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 7
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 30 minute 1 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0

Synthetic Rainfall Details


Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	44	12.208	-0.072	0.000	0.17	0.0	1.8	OK
E2.000	E2	48	12.074	-0.076	0.000	0.13	0.0	0.9	OK
E1.001	E3	70	11.401	-0.669	0.000	0.00	0.0	0.0	OK
E1.002	E4	38	12.250	-0.150	0.000	0.00	0.0	0.0	OK



Stroud Associates Ltd		Page 9
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 120 minute 1 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details


Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water	Flooded			Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	55	12.198	-0.082	0.000	0.08	0.0	0.8	OK
E2.000	E2	55	12.066	-0.084	0.000	0.06	0.0	0.4	OK
E1.001	E3	66	11.515	-0.555	0.000	0.00	0.0	0.0	OK
E1.002	E4	37	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 10						
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB								
Date 08/02/2016 11:21	Designed by user							
File plot 6.mdx	Checked by							
Micro Drainage	Network 2014.1.1							
<u>Summary Wizard of 180 minute 1 year Summer I+20% for Existing</u>								
<u>Simulation Criteria</u>								
Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000					
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	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 Storage Structures 1								
Number of Online Controls 0 Number of Time/Area Diagrams 0								
Number of Offline Controls 0 Number of Real Time Controls 0								
<u>Synthetic Rainfall Details</u>								
Rainfall Model	FSR	Ratio R	0.400					
Region England and Wales	Cv (Summer)		0.750					
M5-60 (mm)	19.100	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							
Return Period(s) (years)	1, 30, 100							
Climate Change (%)	20, 20, 20							
<b>PN</b>	<b>US/MH Name Rank</b>	<b>Water Level (m)</b>	<b>Surch'ed Depth (m)</b>	<b>Flooded Volume (m³)</b>	<b>Flow / Cap.</b>	<b>O'flow (l/s)</b>	<b>Pipe Flow (l/s)</b>	<b>Status</b>
E1.000	E1 56 12.196	-0.084	0.000	0.06	0.0	0.6	OK	
E2.000	E2 56 12.064	-0.086	0.000	0.05	0.0	0.3	OK	
E1.001	E3 64 11.556	-0.514	0.000	0.00	0.0	0.0	OK	
E1.002	E4 35 12.250	-0.150	0.000	0.00	0.0	0.0	OK	
©1982-2014 XP Solutions								

Stroud Associates Ltd		Page 11
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 240 minute 1 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	58	12.194	-0.086	0.000	0.05	0.0	0.5	OK
E2.000	E2	58	12.063	-0.087	0.000	0.04	0.0	0.3	OK
E1.001	E3	62	11.587	-0.483	0.000	0.00	0.0	0.0	OK
E1.002	E4	36	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 12
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage	Network 2014.1.1	

Summary Wizard of 360 minute 1 year Summer I+20% for Existing

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 Storage Structures 1
Number of Online Controls 0  Number of Time/Area Diagrams 0
Number of Offline Controls 0  Number of Real Time Controls 0

```

Synthetic Rainfall Details

```

Rainfall Model          FSR      Ratio R 0.400
      Region England and Wales Cv (Summer) 0.750
      M5-60 (mm)          19.100 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
Return Period(s) (years)      1, 30, 100
Climate Change (%)           20, 20, 20

```

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap. (l/s)	O'flow (l/s)	Flow (l/s)	
E1.000	E1	60	12.193	-0.087	0.000	0.04	0.0	0.4	OK
E2.000	E2	60	12.061	-0.089	0.000	0.03	0.0	0.2	OK
E1.001	E3	58	11.635	-0.435	0.000	0.00	0.0	0.0	OK
E1.002	E4	40	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Suite F, Harkstead Hall Barns  
Harkstead, Ipswich  
Suffolk IP9 1DB



Date 08/02/2016 11:21  
File plot 6.mdx

Designed by user  
Checked by

Micro Drainage Network 2014.1.1

Summary Wizard of 480 minute 1 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000    Additional Flow - % of Total Flow 0.000  
 Hot Start (mins) 0    MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
 Number of Online Controls 0    Number of Time/Area Diagrams 0  
 Number of Offline Controls 0    Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model    FSR    Ratio R 0.400  
 Region England and Wales Cv (Summer) 0.750  
 M5-60 (mm)    19.100 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  
 Return Period(s) (years)    1, 30, 100  
 Climate Change (%)    20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap. (l/s)	O'flow (l/s)	Flow (l/s)	
E1.000	E1	62	12.191	-0.089	0.000	0.03	0.0	0.3	OK
E2.000	E2	62	12.061	-0.089	0.000	0.02	0.0	0.2	OK
E1.001	E3	57	11.670	-0.400	0.000	0.00	0.0	0.0	OK
E1.002	E4	44	12.250	-0.150	0.000	0.00	0.0	0.0	OK





Summary Wizard of 720 minute 1 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /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 Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0


Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.400
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	19.100	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
Return Period(s) (years)		1, 30, 100
Climate Change (%)		20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	66	12.190	-0.090	0.000	0.02	0.0	0.2	OK
E2.000	E2	66	12.059	-0.091	0.000	0.02	0.0	0.1	OK
E1.001	E3	52	11.724	-0.346	0.000	0.00	0.0	0.0	OK
E1.002	E4	67	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 16
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 960 minute 1 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /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 Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0


Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.400
Region England and Wales Cv (Summer)			0.750
M5-60 (mm)	19.100	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
Return Period(s) (years)		1, 30, 100
Climate Change (%)		20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	68	12.189	-0.091	0.000	0.02	0.0	0.2	OK
E2.000	E2	68	12.057	-0.093	0.000	0.01	0.0	0.1	OK
E1.001	E3	47	11.766	-0.304	0.000	0.00	0.0	0.0	OK
E1.002	E4	55	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 17
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 1440 minute 1 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	71	12.187	-0.093	0.000	0.01	0.0	0.1	OK
E2.000	E2	71	12.055	-0.095	0.000	0.01	0.0	0.1	OK
E1.001	E3	44	11.831	-0.239	0.000	0.00	0.0	0.0	OK
E1.002	E4	54	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 18
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 15 minute 30 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /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 Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0


Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.400
Region England and Wales Cv (Summer)			0.750
M5-60 (mm)	19.100	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
Return Period(s) (years)		1, 30, 100
Climate Change (%)		20, 20, 20

		Water			Flooded		Pipe		
PN	US/MH Name Rank	Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status	
E1.000	E1 32	12.229	-0.051	0.000	0.49	0.0	5.0	OK	
E2.000	E2 37	12.093	-0.057	0.000	0.39	0.0	2.5	OK	
E1.001	E3 63	11.578	-0.492	0.000	0.00	0.0	0.0	OK	
E1.002	E4 53	12.250	-0.150	0.000	0.00	0.0	0.0	OK	

Stroud Associates Ltd		Page 19
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 30 minute 30 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0

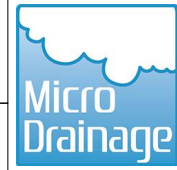
Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	34	12.225	-0.055	0.000	0.42	0.0	4.3	OK
E2.000	E2	39	12.090	-0.060	0.000	0.33	0.0	2.2	OK
E1.001	E3	54	11.693	-0.377	0.000	0.00	0.0	0.0	OK
E1.002	E4	58	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Suite F, Harkstead Hall Barns  
Harkstead, Ipswich  
Suffolk IP9 1DB



Date 08/02/2016 11:21  
File plot 6.mdx

Designed by user  
Checked by

Micro Drainage

Network 2014.1.1

Summary Wizard of 60 minute 30 year Summer I+20% for Existing

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 Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded			Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)		
E1.000	E1	38	12.218	-0.062	0.000	0.30	0.0	3.1	OK	
E2.000	E2	43	12.083	-0.067	0.000	0.24	0.0	1.5	OK	
E1.001	E3	45	11.814	-0.256	0.000	0.00	0.0	0.0	OK	
E1.002	E4	57	12.250	-0.150	0.000	0.00	0.0	0.0	OK	

Stroud Associates Ltd		Page 21
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 120 minute 30 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /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 Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.400
Region England and Wales Cv (Summer)	0.750		
M5-60 (mm)	19.100	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
Return Period(s) (years)	1, 30, 100
Climate Change (%)	20, 20, 20

PN	US/MH Name	Rank	Water		Flooded			Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)		
E1.000	E1	43	12.209	-0.071	0.000	0.18	0.0	1.9	OK	
E2.000	E2	47	12.075	-0.075	0.000	0.15	0.0	0.9	OK	
E1.001	E3	38	11.942	-0.128	0.000	0.00	0.0	0.0	OK	
E1.002	E4	56	12.250	-0.150	0.000	0.00	0.0	0.0	OK	



Summary Wizard of 180 minute 30 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000	Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0	MADD Factor * 10m <sup>3</sup> /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 Storage Structures 1
Number of Online Controls 0	Number of Time/Area Diagrams 0
Number of Offline Controls 0	Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R 0.400
Region England and Wales	Cv (Summer) 0.750	
M5-60 (mm)	19.100	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
Return Period(s) (years)	1, 30, 100
Climate Change (%)	20, 20, 20

PN	US/MH Name	Rank	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe	
								Flow (l/s)	Status
E1.000	E1	46	12.205	-0.075	0.000	0.14	0.0	1.5	OK
E2.000	E2	50	12.072	-0.078	0.000	0.11	0.0	0.7	OK
E1.001	E3	36	12.018	-0.052	0.000	0.00	0.0	0.0	OK
E1.002	E4	52	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 23
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 240 minute 30 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	49	12.203	-0.077	0.000	0.12	0.0	1.2	OK
E2.000	E2	53	12.070	-0.080	0.000	0.09	0.0	0.6	OK
E1.001	E3	34	12.069	-0.001	0.000	0.00	0.0	0.0	OK
E1.002	E4	48	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 24
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 360 minute 30 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /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 Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0


Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.400
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	19.100	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
Return Period(s) (years)		1, 30, 100
Climate Change (%)		20, 20, 20

PN	US/MH		Water		Flooded			Pipe		Status
	Name	Rank	Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)		
E1.000	E1	54	12.199	-0.081	0.000	0.09	0.0	0.9	OK	
E2.000	E2	31	12.144	-0.006	0.000	0.07	0.0	0.4	OK	
E1.001	E3	31	12.144	0.074	0.000	0.00	0.0	0.0	SURCHARGED	
E1.002	E4	47	12.250	-0.150	0.000	0.00	0.0	0.0	OK	

Stroud Associates Ltd		Page 25
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 480 minute 30 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	50	12.202	-0.078	0.000	0.07	0.0	0.7	OK
E2.000	E2	28	12.202	0.052	0.000	0.05	0.0	0.3	SURCHARGED
E1.001	E3	28	12.202	0.132	0.000	0.00	0.0	0.0	SURCHARGED
E1.002	E4	46	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Suite F, Harkstead Hall Barns  
Harkstead, Ipswich  
Suffolk IP9 1DB



Date 08/02/2016 11:21  
File plot 6.mdx

Designed by user  
Checked by

Micro Drainage Network 2014.1.1

Summary Wizard of 600 minute 30 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000	Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0	MADD Factor * 10m <sup>3</sup> /ha Storage 2.000
Hot Start Level (mm) 0	Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500	Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000	

Number of Input Hydrographs 0	Number of Storage Structures 1
Number of Online Controls 0	Number of Time/Area Diagrams 0
Number of Offline Controls 0	Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R 0.400
Region England and Wales	Cv (Summer) 0.750	
M5-60 (mm)	19.100	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
Return Period(s) (years)	1, 30, 100
Climate Change (%)	20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / O'flow Cap.	Flow (l/s)		
E1.000	E1	25	12.248	-0.032	0.000	0.06	0.0	0.6	OK
E2.000	E2	25	12.248	0.098	0.000	0.05	0.0	0.3	SURCHARGED
E1.001	E3	25	12.248	0.178	0.000	0.00	0.0	0.0	SURCHARGED
E1.002	E4	51	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Suite F, Harkstead Hall Barns  
Harkstead, Ipswich  
Suffolk IP9 1DB



Date 08/02/2016 11:21  
File plot 6.mdx

Designed by user  
Checked by

Micro Drainage Network 2014.1.1

Summary Wizard of 720 minute 30 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /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 Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.400
Region England and Wales Cv (Summer)			0.750
M5-60 (mm)	19.100	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
Return Period(s) (years)		1, 30, 100
Climate Change (%)		20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / O'flow Cap. (l/s)	Flow (l/s)		
E1.000	E1	23	12.267	-0.013	0.000	0.05	0.0	0.5	OK
E2.000	E2	23	12.266	0.116	0.000	0.04	0.0	0.3	SURCHARGED
E1.001	E3	23	12.266	0.196	0.000	0.01	0.0	0.1	SURCHARGED
E1.002	E4	23	12.253	-0.147	0.000	0.00	0.0	0.1	OK

Stroud Associates Ltd		Page 28
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 960 minute 30 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0 MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	22	12.267	-0.013	0.000	0.04	0.0	0.4	OK
E2.000	E2	22	12.266	0.116	0.000	0.03	0.0	0.2	SURCHARGED
E1.001	E3	22	12.267	0.197	0.000	0.01	0.0	0.1	SURCHARGED
E1.002	E4	22	12.253	-0.147	0.000	0.00	0.0	0.1	OK

Suite F, Harkstead Hall Barns  
Harkstead, Ipswich  
Suffolk IP9 1DB



Date 08/02/2016 11:21  
File plot 6.mdx

Designed by user  
Checked by

Micro Drainage Network 2014.1.1

Summary Wizard of 1440 minute 30 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details


Rainfall Model	FSR	Ratio R	0.400
Region England and Wales	Cv (Summer)		0.750
M5-60 (mm)	19.100	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
Return Period(s) (years)		1, 30, 100
Climate Change (%)		20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / O'flow Cap. (l/s)	Flow (l/s)		
E1.000	E1	21	12.269	-0.011	0.000	0.03	0.0	0.3	OK
E2.000	E2	21	12.269	0.119	0.000	0.02	0.0	0.1	SURCHARGED
E1.001	E3	21	12.268	0.198	0.000	0.01	0.0	0.1	SURCHARGED
E1.002	E4	21	12.254	-0.146	0.000	0.01	0.0	0.1	OK



Stroud Associates Ltd		Page 30
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 15 minute 100 year Summer I+20% for Existing

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 Storage Structures 1  
 Number of Online Controls 0    Number of Time/Area Diagrams 0  
 Number of Offline Controls 0    Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR    Ratio R 0.400  
 Region England and Wales Cv (Summer) 0.750  
 M5-60 (mm) 19.100 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  
 Return Period(s) (years) 1, 30, 100  
 Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	29	12.238	-0.042	0.000	0.63	0.0	6.5	OK
E2.000	E2	34	12.100	-0.050	0.000	0.50	0.0	3.3	OK
E1.001	E3	55	11.690	-0.380	0.000	0.00	0.0	0.0	OK
E1.002	E4	50	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 31
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 30 minute 100 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                    0                    MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model                                  FSR                  Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                                      19.100 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  
Return Period(s) (years)    1, 30, 100  
Climate Change (%)    20, 20, 20

PN	US/MH Name	Rank	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe	Status
								Flow (l/s)	
E1.000	E1	30	12.233	-0.047	0.000	0.55	0.0	5.6	OK
E2.000	E2	35	12.096	-0.054	0.000	0.43	0.0	2.8	OK
E1.001	E3	42	11.844	-0.226	0.000	0.00	0.0	0.0	OK
E1.002	E4	49	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Suite F, Harkstead Hall Barns  
 Harkstead, Ipswich  
 Suffolk IP9 1DB



Date 08/02/2016 11:21  
 File plot 6.mdx

Designed by user  
 Checked by

Micro Drainage Network 2014.1.1

Summary Wizard of 60 minute 100 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
 Hot Start (mins) 0      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
 Number of Online Controls 0      Number of Time/Area Diagrams 0  
 Number of Offline Controls 0      Number of Real Time Controls 0

Synthetic Rainfall Details

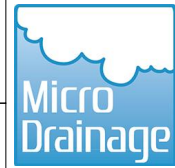
Rainfall Model FSR      Ratio R 0.400  
 Region England and Wales Cv (Summer) 0.750  
 M5-60 (mm) 19.100 Cv (Winter) 0.840

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  
 Return Period(s) (years) 1, 30, 100  
 Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded			Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)		
E1.000	E1	35	12.224	-0.056	0.000	0.39	0.0	4.0	OK	
E2.000	E2	41	12.088	-0.062	0.000	0.31	0.0	2.0	OK	
E1.001	E3	37	12.003	-0.067	0.000	0.00	0.0	0.0	OK	
E1.002	E4	59	12.250	-0.150	0.000	0.00	0.0	0.0	OK	

Suite F, Harkstead Hall Barns  
Harkstead, Ipswich  
Suffolk IP9 1DB



Date 08/02/2016 11:21

Designed by user

File plot 6.mdx

Checked by

Micro Drainage

Network 2014.1.1

Summary Wizard of 120 minute 100 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0 MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0

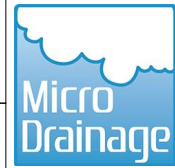
Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	39	12.213	-0.067	0.000	0.24	0.0	2.5	OK
E2.000	E2	30	12.155	0.005	0.000	0.19	0.0	1.2	SURCHARGED
E1.001	E3	30	12.155	0.085	0.000	0.00	0.0	0.0	SURCHARGED
E1.002	E4	69	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Suite F, Harkstead Hall Barns  
 Harkstead, Ipswich  
 Suffolk IP9 1DB



Date 08/02/2016 11:21

Designed by user

File plot 6.mdx

Checked by

Micro Drainage

Network 2014.1.1

Summary Wizard of 180 minute 100 year Summer I+20% for Existing

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 Storage Structures 1  
 Number of Online Controls 0 Number of Time/Area Diagrams 0  
 Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
 Region England and Wales Cv (Summer) 0.750  
 M5-60 (mm) 19.100 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  
 Return Period(s) (years) 1, 30, 100  
 Climate Change (%) 20, 20, 20

PN	US/MH		Water		Flooded		Pipe		Status
	Name	Rank	Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	27	12.246	-0.034	0.000	0.19	0.0	1.9	OK
E2.000	E2	27	12.246	0.096	0.000	0.15	0.0	1.0	SURCHARGED
E1.001	E3	27	12.246	0.176	0.000	0.00	0.0	0.0	SURCHARGED
E1.002	E4	68	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Suite F, Harkstead Hall Barns  
Harkstead, Ipswich  
Suffolk IP9 1DB



Date 08/02/2016 11:21  
File plot 6.mdx

Designed by user  
Checked by

Micro Drainage Network 2014.1.1

Summary Wizard of 240 minute 100 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /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 Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.400
Region England and Wales Cv (Summer)			0.750
M5-60 (mm)	19.100	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
Return Period(s) (years)		1, 30, 100
Climate Change (%)		20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / O'flow Cap. (l/s)	Flow (l/s)		
E1.000	E1	15	12.279	-0.001	0.000	0.15	0.0	1.6	OK
E2.000	E2	15	12.279	0.129	0.000	0.12	0.0	0.8	SURCHARGED
E1.001	E3	15	12.278	0.208	0.000	0.02	0.0	0.2	SURCHARGED
E1.002	E4	15	12.258	-0.142	0.000	0.01	0.0	0.2	OK

Suite F, Harkstead Hall Barns  
 Harkstead, Ipswich  
 Suffolk IP9 1DB



Date 08/02/2016 11:21  
 File plot 6.mdx

Designed by user  
 Checked by

Micro Drainage Network 2014.1.1

Summary Wizard of 360 minute 100 year Summer I+20% for Existing

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 Storage Structures 1  
 Number of Online Controls 0 Number of Time/Area Diagrams 0  
 Number of Offline Controls 0 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
 Region England and Wales Cv (Summer) 0.750  
 M5-60 (mm) 19.100 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  
 Return Period(s) (years) 1, 30, 100  
 Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	14	12.280	0.000	0.000	0.11	0.0	1.1	SURCHARGED
E2.000	E2	14	12.280	0.130	0.000	0.09	0.0	0.6	SURCHARGED
E1.001	E3	14	12.279	0.209	0.000	0.02	0.0	0.2	SURCHARGED
E1.002	E4	14	12.259	-0.141	0.000	0.01	0.0	0.2	OK

Stroud Associates Ltd		Page 37
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage	Network 2014.1.1	

Summary Wizard of 480 minute 100 year Summer I+20% for Existing

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 Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000
  
```

```

Number of Input Hydrographs 0 Number of Storage Structures 1
Number of Online Controls 0 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0
  
```

Synthetic Rainfall Details

```

Rainfall Model      FSR      Ratio R 0.400
      Region England and Wales Cv (Summer) 0.750
      M5-60 (mm)      19.100 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
Return Period(s) (years)      1, 30, 100
Climate Change (%)      20, 20, 20
  
```

PN	US/MH Name	Rank	Water		Flooded			Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)		
E1.000	E1	13	12.283	0.003	0.000	0.09	0.0	0.9	SURCHARGED	
E2.000	E2	13	12.283	0.133	0.000	0.07	0.0	0.5	SURCHARGED	
E1.001	E3	13	12.282	0.212	0.000	0.03	0.0	0.2	SURCHARGED	
E1.002	E4	13	12.261	-0.139	0.000	0.01	0.0	0.2	OK	



Suite F, Harkstead Hall Barns  
 Harkstead, Ipswich  
 Suffolk IP9 1DB

Date 08/02/2016 11:21  
 File plot 6.mdx

Designed by user  
 Checked by



Micro Drainage Network 2014.1.1

Summary Wizard of 600 minute 100 year Summer I+20% for Existing

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 Storage Structures 1  
 Number of Online Controls 0 Number of Time/Area Diagrams 0  
 Number of Offline Controls 0 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
 Region England and Wales Cv (Summer) 0.750  
 M5-60 (mm) 19.100 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  
 Return Period(s) (years) 1, 30, 100  
 Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	12	12.286	0.006	0.000	0.07	0.0	0.8	SURCHARGED
E2.000	E2	12	12.286	0.136	0.000	0.06	0.0	0.4	SURCHARGED
E1.001	E3	12	12.285	0.215	0.000	0.03	0.0	0.3	SURCHARGED
E1.002	E4	12	12.263	-0.137	0.000	0.02	0.0	0.3	OK

Stroud Associates Ltd		Page 39
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage	Network 2014.1.1	

Summary Wizard of 720 minute 100 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0 MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	11	12.288	0.008	0.000	0.06	0.0	0.7	SURCHARGED
E2.000	E2	11	12.287	0.137	0.000	0.05	0.0	0.3	SURCHARGED
E1.001	E3	11	12.286	0.216	0.000	0.03	0.0	0.3	SURCHARGED
E1.002	E4	11	12.264	-0.136	0.000	0.02	0.0	0.3	OK

Stroud Associates Ltd		Page 40
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 960 minute 100 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	9	12.290	0.010	0.000	0.05	0.0	0.5	SURCHARGED
E2.000	E2	9	12.289	0.139	0.000	0.04	0.0	0.3	SURCHARGED
E1.001	E3	9	12.288	0.218	0.000	0.03	0.0	0.3	SURCHARGED
E1.002	E4	9	12.265	-0.135	0.000	0.02	0.0	0.3	OK

Stroud Associates Ltd		Page 41
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 1440 minute 100 year Summer I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / O'flow Cap. (l/s)	Flow (l/s)		
E1.000	E1	10	12.289	0.009	0.000	0.04	0.0	0.4	SURCHARGED
E2.000	E2	10	12.288	0.138	0.000	0.03	0.0	0.2	SURCHARGED
E1.001	E3	10	12.287	0.217	0.000	0.03	0.0	0.3	SURCHARGED
E1.002	E4	10	12.264	-0.136	0.000	0.02	0.0	0.3	OK

Stroud Associates Ltd		Page 42
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 15 minute 1 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /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 Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0


Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.400
Region England and Wales Cv (Summer)			0.750
M5-60 (mm)	19.100	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
Return Period(s) (years)		1, 30, 100
Climate Change (%)		20, 20, 20

PN	US/MH Name	Rank	Water		Flooded			Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)		
E1.000	E1	41	12.210	-0.070	0.000	0.20	0.0	2.0	OK	
E2.000	E2	45	12.076	-0.074	0.000	0.16	0.0	1.0	OK	
E1.001	E3	71	11.373	-0.697	0.000	0.00	0.0	0.0	OK	
E1.002	E4	71	12.250	-0.150	0.000	0.00	0.0	0.0	OK	

Stroud Associates Ltd		Page 43
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 30 minute 1 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000  
 Hot Start (mins) 0 MADD Factor \* 10m<sup>3</sup>/ha Storage 2.000  
 Hot Start Level (mm) 0 Inlet Coeffiecient 0.800  
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000  
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 1  
 Number of Online Controls 0 Number of Time/Area Diagrams 0  
 Number of Offline Controls 0 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
 Region England and Wales Cv (Summer) 0.750  
 M5-60 (mm) 19.100 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  
 Return Period(s) (years) 1, 30, 100  
 Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
E1.000	E1	45	12.206	-0.074	0.000	0.15	0.0	1.5	OK
E2.000	E2	49	12.073	-0.077	0.000	0.12	0.0	0.8	OK
E1.001	E3	69	11.425	-0.645	0.000	0.00	0.0	0.0	OK
E1.002	E4	70	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 44
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage	Network 2014.1.1	

Summary Wizard of 60 minute 1 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000     Additional Flow - % of Total Flow 0.000  
Hot Start (mins)     0     MADD Factor \* 10m<sup>3</sup>/ha Storage 2.000  
Hot Start Level (mm)     0     Inlet Coeffiecient 0.800  
Manhole Headloss Coeff (Global) 0.500     Flow per Person per Day (l/per/day) 0.000  
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0     Number of Storage Structures 1  
Number of Online Controls 0     Number of Time/Area Diagrams 0  
Number of Offline Controls 0     Number of Real Time Controls 0

Synthetic Rainfall Details

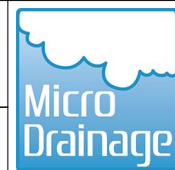
Rainfall Model     FSR     Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)     19.100 Cv (Winter) 0.840

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  
Return Period(s) (years)     1, 30, 100  
Climate Change (%)     20, 20, 20

PN	US/MH Name	Rank	Water	Flooded			Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	52	12.201	-0.079	0.000	0.10	0.0	1.0	OK
E2.000	E2	54	12.068	-0.082	0.000	0.08	0.0	0.5	OK
E1.001	E3	67	11.485	-0.585	0.000	0.00	0.0	0.0	OK
E1.002	E4	66	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Suite F, Harkstead Hall Barns  
Harkstead, Ipswich  
Suffolk IP9 1DB



Date 08/02/2016 11:21

Designed by user

File plot 6.mdx

Checked by

Micro Drainage

Network 2014.1.1

Summary Wizard of 120 minute 1 year Winter I+20% for Existing

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 Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details


Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

	US/MH		Water	Flooded			Pipe		
PN	Name	Rank	Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
E1.000	E1	57	12.196	-0.084	0.000	0.06	0.0	0.6	OK
E2.000	E2	57	12.064	-0.086	0.000	0.05	0.0	0.3	OK
E1.001	E3	65	11.553	-0.517	0.000	0.00	0.0	0.0	OK
E1.002	E4	62	12.250	-0.150	0.000	0.00	0.0	0.0	OK



Stroud Associates Ltd		Page 46
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 180 minute 1 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)      0      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model      FSR      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)      19.100 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  
Return Period(s) (years)      1, 30, 100  
Climate Change (%)      20, 20, 20

PN	US/MH Name	Rank	Water	Flooded			Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	59	12.194	-0.086	0.000	0.05	0.0	0.5	OK
E2.000	E2	59	12.062	-0.088	0.000	0.04	0.0	0.2	OK
E1.001	E3	61	11.598	-0.472	0.000	0.00	0.0	0.0	OK
E1.002	E4	61	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 47
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage	Network 2014.1.1	

Summary Wizard of 240 minute 1 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0 MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	61	12.193	-0.087	0.000	0.04	0.0	0.4	OK
E2.000	E2	61	12.061	-0.089	0.000	0.03	0.0	0.2	OK
E1.001	E3	59	11.633	-0.437	0.000	0.00	0.0	0.0	OK
E1.002	E4	60	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 48
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 360 minute 1 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0 MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
E1.000	E1	63	12.191	-0.089	0.000	0.03	0.0	0.3	OK
E2.000	E2	63	12.060	-0.090	0.000	0.02	0.0	0.1	OK
E1.001	E3	56	11.687	-0.383	0.000	0.00	0.0	0.0	OK
E1.002	E4	65	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 49
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 480 minute 1 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000    Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0    MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0    Number of Time/Area Diagrams 0  
Number of Offline Controls 0    Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model    FSR    Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)    19.100 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  
Return Period(s) (years)    1, 30, 100  
Climate Change (%)    20, 20, 20

PN	US/MH Name	Rank	Water	Flooded			Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	65	12.190	-0.090	0.000	0.02	0.0	0.2	OK
E2.000	E2	65	12.059	-0.091	0.000	0.02	0.0	0.1	OK
E1.001	E3	51	11.726	-0.344	0.000	0.00	0.0	0.0	OK
E1.002	E4	64	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 50
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 600 minute 1 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	67	12.189	-0.091	0.000	0.02	0.0	0.2	OK
E2.000	E2	67	12.057	-0.093	0.000	0.02	0.0	0.1	OK
E1.001	E3	48	11.758	-0.312	0.000	0.00	0.0	0.0	OK
E1.002	E4	63	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 51
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 720 minute 1 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	69	12.188	-0.092	0.000	0.02	0.0	0.2	OK
E2.000	E2	69	12.056	-0.094	0.000	0.01	0.0	0.1	OK
E1.001	E3	46	11.787	-0.283	0.000	0.00	0.0	0.0	OK
E1.002	E4	29	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Summary Wizard of 960 minute 1 year Winter I+20% for Existing

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 Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.400
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	19.100	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		
Return Period(s) (years)	1, 30, 100		
Climate Change (%)	20, 20, 20		

PN	US/MH		Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
	Name	Rank							
E1.000	E1	70	12.187	-0.093	0.000	0.01	0.0	0.1	OK
E2.000	E2	70	12.055	-0.095	0.000	0.01	0.0	0.1	OK
E1.001	E3	43	11.834	-0.236	0.000	0.00	0.0	0.0	OK
E1.002	E4	27	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Suite F, Harkstead Hall Barns  
Harkstead, Ipswich  
Suffolk IP9 1DB



Date 08/02/2016 11:21

Designed by user

File plot 6.mdx

Checked by

Micro Drainage

Network 2014.1.1

Summary Wizard of 1440 minute 1 year Winter I+20% for Existing

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 Coeffiecient 0.800  
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000  
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details


Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

PN	US/MH		Water Level		Flooded Volume		Pipe Flow / O'flow		Pipe Flow	Status
	Name	Rank	(m)	Surch'ed Depth (m)	(m³)	Flow / Cap.	(l/s)	(l/s)		
E1.000	E1	72	12.185	-0.095	0.000	0.01	0.0	0.1	OK	
E2.000	E2	72	12.054	-0.096	0.000	0.01	0.0	0.1	OK	
E1.001	E3	40	11.907	-0.163	0.000	0.00	0.0	0.0	OK	
E1.002	E4	25	12.250	-0.150	0.000	0.00	0.0	0.0	OK	



Stroud Associates Ltd		Page 54
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 15 minute 30 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water	Flooded			Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	31	12.229	-0.051	0.000	0.49	0.0	5.0	OK
E2.000	E2	36	12.093	-0.057	0.000	0.39	0.0	2.5	OK
E1.001	E3	60	11.624	-0.446	0.000	0.00	0.0	0.0	OK
E1.002	E4	26	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Summary Wizard of 30 minute 30 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /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 Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.400
Region England and Wales Cv (Summer)			0.750
M5-60 (mm)	19.100	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
Return Period(s) (years)		1, 30, 100
Climate Change (%)		20, 20, 20

PN	US/MH Name	Rank	Water		Flooded			Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)		
E1.000	E1	36	12.222	-0.058	0.000	0.36	0.0	3.7	OK	
E2.000	E2	42	12.087	-0.063	0.000	0.29	0.0	1.9	OK	
E1.001	E3	49	11.752	-0.318	0.000	0.00	0.0	0.0	OK	
E1.002	E4	32	12.250	-0.150	0.000	0.00	0.0	0.0	OK	

Stroud Associates Ltd		Page 56
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 60 minute 30 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	40	12.213	-0.067	0.000	0.24	0.0	2.4	OK
E2.000	E2	44	12.079	-0.071	0.000	0.19	0.0	1.2	OK
E1.001	E3	41	11.888	-0.182	0.000	0.00	0.0	0.0	OK
E1.002	E4	28	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 57
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 120 minute 30 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /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 Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.400
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	19.100	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
Return Period(s) (years)	1, 30, 100
Climate Change (%)	20, 20, 20

PN	US/MH Name	Rank	Water		Flooded			Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)		
E1.000	E1	47	12.205	-0.075	0.000	0.14	0.0	1.5	OK	
E2.000	E2	51	12.072	-0.078	0.000	0.11	0.0	0.7	OK	
E1.001	E3	35	12.027	-0.043	0.000	0.00	0.0	0.0	OK	
E1.002	E4	30	12.250	-0.150	0.000	0.00	0.0	0.0	OK	

Stroud Associates Ltd		Page 58
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 180 minute 30 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0 MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / O'flow Cap. (l/s)	Flow (l/s)		
E1.000	E1	51	12.202	-0.078	0.000	0.11	0.0	1.1	OK
E2.000	E2	32	12.105	-0.045	0.000	0.09	0.0	0.6	OK
E1.001	E3	32	12.105	0.035	0.000	0.00	0.0	0.0	SURCHARGED
E1.002	E4	33	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Suite F, Harkstead Hall Barns  
 Harkstead, Ipswich  
 Suffolk IP9 1DB



Date 08/02/2016 11:21  
 File plot 6.mdx

Designed by user  
 Checked by

Micro Drainage Network 2014.1.1

Summary Wizard of 240 minute 30 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000    Additional Flow - % of Total Flow 0.000  
 Hot Start (mins) 0    MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
 Number of Online Controls 0    Number of Time/Area Diagrams 0  
 Number of Offline Controls 0    Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model    FSR    Ratio R 0.400  
 Region England and Wales Cv (Summer) 0.750  
 M5-60 (mm)    19.100 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  
 Return Period(s) (years)    1, 30, 100  
 Climate Change (%)    20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	53	12.200	-0.080	0.000	0.09	0.0	0.9	OK
E2.000	E2	29	12.164	0.014	0.000	0.07	0.0	0.4	SURCHARGED
E1.001	E3	29	12.164	0.094	0.000	0.00	0.0	0.0	SURCHARGED
E1.002	E4	34	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 60
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 360 minute 30 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	26	12.247	-0.033	0.000	0.06	0.0	0.7	OK
E2.000	E2	26	12.247	0.097	0.000	0.05	0.0	0.3	SURCHARGED
E1.001	E3	26	12.247	0.177	0.000	0.00	0.0	0.0	SURCHARGED
E1.002	E4	31	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 61
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 480 minute 30 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0

Synthetic Rainfall Details


Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	19	12.272	-0.008	0.000	0.05	0.0	0.5	OK
E2.000	E2	19	12.272	0.122	0.000	0.04	0.0	0.3	SURCHARGED
E1.001	E3	19	12.272	0.202	0.000	0.01	0.0	0.1	SURCHARGED
E1.002	E4	19	12.255	-0.145	0.000	0.01	0.0	0.1	OK



Stroud Associates Ltd		Page 62
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 600 minute 30 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0 MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	20	12.272	-0.008	0.000	0.04	0.0	0.4	OK
E2.000	E2	20	12.271	0.121	0.000	0.03	0.0	0.2	SURCHARGED
E1.001	E3	20	12.271	0.201	0.000	0.01	0.0	0.1	SURCHARGED
E1.002	E4	20	12.255	-0.145	0.000	0.01	0.0	0.1	OK

Stroud Associates Ltd		Page 63
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 720 minute 30 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0 MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	18	12.274	-0.006	0.000	0.04	0.0	0.4	OK
E2.000	E2	18	12.274	0.124	0.000	0.03	0.0	0.2	SURCHARGED
E1.001	E3	18	12.273	0.203	0.000	0.01	0.0	0.1	SURCHARGED
E1.002	E4	18	12.256	-0.144	0.000	0.01	0.0	0.1	OK

Stroud Associates Ltd		Page 64
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 960 minute 30 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /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 Storage Structures	1
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details


Rainfall Model	FSR	Ratio R	0.400
Region England and Wales Cv (Summer)			0.750
M5-60 (mm)	19.100	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
Return Period(s) (years)		1, 30, 100
Climate Change (%)		20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / O'flow Cap. (l/s)	Flow (l/s)		
E1.000	E1	17	12.277	-0.003	0.000	0.03	0.0	0.3	OK
E2.000	E2	17	12.277	0.127	0.000	0.02	0.0	0.2	SURCHARGED
E1.001	E3	17	12.277	0.207	0.000	0.02	0.0	0.2	SURCHARGED
E1.002	E4	17	12.257	-0.143	0.000	0.01	0.0	0.2	OK



Stroud Associates Ltd		Page 66
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 15 minute 100 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	28	12.238	-0.042	0.000	0.63	0.0	6.5	OK
E2.000	E2	33	12.100	-0.050	0.000	0.50	0.0	3.3	OK
E1.001	E3	50	11.749	-0.321	0.000	0.00	0.0	0.0	OK
E1.002	E4	41	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 67
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 30 minute 100 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
E1.000	E1	33	12.229	-0.051	0.000	0.48	0.0	4.9	OK
E2.000	E2	38	12.093	-0.057	0.000	0.38	0.0	2.4	OK
E1.001	E3	39	11.921	-0.149	0.000	0.00	0.0	0.0	OK
E1.002	E4	43	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 68
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 60 minute 100 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	37	12.218	-0.062	0.000	0.31	0.0	3.2	OK
E2.000	E2	40	12.089	-0.061	0.000	0.25	0.0	1.6	OK
E1.001	E3	33	12.089	0.019	0.000	0.00	0.0	0.0	SURCHARGED
E1.002	E4	45	12.250	-0.150	0.000	0.00	0.0	0.0	OK

Stroud Associates Ltd		Page 69
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21 File plot 6.mdx	Designed by user Checked by	

Micro Drainage Network 2014.1.1

Summary Wizard of 120 minute 100 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0 MADD Factor \* 10m<sup>3</sup>/ha Storage 2.000  
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800  
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000  
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 1  
Number of Online Controls 0 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details


Rainfall Model FSR Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 19.100 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  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	24	12.259	-0.021	0.000	0.19	0.0	1.9	OK
E2.000	E2	24	12.258	0.108	0.000	0.15	0.0	1.0	SURCHARGED
E1.001	E3	24	12.258	0.188	0.000	0.00	0.0	0.0	SURCHARGED
E1.002	E4	24	12.251	-0.149	0.000	0.00	0.0	0.0	OK



Stroud Associates Ltd		Page 70
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 180 minute 100 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	8	12.290	0.010	0.000	0.14	0.0	1.5	SURCHARGED
E2.000	E2	8	12.290	0.140	0.000	0.11	0.0	0.7	SURCHARGED
E1.001	E3	8	12.289	0.219	0.000	0.04	0.0	0.4	SURCHARGED
E1.002	E4	8	12.265	-0.135	0.000	0.02	0.0	0.4	OK

Stroud Associates Ltd		Page 71
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 240 minute 100 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	6	12.293	0.013	0.000	0.11	0.0	1.2	SURCHARGED
E2.000	E2	6	12.292	0.142	0.000	0.09	0.0	0.6	SURCHARGED
E1.001	E3	6	12.291	0.221	0.000	0.04	0.0	0.4	SURCHARGED
E1.002	E4	6	12.266	-0.134	0.000	0.02	0.0	0.4	OK

Stroud Associates Ltd		Page 72
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 360 minute 100 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	3	12.300	0.020	0.000	0.08	0.0	0.8	SURCHARGED
E2.000	E2	3	12.299	0.149	0.000	0.07	0.0	0.4	SURCHARGED
E1.001	E3	3	12.297	0.227	0.000	0.05	0.0	0.5	SURCHARGED
E1.002	E4	3	12.267	-0.133	0.000	0.03	0.0	0.5	OK

Suite F, Harkstead Hall Barns  
 Harkstead, Ipswich  
 Suffolk IP9 1DB



Date 08/02/2016 11:21

Designed by user

File plot 6.mdx

Checked by

Micro Drainage

Network 2014.1.1

Summary Wizard of 480 minute 100 year Winter I+20% for Existing

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 Storage Structures 1  
 Number of Online Controls 0 Number of Time/Area Diagrams 0  
 Number of Offline Controls 0 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400  
 Region England and Wales Cv (Summer) 0.750  
 M5-60 (mm) 19.100 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  
 Return Period(s) (years) 1, 30, 100  
 Climate Change (%) 20, 20, 20

PN	US/MH Name	Rank	Water		Flooded			Pipe		Status
			Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)		
E1.000	E1	1	12.301	0.021	0.000	0.07	0.0	0.7	SURCHARGED	
E2.000	E2	1	12.300	0.150	0.000	0.05	0.0	0.3	SURCHARGED	
E1.001	E3	1	12.298	0.228	0.000	0.05	0.0	0.5	SURCHARGED	
E1.002	E4	1	12.268	-0.132	0.000	0.03	0.0	0.5	OK	

Stroud Associates Ltd		Page 74
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 600 minute 100 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	2	12.300	0.020	0.000	0.06	0.0	0.6	SURCHARGED
E2.000	E2	2	12.299	0.149	0.000	0.04	0.0	0.3	SURCHARGED
E1.001	E3	2	12.298	0.228	0.000	0.05	0.0	0.5	SURCHARGED
E1.002	E4	2	12.267	-0.133	0.000	0.03	0.0	0.5	OK

Stroud Associates Ltd		Page 75
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 720 minute 100 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                    0    MADD Factor \* 10m<sup>3</sup>/ha Storage 2.000  
Hot Start Level (mm)                0    Inlet Coeffiecient 0.800  
Manhole Headloss Coeff (Global) 0.500      Flow per Person per Day (l/per/day) 0.000  
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0      Number of Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model    FSR    Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)    19.100 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  
Return Period(s) (years)    1, 30, 100  
Climate Change (%)    20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	4	12.299	0.019	0.000	0.05	0.0	0.5	SURCHARGED
E2.000	E2	4	12.298	0.148	0.000	0.04	0.0	0.2	SURCHARGED
E1.001	E3	4	12.297	0.227	0.000	0.05	0.0	0.5	SURCHARGED
E1.002	E4	4	12.267	-0.133	0.000	0.03	0.0	0.5	OK

Stroud Associates Ltd		Page 76
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 960 minute 100 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model                      FSR                      Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      19.100 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  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	5	12.296	0.016	0.000	0.04	0.0	0.4	SURCHARGED
E2.000	E2	5	12.295	0.145	0.000	0.03	0.0	0.2	SURCHARGED
E1.001	E3	5	12.294	0.224	0.000	0.05	0.0	0.4	SURCHARGED
E1.002	E4	5	12.266	-0.134	0.000	0.03	0.0	0.4	OK

Stroud Associates Ltd		Page 77
Suite F, Harkstead Hall Barns Harkstead, Ipswich Suffolk IP9 1DB		
Date 08/02/2016 11:21	Designed by user	
File plot 6.mdx	Checked by	
Micro Drainage		Network 2014.1.1

Summary Wizard of 1440 minute 100 year Winter I+20% for Existing

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                    0    MADD Factor \* 10m<sup>3</sup>/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 Storage Structures 1  
Number of Online Controls 0      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model    FSR    Ratio R 0.400  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)    19.100 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  
Return Period(s) (years)    1, 30, 100  
Climate Change (%)    20, 20, 20

PN	US/MH Name	Rank	Water		Flooded		Pipe		Status
			Level (m)	Surch'ed Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
E1.000	E1	7	12.291	0.011	0.000	0.03	0.0	0.3	SURCHARGED
E2.000	E2	7	12.290	0.140	0.000	0.02	0.0	0.1	SURCHARGED
E1.001	E3	7	12.289	0.219	0.000	0.04	0.0	0.4	SURCHARGED
E1.002	E4	7	12.265	-0.135	0.000	0.02	0.0	0.4	OK