Appendix: F – CCTV Survey

Draincare Environmental Services Ltd

1394 - Anglia Square, Norwich, NR3 1DZ

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Project Name:	Project number:	Date:	Contact:	
1394 - Anglia Square, Norwi	1394	13/11/2018	Howard Palmer	

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Project Name:	Project number:	Date:	Contact:	
1394 - Anglia Square, Norwi	1394	13/11/2018	Howard Palmer	

Place :

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∑∅ / Main sections

Project name :	Project number :	Contact :	Date :
1394 - Anglia Square, Norwich, NR3	**1394**	**Howard Palmer**	**13/11/2018**

Nr.	US MH	DS MH	Date	Road	Tape No.	Material	m	(m)
35	MH1 outlet1	Main	01/11/2018	Edward street		Vitrified clay	6.25	6.25
36	MH1 outlet2	Unknown	30/10/2018	Edward street		Vitrified clay	1.59	1.59
39	MH5 Outl 2	Unknown	01/11/2018	Edward street site1		Vitrified clay	0.00	0.00
Pipe size: CIRCULAR 100/100 = 7.84 m (7.84 m)								
Nr.	**US MH**	**DS MH**	**Date**	**Road**	**Tape No.**	**Material**	**m**	**(m)**
10	9209	B/Junction	29/10/2018	Anglia Square		Vitrified clay	19.54	19.54
20	8303A	8303C	30/10/2018	Anglia Square		Vitrified clay	18.69	18.69
21	8303A	8303C	30/10/2018	Anglia Square		Vitrified clay	20.88	20.88
37	MH4	MH5	30/10/2018	Edward street		Vitrified clay	22.98	22.98
38	MH5 Outl 1	Unknown	01/11/2018	Edward street site1		Vitrified clay	11.74	11.74
40	0457A	0457	31/10/2018	Edward street site2		Pitch fibre	5.74	5.74
Pipe size: CIRCULAR 150/150 = 99.57 m (99.57 m)								
Nr.	**US MH**	**DS MH**	**Date**	**Road**	**Tape No.**	**Material**	**m**	**(m)**
1	9401	0405	29/10/2018	Anglia Square		Vitrified clay	31.82	31.82
2	0405	0406	29/10/2018	Anglia Square		Vitrified clay	28.25	28.25
3	0406	0408	29/10/2018	Anglia Square		Vitrified clay	26.74	26.74
4	0408	0301	29/10/2018	Anglia Square		Vitrified clay	42.29	42.29
7	0303	0301	29/10/2018	Anglia Square		Vitrified clay	45.47	45.47
9	0252	0352	29/10/2018	Anglia Square		Vitrified clay	29.63	29.63
11	9351 A	9305	29/10/2018	Anglia Square		Vitrified clay	65.25	65.25
12	9305	9306	29/10/2018	Anglia Square		Vitrified clay	42.93	42.93
13	9306	9305	29/10/2018	Anglia Square		Vitrified clay	43.69	43.69
14	9305	9301	29/10/2018	Anglia Square		Vitrified clay	7.41	7.41
16	9256	9255	30/10/2018	Anglia Square		Vitrified clay	8.84	8.84
17	9255	9305A	30/10/2018	Anglia Square		Vitrified clay	60.82	60.82
18	9305A	9465A	30/10/2018	Anglia Square		Vitrified clay	37.89	37.89
19	9465A	9465	30/10/2018	Anglia Square		Vitrified clay	1.72	1.72
31	9305	9208	01/11/2018	Anglia square		Vitrified clay	0.08	0.08
32	9208	9351A	01/11/2018	Anglia square		Vitrified clay	16.14	16.14
Pipe size: CIRCULAR 225/225 = 488.97 m (488.97 m)								
Nr.	**US MH**	**DS MH**	**Date**	**Road**	**Tape No.**	**Material**	**m**	**(m)**
5	0301	0305	29/10/2018	Anglia Square		Vitrified clay	19.36	19.36
6	0305	1306	29/10/2018	Anglia Square		Vitrified clay	24.27	24.27
8	0352	0354	29/10/2018	Anglia Square		Vitrified clay	49.35	49.35
15	9306	9465 Br1	29/10/2018	Anglia Square		Vitrified clay	9.95	9.95
29	0308	0310	31/10/2018	Anglia square		Vitrified clay	3.17	3.17
34	9423	9401	01/11/2018	Anglia square		Vitrified clay	0.08	0.08
Pipe size: CIRCULAR 300/300 = 106.18 m (106.18 m)								
Nr.	**US MH**	**DS MH**	**Date**	**Road**	**Tape No.**	**Material**	**m**	**(m)**
22	9465	9465B	31/10/2018	Anglia square			6.10	**5.20**
23	9465	0453	31/10/2018	Anglia square			23.97	23.97
30	0310	0309	31/10/2018	Anglia square		Vitrified clay	8.77	8.77
Pipe size: CIRCULAR 375/375 = 38.84 m (37.94 m)								
Nr.	**US MH**	**DS MH**	**Date**	**Road**	**Tape No.**	**Material**	**m**	**(m)**
24	9459	0456	31/10/2018	Anglia square			32.69	32.69
25	9459	0454	31/10/2018	Anglia square			22.40	22.40
26	0454	0456	31/10/2018	Anglia square			27.40	27.40

Place :

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∑∅ / Main sections

Project name :	Project number :	Contact :	Date :
1394 - Anglia Square, Norwich, NR3	**1394**	**Howard Palmer**	**13/11/2018**

Nr.	US MH	DS MH	Date	Road	Tape No.	Material	m	(m)
27	0456	0354	31/10/2018	Anglia square			0.16	0.16
28	0354	1351	31/10/2018	Anglia square			97.16	97.16
Pipe size: CIRCULAR 675/675 = 179.81 m (179.81 m)								

Nr.	US MH	DS MH	Date	Road	Tape No.	Material	m	(m)
33	9460	9459	01/11/2018	Anglia square		Brick	35.31	**35.30**
Pipe size: EGG SHAPED 675/675 = 35.31 m (35.3 m)								

All sections = 956.52 m (955.61 m)

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Project-information

Project name :	Project Number :	Contact :	Date :
1394 - Anglia Square, Norwich, NR3	**1394**	**Howard Palmer**	**29/10/2018**

Client:	**Weston Homes PLC**
Contact Name:	**Howard Palmer**
Department:	**CCTV**
Road:	**Parsonage Road**
Town:	**Takeley**
County:	**CM22 6PU**
Telephone:	**01279 873341**
Fax:	
Mobile:	
E-mail:	**howard.palmer@weston-homes.com**

Site:	**Weston Homes PLC**
Contact Name:	**Howard Palmer**
Department:	**CCTV**
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Town:	**Norwich**
County:	**NR3 1DZ**
Telephone:	**01279 873341**
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E-mail:	**howard.palmer@weston-homes.com**

Contractor	**Draincare Environmental Services Ltd**
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Project-information

Project name :	Project Number :	Contact :	Date :
1394 - Anglia Square, Norwich, NR3	**1394**	**Howard Palmer**	**29/10/2018**

Background:

Draincare Environmental Services Ltd has been requested to undertake an investigation of the drainage at the above site.

Executive Summary / Overview:

Defects fully detailed and graded within the report.

CCTV survey conducted to establish pipework condition and defects.

Any operational or structural defects found during CCTV works are noted and graded, and if graded 4 or 5 photographed, within the following report.

All pipework, once past the property's boundary or found to be shared, may be the Water Utility's responsibility, following the 2011 legislation change, as described on the last page of this report.

Note(s):

Unable to CCTV survey the pipework between chambers 9423 d/s to 9401 (Plan 1), 0456 d/s to 0354 (Plan 2), 0351 d/s to 1352 (Plan 2 & 3), 1352 d/s to 1353 (Plan 3), 1353 d/s to main in road (Plan 3), 0306 d/s to 0307 (Plan 3), 0307 d/s to 0308 (Plan 3), 0308 d/s to 0310 (Plan 3), 0303 u/s to 0304 (redundant, Plan 4) and 9208 d/s to 9305 (Plan 5 & 6) due to high levels of debris / water and requiring a combination tanker-jetter lorry to clean and remove debris.

Unable to CCTV survey downstream from chamber 0402A located within Site 2 Edward Street car park due to the main in the road being blocked at the time causing chambers 0402A and chamber 0402 located within Edward Road to be full. AW were made aware and cleared main after site attendance.

Recommendations:

1) All operational defects graded 4 or above should be considered for appropriate remedial works to be undertaken (i.e. High Pressure Jetting, suction, cleaning/clearing works etc), in an attempt to return the pipework to a satisfactory and serviceable condition or facilitate further CCTV works.

2) All structural defects graded 4 or above should be considered for appropriate remedial works to be undertaken (i.e. lining, excavation, repair/replace etc), in an attempt to return the pipework to a satisfactory and serviceable condition.

All operational and structural defects graded 1 or 2 should not be detrimental to the effectiveness of the drainage, and are identified as a general note only.
All operational and structural defects graded 3 are unlikely to be detrimental to the effectiveness of the drainage.
All operational and structural defects graded 4 or 5 may be detrimental to the effectiveness of the drainage and should be considered for remedial work.
Pipe deformation / ovaling is described in % terms - % being an approximation of the amount of vertical dimension compressed.
The pipe materials as described should be recognised as the survey engineer's best judgement only.

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**1**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**9401**
Road :	**Anglia Square**	Catchment:	**Plan 1**	U/S Depth :	**2.23**
Location	**Road**	Tape number :		D/S MH :	**0405**
Inspection	**9401 (D/S) 0405**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**31.82 m**	Lining :	

Comment :

1:255 Position	Code	Observation	Photo	Grade
Depth: 2.23				
9401				
0.00	MH	Start node type, manhole reference number: 9401		(Constr) 0
0.00	WL	Water level 20 % of the vertical dimension Flow		(Serv) 0
1.27	CUW	Loss of vision, camera under water		(Misc) 0
8.27	DEC	Settled deposits, hard or compacted 10 % cross-sectional area loss		(Serv) 3
31.82	MHF	Finish node type, manhole reference number: 0405		(Constr) 0
0405				

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**1**	**2**	**0.06**	**2**	**3**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**2**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**0405**
Road :	**Anglia Square**	Catchment:	**Plan 1 & 2**	U/S Depth :	
Location	**Other Pedestrian area**	Tape number :		D/S MH :	**0406**
Inspection	**0405 (D/S) 0406**	Pipe Length		D/S Depth :	**2.6**

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**28.25 m**	Lining :	

Comment :

1:225	Position	Code	Observation	Photo	Grade
0405					
	0.00	MH	Start node type, manhole reference number: 0405		(Constr) 0
	0.00	WL	Water level 10 % of the vertical dimension Flow		(Serv) 0
	28.25	MHF	Finish node type, manhole reference number: 0406		(Constr) 0
0406					

Depth: 2.6

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**3**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**0406**
Road :	**Anglia Square**	Catchment:	**Plan 2**	U/S Depth :	**2.6**
Location	**Other Pedestrian area**	Tape number :		D/S MH :	**0408**
Inspection	**0406 (D/S) 0408**	Pipe Length		D/S Depth :	**3.07**

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**26.74 m**	Lining :	

Comment :

1:225 Position	Code	Observation	Photo	Grade
Depth: 2.6				
0406				
0.00	MH	Start node type, manhole reference number: 0406		(Constr) 0
0.00	WL	Water level 10 % of the vertical dimension Flow		(Serv) 0
7.72	REM	General remark 0407		(Misc) 0
8.58	LL	Line deviates left		(Serv) 0
26.74	MHF	Finish node type, manhole reference number: 0408		(Constr) 0
0408				
Depth: 3.07				

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**4**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**0408**
Road :	**Anglia Square**	Catchment:	**Plan 2**	U/S Depth :	**3.07**
Location	**Other Pedestrian area**	Tape number :		D/S MH :	**0301**
Inspection	**0408 (D/S) 0301**	Pipe Length		D/S Depth :	**3.6**

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**42.29 m**	Lining :	

Comment :

1:345 Position	Code	Observation	Photo	Grade
Depth: 3.07				
0.00	MH	Start node type, manhole reference number: 0408		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
0.60	WL	Water level 5 % of the vertical dimension Flow		(Serv) 0
15.99	WL	Water level 20 % of the vertical dimension		(Serv) 0
21.64	DEG	Attached deposits, grease from 5 O'Clock to 7 O'Clock 10 % cross-sectional area loss		(Serv) 3
40.36	CUW	Loss of vision, camera under water		(Misc) 0
42.29	MHF	Finish node type, manhole reference number: 0301		(Constr) 0
Depth: 3.6				

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**1**	**2**	**0.05**	**2**	**3**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**5**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**0301**
Road :	**Anglia Square**	Catchment:	**Plan 2**	U/S Depth :	**3.6**
Location	**Other Pedestrian area**	Tape number :		D/S MH :	**0305**
Inspection	**0301 (D/S) 0305**	Pipe Length		D/S Depth :	**3.78**

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**300 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**19.36 m**	Lining :	

Comment :

1:165 Position	Code	Observation	Photo	Grade
Depth: 3.6				
0301				
0.00	MH	Start node type, manhole reference number: 0301		(Constr) 0
0.00	WL	Water level 50 % of the vertical dimension		(Serv) 0
0.00	CUW	Loss of vision, camera under water		(Misc) 0
1.71	WL	Water level 30 % of the vertical dimension		(Serv) 0
10.58	DEX	Settled deposits, other 40 % cross-sectional area loss Debris	6_6_26_A.jpg	(Serv) 4
15.64	FL	Fracture, longitudinal from 3 O'Clock		(Struct) 3
19.36	MHF	Finish node type, manhole reference number: 0305		(Constr) 0
0305				
Depth: 3.78				

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	**40**	**2.07**	**40**	**3**	**1**	**5**	**0.26**	**5**	**4**

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Inspection pictures

Place :	Road :	Date :	Section number :	PLR Suffix :
Norwich	**Anglia Square**	**29/10/2018**	**5**	**X**

Photo: 6_6_26_A.jpg, 00:02:11
10.58m, Settled deposits, other 40 % cross-sectional area loss Debris

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**6**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**0305**
Road :	**Anglia Square**	Catchment:	**Plan 3**	U/S Depth :	**3.78**
Location	**Other Pedestrian area**	Tape number :		D/S MH :	**1306**
Inspection	**0305 (D/S) 1306**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**300 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**24.27 m**	Lining :	

Comment :

1:195 Position	Code	Observation	Photo	Grade
Depth: 3.78				
0305				
0.00	MH	Start node type, manhole reference number: 0305		(Constr) 0
0.02	WL	Water level 5 % of the vertical dimension Flow		(Serv) 0
1.99	WL	Water level 10 % of the vertical dimension		(Serv) 0
3.28	CUW	Loss of vision, camera under water		(Misc) 0
4.70	WL	Water level 20 % of the vertical dimension		(Serv) 0
10.83	WL	Water level 40 % of the vertical dimension		(Serv) 0
24.27	MHF	Finish node type, manhole reference number: 1306		(Constr) 0
1306				

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**7**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**0303**
Road :	**Anglia Square**	Catchment:	**Plan 4 & 2**	U/S Depth :	**1.6**
Location	**Road**	Tape number :		D/S MH :	**0301**
Inspection	**0303 (D/S) 0301**	Pipe Length		D/S Depth :	**3.6**

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**45.47 m**	Lining :	

Comment :

1:360 Position	Code	Observation	Photo	Grade
Depth: 1.6				
0303				
0.00	MH	Start node type, manhole reference number: 0303		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
13.66	REM	General remark 0303A		(Misc) 0
31.36	WL	Water level 5 % of the vertical dimension		(Serv) 0
45.47	MHF	Finish node type, manhole reference number: 0301 backdrop shaft prior to 0301		(Constr) 0
0301				
Depth: 3.6				

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

Draincare

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**8**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**0352**
Road :	**Anglia Square**	Catchment:	**Plan 4 & 2**	U/S Depth :	**1.28**
Location	**Road**	Tape number :		D/S MH :	**0354**
Inspection	**0352 (D/S) 0354**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**300 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**49.35 m**	Lining :	

Comment :

1:390 Position	Code	Observation	Photo	Grade
Depth: 1.28				
0352				
0.00	MH	Start node type, manhole reference number: 0352		(Constr) 0
0.00	WL	Water level 5 % of the vertical dimension		(Serv) 0
2.76	SC	Dimension of drain/sewer changes 300 mm high 300 mm wide		0
4.13	DEX	Settled deposits, other 10 % cross-sectional area loss debris		(Serv) 3
13.83	REM	General remark 0352A		(Misc) 0
16.75	CN	Connection other than junction from 11 O'Clock diameter: 150 mm		(Constr) 0
17.52	CN	Connection other than junction from 1 O'Clock diameter: 150 mm		(Constr) 0
39.67	DEX	Settled deposits, other 5 % cross-sectional area loss debris		(Serv) 2
49.35	MHF	Finish node type, manhole reference number: 0354 Backdrop prior to 0354		(Constr) 0
0354				

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**2**	**2**	**0.06**	**3**	**3**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**9**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**0252**
Road :	**Anglia Square**	Catchment:	**Plan 4**	U/S Depth :	**1.57**
Location	**Road**	Tape number :		D/S MH :	**0352**
Inspection	**0252 (D/S) 0352**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**29.63 m**	Lining :	

Comment :

1:240 **Depth: 1.57**

Position	Code	Observation	Photo	Grade
0252				
0.00	MH	Start node type, manhole reference number: 0252		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
1.25	LL	Line deviates left		(Serv) 0
2.82	JN	Junction from 11 O'Clock diameter: 150 mm RG		(Constr) 0
3.69	JN	Junction from 2 O'Clock diameter: 150 mm RG		(Constr) 0
9.75	WL	Water level 5 % of the vertical dimension		(Serv) 0
17.92	JN	Junction from 10 O'Clock diameter: 150 mm		(Constr) 0
23.44	REM	General remark 0353		(Misc) 0
28.32	DEX	Settled deposits, other 5 % cross-sectional area loss Debris		(Serv) 2
29.63	MHF	Finish node type, manhole reference number: Drain run 0352		(Constr) 0
0352				

Structural Defects | **Constructional Features**

Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**1**	**1**	**0.03**	**1**	**2**

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Inspection report

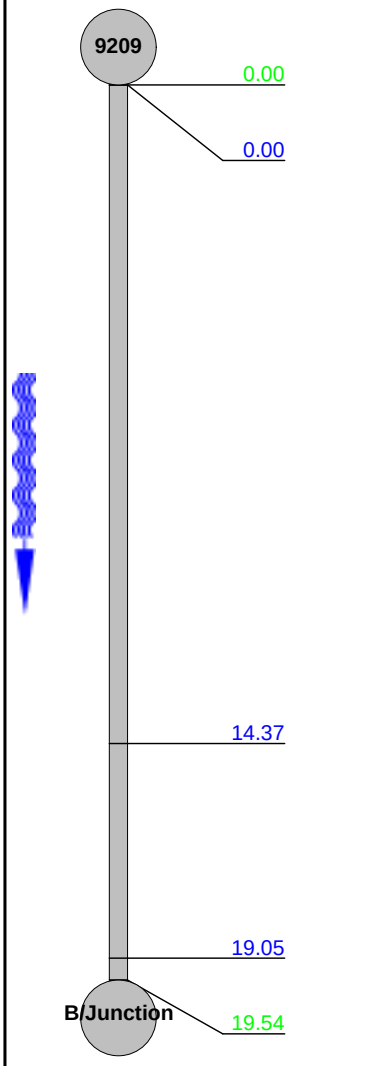
Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**10**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**9209**
Road :	**Anglia Square**	Catchment:	**Plan 5**	U/S Depth :	**1.13**
Location	**Road**	Tape number :		D/S MH :	**B/Junction**
Inspection	**9209 (D/S) B/Junction**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**19.54 m**	Lining :	

Comment :

1:165 Position	Code	Observation	Photo	Grade
Depth: 1.13				
0.00	MH	Start node type, manhole reference number: 9209		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
14.37	DES	Settled deposits, fine 5 % cross-sectional area loss		(Serv) 2
19.05	LL	Line deviates left		(Serv) 0
19.54	BRF	Finish node type, major connection without manhole reference number: Blind junction downstream of 9301		(Constr) 0



Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**1**	**1**	**0.05**	**1**	**2**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**11**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

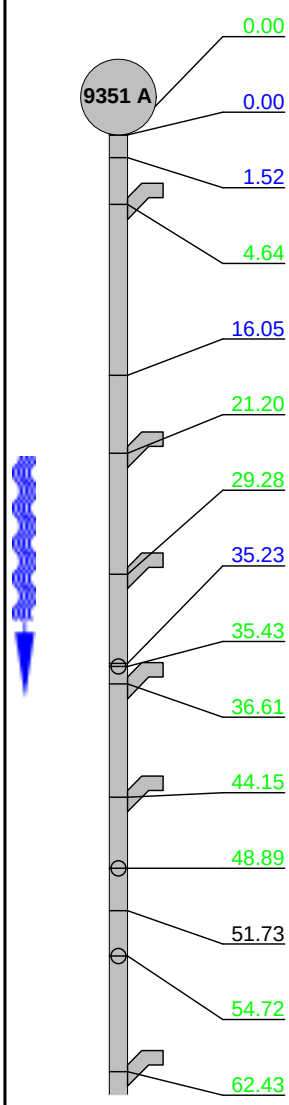
Place :	**Norwich**	Location details:		U/S MH :	**9351 A**
Road :	**Anglia Square**	Catchment:	**Plan 5 & 6**	U/S Depth :	**2.13**
Location	**Road**	Tape number :		D/S MH :	**9305**
Inspection	**9351 A (D/S) 9305**	Pipe Length		D/S Depth :	**2.74**

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**65.25 m**	Lining :	

Comment :

1:504

Depth: 2.13



Position	Code	Observation	Photo	Grade
0.00	MH	Start node type, manhole reference number: 9351 A		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
1.52	WL	Water level 10 % of the vertical dimension		(Serv) 0
4.64	JN	Junction from 11 O'Clock diameter: 100 mm		(Constr) 0
16.05	LR	Line deviates right		(Serv) 0
21.20	JN	Junction from 11 O'Clock diameter: 100 mm		(Constr) 0
29.28	JN	Junction from 11 O'Clock diameter: 150 mm		(Constr) 0
35.23	WL	Water level 5 % of the vertical dimension		(Serv) 0
35.43	JN	Junction from 12 O'Clock diameter: 150 mm		(Constr) 0
36.61	JN	Junction from 11 O'Clock diameter: 150 mm		(Constr) 0
44.15	CN	Connection other than junction from 11 O'Clock diameter: 150 mm		(Constr) 0
48.89	JN	Junction from 12 O'Clock diameter: 100 mm		(Constr) 0
51.73	REM	General remark 9305		(Misc) 0
54.72	JN	Junction from 12 O'Clock diameter: 100 mm		(Constr) 0
62.43	JN	Junction from 9 O'Clock diameter: 150 mm		(Constr) 0

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Inspection Report

Date :	Job number :	Weather :	Operator :	Section number :	PLR :
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**11**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Grade:
no rain or snow				**no**	

1:504	Position	Code	Observation	Photo	Grade
	65.25	SA	Survey abandoned (can't push coiler further)		(Misc) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**12**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**9305**
Road :	**Anglia Square**	Catchment:	**Plan 6 & 1**	U/S Depth :	**2.74**
Location	**Road**	Tape number :		D/S MH :	**9306**
Inspection	**9305 (D/S) 9306**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**42.93 m**	Lining :	

Comment :

1:345 Position	Code	Observation	Photo	Grade
Depth: 2.74				
9305				
0.00	MH	Start node type, manhole reference number: 9305		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
16.26	JN	Junction from 12 O'Clock diameter: 100 mm		(Constr) 0
17.64	JN	Junction from 2 O'Clock diameter: 100 mm		(Constr) 0
31.45	JN	Junction from 9 O'Clock diameter: 100 mm		(Constr) 0
33.19	JN	Junction from 2 O'Clock diameter: 100 mm		(Constr) 0
42.93	MHF	Finish node type, manhole reference number: 9306		(Constr) 0
9306				
Unable to lift				

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**13**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

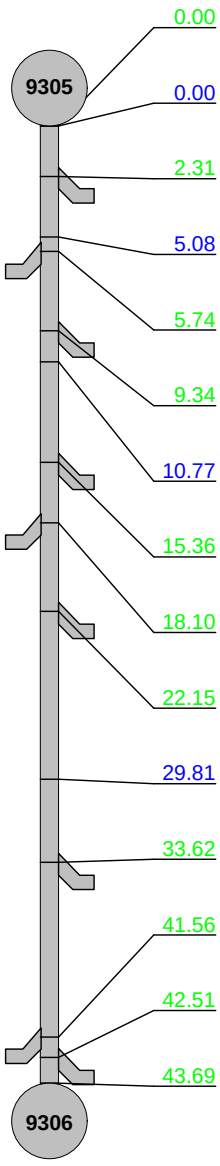
Place :	**Norwich**	Location details:		U/S MH :	**9306**
Road :	**Anglia Square**	Catchment:	**Plan 6 & 1**	U/S Depth :	
Location	**Road**	Tape number :		D/S MH :	**9305**
Inspection	**9305 (U/S) 9306**	Pipe Length		D/S Depth :	**2.12**

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**43.69 m**	Lining :	

Comment :

1:345 Position | **Code** | **Observation** | **Photo** | **Grade**

Depth: 2.12



Position	Code	Observation	Grade
0.00	MH	Start node type, manhole reference number: 9305	(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension	(Serv) 0
2.31	JN	Junction from 9 O'Clock diameter: 225 mm	(Constr) 0
5.08	DEX	Settled deposits, other 10 % cross-sectional area loss Debris	(Serv) 3
5.74	JN	Junction from 2 O'Clock diameter: 225 mm	(Constr) 0
9.34	JN	Junction from 11 O'Clock diameter: 225 mm	(Constr) 0
10.77	WL	Water level 20 % of the vertical dimension	(Serv) 0
15.36	JN	Junction from 11 O'Clock diameter: 225 mm	(Constr) 0
18.10	JN	Junction from 2 O'Clock diameter: 225 mm	(Constr) 0
22.15	JN	Junction from 11 O'Clock diameter: 225 mm	(Constr) 0
29.81	WL	Water level 5 % of the vertical dimension	(Serv) 0
33.62	JN	Junction from 11 O'Clock diameter: 225 mm	(Constr) 0
41.56	CN	Connection other than junction from 2 O'Clock diameter: 225 mm	(Constr) 0
42.51	JN	Junction from 11 O'Clock diameter: 150 mm	(Constr) 0
43.69	MHF	Finish node type, manhole reference number: 9306	(Constr) 0

Structural Defects | **Constructional Features**

Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**1**	**2**	**0.05**	**2**	**3**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**14**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**9305**
Road :	**Anglia Square**	Catchment:	**Plan 6**	U/S Depth :	**2.12**
Location	**Road**	Tape number :		D/S MH :	**9301**
Inspection	**9305 (D/S) 9301**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**7.41 m**	Lining :	

Comment :

1:60 Position	Code	Observation	Photo	Grade
Depth: 2.12				
0.00	MH	Start node type, manhole reference number: 9305		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
7.41	SA	Survey abandoned (can't push coiler further)		(Misc) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
29/10/2018	**Weston**	**no rain or snow**	**Draincare**	**15**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**9306**
Road :	**Anglia Square**	Catchment:	**Plan 1**	U/S Depth :	
Location	**Road**	Tape number :		D/S MH :	**9465 Br1**
Inspection	**9465 Br1 (U/S) 9306**	Pipe Length		D/S Depth :	**2.7**

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**300 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**9.95 m**	Lining :	

Comment :

1:90 Position	Code	Observation	Photo	Grade
Depth: 2.7				
9465 Br1				
0.00	MH	Start node type, manhole reference number: 9465 Br1		(Constr) 0
0.00	WL	Water level 5 % of the vertical dimension		(Serv) 0
0.00	DEX	Settled deposits, other 5 % cross-sectional area loss debris		(Serv) 2
2.69	JN	Junction from 12 O'Clock diameter: 100 mm		(Constr) 0
3.60	DEX	Settled deposits, other 5 % cross-sectional area loss debris		(Serv) 2
8.36	WL	Water level 10 % of the vertical dimension		(Serv) 0
9.95	MHF	Finish node type, manhole reference number: Drain run 9306		(Constr) 0
9306				
Unable to lift				

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**2**	**1**	**0.2**	**2**	**2**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
30/10/2018	**Weston**	**rain**	**Draincare**	**16**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**9256**
Road :	**Anglia Square**	Catchment:	**Plan 5**	U/S Depth :	**1.34**
Location	**Road**	Tape number :		D/S MH :	**9255**
Inspection	**9255 (U/S) 9256**	Pipe Length		D/S Depth :	**1.4**

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**8.84 m**	Lining :	

Comment :

1:75	Position	Code	Observation	Photo	Grade
Depth: 1.4					
9255					
	0.02	MH	Start node type, manhole reference number: 9255		(Constr) 0
	0.02	WL	Water level 5 % of the vertical dimension		(Serv) 0
	8.84	MHF	Finish node type, manhole reference number: 9256		(Constr) 0
9256					
Depth: 1.34					

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection report

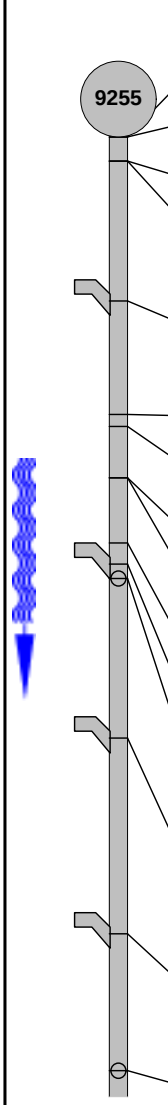
Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
30/10/2018	**Weston**	**rain**	**Draincare**	**17**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**9255**
Road :	**Anglia Square**	Catchment:	**Plan 5 & 6**	U/S Depth :	**1.4**
Location	**Road**	Tape number :		D/S MH :	**9305A**
Inspection	**9255 (D/S) 9305A**	Pipe Length		D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**60.82 m**	Lining :	

Comment :

1:432 Position	Code	Observation	Photo	Grade
Depth: 1.4				
0.00	MH	Start node type, manhole reference number: 9255		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
1.40	WL	Water level 5 % of the vertical dimension		(Serv) 0
1.40	CCJ	Crack, circumferential at joint from 12 O'Clock to 6 O'Clock		(Struct) 2
9.36	JN	Junction from 2 O'Clock diameter: 100 mm		(Constr) 0
15.86	REM	General remark 9351		(Misc) 0
16.54	LR	Line deviates right		(Serv) 0
19.50	LR	Line deviates right		(Serv) 0
19.50	WL	Water level 10 % of the vertical dimension		(Serv) 0
23.20	DEX	Settled deposits, other 20 % cross-sectional area loss Debris		(Serv) 3
24.41	JN	Junction from 3 O'Clock diameter: 150 mm		(Constr) 0
25.24	CN	Connection other than junction from 12 O'Clock diameter: 100 mm		(Constr) 0
34.36	JN	Junction from 3 O'Clock diameter: 150 mm		(Constr) 0
45.52	JN	Junction from 2 O'Clock diameter: 100 mm		(Constr) 0
53.37	CN	Connection other than junction from 12 O'Clock diameter: 100 mm		(Constr) 0



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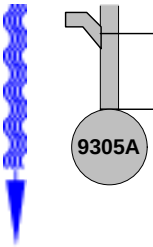
Inspection Report

Date :	Job number :	Weather :	Operator :	Section number :	PLR :
30/10/2018	**Weston**	**rain**	**Draincare**	**17**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Grade:
rain				**no**	

1:432	Position	Code	Observation	Photo	Grade
	56.51	JN	Junction from 2 O'Clock diameter: 100 mm		(Constr) 0
	60.82	MHF	Finish node type, manhole reference number: 9305A		(Constr) 0

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	**10**	**0.16**	**10**	**2**	**1**	**2**	**0.03**	**2**	**3**

Draincare

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Inspection report

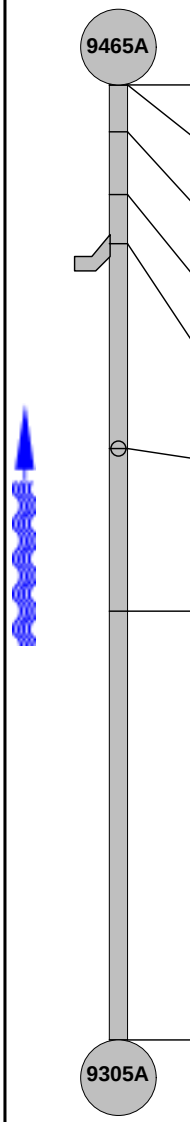
Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
30/10/2018	**Weston**	**rain**	**Draincare**	**18**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**9305A**
Road :	**Anglia Square**	Catchment:	**Plan 1 & 6**	U/S Depth :	
Location	**Road**	Tape number :		D/S MH :	**9465A**
Inspection	**9465A (U/S) 9305A**	Pipe Length		D/S Depth :	**2.1**

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**37.89 m**	Lining :	

Comment :

1:300 Position	Code	Observation	Photo	Grade
Depth: 2.1				
0.00	MH	Start node type, manhole reference number: 9465A		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
1.86	WL	Water level 5 % of the vertical dimension Flow		(Serv) 0
4.34	WL	Water level 10 % of the vertical dimension Flow		(Serv) 0
6.31	CN	Connection other than junction from 2 O'Clock diameter: 100 mm		(Constr) 0
14.42	JN	Junction from 12 O'Clock diameter: 100 mm		(Constr) 0
20.88	WL	Water level 20 % of the vertical dimension		(Serv) 0
37.89	MHF	Finish node type, manhole reference number: 9305A		(Constr) 0



Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
30/10/2018	**Weston**	**rain**	**Draincare**	**19**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**9465A**
Road :	**Anglia Square**	Catchment:	**Plan 1**	U/S Depth :	**2.1**
Location	**Road**	Tape number :		D/S MH :	**9465**
Inspection	**9465A (D/S) 9465**	Pipe Length		D/S Depth :	**2.75**

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**1.72 m**	Lining :	

Comment :

1:50	Position	Code	Observation	Photo	Grade
Depth: 2.1					
9465A					
	0.00	MH	Start node type, manhole reference number: 9465A		(Constr) 0
	0.00	WL	Water level 10 % of the vertical dimension Flow		(Serv) 0
	1.72	MHF	Finish node type, manhole reference number: 9465		(Constr) 0
9465					
Depth: 2.75					

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection report

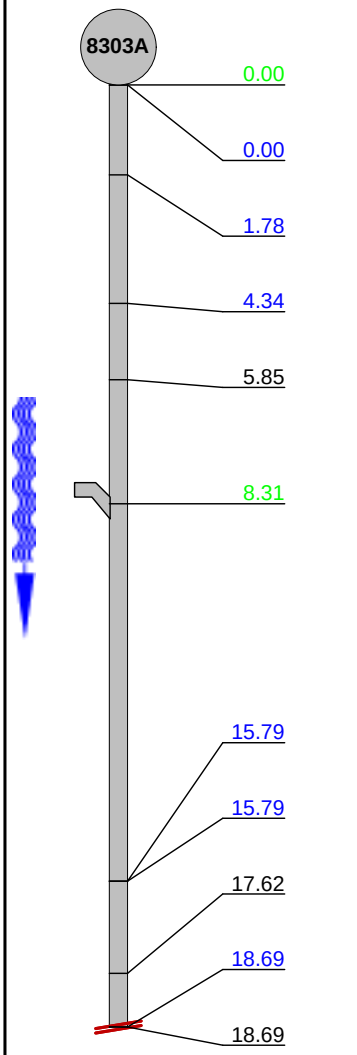
Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
30/10/2018	**Weston**	**rain**	**Draincare**	**20**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**8303A**
Road :	**Anglia Square**	Catchment:	**Plan 7**	U/S Depth :	**1.08**
Location	**Road**	Tape number :		D/S MH :	**8303C**
Inspection	**8303A (D/S) 8303C**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**18.69 m**	Lining :	

Comment :

1:150 Position	Code	Observation	Photo	Grade
Depth: 1.08				
0.00	MH	Start node type, manhole reference number: 8303A		(Constr) 0
0.00	WL	Water level 5 % of the vertical dimension		(Serv) 0
1.78	WL	Water level 10 % of the vertical dimension		(Serv) 0
4.34	DEX	Settled deposits, other 10 % cross-sectional area loss Waste		(Serv) 3
5.85	REM	General remark 8303B		(Misc) 0
8.31	CN	Connection other than junction from 2 O'Clock diameter: 100 mm		(Constr) 0
15.79	WL	Water level 20 % of the vertical dimension		(Serv) 0
15.79	DEX	Settled deposits, other 20 % cross-sectional area loss waste		(Serv) 3
17.62	CUW	Loss of vision, camera under water		(Misc) 0
18.69	OBZ	Other obstacles, other from 3 O'Clock to 9 O'Clock 60 % cross-sectional area loss Debris	21_21_153_A.jpg	(Serv) 5
18.69	SA	Survey abandoned		(Misc) 0



Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**3**	**10**	**0.75**	**14**	**5**

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Inspection pictures

Place :	Road :	Date :	Section number :	PLR Suffix :
Norwich	**Anglia Square**	**30/10/2018**	**20**	**X**

Photo: 21_21_153_A.jpg, 00:02:04
18.69m, Other obstacles, other from 3 O'Clock to 9 O'Clock
60 % cross-sectional area loss Debris

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
30/10/2018	**Weston**	**rain**	**Draincare**	**21**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**8303A**
Road :	**Anglia Square**	Catchment:	**Plan 7**	U/S Depth :	**1.08**
Location	**Road**	Tape number :		D/S MH :	**8303C**
Inspection	**8303A (D/S) 8303C**	Pipe Length		D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**20.88 m**	Lining :	

Comment :

1:165 Position	Code	Observation	Photo	Grade
Depth: 1.08				
8303A				
0.00	MH	Start node type, manhole reference number: 8303A		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
2.35	WL	Water level 10 % of the vertical dimension		(Serv) 0
3.96	DEX	Settled deposits, other 30 % cross-sectional area loss debris	22_22_157_A.jpg	(Serv) 4
5.87	REM	General remark 8303B		(Misc) 0
8.61	CN	Connection other than junction from 2 O'Clock diameter: 100 mm		(Constr) 0
15.55	DEX	Settled deposits, other 20 % cross-sectional area loss debris		(Serv) 3
17.42	CUW	Loss of vision, camera under water		(Misc) 0
20.88	MHF	Finish node type, manhole reference number: 8303C		(Constr) 0
8303C				

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**2**	**5**	**0.34**	**7**	**4**

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Inspection pictures

Place :	Road :	Date :	Section number :	PLR Suffix :
Norwich	**Anglia Square**	**30/10/2018**	**21**	**X**

Photo: 22_22_157_A.jpg, 00:00:29
3.96m, Settled deposits, other 30 % cross-sectional area loss
debris

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
31/10/2018	**Weston**	**no rain or snow**		**22**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	

Place :		Location details:		U/S MH :	**9465**
Road :	**Anglia square**	Catchment:	**Plan 1**	U/S Depth :	
Location	**Road**	Tape number :		D/S MH :	**9465B**
Inspection	**9465 (D/S) 9465B**	Pipe Length	0.00 m	D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**375 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	
Total length :	**6.10 m**	Lining :	

Comment :

1:50	Position	Code	Observation	Photo	Grade
9465					
	0.00	MH	Start node type, manhole, reference number: 9465		(Constr) 0
	0.00	WL	Water level, 0 % of the vertical dimension		(Serv) 0
	1.52	WL	Water level, 10 % of the vertical dimension		(Serv) 0
	4.99	LL	Line deviates left		(Serv) 0
	5.20	MHF	Finish node type, manhole reference number: 9465B		(Constr) 0
9465B					

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
31/10/2018	**Weston**	**no rain or snow**	**Draincare**	**23**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :		Location details:		U/S MH :	**9465**
Road :	**Anglia square**	Catchment:	**Plan 1**	U/S Depth :	**2.75**
Location	**Road**	Tape number :		D/S MH :	**0453**
Inspection	**9465 (D/S) 0453**	Pipe Length	0.00 m	D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**375 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	
Total length :	**23.97 m**	Lining :	

Comment :

1:195 **Depth: 2.75**

Position	Code	Observation	Photo	Grade
9465				
0.00	MH	Start node type, manhole, reference number: 9465		(Constr) 0
0.00	WL	Water level, 0 % of the vertical dimension		(Serv) 0
1.79	WL	Water level, 10 % of the vertical dimension		(Serv) 0
4.93	REM	General remark, 9465B		(Misc) 0
4.93	LL	Line deviates left		(Serv) 0
10.10	DES	Settled deposits, fine, 5 % cross-sectional area loss		(Serv) 2
23.97	MHF	Finish node type, manhole, reference number: 0453		(Constr) 0
0453				

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**1**	**1**	**0.04**	**1**	**2**

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Inspection report

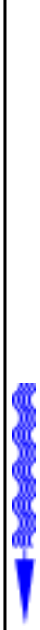
Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
31/10/2018	**Weston**	**no rain or snow**	**Draincare**	**24**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :		Location details:		U/S MH :	**9459**
Road :	**Anglia square**	Catchment:	**Plan 1**	U/S Depth :	**2.99**
Location	**Road**	Tape number :		D/S MH :	**0456**
Inspection	**9459 (D/S) 0456**	Pipe Length	0.00 m	D/S Depth :	**2.91**

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**675 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	
Total length :	**32.69 m**	Lining :	

Comment :

1:270 **Depth: 2.99**



Position	Code	Observation	Photo	Grade
9459				
0.00	MH	Start node type, manhole, reference number: 9459		(Constr) 0
0.00	WL	Water level, 5 % of the vertical dimension		(Serv) 0
10.01	CN	Connection other than junction, at 2 o'clock, diameter: 150 mm		(Constr) 0
25.59	REM	General remark, buried 0453		(Misc) 0
27.24	WL	Water level, 20 % of the vertical dimension		(Serv) 0
28.49	CN	Connection other than junction, at 12 o'clock, diameter: 150 mm		(Constr) 0
32.24	OBZ	Other obstacles, other, from 6 o'clock, to 7 o'clock, 10 % cross-sectional area loss, hard material		(Serv) 3
32.69	SA	Survey abandoned, obstruction in line (to be surveyed up from 0456)		(Misc) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**1**	**10**	**0.31**	**10**	**5**

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Draincare

Inspection report

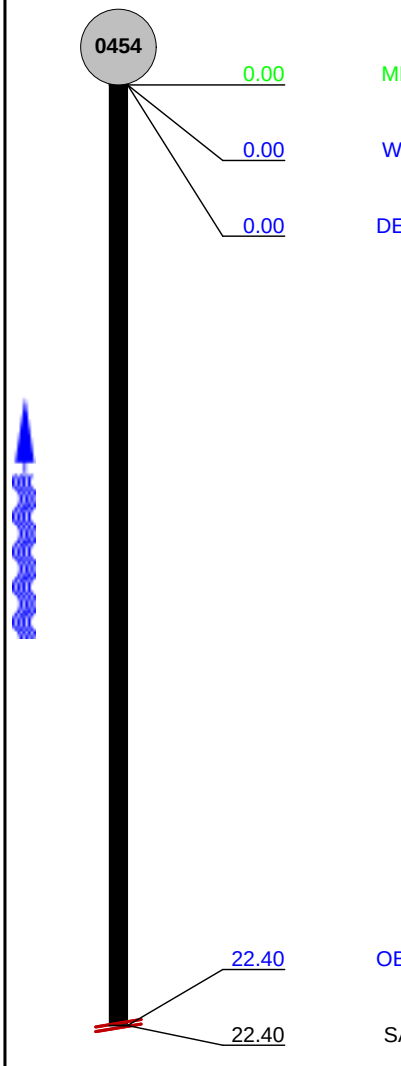
Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
31/10/2018	**Weston**	**no rain or snow**	**Draincare**	**25**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :		Location details:		U/S MH :	**9459**
Road :	**Anglia square**	Catchment:	**Plan 2 & 1**	U/S Depth :	**2.99**
Location	**Road**	Tape number :		D/S MH :	**0454**
Inspection	**0454 (U/S) 9459**	Pipe Length	0.00 m	D/S Depth :	**2.91**

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**675 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	
Total length :	**22.40 m**	Lining :	

Comment :

1:180 Position	Code	Observation	Photo	Grade
Depth: 2.91				
0.00	MH	Start node type, manhole, reference number: 0454		(Constr) 0
0.00	WL	Water level, 10 % of the vertical dimension		(Serv) 0
0.00	DES	Settled deposits, fine, 20 % cross-sectional area loss		(Serv) 3
22.40	OBZ	Other obstacles, other, from 6 o'clock, to 7 o'clock, 10 % cross-sectional area loss, hard material		(Serv) 3
22.40	SA	Survey abandoned, obstruction (cross over point from Section 24)		(Misc) 0



Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**2**	**10**	**0.54**	**12**	**5**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
31/10/2018	**Weston**	**no rain or snow**	**Draincare**	**26**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

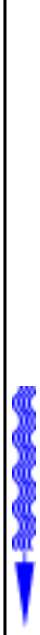
Place :		Location details:		U/S MH :	**0454**
Road :	**Anglia square**	Catchment:	**Plan 2**	U/S Depth :	**2.91**
Location	**Road**	Tape number :		D/S MH :	**0456**
Inspection	**0454 (D/S) 0456**	Pipe Length	0.00 m	D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**675 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	
Total length :	**27.40 m**	Lining :	

Comment :

1:225 **Position** **Code** **Observation** **Photo** **Grade**

Depth: 2.91



Position	Code	Observation	Photo	Grade
0454				
0.00	MH	Start node type, manhole, reference number: 0456		(Constr) 0
0.00	WL	Water level, 20 % of the vertical dimension		(Serv) 0
1.57	DES	Settled deposits, fine, 20 % cross-sectional area loss		(Serv) 3
13.70	LL	Line deviates left		(Serv) 0
15.00	REM	General remark, 0455		(Misc) 0
16.10	WL	Water level, 40 % of the vertical dimension		(Serv) 0
22.15	DES	Settled deposits, fine, 30 % cross-sectional area loss	28_28_197_A.jpg	(Serv) 4
23.22	LR	Line deviates right		(Serv) 0
23.73	REM	General remark, 0456		(Misc) 0
25.67	DES	Settled deposits, fine, 30 % cross-sectional area loss	28_28_200_A.jpg	(Serv) 4
25.67	WL	Water level, 40 % of the vertical dimension		(Serv) 0
27.40	SA	Survey abandoned, debris/silt		(Misc) 0

Structural Defects | **Constructional Features**

Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**3**	**5**	**0.44**	**12**	**4**

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Inspection pictures

Place :	Road :	Date :	Section number :	PLR Suffix :
	Anglia square	**31/10/2018**	**26**	

Photo: 28_28_197_A.jpg, 00:06:20
22.15m, Settled deposits, fine, 30 % cross-sectional area loss

Photo: 28_28_200_A.jpg, 00:07:28
25.67m, Settled deposits, fine, 30 % cross-sectional area loss

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Inspection report

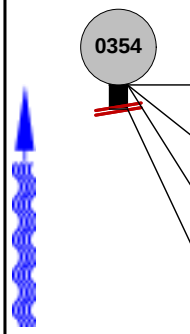
Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
31/10/2018	**Weston**	**no rain or snow**	**Draincare**	**27**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :		Location details:		U/S MH :	**0456**
Road :	**Anglia square**	Catchment:	**Plan 2**	U/S Depth :	**2.91**
Location	**Road**	Tape number :		D/S MH :	**0354**
Inspection	**0354 (U/S) 0456**	Pipe Length	0.00 m	D/S Depth :	**3**

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**675 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	
Total length :	**0.16 m**	Lining :	

Comment :

1:50 Position	Code	Observation	Photo	Grade
Depth: 3				
0.00	MH	Start node type, manhole, reference number: 0354		(Constr) 0
0.00	WL	Water level, 10 % of the vertical dimension		(Serv) 0
0.00	DES	Settled deposits, fine, 40 % cross-sectional area loss	29_29_204_A.jpg	(Serv) 4
0.16	SA	Survey abandoned, silt		(Misc) 0



Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**1**	**5**	**31.25**	**5**	**5**

Draincare

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Inspection pictures

Place :	Road :	Date :	Section number :	PLR Suffix :
	Anglia square	**31/10/2018**	**27**	

Photo: 29_29_204_A.jpg, 00:00:05
0m, Settled deposits, fine, 40 % cross-sectional area loss

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
31/10/2018	**Weston**	**no rain or snow**	**Draincare**	**28**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :		Location details:		U/S MH :	**0354**
Road :	**Anglia square**	Catchment:	**Plan 2**	U/S Depth :	**3**
Location	**Road**	Tape number :		D/S MH :	**1351**
Inspection	**0354 (D/S) 1351**	Pipe Length	0.00 m	D/S Depth :	

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**675 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	
Total length :	**97.16 m**	Lining :	

Comment :

1:780 **Depth: 3**

Position	Code	Observation	Photo	Grade
0354				
0.00	MH	Start node type, manhole, reference number: 0354		(Constr) 0
0.00	WL	Water level, 20 % of the vertical dimension		(Serv) 0
4.36	DES	Settled deposits, fine, 20 % cross-sectional area loss		(Serv) 3
14.15	DEE	Attached deposits, encrustation, from 3 o'clock, to 5 o'clock, 20 % cross-sectional area loss		(Serv) 3
14.91	REM	General remark, 0351		(Misc) 0
33.04	REM	General remark, 1352		(Misc) 0
43.65	REM	General remark, 0352A		(Misc) 0
57.56	JN	Junction, at 9 o'clock, diameter: 675 mm		(Constr) 0
68.12	LR	Line deviates right		(Serv) 0
68.70	REM	General remark, 1353		(Misc) 0
71.67	DES	Settled deposits, fine, 30 % cross-sectional area loss	30_30_217_A.jpg	(Serv) 4
97.16	MHF	Finish node type, manhole reference number: 1351		(Constr) 0
1351				

AW Main in road

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**3**	**5**	**0.09**	**9**	**4**

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Inspection pictures

Place :	Road :	Date :	Section number :	PLR Suffix :
	Anglia square	**31/10/2018**	**28**	

Photo: 30_30_217_A.jpg, 00:16:24
71.67m, Settled deposits, fine, 30 % cross-sectional area loss

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Inspection report

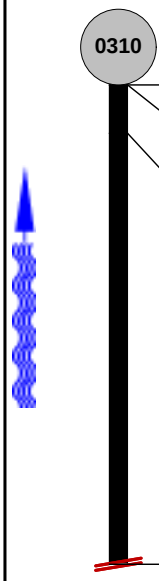
Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
31/10/2018	**Weston**	**no rain or snow**	**Draincare**	**29**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :		Location details:		U/S MH :	**0308**
Road :	**Anglia square**	Catchment:	**Plan 3**	U/S Depth :	
Location	**Other Pedestrian area**	Tape number :		D/S MH :	**0310**
Inspection	**0310 (U/S) 0308**	Pipe Length	0.00 m	D/S Depth :	**3.51**

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**300 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Vitrified clay**
Total length :	**3.17 m**	Lining :	

Comment :

1:50 Position	Code	Observation	Photo	Grade
Depth: 3.51				
0.00	MH	Start node type, manhole, reference number: 0310		(Constr) 0
0.00	WL	Water level, 30 % of the vertical dimension		(Serv) 0
0.32	CUW	Loss of vision, camera under water		(Misc) 0
3.17	SA	Survey abandoned, to much flow & debris underwater		(Misc) 0



Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
31/10/2018	**Weston**	**no rain or snow**	**Draincare**	**30**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :		Location details:		U/S MH :	**0310**
Road :	**Anglia square**	Catchment:	**Plan 3**	U/S Depth :	
Location	**Other Pedestrian area**	Tape number :		D/S MH :	**0309**
Inspection	**0310 (D/S) 0309**	Pipe Length	0.00 m	D/S Depth :	

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**375 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Vitrified clay**
Total length :	**8.77 m**	Lining :	

Comment :

1:75	Position	Code	Observation	Photo	Grade
0310					
	0.00	MH	Start node type, manhole, reference number: 0310		(Constr) 0
	0.00	WL	Water level, 40 % of the vertical dimension		(Serv) 0
	1.71	REM	General remark, suspect burst water main due to flow from joint		(Misc) 0
	8.77	MHF	Finish node type, manhole reference number: 0309 (AW Main in road)		(Constr) 0
0309					

AW Main in road

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection report

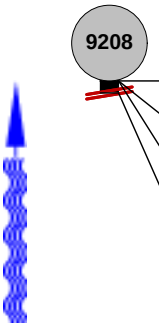
Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
01/11/2018	**Weston**	**no rain or snow**	**Draincare**	**31**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :		Location details:		U/S MH :	**9305**
Road :	**Anglia square**	Catchment:	**Plan 5**	U/S Depth :	**2.12**
Location	**Other Pedestrian area**	Tape number :		D/S MH :	**9208**
Inspection	**9208 (U/S) 9305**	Pipe Length	0.00 m	D/S Depth :	**2.29**

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Vitrified clay**
Total length :	**0.08 m**	Lining :	

Comment :

1:50 Position	Code	Observation	Photo	Grade
Depth: 2.29				
0.00	MH	Start node type, manhole, reference number: 9208		(Constr) 0
0.00	WL	Water level, 80 % of the vertical dimension		(Serv) 0
0.00	CUW	Loss of vision, camera under water		(Misc) 0
0.08	SA	Survey abandoned, to much flow		(Misc) 0



Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
01/11/2018	**Weston**	**no rain or snow**	**Draincare**	**32**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :		Location details:		U/S MH :	**9208**
Road :	**Anglia square**	Catchment:	**Plan 5**	U/S Depth :	**2.08**
Location	**Other Pedestrian area**	Tape number :		D/S MH :	**9351A**
Inspection	**9208 (D/S) 9351A**	Pipe Length	0.00 m	D/S Depth :	**2.13**

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**225 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Vitrified clay**
Total length :	**16.14 m**	Lining :	

Comment :

1:135 Position	Code	Observation	Photo	Grade
Depth: 2.08				
9208				
0.00	MH	Start node type, manhole, reference number: 9208		(Constr) 0
0.00	WL	Water level, 0 % of the vertical dimension		(Serv) 0
0.00	CN	Connection other than junction, at 11 o'clock, diameter: 150 mm		(Constr) 0
0.72	JN	Junction, at 12 o'clock, diameter: 100 mm		(Constr) 0
1.53	JN	Junction, at 11 o'clock, diameter: 100 mm		(Constr) 0
5.95	JN	Junction, at 1 o'clock, diameter: 100 mm		(Constr) 0
7.54	CN	Connection other than junction, at 3 o'clock, diameter: 150 mm		(Constr) 0
9.23	CN	Connection other than junction, at 2 o'clock, diameter: 100 mm		(Constr) 0
11.85	CN	Connection other than junction, at 11 o'clock, diameter: 150 mm, vast amounts of water flow		(Constr) 0
13.23	WL	Water level, 30 % of the vertical dimension		(Serv) 0
16.14	MHF	Finish node type, manhole, reference number: 9351A		(Constr) 0
9351A				
Depth: 2.13				

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
01/11/2018	**Weston**	**no rain or snow**	**Draincare**	**33**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :		Location details:		U/S MH :	**9460**
Road :	**Anglia square**	Catchment:	**Plan 1**	U/S Depth :	**3.17**
Location	**Other Pedestrian area**	Tape number :		D/S MH :	**9459**
Inspection	**9460 (D/S) 9459**	Pipe Length	0.00 m	D/S Depth :	**2.99**

Use:	**Surface water**	Pipe shape :	**Egg shaped**
Year laid :		Pipe size :	**675 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Brick**
Total length :	**35.31 m**	Lining :	

Comment :

1:285 Position	Code	Observation	Photo	Grade
Depth: 3.17				
9460				
0.01	MH	Start node type, manhole, reference number: 9460		(Constr) 0
0.02	WL	Water level, 30 % of the vertical dimension		(Serv) 0
1.45	CN	Connection other than junction, at 11 o'clock, diameter: 150 mm		(Constr) 0
4.29	CN	Connection other than junction, at 3 o'clock, diameter: 150 mm		(Constr) 0
4.29	REM	General remark, possible mh		(Misc) 0
9.78	CN	Connection other than junction, at 3 o'clock, diameter: 150 mm		(Constr) 0
22.71	CN	Connection other than junction, at 3 o'clock, diameter: 150 mm		(Constr) 0
26.81	CN	Connection other than junction, at 11 o'clock, diameter: 150 mm		(Constr) 0
29.20	CN	Connection other than junction, at 11 o'clock, diameter: 150 mm		(Constr) 0
35.31	MHF	Finish node type, manhole, reference number: 9459		(Constr) 0
9459				
Depth: 2.99				

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1

Draincare

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Inspection report

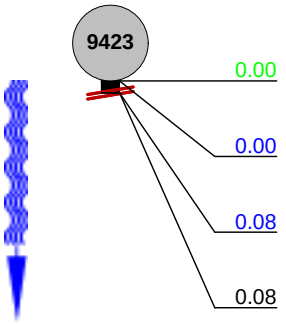
Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
01/11/2018	**Weston**	**no rain or snow**	**Draincare**	**34**	
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
no rain or snow				**no**	**Draincare**

Place :		Location details:		U/S MH :	**9423**
Road :	**Anglia square**	Catchment:	**Plan 1**	U/S Depth :	**2.4**
Location	**Other Pedestrian area**	Tape number :		D/S MH :	**9401**
Inspection	**9423 (D/S) 9401**	Pipe Length	0.00 m	D/S Depth :	**2.23**

Use:	**Foul**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**300 mm**
Purpose :	**Routine inspection of condition**	Pipe material :	**Vitrified clay**
Total length :	**0.08 m**	Lining :	

Comment :

1:50 Position	Code	Observation	Photo	Grade
Depth: 2.4				
0.00	MH	Start node type, manhole, reference number: 9423		(Constr) 0
0.00	WL	Water level, 50 % of the vertical dimension		(Serv) 0
0.08	OBZ	Other obstacles, other, from 3 o'clock, to 9 o'clock, 20 % cross-sectional area loss, assumed scale under flow	36_36_254_A.jpg	(Serv) 5
0.08	SA	Survey abandoned, to much flow		(Misc) 0



Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**1**	**10**	**125**	**10**	**5**

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Inspection pictures

Place :	Road :	Date :	Section number :	PLR Suffix :
	Anglia square	**01/11/2018**	**34**	

Photo: 36_36_254_A.jpg, 00:00:46
0.08m, Other obstacles, other, from 3 o'clock, to 9 o'clock, 20 % cross-sectional area loss, assumed scale under flow

Draincare

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Inspection report

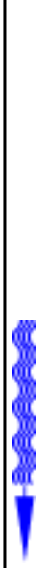
Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
01/11/2018	**Weston**	**rain**	**Draincare**	**35**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**MH1 outlet1**
Road :	**Edward street**	Catchment:	**Site1 Plan**	U/S Depth :	**0.98**
Location	**Road**	Tape number :		D/S MH :	**Main**
Inspection	**MH1 outlet1 (D/S) Main**	Pipe Length		D/S Depth :	

Use:	**Other (state in comments)**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**6.25 m**	Lining :	

Comment : **Edward Street Site1 Plan. Assumed SW**

1:60 **Depth: 0.98**



Position	Code	Observation	Photo	Grade
MH1 outlet1				
0.00	MH	Start node type, manhole reference number: MH1 outlet1		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
0.70	DEX	Settled deposits, other 20 % cross-sectional area loss Debris		(Serv) 3
1.00	CC	Crack, circumferential from 9 O'Clock to 3 O'Clock		(Struct) 2
1.47	LR	Line deviates right		(Serv) 0
2.06	OJL	Open joint, large		(Struct) 1
2.23	FM	Fracture, multiple from 9 O'Clock to 3 O'Clock	38_38_263_A.jpg	(Struct) 4
3.03	FL	Fracture, longitudinal from 2 O'Clock		(Struct) 3
3.03	LL	Line deviates left		(Serv) 0
3.03	LD	Line deviates down		(Serv) 0
5.85	LD	Line deviates down		(Serv) 0
Main				
5.96	LR	Line deviates right		(Serv) 0
6.25	BRF	Finish node type, major connection without manhole reference number: Main		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
4	**80**	**21.12**	**132**	**4**	**1**	**2**	**0.32**	**2**	**3**

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Inspection pictures

Place :	Road :	Date :	Section number :	PLR Suffix :
Norwich	**Edward street**	**01/11/2018**	**35**	**X**

Photo: 38_38_263_A.jpg, 00:00:49
2.23m, Fracture, multiple from 9 O'Clock to 3 O'Clock

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
30/10/2018	**Weston**	**rain**	**Draincare**	**36**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**MH1 outlet2**
Road :	**Edward street**	Catchment:	**Site1 Plan**	U/S Depth :	**0.97**
Location	**Road**	Tape number :		D/S MH :	**Unknown**
Inspection	**MH1 outlet2 (D/S) Unknown**	Pipe Length		D/S Depth :	

Use:	**Other (state in comments)**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**1.59 m**	Lining :	

Comment : **Edward Street Site1 Plan. Assumed FW**

1:50 Position	Code	Observation	Photo	Grade
Depth: 0.97				
MH1 outlet2				
0.00	MH	Start node type, manhole reference number: MH1 outlet2		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
0.08	JN	Junction from 3 O'Clock diameter: 100 mm		(Constr) 0
0.19	DEX	Settled deposits, other 5 % cross-sectional area loss debris		(Serv) 2
0.19	LR	Line deviates right		(Serv) 0
1.29	FM	Fracture, multiple at 12 O'Clock	39_39_275_A.jpg	(Struct) 4
1.59	OBZ	Other obstacles, other at 12 O'Clock 70 % cross-sectional area loss debris / rubble	39_39_276_A.jpg	(Serv) 5
1.59	SA	Survey abandoned Debris / rubble		(Misc) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	**80**	**50.31**	**80**	**4**	**2**	**10**	**6.92**	**11**	**5**

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Inspection pictures

Place :	Road :	Date :	Section number :	PLR Suffix :
Norwich	**Edward street**	**30/10/2018**	**36**	**X**

Photo: 39_39_275_A.jpg, 00:00:20
1.29m, Fracture, multiple at 12 O'Clock

Photo: 39_39_276_A.jpg, 00:00:32
1.59m, Other obstacles, other at 12 O'Clock 70 % cross-sectional area loss debris / rubble

Draincare

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Inspection report

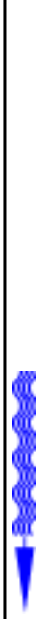
Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
30/10/2018	**Weston**	**rain**	**Draincare**	**37**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**MH4**
Road :	**Edward street**	Catchment:	**Site1 Plan**	U/S Depth :	**1.06**
Location	**Other (state in comments)**	Tape number :		D/S MH :	**MH5**
Inspection	**MH4 (D/S) MH5**	Pipe Length		D/S Depth :	

Use:	**Other (state in comments)**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**22.98 m**	Lining :	

Comment : **Edward Street Site1 Plan. Unknown FW or SW.**

1:195 **Depth: 1.06**



Position	Code	Observation	Photo	Grade
MH4				
0.00	MH	Start node type, manhole reference number: MH4		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
10.00	LR	Line deviates right		(Serv) 0
10.04	JN	Junction from 3 O'Clock diameter: 150 mm		(Constr) 0
10.04	JN	Junction from 9 O'Clock diameter: 150 mm		(Constr) 0
10.21	JN	Junction from 12 O'Clock diameter: 150 mm		(Constr) 0
10.73	LR	Line deviates right		(Serv) 0
13.11	CC	Crack, circumferential from 9 O'Clock to 3 O'Clock		(Struct) 2
14.80	RF	Roots, fine		(Serv) 2
16.67	LD	Line deviates down		(Serv) 0
20.22	LD	Line deviates down		(Serv) 0
22.06	LD	Line deviates down		(Serv) 0
MH5				
22.98	BRF	Finish node type, major connection without manhole reference number: MH5		(Constr) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
2	**10**	**0.48**	**11**	**2**	**0**	**0**	**0**	**0**	**1**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
01/11/2018	**Weston**	**rain**	**Draincare**	**38**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**MH5 Outl 1**
Road :	**Edward street site1**	Catchment:	**Site1 Plan**	U/S Depth :	**1.08**
Location	**Other (state in comments)**	Tape number :		D/S MH :	**Unknown**
Inspection	**MH5 Outl 1 (D/S) Unknown**	Pipe Length		D/S Depth :	

Use:	**Other (state in comments)**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**11.74 m**	Lining :	

Comment : **Edward Street Site1 Plan. Assumed FW**

1:105 Position	Code	Observation	Photo	Grade
Depth: 1.08				
MH5 Outl 1				
0.00	MH	Start node type, manhole reference number: Mh5/1		(Constr) 0
0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
0.02	LR	Line deviates right		(Serv) 0
1.67	CC	Crack, circumferential from 9 O'Clock to 3 O'Clock		(Struct) 2
9.41	LD	Line deviates down		(Serv) 0
10.74	LD	Line deviates down		(Serv) 0
11.74	BRF	Finish node type, major connection without manhole reference number: Unknown		(Constr) 0
Unknown				

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
1	**10**	**0.85**	**10**	**2**	**0**	**0**	**0**	**0**	**1**

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
01/11/2018	**Weston**	**rain**	**Draincare**	**39**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**MH5 Outl 2**
Road :	**Edward street site1**	Catchment:	**Site1 Plan**	U/S Depth :	**1.3**
Location	**Other (state in comments)**	Tape number :		D/S MH :	**Unknown**
Inspection	**MH5 Outl 2 (D/S) Unknown**	Pipe Length		D/S Depth :	

Use:	**Other (state in comments)**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**100 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Vitrified clay**
Total length :	**0.00 m**	Lining :	

Comment : **Edward Street Site1 Plan. Assumed SW**

1:50 Position	Code	Observation	Photo	Grade
Depth: 1.3				
MH5 Outl 2				
0.00	MH	Start node type, manhole reference number: Mh5/2		(Constr) 0
0.00	WL	Water level 5 % of the vertical dimension		(Serv) 0
0.00	RM	Roots, mass 10 % cross-sectional area loss		(Serv) 3
0.00	DES	Settled deposits, fine 50 % cross-sectional area loss	42_42_301_A.jpg	(Serv) 4
0.00	SA	Survey abandoned IC trap full of silt/roots		(Misc) 0

Structural Defects | **Constructional Features**
Service Defects | **Miscellaneous Features**

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**2**	**9**	**0**	**9**	**4**

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Inspection pictures

Place :	Road :	Date :	Section number :	PLR Suffix :
Norwich	**Edward street site1**	**01/11/2018**	**39**	**X**

Photo: 42_42_301_A.jpg, 00:00:05
0m, Settled deposits, fine 50 % cross-sectional area loss

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Inspection report

Date :	Job number :	Weather :	Operator :	Section number :	PLR SUFFIX:
31/10/2018	**Weston**	**rain**	**Draincare**	**40**	**X**
Weather	Vehicle :	Camera :	Preset :	Cleaned :	Operator :
rain				**no**	**Draincare**

Place :	**Norwich**	Location details:		U/S MH :	**0457A**
Road :	**Edward street site2**	Catchment:	**Site2 Plan**	U/S Depth :	**1.2**
Location	**Other (state in comments)**	Tape number :		D/S MH :	**0457**
Inspection	**0457A (D/S) 0457**	Pipe Length		D/S Depth :	**1.47**

Use:	**Surface water**	Pipe shape :	**Circular**
Year laid :		Pipe size :	**150 mm**
Purpose :	**Other (state in remarks)**	Pipe material :	**Pitch fibre**
Total length :	**5.74 m**	Lining :	

Comment :

1:60	Position	Code	Observation	Photo	Grade
Depth: 1.2					
0457A					
	0.00	MH	Start node type, manhole reference number: 0457A		(Constr) 0
	0.00	WL	Water level 0 % of the vertical dimension		(Serv) 0
	5.74	MHF	Finish node type, manhole reference number: 0457		(Constr) 0
0457					
Depth: 1.47					

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

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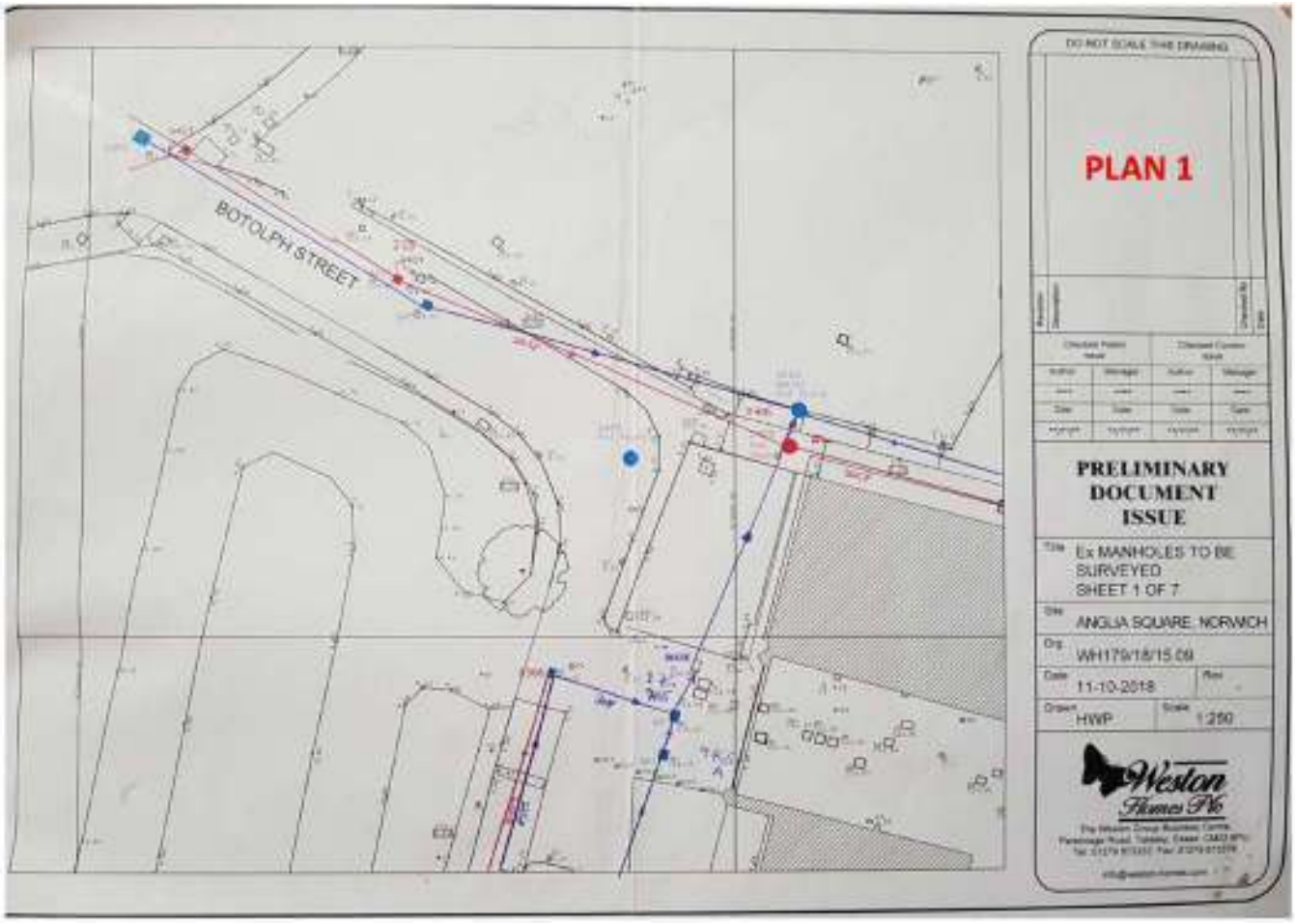
Date:	Job # : **Weston**	Weather : **rain**	Operator : **Draincare**	Section # : **40**	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : **no**	Rate :

Street 1 : **Edward street site2**	City : **Norwich**	Section type : **unknown**
Street 2 :	Map # 1 :	Map # 2 :
VCR # :	Media # :	US MH : **0457A**
DS MH : **0457**	Section length : **5.74 m**	Joint length :
Remark :		



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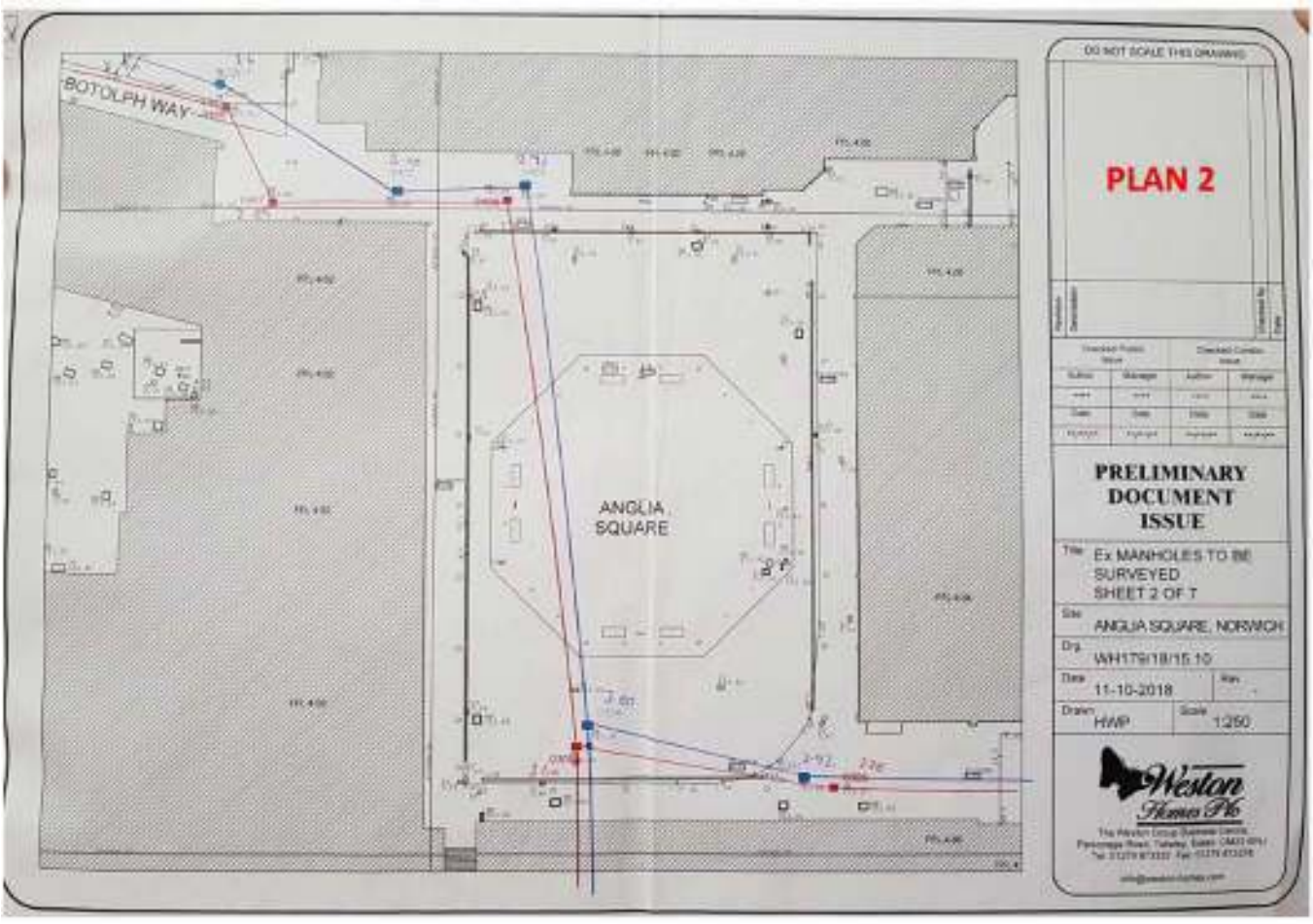
Date:	Job # : **Weston**	Weather : **rain**	Operator : **Draincare**	Section # : **40**	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : **no**	Rate :

Street 1 : **Edward street site2**	City : **Norwich**	Section type : **unknown**
Street 2 :	Map # 1 :	Map # 2 :
VCR # :	Media # :	US MH : **0457A**
DS MH : **0457**	Section length : **5.74 m**	Joint length :
Remark :		



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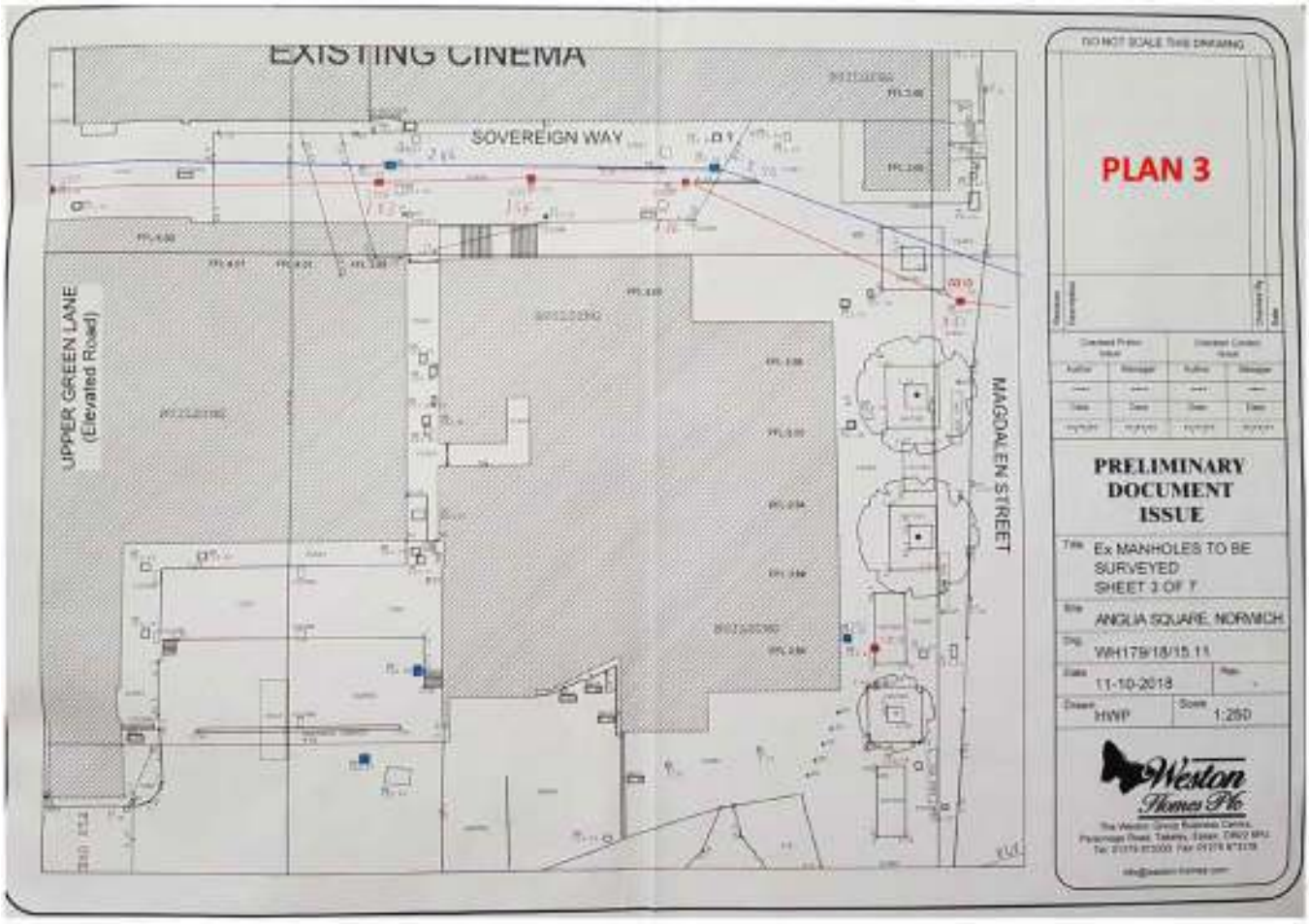
Date:	Job # : **Weston**	Weather : **rain**	Operator : **Draincare**	Section # : **40**	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : **no**	Rate :

Street 1 : **Edward street site2**	City : **Norwich**	Section type : **unknown**
Street 2 :	Map # 1 :	Map # 2 :
VCR # :	Media # :	US MH : **0457A**
DS MH : **0457**	Section length : **5.74 m**	Joint length :

Remark :



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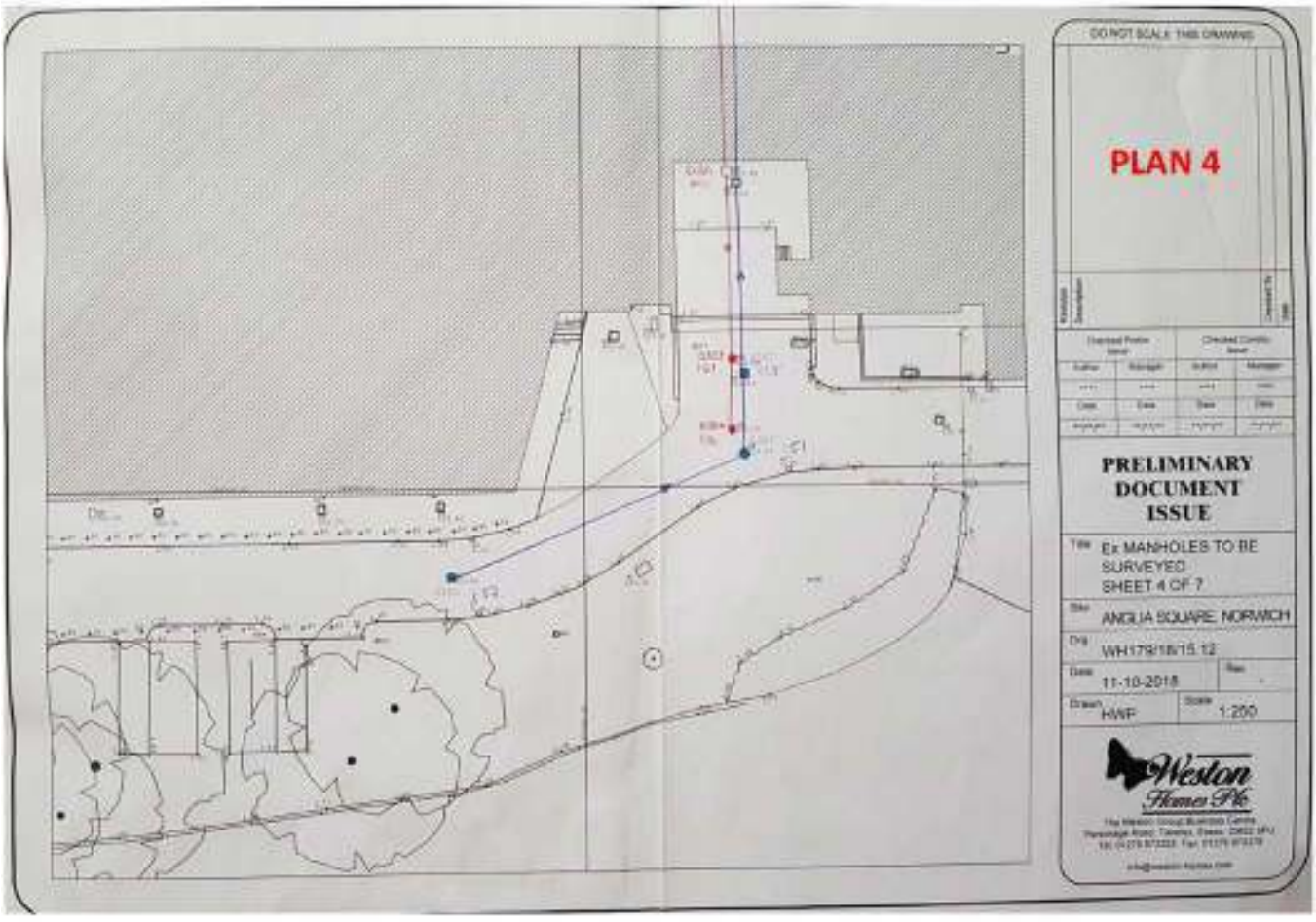
Date:	Job # : **Weston**	Weather : **rain**	Operator : **Draincare**	Section # : **40**	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : **no**	Rate :

Street 1 : **Edward street site2**	City : **Norwich**	Section type : **unknown**
Street 2 :	Map # 1 :	Map # 2 :
VCR # :	Media # :	US MH : **0457A**
DS MH : **0457**	Section length : **5.74 m**	Joint length :

Remark :



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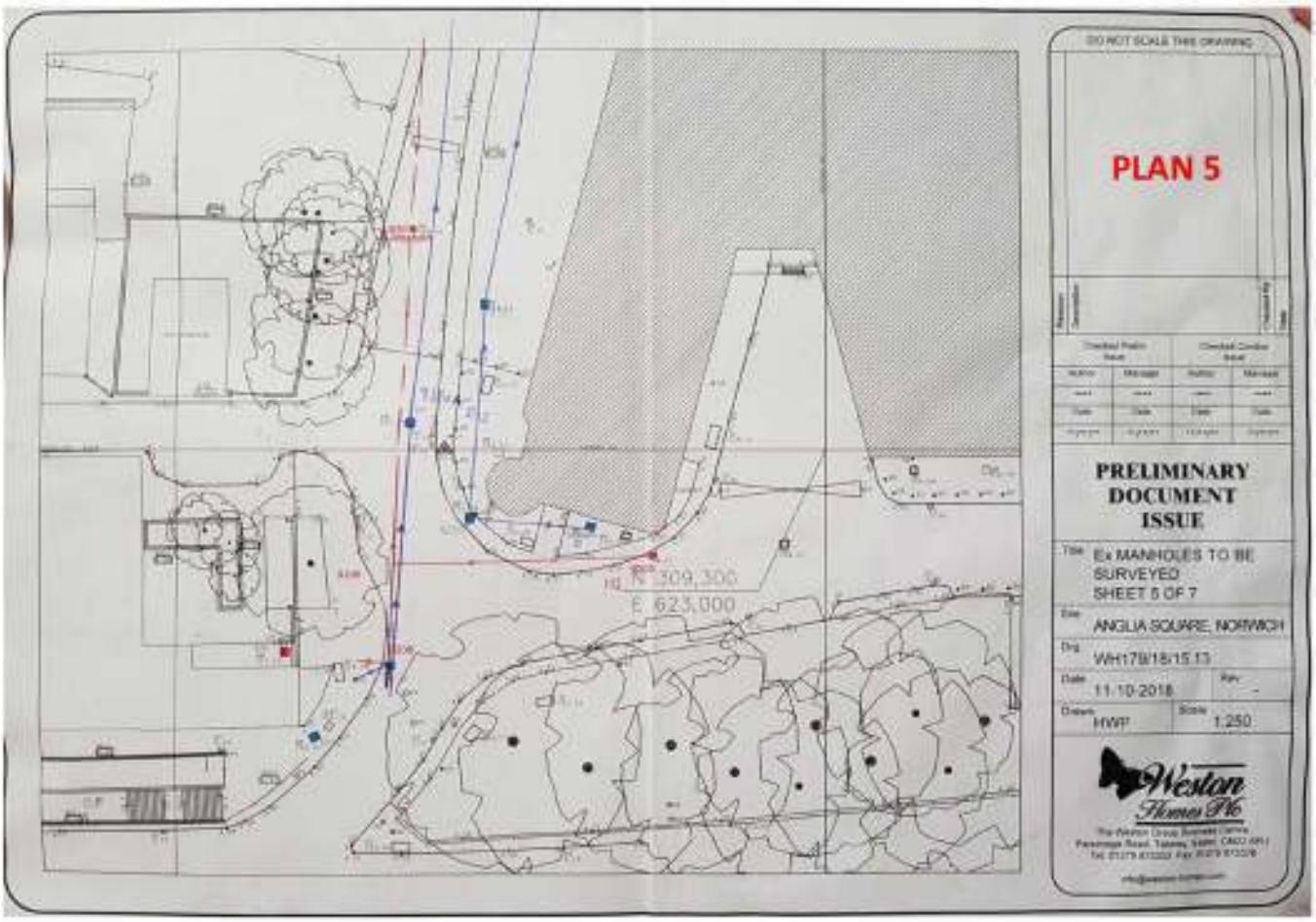
Date:	Job # : **Weston**	Weather : **rain**	Operator : **Draincare**	Section # : **40**	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : **no**	Rate :

Street 1 : **Edward street site2**	City : **Norwich**	Section type : **unknown**
Street 2 :	Map # 1 :	Map # 2 :
VCR # :	Media # :	US MH : **0457A**
DS MH : **0457**	Section length : **5.74 m**	Joint length :
Remark :		



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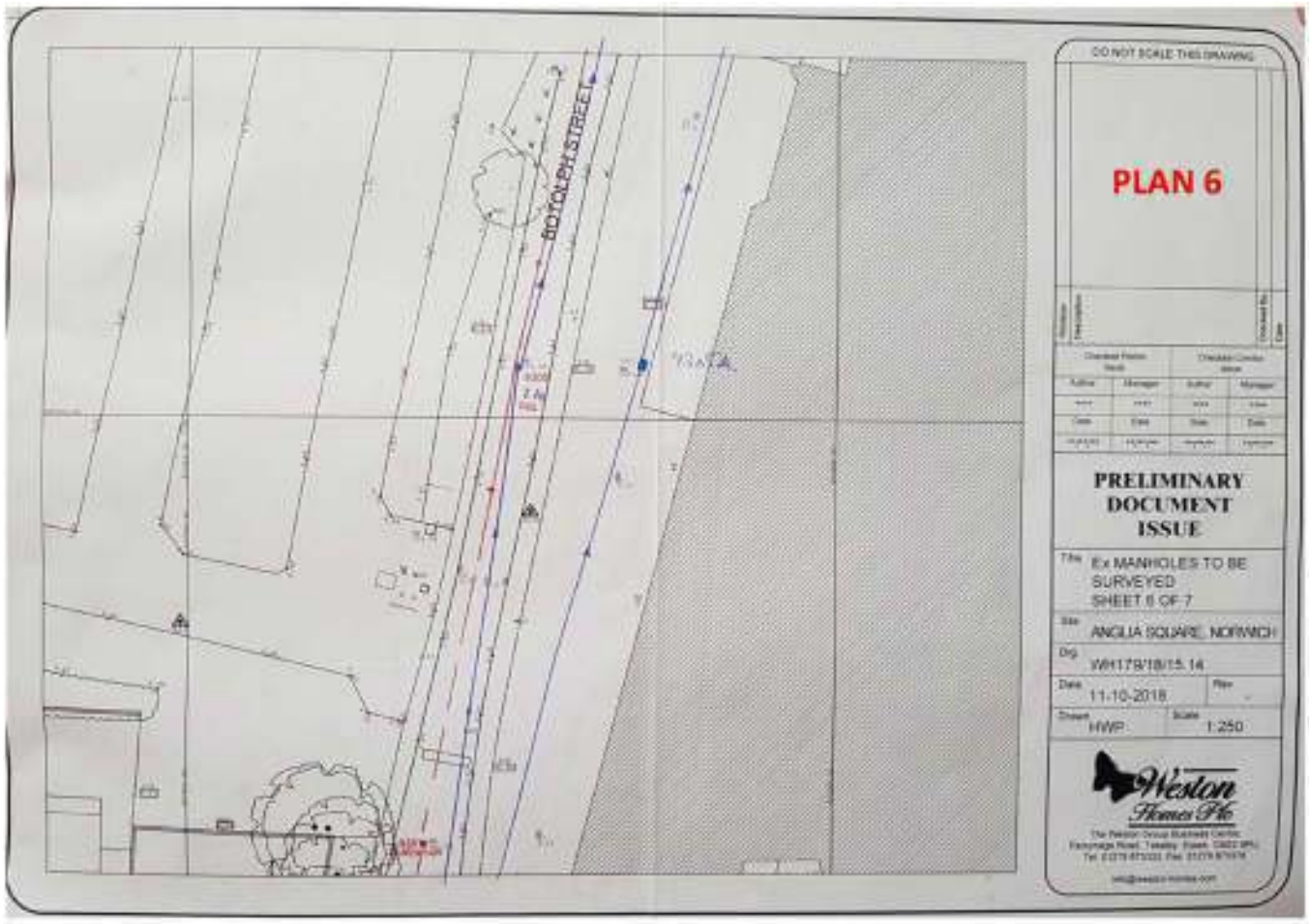
Date:	Job # : **Weston**	Weather : **rain**	Operator : **Draincare**	Section # : **40**	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : **no**	Rate :

Street 1 : **Edward street site2**	City : **Norwich**	Section type : **unknown**
Street 2 :	Map # 1 :	Map # 2 :
VCR # :	Media # :	US MH : **0457A**
DS MH : **0457**	Section length : **5.74 m**	Joint length :
Remark :		



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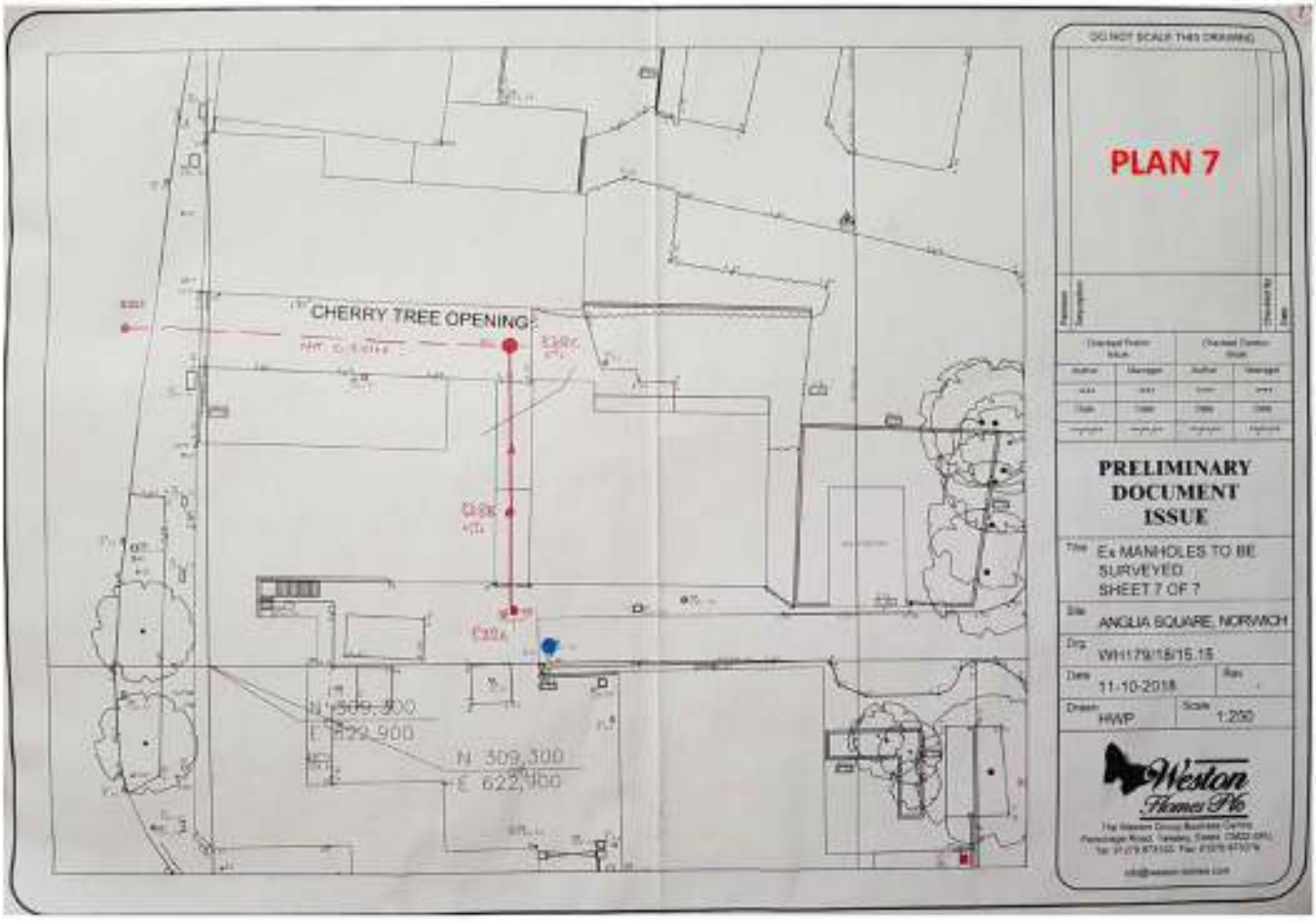
Date:	Job # : **Weston**	Weather : **rain**	Operator : **Draincare**	Section # : **40**	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : **no**	Rate :

Street 1 : **Edward street site2**	City : **Norwich**	Section type : **unknown**
Street 2 :	Map # 1 :	Map # 2 :
VCR # :	Media # :	US MH : **0457A**
DS MH : **0457**	Section length : **5.74 m**	Joint length :
Remark :		



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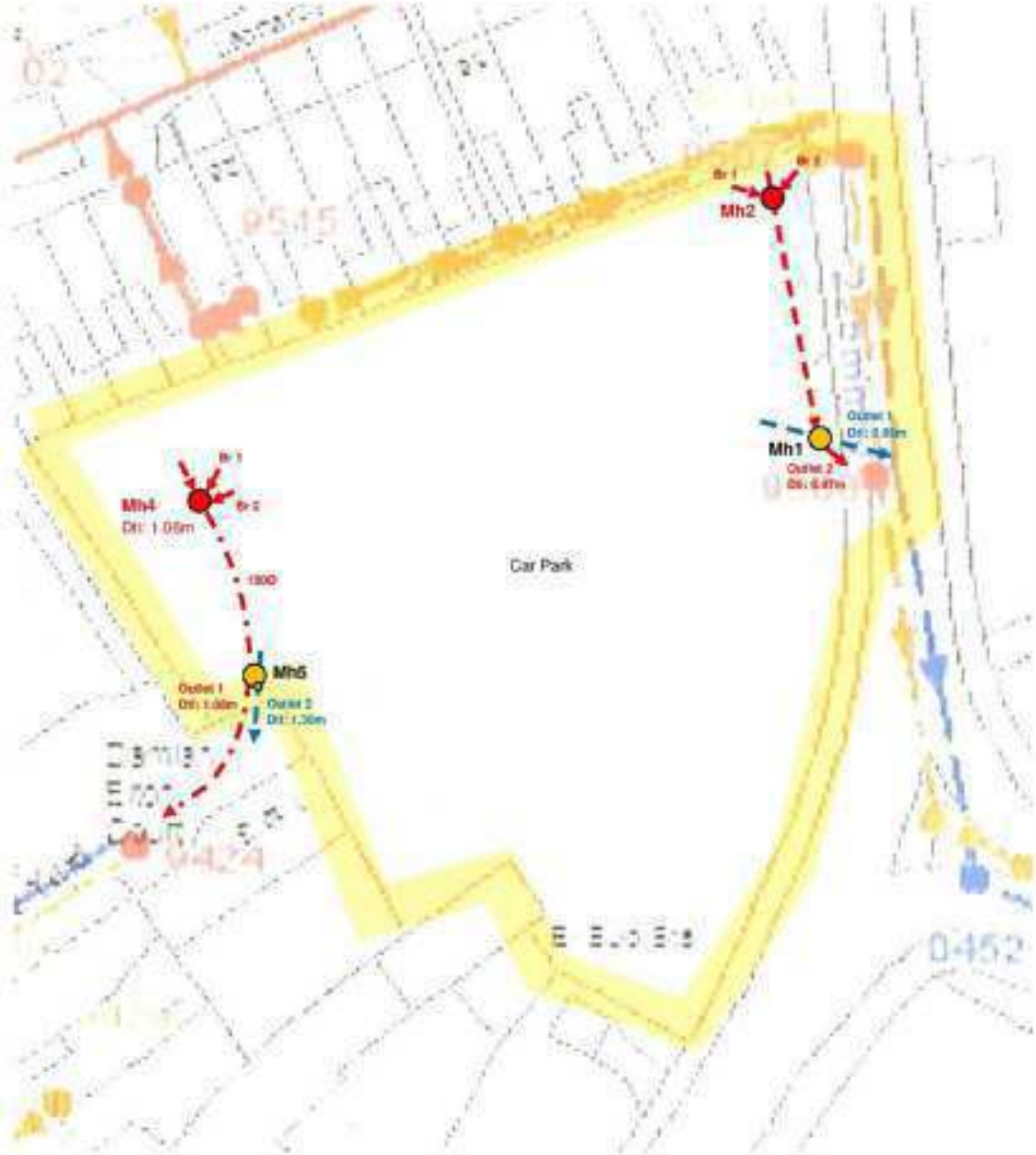
Date:	Job # : **Weston**	Weather : **rain**	Operator : **Draincare**	Section # : **40**	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : **no**	Rate :

Street 1 : **Edward street site2**	City : **Norwich**	Section type : **unknown**
Street 2 :	Map # 1 :	Map # 2 :
VCR # :	Media # :	US MH : **0457A**
DS MH : **0457**	Section length : **5.74 m**	Joint length :
Remark :		



Pipe diameters are stated in millimetres (mm). Depths and lengths are in metres (m)
All pipework surveyed on site plan will be 1000 unless otherwise indicated.

OUTLINE DRAINAGE PLAN – EDWARD STREET SITE 1

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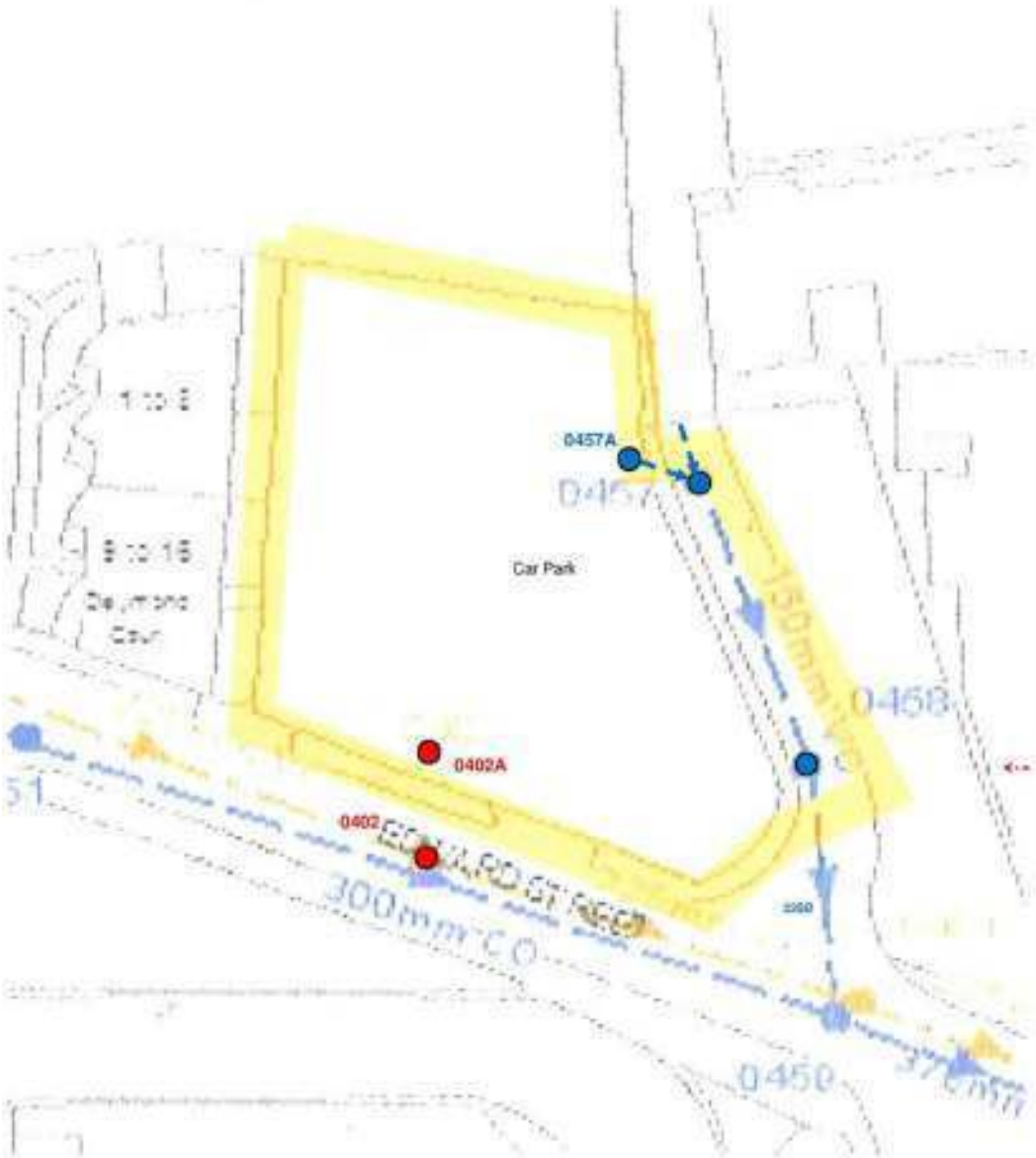
Date:	Job # : **Weston**	Weather : **rain**	Operator : **Draincare**	Section # : **40**	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : **no**	Rate :

Street 1 : **Edward street site2**	City : **Norwich**	Section type : **unknown**
Street 2 :	Map # 1 :	Map # 2 :
VCR # :	Media # :	US MH : **0457A**
DS MH : **0457**	Section length : **5.74 m**	Joint length :
Remark :		



Pipe diameters are stated in millimetres (mm). Depths and lengths are in metres (m)
All pipework surveyed on site plan will be 1500 unless otherwise indicated.

OUTLINE DRAINAGE PLAN – EDWARD STREET SITE 2

Draincare

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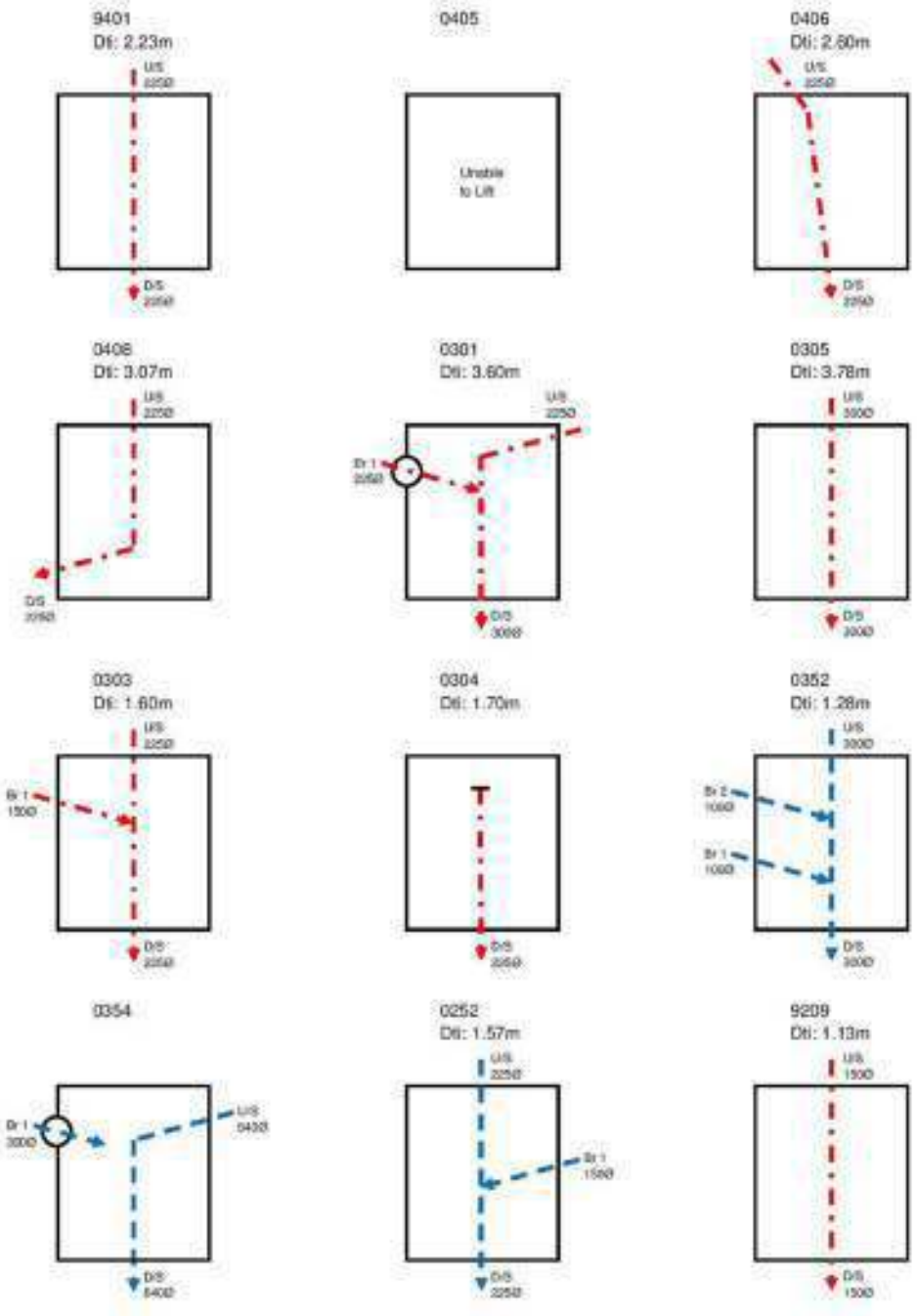
Date:	Job # : **Weston**	Weather : **rain**	Operator : **Draincare**	Section # : **40**	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : **no**	Rate :

Street 1 : **Edward street site2**	City : **Norwich**	Section type : **unknown**
Street 2 :	Map # 1 :	Map # 2 :
VCR # :	Media # :	US MH : **0457A**
DS MH : **0457**	Section length : **5.74 m**	Joint length :
Remark :		

Manhole Data:

Pipe diameters are stated in millimetres (mm). Depths and lengths are in metres (m)



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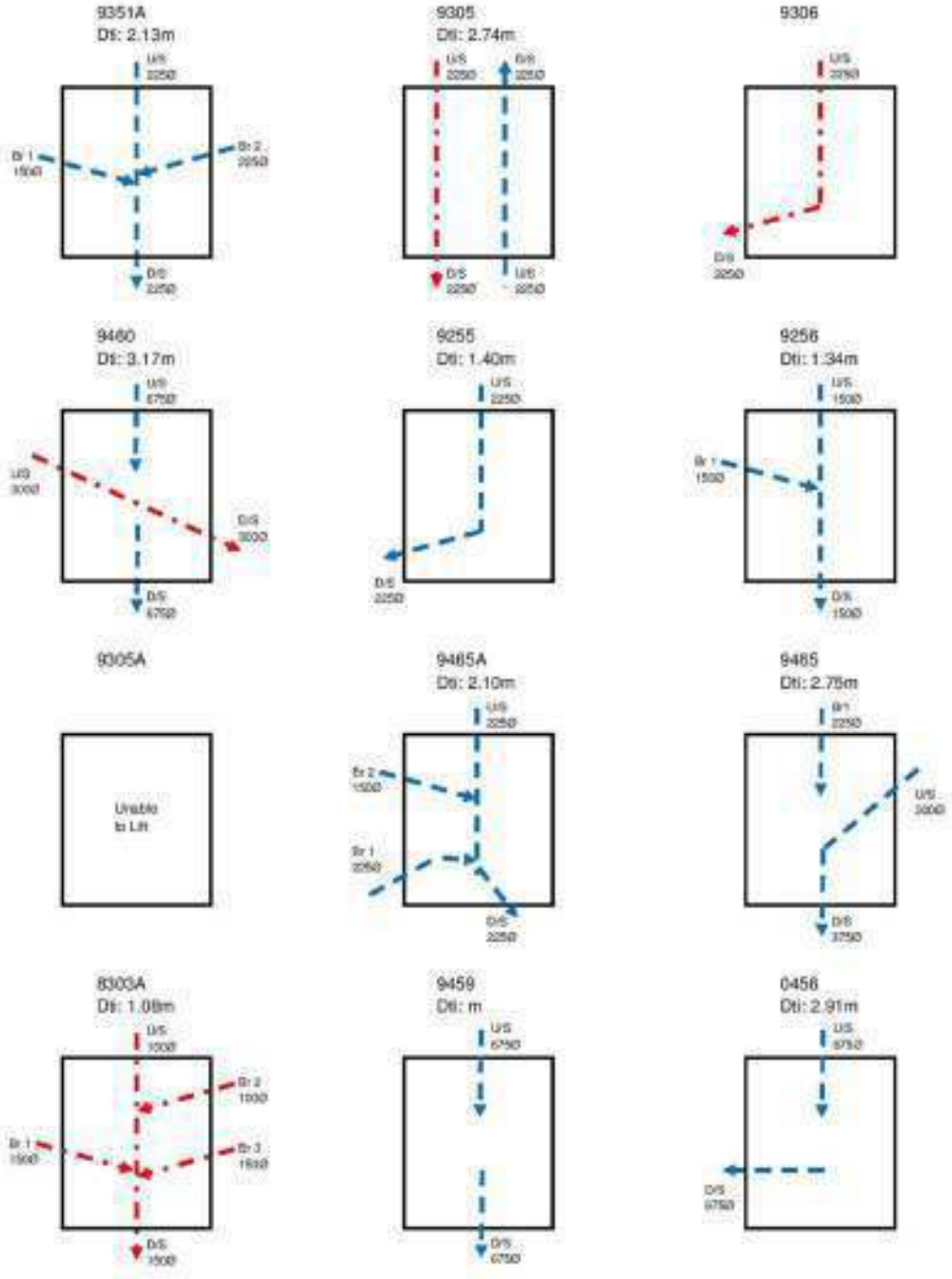
Date:	Job # : **Weston**	Weather : **rain**	Operator : **Draincare**	Section # : **40**	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : **no**	Rate :

Street 1 : **Edward street site2**	City : **Norwich**	Section type : **unknown**
Street 2 :	Map # 1 :	Map # 2 :
VCR # :	Media # :	US MH : **0457A**
DS MH : **0457**	Section length : **5.74 m**	Joint length :
Remark :		



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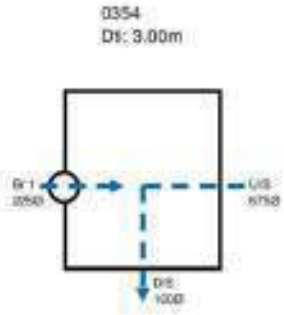
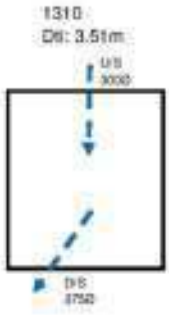
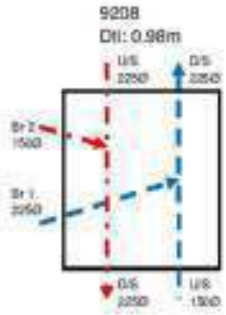
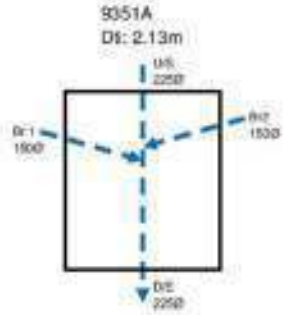
Date:	Job # : **Weston**	Weather : **rain**	Operator : **Draincare**	Section # : **40**	Section name :
Present :	Vehicle :	Camera :	Preset :	Cleaned : **no**	Rate :

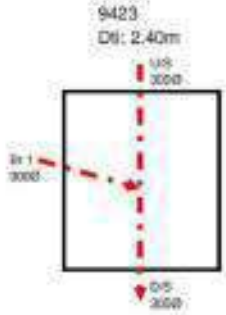
Street 1 : **Edward street site2**	City : **Norwich**	Section type : **unknown**
Street 2 :	Map # 1 :	Map # 2 :
VCR # :	Media # :	US MH : **0457A**
DS MH : **0457**	Section length : **5.74 m**	Joint length :
Remark :		

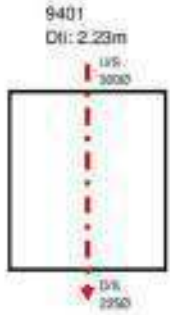


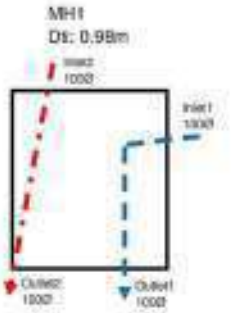


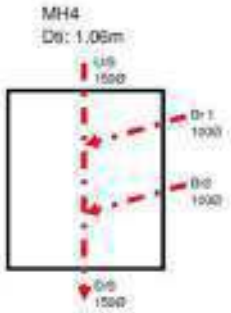


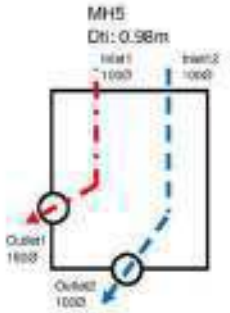


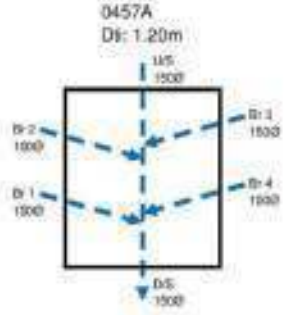


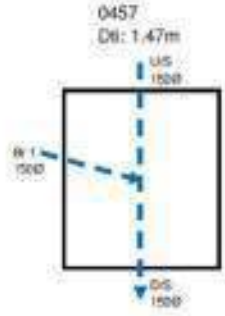












Grade 1 & 2 structural and service/operational defects should not be detrimental to the effectiveness of the drainage.

Grade 3, 4 & 5 structural and service/operational defects may be detrimental to the effectiveness of the drainage, and may require remedial treatment.
Pipework grading is based on the Sewerage Rehabilitating Manual (SRM) grading from the Water Research Centre (WRC).

The pipe materials as described should be recognized as the survey engineer's best judgment only.

The information provided in this report is given without obligation and the accuracy cannot be guaranteed without verification. No liability of any kind whatsoever is accepted by Draincare Ltd, their agents, or servants for any error or omission. The actual position of pipelines/services faults must be verified and established on the site before any mechanical plant is used or excavations/repairs attempted.

The survey is recorded on DVD or Hard Drive, which is enclosed with the report.
Please note that DVD or Hard Drive references and survey run titles are correct in the written report. Survey run titles on DVD or Hard Drive should be referred to the written report.

If the pipework material within your survey is noted as **Pitch Fibre or Asbestos Cement** please note that any works which may disturb the pipe structure must be undertaken in accordance with the Approved Code of Practice "Managing and Working With Asbestos – Control of Asbestos Regulations 2012"

Any quotation provided in this report for remedial measures affecting **Pitch Fibre Pipes** may exclude any additional costs associated with the presence of Asbestos and specialist support services.

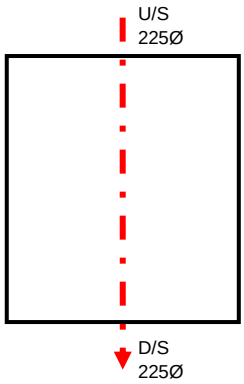
The Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 became effective from 1st October 2011. As a result your responsibility for drainage may cease at your property boundary or you may only be responsible for the pipework before it connects to a communal drain serving your property.

We recommend that the responsibility is determined before work to the drainage system is undertaken.

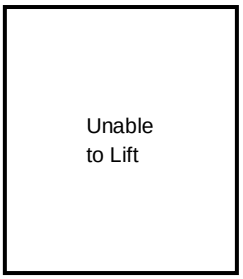
Manhole Data:

Pipe diameters are stated in millimetres (mm). Depths and lengths are in metres (m)

9401
Dti: 2.23m



0405



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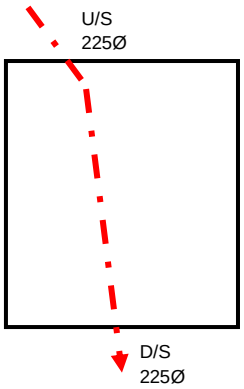
Dti: 2.60m



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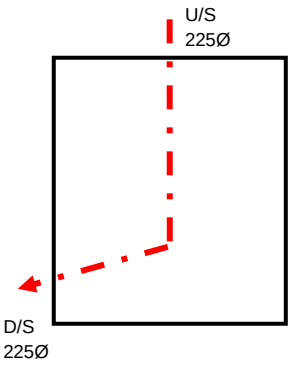

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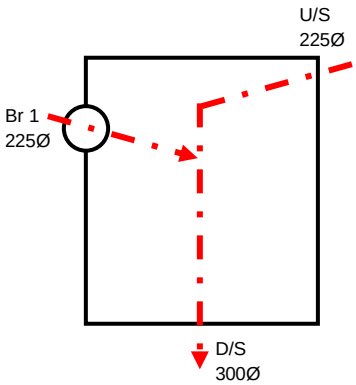

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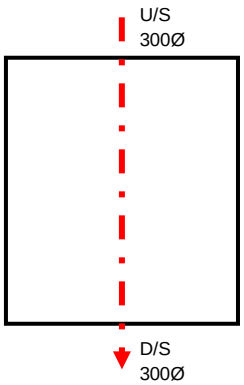

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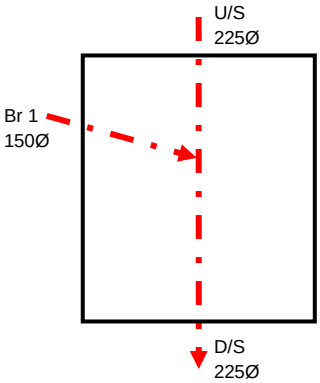
Dti: 1.60m



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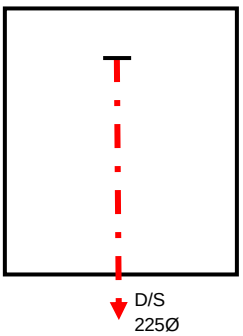

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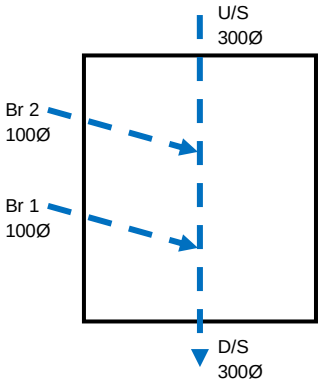

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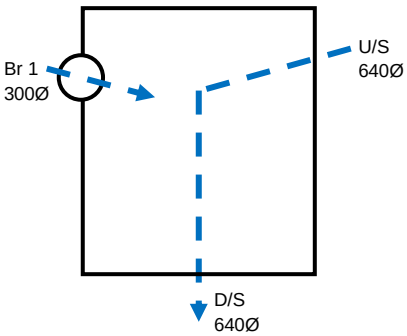

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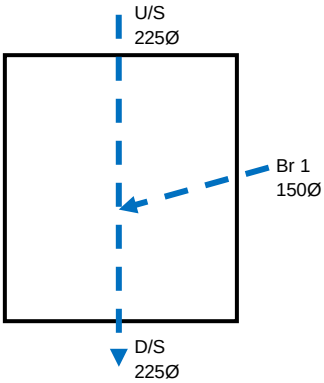

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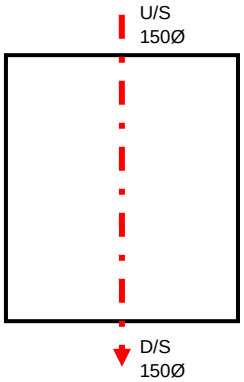

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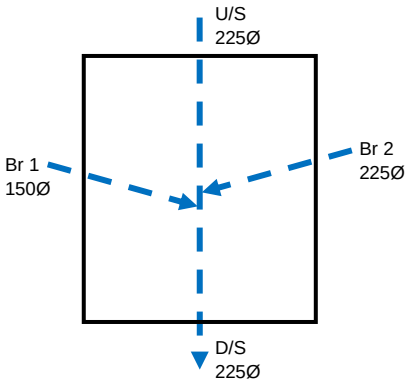

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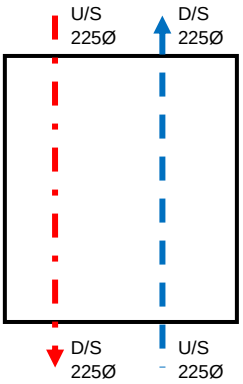

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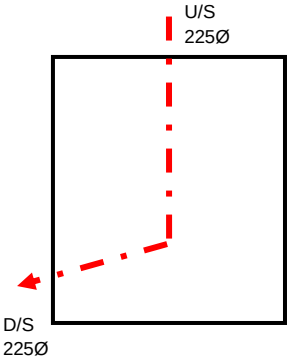

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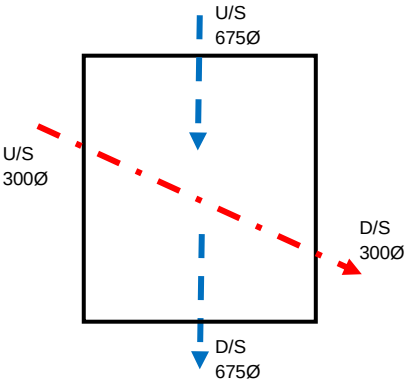

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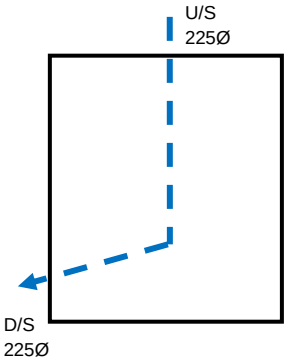

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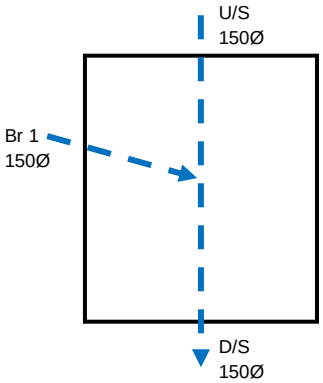

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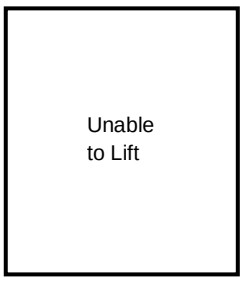

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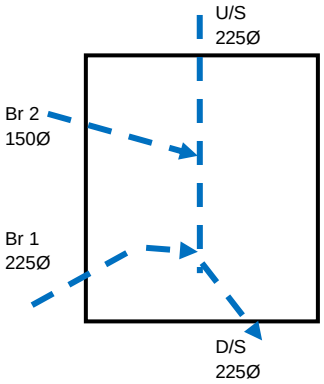

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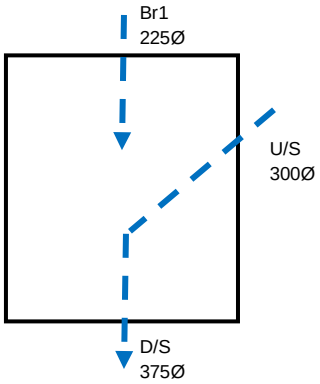

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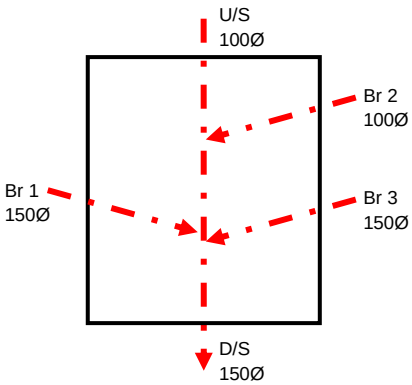

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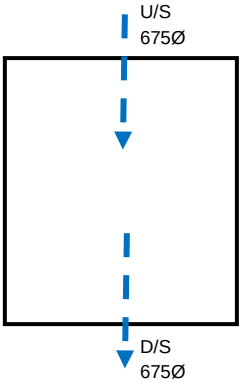
Dti: m



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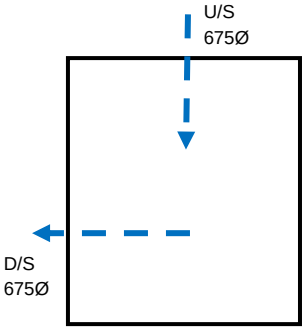

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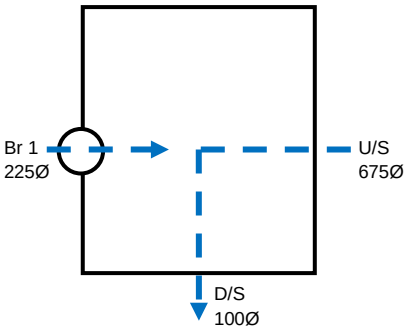

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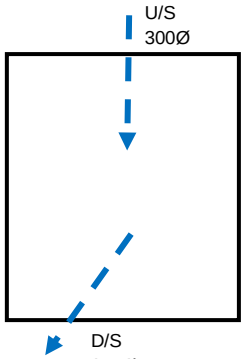

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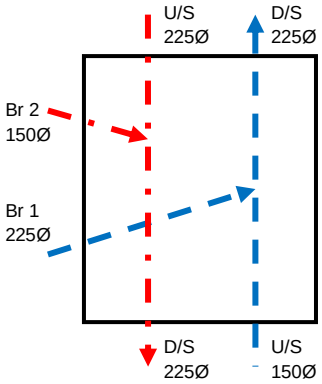

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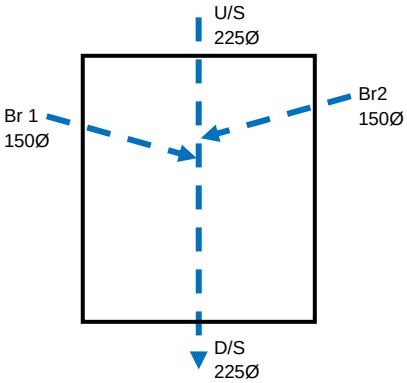

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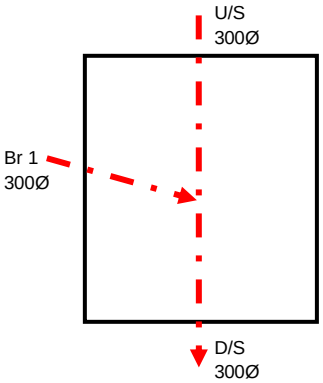

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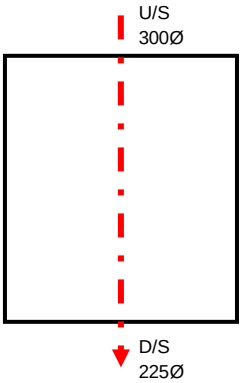

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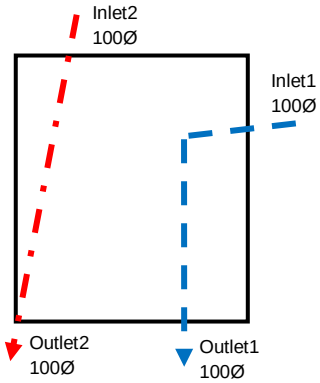

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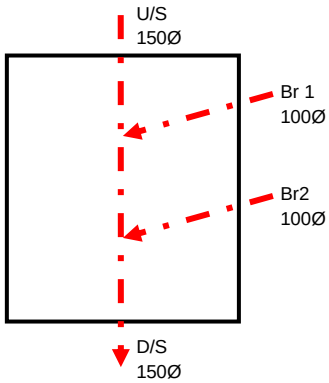

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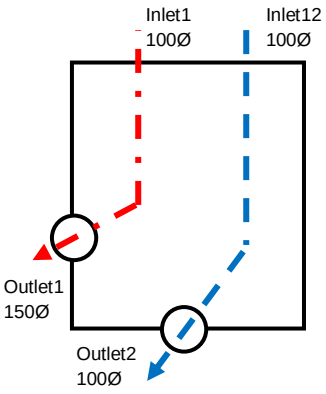
Dti: 0.98m



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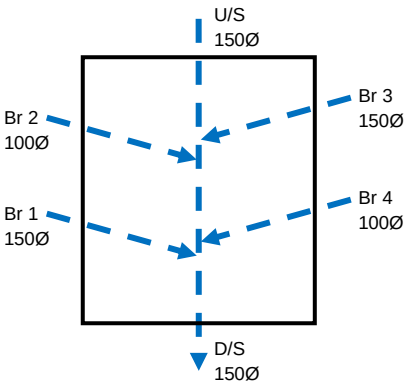

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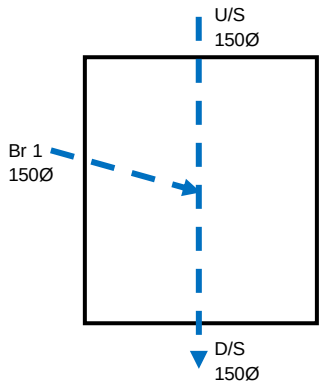
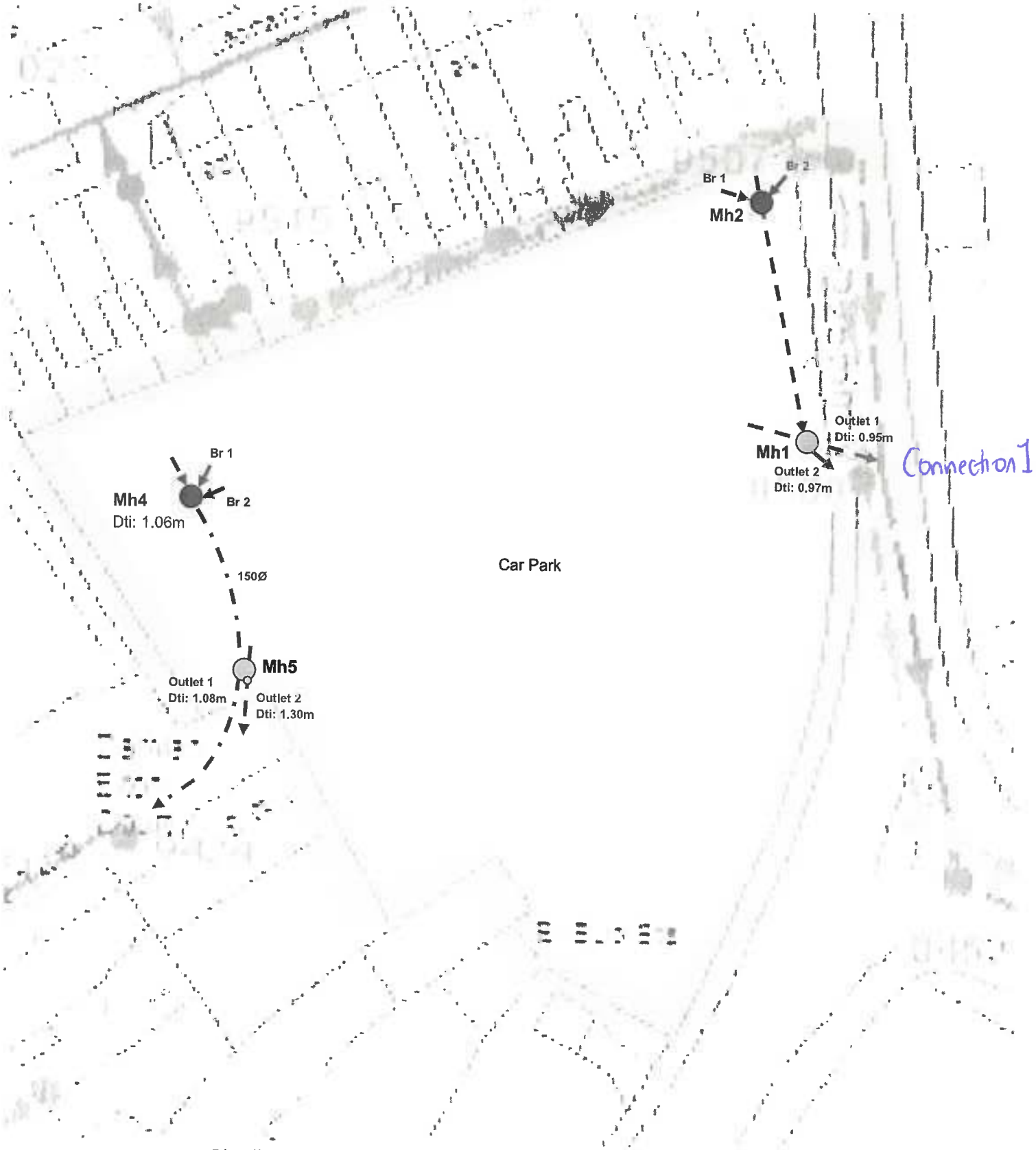
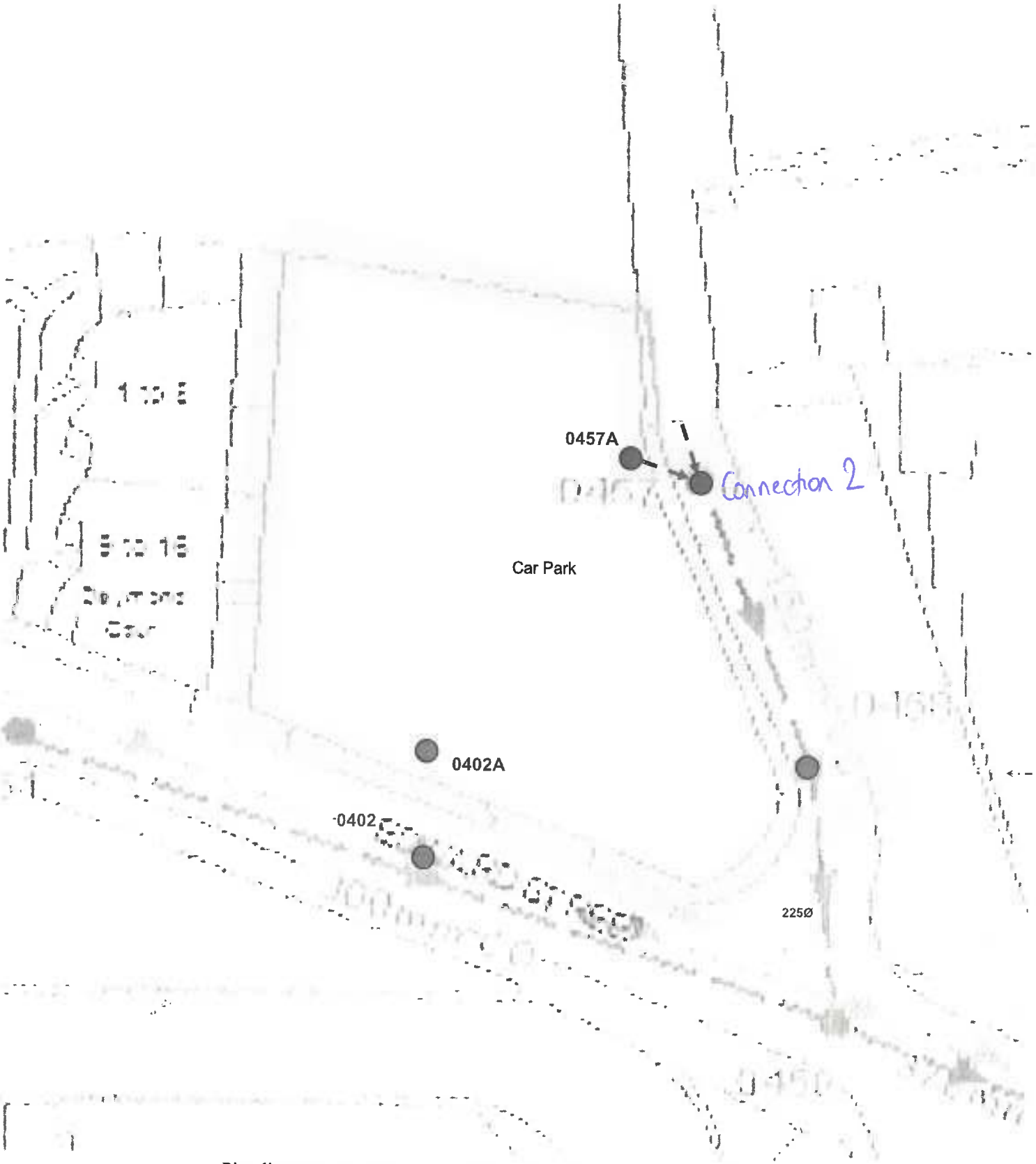




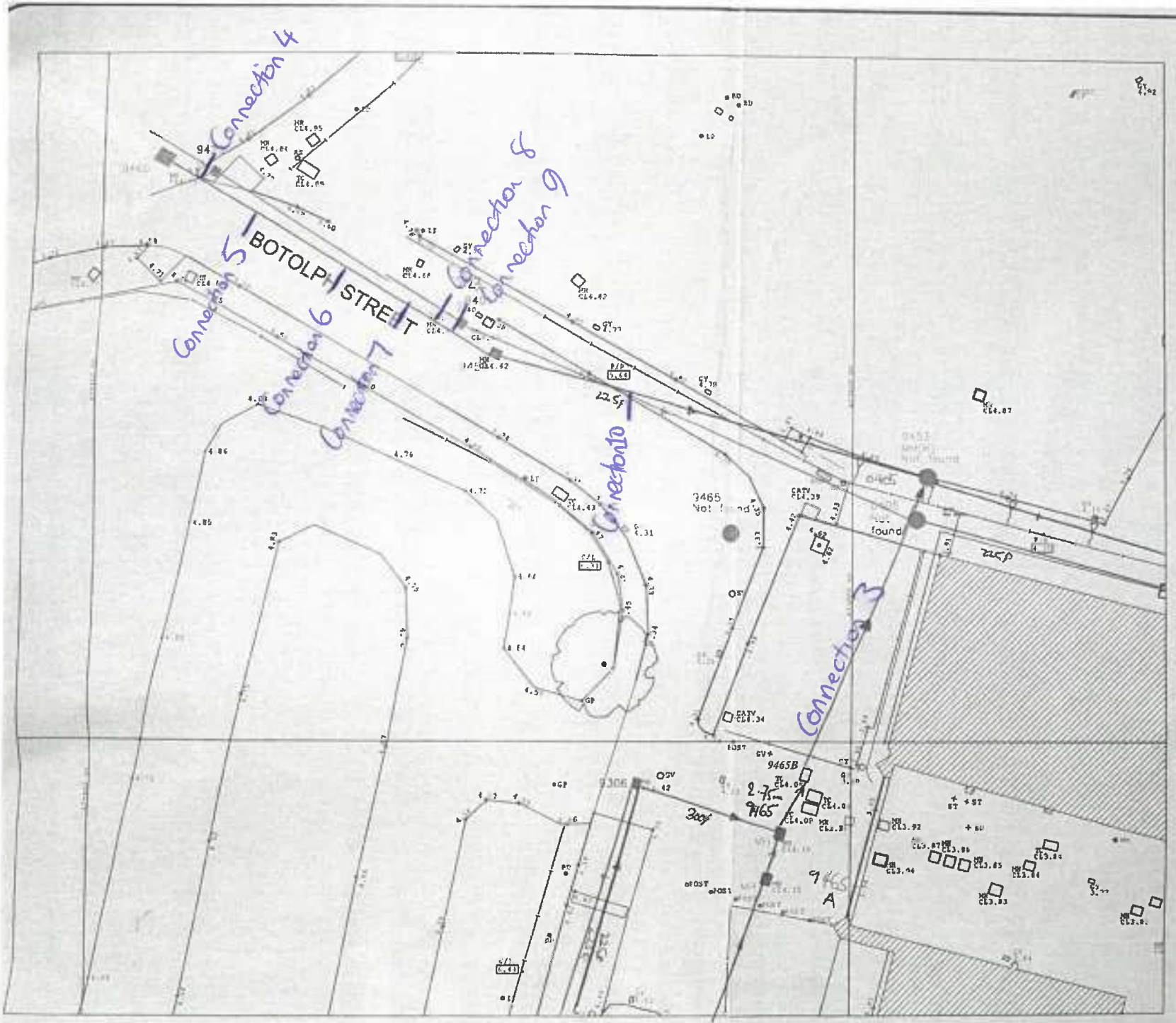
Pipe diameters are stated in millimetres (mm). Depths and lengths are in metres (m)
All pipework surveyed on site-plan will be 100Ø unless otherwise indicated.

OUTLINE DRAINAGE PLAN – EDWARD STREET SITE 1



Pipe diameters are stated in millimetres (mm). Depths and lengths are in metres (m)
All pipework surveyed on site-plan will be 150Ø unless otherwise indicated.

OUTLINE DRAINAGE PLAN – EDWARD STREET SITE 2



DO NOT SCALE THIS DRAWING

PLAN 1

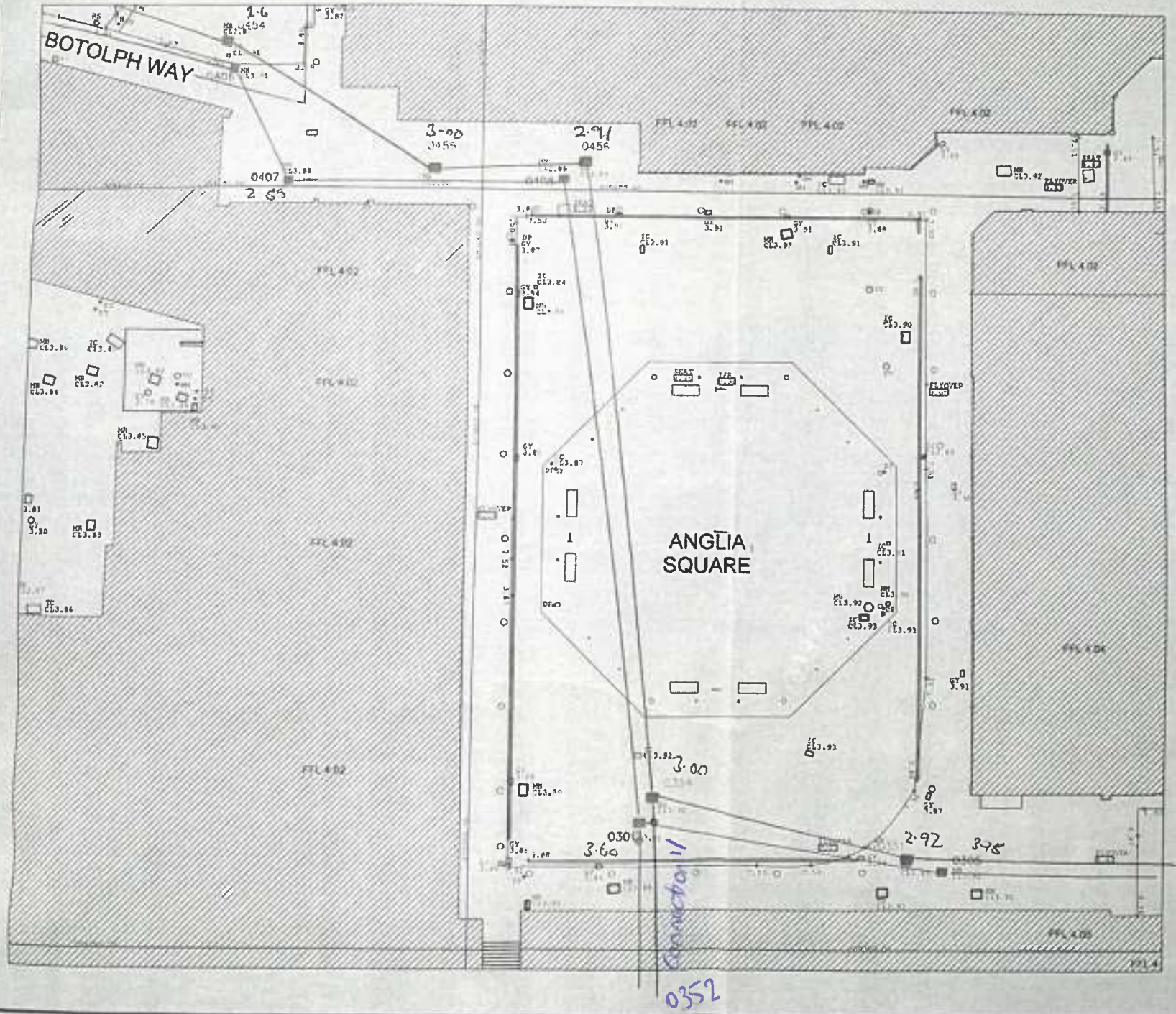
Revision	Description	Checked By	Date

Checked Prelim Issue		Checked Condoc Issue	
Author	Manager	Author	Manager
****	****	****	****
Date	Date	Date	Date
//**	**/**/**	**/**/**	**/**/**

PRELIMINARY DOCUMENT ISSUE

Title	Ex MANHOLES TO BE SURVEYED SHEET 1 OF 7
Site	ANGLIA SQUARE, NORWICH
Drg.	WH179/18/15.09
Date	11-10-2018
Rev	-
Drawn	HWP
Scale	1:250

Weston Homes Plc
The Weston Group Business Centre,
Parsonage Road, Takeley, Essex. CM22 6PU.
Tel: 01279 873333 Fax: 01279 873378
info@weston-homes.com



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PLAN 2

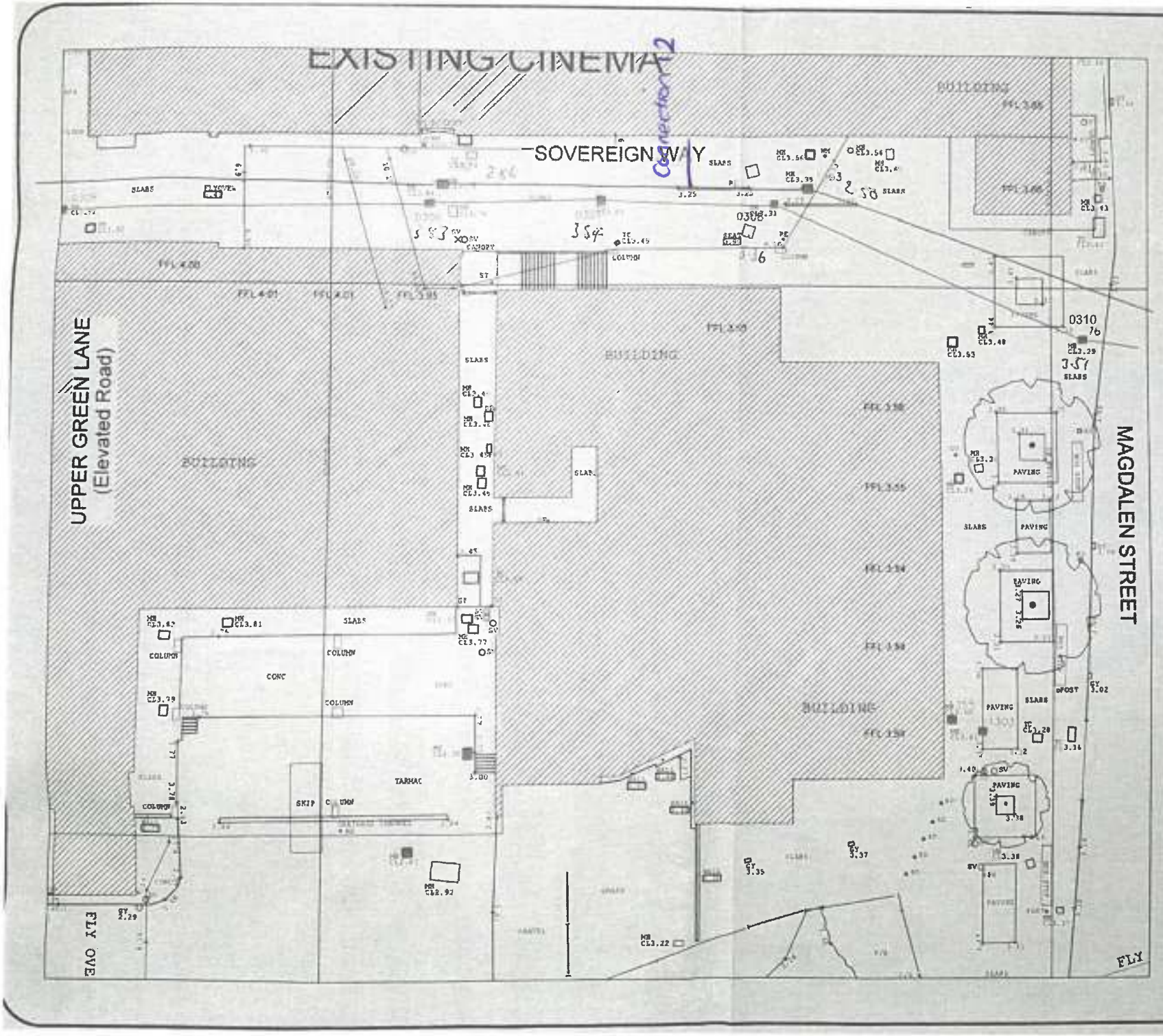
Revision	Description	Checked By	Date

Checked Prelim Issue		Checked Condoc Issue	
Author	Manager	Author	Manager
****	****	****	****
Date	Date	Date	Date
//**	**/**/**	**/**/**	**/**/**

PRELIMINARY DOCUMENT ISSUE

Title	Ex MANHOLES TO BE SURVEYED SHEET 2 OF 7
Site	ANGLIA SQUARE, NORWICH
Drg	WH179/18/15.10
Date	11-10-2018
Rev	-
Drawn	HWP
Scale	1:250

Weston Homes Plc
The Weston Group Business Centre
Parsonage Road, Takeley, Essex CM22 6PU
Tel: 01279 873333 Fax: 01279 873378
info@weston-homes.com



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PLAN 3

Revision	Description	Checked By	Date

Checked Prelim Issue		Checked Condoc Issue	
Author	Manager	Author	Manager
****	****	****	****
Date	Date	Date	Date
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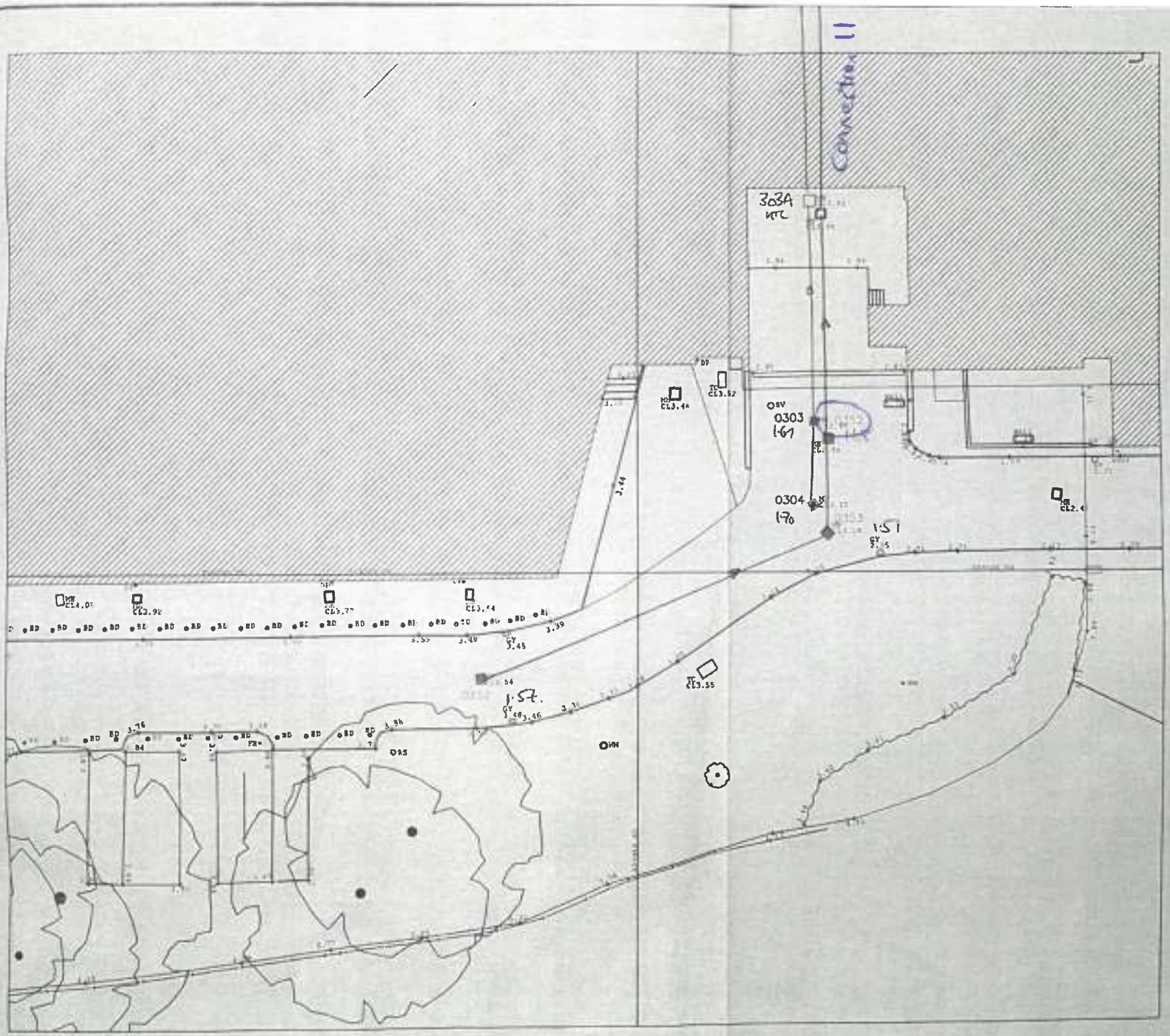
PRELIMINARY DOCUMENT ISSUE

Title	Ex MANHOLES TO BE SURVEYED SHEET 3 OF 7
Site	ANGLIA SQUARE, NORWICH
Drg.	WH179/18/15.11
Date	11-10-2018
Rev	-
Drawn	HWP
Scale	1:250

Weston Homes Plc
The Weston Group Business Centre,
Parsonage Road, Takeley, Essex, CM22 6PU
Tel: 01279 873333. Fax: 01279 873378
info@weston-homes.com



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PLAN 4

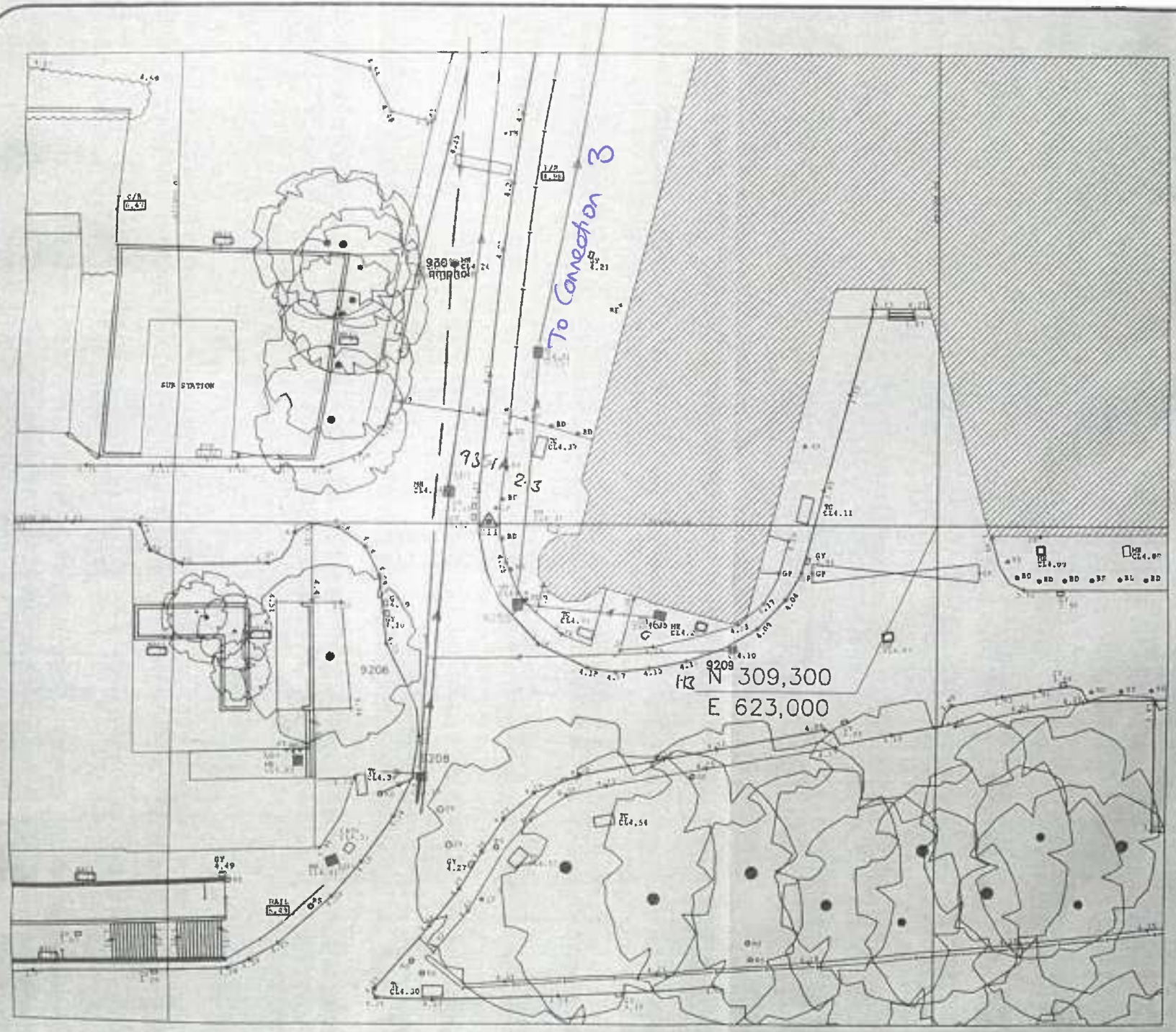
Revision	Description	Checked By	Date

Checked Prelim Issue		Checked Condoc Issue	
Author	Manager	Author	Manager
****	****	****	****
Date	Date	Date	Date
//**	**/**/**	**/**/**	**/**/**

PRELIMINARY DOCUMENT ISSUE

Title	Ex MANHOLES TO BE SURVEYED SHEET 4 OF 7
Site	ANGLIA SQUARE, NORWICH
Drg	WH179/18/15.12
Date	11-10-2018
Rev	-
Drawn	HWP
Scale	1:250

Weston Homes Plc
The Weston Group Business Centre,
Parsonage Road, Takeley, Essex. CM22 6PU.
Tel: 01279 873333 Fax: 01279 873378
info@weston-homes.com



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PLAN 5

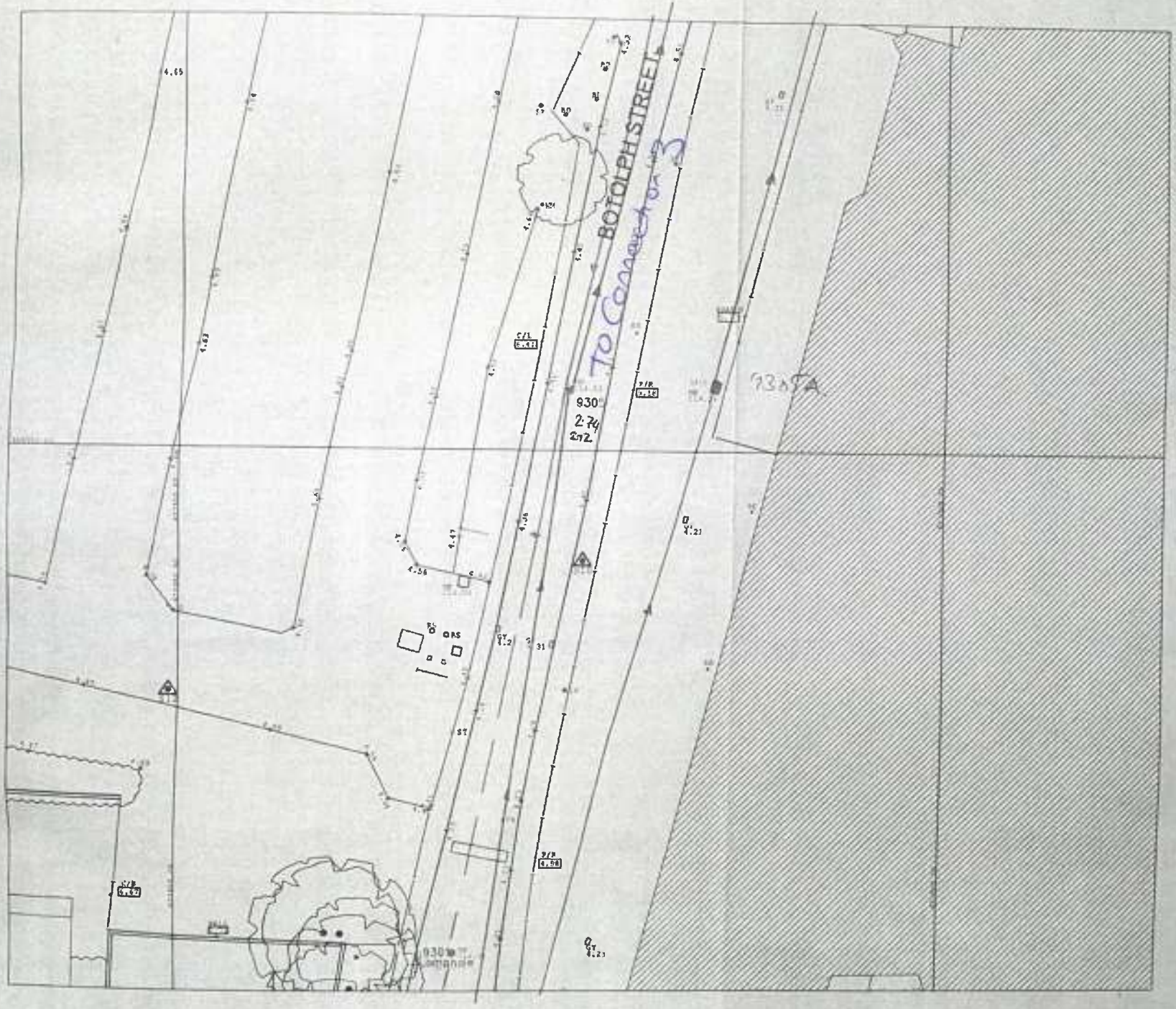
Revision	Description	Checked By	Date

Checked Prelim Issue		Checked Condoc Issue	
Author	Manager	Author	Manager
****	****	****	****
Date	Date	Date	Date
//**	**/**/**	**/**/**	**/**/**

PRELIMINARY DOCUMENT ISSUE

Title	Ex MANHOLES TO BE SURVEYED SHEET 5 OF 7
Site	ANGLIA SQUARE, NORWICH
Drg	WH179/18/15 13
Date	11-10-2018
Rev	-
Drawn	HWP
Scale	1:250

Weston Homes Plc
The Weston Group Business Centre,
Parsonage Road, Takeley, Essex CM22 6PU
Tel: 01279 873333 Fax: 01279 873378
info@weston-homes.com



DO NOT SCALE THIS DRAWING

PLAN 6

Revision	Description	Checked By	Date

Checked Prelim Issue		Checked Condoc Issue	
Author	Manager	Author	Manager
****	****	****	****
Date	Date	Date	Date
//**	**/**/**	**/**/**	**/**/**

PRELIMINARY DOCUMENT ISSUE

Title: Ex MANHOLES TO BE SURVEYED SHEET 6 OF 7

Site: ANGLIA SQUARE, NORWICH

Drg: WH179/18/15.14

Date: 11-10-2018 | Rev:

Drawn: HWP | Scale: 1:250

Weston Homes Plc
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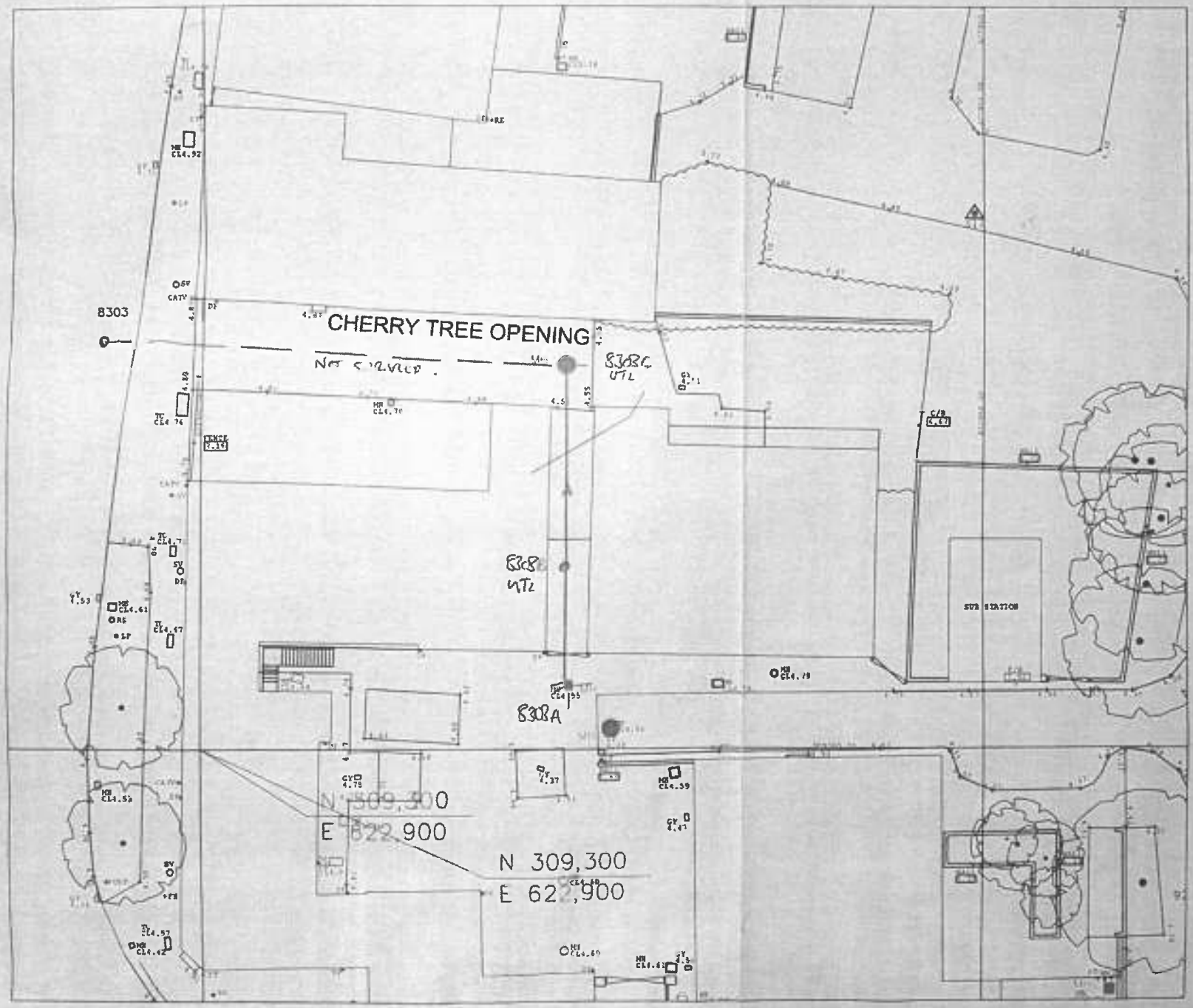

DO NOT SCALE THIS DRAWING

PLAN 7

Revision	Description	Checked By	Date

Checked Prelim Issue		Checked Consoc Issue	
Author	Manager	Author	Manager
****	****	****	****
Date	Date	Date	Date
//**	**/**/**	**/**/**	**/**/**

PRELIMINARY DOCUMENT ISSUE

Title	Ex MANHOLES TO BE SURVEYED SHEET 7 OF 7
Site	ANGLIA SQUARE, NORWICH
Drg.	WH179/18/15.15
Date	11-10-2018
Rev	-
Drawn	HWP
Scale	1:250

Weston Homes Plc
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Summary of CCTV Drainage Survey Connections:

Ex. Connection 1 – outfall to 225dia sewer in Edward Street – see attached Edward Street Area 1 and page 48 of the cctv survey report.

Ex. Connection 2 – outfall to 300dia sewer in Edward Street via 0458 – see attached Edward Street Area 2 and page 56 of the cctv survey report.

Ex. Connection 3 – outfall to 675dia sewer at mh 0453 – see attached Plan 1 and page 32 of the cctv survey report.

Ex. Connections 4 to 9 – outfalls to 675dia sewer between mhs 9460 and 9459 – shown as junctions on page 45 of the cctv survey report.

Ex. Connection 10 – outfall to 675dia sewer – shown as junction on page 33 of the cctv survey report.

Ex. Connection 11 – outfall to 675dia sewer - see attached Plan 2, Plan 4 and page 13 of the cctv survey report.

Ex. Connection 12 – outfall to 675dia sewer - see attached Plan 3 and shown as junction on page 39 of the cctv survey report.

Appendix: G – Existing Impermeable Areas and Drainage Catchments

TOTAL SITE AREA: 46502.3m²

AREAS OF ADOPTED PUBLIC HIGHWAY OR BUILDINGS OUTSIDE APPLICATION BOUNDARY: NOT INCLUDED IN BROWNFIELD RUNOFF CALCULATIONS: 2239.3m²

AREA OF PERMEABLE SURFACE OR LANDSCAPING. IT IS EXPECTED THAT SOME GREEN-FIELD RUNOFF WOULD OCCUR HOWEVER THESE RATES SHALL NOT BE INCLUDED IN BROWNFIELD RUNOFF CALCULATIONS: 1845m²

AREA OF CAR PARK WHICH DRAINS TO PRIVATE DRAINAGE SYSTEM AND NOT INTO ANGLIAN WATER SEWERS. NOT INCLUDED IN BROWNFIELD RUNOFF CALCULATIONS: 2814m².

AREA OF IMPERMEABLE SURFACE THAT DRAINS SURFACE WATER RUN-OFF TO EXISTING ANGLIAN WATER SURFACE WATER SEWERS: INCLUDED IN BROWNFIELD RUNOFF CALCULATIONS: 39,182m²

SURFACE WATER RUNOFF FROM EXISTING LANDSCAPED AREA IS IDENTIFIED AS CONTRIBUTING TO THE ADOPTED SURFACE WATER SEWER NETWORK. GREENFIELD RUNOFF RATES APPLIED. INCLUDED IN BROWNFIELD RUNOFF CALCULATIONS: 395m²

NEW BOTOLPH STREET

EDWARD STREET

MAGDALEN STREET

PITT STREET

Area1

Area2

Area3

Area4

Area5

Area6

Area7

Area8

NOT IN APPLICATION BOUNDARY AND NOT INCLUDED IN CALCULATIONS

Barclays

Barnardo's

Cinema

Wes

Pound Stretcher

99p Stores

Nails

Vacant

Iceland

Grocer

Scope

Card Fair

Unknown

MULTI-STOREY CARPARK

NO ACCESS

SPOIL HEAP NO ACCESS

FLY OVER

REV	DATE	BY	DESCRIPTION	CHK	APD

DRAWING STATUS: FOR INFORMATION

EAS
Unit 23, The Maltings, Stanstead Abbotts, Hertfordshire, SG12 8HG
Tel: 01920 871777
www.eastp.co.uk

CLIENT: WESTON HOMES

ARCHITECTS:

PROJECT: ANGLIA SQUARE, NORWICH

TITLE: EXISTING IMPERMEABLE AREAS WHICH DRAIN SURFACE WATER TO ANGLIAN WATER SURFACE WATER SEWERS

SCALE @ A1:	DESIGN / DRAWN:	DATE:
1:500	MD	06.04.2017
PROJECT No: 3831	DRAWING No: SK01-D	

Appendix: H – FEH Brownfield Runoff Hydraulic Calculations

Existing Network Details for Storm

* - Indicates pipe has been modified outside of System 1

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
*	1.000	23.300	0.291	80.1	0.040	3.00	0.600	o	150	Pipe/Conduit
*	1.001	21.000	0.292	71.9	0.040	0.00	0.600	o	150	Pipe/Conduit
*	2.000	18.000	0.225	80.0	0.040	3.00	0.600	o	150	Pipe/Conduit
*	2.001	22.000	0.275	80.0	0.040	0.00	0.600	o	150	Pipe/Conduit
*	3.000	23.000	0.287	80.1	0.040	3.00	0.600	o	150	Pipe/Conduit
*	1.002	10.000	0.125	80.0	0.039	0.00	0.600	o	150	Pipe/Conduit

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	1.000	mh1	5.510	4.545	0.815	5.510	4.254	1.106		1200
*	1.001	mh2	5.510	4.254	1.106	5.500	3.962	1.388		1200
*	2.000	mh3	5.510	4.492	0.868	5.510	4.267	1.093		1200
*	2.001	mh4	5.510	4.267	1.093	5.500	3.992	1.358		1200
*	3.000	mh5	5.510	4.249	1.111	5.500	3.962	1.388		1200
*	1.002	mh6	5.500	3.887	1.463	5.500	3.762	1.588		1200

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
mh1	5.510	0.965	Open Manhole	1200	1.000	4.545	150				
mh2	5.510	1.256	Open Manhole	1200	1.001	4.254	150	1.000	4.254	150	
mh3	5.510	1.018	Open Manhole	1200	2.000	4.492	150				
mh4	5.510	1.243	Open Manhole	1200	2.001	4.267	150	2.000	4.267	150	
mh5	5.510	1.261	Open Manhole	1200	3.000	4.249	150				
mh6	5.500	1.613	Open Manhole	1200	1.002	3.887	150	1.001	3.962	150	75
								2.001	3.992	150	105
								3.000	3.962	150	75
	5.500	1.738	Open Manhole	0		OUTFALL		1.002	3.762	150	

No coordinates have been specified, layout information cannot be produced.

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	mh1	5.510	4.545	0.815	Open Manhole	1200
1.001	o	150	mh2	5.510	4.254	1.106	Open Manhole	1200
2.000	o	150	mh3	5.510	4.492	0.868	Open Manhole	1200
2.001	o	150	mh4	5.510	4.267	1.093	Open Manhole	1200
3.000	o	150	mh5	5.510	4.249	1.111	Open Manhole	1200
1.002	o	150	mh6	5.500	3.887	1.463	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	23.300	80.1	mh2	5.510	4.254	1.106	Open Manhole	1200
1.001	21.000	71.9	mh6	5.500	3.962	1.388	Open Manhole	1200
2.000	18.000	80.0	mh4	5.510	4.267	1.093	Open Manhole	1200
2.001	22.000	80.0	mh6	5.500	3.992	1.358	Open Manhole	1200
3.000	23.000	80.1	mh6	5.500	3.962	1.388	Open Manhole	1200
1.002	10.000	80.0		5.500	3.762	1.588	Open Manhole	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.002		5.500	3.762	0.000	0	0

Simulation Criteria for Storm

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

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

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
Return Period (years)	1	E (1km)	0.310
FEH Rainfall Version	1999	F (1km)	2.498
Site Location	GB 622800 309650 TG 22800 09650	Summer Storms	Yes
C (1km)	-0.024	Winter Storms	No
D1 (1km)	0.275	Cv (Summer)	0.750
D2 (1km)	0.370	Cv (Winter)	0.840

Synthetic Rainfall Details

Storm Duration (mins) 30

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region England and Wales		Ratio R 0.405	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	1	+0%					4.608	-0.087	0.000
1.001	mh2	15 Summer	1	+0%	2/15 Summer				4.335	-0.069	0.000
2.000	mh3	15 Summer	1	+0%					4.556	-0.086	0.000
2.001	mh4	15 Summer	1	+0%	2/15 Summer				4.351	-0.066	0.000
3.000	mh5	15 Summer	1	+0%	2/15 Winter				4.312	-0.087	0.000
1.002	mh6	15 Winter	1	+0%	1/15 Summer				4.256	0.219	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.34			6.5	OK	
1.001	mh2	0.56			11.1	OK	
2.000	mh3	0.36			6.6	OK	
2.001	mh4	0.59			11.1	OK	
3.000	mh5	0.35			6.5	OK	
1.002	mh6	1.67			29.5	SURCHARGED	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region England and Wales		Ratio R 0.405	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	2	+0%					4.618	-0.077	0.000
1.001	mh2	15 Summer	2	+0%	2/15 Summer				4.455	0.051	0.000
2.000	mh3	15 Summer	2	+0%					4.566	-0.076	0.000
2.001	mh4	15 Summer	2	+0%	2/15 Summer				4.459	0.042	0.000
3.000	mh5	15 Summer	2	+0%	2/15 Winter				4.391	-0.008	0.000
1.002	mh6	15 Winter	2	+0%	1/15 Summer				4.380	0.343	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.45			8.4	OK	
1.001	mh2	0.63			12.4	SURCHARGED	
2.000	mh3	0.46			8.5	OK	
2.001	mh4	0.67			12.6	SURCHARGED	
3.000	mh5	0.44			8.4	OK	
1.002	mh6	1.94			34.3	SURCHARGED	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model		FEH	Data Type Point
FEH Rainfall Version		2013	Cv (Summer) 0.750
Site Location	GB 623065 309383 TG 23065 09383		Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	2	+0%					4.615	-0.080	0.000
1.001	mh2	15 Summer	2	+0%	2/15 Summer				4.415	0.011	0.000
2.000	mh3	15 Summer	2	+0%					4.563	-0.079	0.000
2.001	mh4	15 Summer	2	+0%	2/15 Summer				4.420	0.003	0.000
3.000	mh5	15 Summer	2	+0%					4.359	-0.040	0.000
1.002	mh6	15 Winter	2	+0%	2/15 Summer				4.341	0.304	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.42			7.8	OK	
1.001	mh2	0.61			12.0	SURCHARGED	
2.000	mh3	0.43			8.0	OK	
2.001	mh4	0.64			12.1	SURCHARGED	
3.000	mh5	0.42			7.9	OK	
1.002	mh6	1.86			32.9	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Point
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 623065 309383 TG 23065 09383	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	30
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	30	+0%	30/15 Summer				5.508	0.813
1.001	mh2	15 Winter	30	+0%	30/15 Summer	30/15 Summer			5.510	1.106
2.000	mh3	15 Winter	30	+0%	30/15 Summer	30/15 Summer			5.511	0.869
2.001	mh4	15 Winter	30	+0%	30/15 Summer	30/15 Summer			5.510	1.093
3.000	mh5	15 Winter	30	+0%	30/15 Summer				5.458	1.059
1.002	mh6	15 Winter	30	+0%	30/15 Summer				5.332	1.295

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.000	0.80			15.0	FLOOD RISK	
1.001	mh2	0.108	1.03			20.4	FLOOD	2
2.000	mh3	1.400	0.78			14.6	FLOOD	3
2.001	mh4	0.109	1.12			21.0	FLOOD	2
3.000	mh5	0.000	0.66			12.4	FLOOD RISK	
1.002	mh6	0.000	3.35			59.3	FLOOD RISK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Point
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 623065 309383 TG 23065 09383	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	30
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	30	+45%	30/15 Summer	30/15 Summer			5.516	0.821
1.001	mh2	15 Winter	30	+45%	30/15 Summer	30/15 Summer			5.512	1.108
2.000	mh3	15 Winter	30	+45%	30/15 Summer	30/15 Summer			5.516	0.874
2.001	mh4	15 Winter	30	+45%	30/15 Summer	30/15 Summer			5.512	1.095
3.000	mh5	15 Winter	30	+45%	30/15 Summer	30/15 Summer			5.512	1.113
1.002	mh6	15 Summer	30	+45%	30/15 Summer				5.413	1.376

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	5.923	1.16			21.9	FLOOD	4
1.001	mh2	1.917	1.11			22.1	FLOOD	5
2.000	mh3	5.847	1.24			23.0	FLOOD	6
2.001	mh4	2.007	1.23			23.1	FLOOD	5
3.000	mh5	1.693	0.89			16.7	FLOOD	4
1.002	mh6	0.000	3.44			60.9	FLOOD RISK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model		FEH	Data Type Point
FEH Rainfall Version		2013	Cv (Summer) 0.750
Site Location	GB 623065 309383 TG 23065 09383		Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	100	+0%	100/15 Summer	100/15 Summer			5.514	0.819
1.001	mh2	15 Winter	100	+0%	100/15 Summer	100/15 Summer			5.511	1.107
2.000	mh3	15 Winter	100	+0%	100/15 Summer	100/15 Summer			5.515	0.873
2.001	mh4	15 Winter	100	+0%	100/15 Summer	100/15 Summer			5.511	1.094
3.000	mh5	15 Winter	100	+0%	100/15 Summer	100/15 Summer			5.511	1.112
1.002	mh6	15 Winter	100	+0%	100/15 Summer				5.394	1.357

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	4.270	1.09			20.6	FLOOD	4
1.001	mh2	1.196	1.11			21.9	FLOOD	4
2.000	mh3	4.577	1.14			21.1	FLOOD	5
2.001	mh4	1.272	1.21			22.8	FLOOD	4
3.000	mh5	0.930	0.86			16.1	FLOOD	4
1.002	mh6	0.000	3.43			60.6	FLOOD RISK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Point
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 623065 309383 TG 23065 09383	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	100	+45%	100/15 Summer	100/15 Summer			5.519	0.824
1.001	mh2	15 Winter	100	+45%	100/15 Summer	100/15 Summer			5.515	1.111
2.000	mh3	15 Winter	100	+45%	100/15 Summer	100/15 Summer			5.519	0.877
2.001	mh4	15 Winter	100	+45%	100/15 Summer	100/15 Summer			5.515	1.098
3.000	mh5	15 Winter	100	+45%	100/15 Summer	100/15 Summer			5.514	1.115
1.002	mh6	15 Summer	100	+45%	100/15 Summer				5.458	1.421

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	9.165	1.18			22.2	FLOOD	6
1.001	mh2	4.581	1.13			22.3	FLOOD	6
2.000	mh3	9.085	1.25			23.3	FLOOD	7
2.001	mh4	4.680	1.24			23.3	FLOOD	6
3.000	mh5	4.242	0.97			18.2	FLOOD	6
1.002	mh6	0.000	3.49			61.8	FLOOD RISK	

Existing Network Details for Storm

* - Indicates pipe has been modified outside of System 1

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
*	1.000	19.000	0.320	59.4	0.042	3.00	0.600	o	150	Pipe/Conduit
*	2.000	12.000	0.380	31.6	0.042	3.00	0.600	o	150	Pipe/Conduit
*	1.001	10.000	0.250	40.0	0.041	0.00	0.600	o	150	Pipe/Conduit

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	1.000	mh1	4.060	3.220	0.690	4.000	2.900	0.950		1200
*	2.000	mh2	3.980	3.280	0.550	4.000	2.900	0.950		1200
*	1.001	mh3	4.000	2.900	0.950	5.500	2.650	2.700		1200

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
mh1	4.060	0.840	Open Manhole	1200	1.000	3.220	150				
mh2	3.980	0.700	Open Manhole	1200	2.000	3.280	150				
mh3	4.000	1.100	Open Manhole	1200	1.001	2.900	150	1.000	2.900	150	
								2.000	2.900	150	
	5.500	2.850	Open Manhole	0		OUTFALL		1.001	2.650	150	

No coordinates have been specified, layout information cannot be produced.

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	mh1	4.060	3.220	0.690	Open Manhole	1200
2.000	o	150	mh2	3.980	3.280	0.550	Open Manhole	1200
1.001	o	150	mh3	4.000	2.900	0.950	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	19.000	59.4	mh3	4.000	2.900	0.950	Open Manhole	1200
2.000	12.000	31.6	mh3	4.000	2.900	0.950	Open Manhole	1200
1.001	10.000	40.0		5.500	2.650	2.700	Open Manhole	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.001		5.500	2.650	0.000	0	0

Simulation Criteria for Storm

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

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

Synthetic Rainfall Details

Rainfall Model	FEH	E (1km)	0.310
Return Period (years)	1	F (1km)	2.498
FEH Rainfall Version	1999	Summer Storms	Yes
Site Location GB 622800 309650 TG 22800 09650		Winter Storms	No
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370	Storm Duration (mins)	30
D3 (1km)	0.255		

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region England and Wales		Ratio R 0.405	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	1	+0%					3.280	-0.090	0.000
2.000	mh2	15 Summer	1	+0%					3.331	-0.099	0.000
1.001	mh3	15 Summer	1	+0%					2.999	-0.051	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.32			7.0	OK	
2.000	mh2	0.24			7.0	OK	
1.001	mh3	0.74			18.5	OK	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region England and Wales		Ratio R 0.405	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	2	+0%					3.289	-0.081	0.000
2.000	mh2	15 Summer	2	+0%					3.339	-0.091	0.000
1.001	mh3	15 Summer	2	+0%					3.019	-0.031	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.42			9.1	OK	
2.000	mh2	0.32			9.1	OK	
1.001	mh3	0.96			24.1	OK	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	2	+0%					3.291	-0.079	0.000
2.000	mh2	15 Summer	2	+0%					3.341	-0.089	0.000
1.001	mh3	15 Summer	2	+0%					3.030	-0.020	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.44			9.5	OK	
2.000	mh2	0.33			9.5	OK	
1.001	mh3	1.00			25.1	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	30
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Summer	30	+0%	30/15 Summer	30/15 Summer			4.060	0.690
2.000	mh2	15 Winter	30	+0%	30/15 Summer	30/15 Summer			3.980	0.550
1.001	mh3	15 Winter	30	+0%	30/15 Summer				3.877	0.827

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.266	0.80			17.3	FLOOD	2
2.000	mh2	0.332	0.63			18.0	FLOOD	2
1.001	mh3	0.000	2.06			51.8	FLOOD RISK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	30
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	30	+45%	30/15 Summer	30/15 Summer			4.063	0.693
2.000	mh2	15 Winter	30	+45%	30/15 Summer	30/15 Summer			3.984	0.554
1.001	mh3	15 Winter	30	+45%	30/15 Summer				3.941	0.891

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	3.157	0.98			21.3	FLOOD	4
2.000	mh2	3.829	0.79			22.8	FLOOD	4
1.001	mh3	0.000	2.14			53.7	FLOOD RISK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	100	+0%	100/15 Summer	100/15 Summer			4.064	0.694
2.000	mh2	15 Winter	100	+0%	100/15 Summer	100/15 Summer			3.984	0.554
1.001	mh3	15 Winter	100	+0%	100/15 Summer				3.946	0.896

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	3.581	0.99			21.5	FLOOD	4
2.000	mh2	4.359	0.82			23.6	FLOOD	4
1.001	mh3	0.000	2.15			53.9	FLOOD RISK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	100	+45%	100/15 Summer	100/15 Summer			4.069	0.699
2.000	mh2	15 Winter	100	+45%	100/15 Summer	100/15 Summer			3.992	0.562
1.001	mh3	15 Summer	100	+45%	100/15 Summer	100/15 Summer			4.000	0.950

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	9.421	1.06			23.0	FLOOD	5
2.000	mh2	12.052	1.02			29.3	FLOOD	5
1.001	mh3	0.071	2.20			55.2	FLOOD	2

Existing Network Details for Storm

* - Indicates pipe has been modified outside of System 1

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
*	1.000	25.600	0.256	100.0	0.085	3.00	0.600	o	225	Pipe/Conduit
*	1.001	32.700	0.000	0.0	0.085	0.00	0.600	o	225	Pipe/Conduit

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	1.000	mh1	5.000	3.156	1.619	5.000	2.900	1.875		1200
*	1.001	mh2	5.000	2.900	1.875	5.500	2.900	2.375		1200

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
mh1	5.000	1.844	Open Manhole	1200	1.000	3.156	225				
mh2	5.000	2.100	Open Manhole	1200	1.001	2.900	225	1.000	2.900	225	
	5.500	2.600	Open Manhole	0		OUTFALL		1.001	2.900	225	

No coordinates have been specified, layout information cannot be produced.

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	225	mh1	5.000	3.156	1.619	Open Manhole	1200
1.001	o	225	mh2	5.000	2.900	1.875	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	25.600	100.0	mh2	5.000	2.900	1.875	Open Manhole	1200
1.001	32.700	0.0		5.500	2.900	2.375	Open Manhole	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.001		5.500	2.900	0.000	0	0

Simulation Criteria for Storm

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

Number of Input Hydrographs	0	Number of Storage Structures	0
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	FEH
Return Period (years)	1
FEH Rainfall Version	1999
Site Location	GB 622800 309650 TG 22800 09650
C (1km)	-0.024
D1 (1km)	0.275
D2 (1km)	0.370
D3 (1km)	0.255
E (1km)	0.310
F (1km)	2.498
Summer Storms	Yes
Winter Storms	No

Synthetic Rainfall Details

Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	30

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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	0
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 0.407
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.000	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	mh1	15 Summer	1	+0%					3.242
1.001	mh2	15 Winter	1	+0%	1/15 Summer				3.189

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	-0.139	0.000	0.29			14.0	OK	
1.001	mh2	0.064	0.000	1.82			22.3	SURCHARGED	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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	0
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 0.407
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.000	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	mh1	15 Summer	2	+0%					3.279
1.001	mh2	15 Winter	2	+0%	1/15 Summer				3.238

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	-0.102	0.000	0.37			17.8	OK	
1.001	mh2	0.113	0.000	2.35			28.7	SURCHARGED	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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	0
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	FEH
FEH Rainfall Version	1999
Site Location	GB 622800 309650 TG 22800 09650
C (1km)	-0.024
D1 (1km)	0.275
D2 (1km)	0.370
D3 (1km)	0.255
E (1km)	0.310
F (1km)	2.498
Cv (Summer)	0.750
Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	mh1	15 Summer	2	+0%					3.291
1.001	mh2	15 Winter	2	+0%	2/15 Summer				3.250

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	-0.090	0.000	0.38			18.5	OK	
1.001	mh2	0.125	0.000	2.45			30.0	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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	0
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	FEH
FEH Rainfall Version	1999
Site Location	GB 622800 309650 TG 22800 09650
C (1km)	-0.024
D1 (1km)	0.275
D2 (1km)	0.370
D3 (1km)	0.255
E (1km)	0.310
F (1km)	2.498
Cv (Summer)	0.750
Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	30
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	mh1	15 Summer	30	+0%	30/15 Summer				4.349
1.001	mh2	15 Winter	30	+0%	30/15 Summer				4.128

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.968	0.000	0.88			42.5	SURCHARGED	
1.001	mh2	1.003	0.000	6.64			81.3	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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	0
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	FEH
FEH Rainfall Version	1999
Site Location	GB 622800 309650 TG 22800 09650
C (1km)	-0.024
D1 (1km)	0.275
D2 (1km)	0.370
D3 (1km)	0.255
E (1km)	0.310
F (1km)	2.498
Cv (Summer)	0.750
Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	30
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	mh1	15 Winter	30	+45%	30/15 Summer	30/15 Summer			5.002
1.001	mh2	15 Winter	30	+45%	30/15 Summer				4.812

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	1.621	1.831	1.22			58.6	FLOOD	2
1.001	mh2	1.687	0.000	8.64			105.9	FLOOD RISK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Summer	100	+0%	100/15 Summer	100/15 Summer			5.003	1.622
1.001	mh2	15 Winter	100	+0%	100/15 Summer				4.824	1.699

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	2.712	1.27			60.9	FLOOD	2
1.001	mh2	0.000	8.72			106.8	FLOOD RISK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	100	+45%	100/15 Summer	100/15 Summer			5.016	1.635
1.001	mh2	15 Winter	100	+45%	100/15 Summer	100/15 Winter			4.960	1.835

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	15.999	1.66			79.8	FLOOD	4
1.001	mh2	0.041	9.20			112.7	FLOOD	

Existing Network Details for Storm

* - Indicates pipe has been modified outside of System 1

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
*	1.000	8.700	0.200	43.5	0.058	3.00	0.600	o	150	Pipe/Conduit
*	1.001	10.300	0.140	73.6	0.059	0.00	0.600	o	150	Pipe/Conduit
*	1.002	40.500	0.690	58.7	0.088	0.00	0.600	o	225	Pipe/Conduit
*	2.000	35.000	0.380	92.1	0.059	3.00	0.600	o	150	Pipe/Conduit
*	1.003	15.500	0.155	100.0	0.088	0.00	0.600	o	300	Pipe/Conduit

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	1.000	mh1	3.800	3.120	0.530	3.920	2.920	0.850		1200
*	1.001	mh2	3.920	2.920	0.850	3.300	2.780	0.370		1200
*	1.002	mh3	3.300	2.780	0.295	3.300	2.090	0.985		1200
*	2.000	mh4	3.640	2.470	1.020	3.300	2.090	1.060		1200
*	1.003	mh5	3.300	2.090	0.910	5.500	1.935	3.265		1200

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
mh1	3.800	0.680	Open Manhole	1200	1.000	3.120	150				
mh2	3.920	1.000	Open Manhole	1200	1.001	2.920	150	1.000	2.920	150	
mh3	3.300	0.520	Open Manhole	1200	1.002	2.780	225	1.001	2.780	150	
mh4	3.640	1.170	Open Manhole	1200	2.000	2.470	150				
mh5	3.300	1.210	Open Manhole	1200	1.003	2.090	300	1.002	2.090	225	
								2.000	2.090	150	
	5.500	3.565	Open Manhole	0		OUTFALL		1.003	1.935	300	

No coordinates have been specified, layout information cannot be produced.

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	mh1	3.800	3.120	0.530	Open Manhole	1200
1.001	o	150	mh2	3.920	2.920	0.850	Open Manhole	1200
1.002	o	225	mh3	3.300	2.780	0.295	Open Manhole	1200
2.000	o	150	mh4	3.640	2.470	1.020	Open Manhole	1200
1.003	o	300	mh5	3.300	2.090	0.910	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	8.700	43.5	mh2	3.920	2.920	0.850	Open Manhole	1200
1.001	10.300	73.6	mh3	3.300	2.780	0.370	Open Manhole	1200
1.002	40.500	58.7	mh5	3.300	2.090	0.985	Open Manhole	1200
2.000	35.000	92.1	mh5	3.300	2.090	1.060	Open Manhole	1200
1.003	15.500	100.0		5.500	1.935	3.265	Open Manhole	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.003		5.500	1.935	0.000	0	0

Simulation Criteria for Storm

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

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

Synthetic Rainfall Details

Rainfall Model	FEH	E (1km)	0.310
Return Period (years)	1	F (1km)	2.498
FEH Rainfall Version	1999	Summer Storms	Yes
Site Location	GB 622800 309650 TG 22800 09650	Winter Storms	No
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370	Storm Duration (mins)	30
D3 (1km)	0.255		

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region	England and Wales	Ratio R 0.405	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	1	+0%					3.188	-0.082	0.000
1.001	mh2	15 Summer	1	+0%	2/15 Summer				3.032	-0.038	0.000
1.002	mh3	15 Winter	1	+0%					2.880	-0.125	0.000
2.000	mh4	15 Summer	1	+0%					2.552	-0.068	0.000
1.003	mh5	15 Winter	1	+0%					2.239	-0.151	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Level Status	Exceeded
1.000	mh1	0.41			9.8	OK	
1.001	mh2	0.88			16.2	OK	
1.002	mh3	0.41			26.3	OK	
2.000	mh4	0.53			9.5	OK	
1.003	mh5	0.49			45.4	OK	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region	England and Wales	Ratio R 0.405	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	2	+0%					3.200	-0.070	0.000
1.001	mh2	15 Summer	2	+0%	2/15 Summer				3.098	0.028	0.000
1.002	mh3	15 Winter	2	+0%					2.896	-0.109	0.000
2.000	mh4	15 Summer	2	+0%					2.567	-0.053	0.000
1.003	mh5	15 Winter	2	+0%					2.263	-0.127	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.53			12.7	OK	
1.001	mh2	1.12			20.7	SURCHARGED	
1.002	mh3	0.52			33.7	OK	
2.000	mh4	0.69			12.3	OK	
1.003	mh5	0.62			58.1	OK	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2, 30
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Summer	2	+0%	30/15 Summer	30/15 Summer			3.202	-0.068
1.001	mh2	15 Summer	2	+0%	2/15 Summer				3.117	0.047
1.002	mh3	15 Winter	2	+0%	30/15 Summer	30/15 Summer			2.900	-0.105
2.000	mh4	15 Summer	2	+0%	30/15 Summer				2.570	-0.050
1.003	mh5	15 Winter	2	+0%	30/15 Summer				2.269	-0.121

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.000	0.56			13.3	OK	3
1.001	mh2	0.000	1.17			21.7	SURCHARGED	
1.002	mh3	0.000	0.55			35.3	OK	2
2.000	mh4	0.000	0.72			12.9	OK	
1.003	mh5	0.000	0.65			61.0	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2, 30
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	30	+0%	30/15 Summer	30/15 Summer			3.804	0.534
1.001	mh2	30 Summer	30	+0%	2/15 Summer				3.749	0.679
1.002	mh3	15 Winter	30	+0%	30/15 Summer	30/15 Summer			3.302	0.297
2.000	mh4	15 Winter	30	+0%	30/15 Summer				3.531	0.911
1.003	mh5	15 Winter	30	+0%	30/15 Summer				2.564	0.174

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	4.222	1.29			30.5	FLOOD	3
1.001	mh2	0.000	2.00			37.0	FLOOD RISK	
1.002	mh3	1.593	1.10			71.0	FLOOD	2
2.000	mh4	0.000	1.55			27.6	FLOOD RISK	
1.003	mh5	0.000	1.47			137.5	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	30
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	30	+45%	30/15 Summer	30/15 Summer			3.812	0.542
1.001	mh2	30 Winter	30	+45%	30/15 Summer				3.786	0.716
1.002	mh3	15 Winter	30	+45%	30/15 Summer	30/15 Summer			3.308	0.303
2.000	mh4	15 Winter	30	+45%	30/15 Summer	30/15 Summer			3.642	1.022
1.003	mh5	15 Winter	30	+45%	30/15 Summer				2.657	0.267

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	11.941	1.43			34.0	FLOOD	5
1.001	mh2	0.000	2.04			37.7	FLOOD RISK	
1.002	mh3	8.059	1.16			75.0	FLOOD	4
2.000	mh4	2.417	1.73			30.9	FLOOD	3
1.003	mh5	0.000	1.68			156.8	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	100	+0%	100/15 Summer	100/15 Summer			3.813	0.543
1.001	mh2	60 Summer	100	+0%	100/15 Summer				3.738	0.668
1.002	mh3	15 Winter	100	+0%	100/15 Summer	100/15 Summer			3.309	0.304
2.000	mh4	15 Winter	100	+0%	100/15 Summer	100/15 Summer			3.643	1.023
1.003	mh5	15 Winter	100	+0%	100/15 Summer				2.670	0.280

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	13.258	1.44			34.1	FLOOD	5
1.001	mh2	0.000	2.02			37.5	FLOOD RISK	
1.002	mh3	9.278	1.16			74.7	FLOOD	4
2.000	mh4	2.995	1.73			30.9	FLOOD	3
1.003	mh5	0.000	1.70			159.1	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	100	+45%	100/15 Summer	100/15 Summer			3.827	0.557
1.001	mh2	15 Summer	100	+45%	100/15 Summer	100/15 Summer			3.922	0.852
1.002	mh3	15 Winter	100	+45%	100/15 Summer	100/15 Summer			3.322	0.317
2.000	mh4	15 Winter	100	+45%	100/15 Summer	100/15 Summer			3.649	1.029
1.003	mh5	15 Winter	100	+45%	100/15 Summer				2.807	0.417

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	26.702	1.45			34.3	FLOOD	6
1.001	mh2	1.641	2.10			38.8	FLOOD	2
1.002	mh3	22.164	1.20			77.4	FLOOD	6
2.000	mh4	9.331	1.79			32.0	FLOOD	5
1.003	mh5	0.000	1.94			181.5	SURCHARGED	

Existing Network Details for Storm

* - Indicates pipe has been modified outside of System 1

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
*	1.000	34.000	0.340	100.0	0.083	3.00	0.600	o	225	Pipe/Conduit
*	1.001	25.600	1.100	23.3	0.084	0.00	0.600	o	675	Pipe/Conduit
*	1.002	20.000	0.200	100.0	0.084	0.00	0.600	o	675	Pipe/Conduit

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	1.000	mh1	3.910	1.930	1.755	3.740	1.590	1.925		1200
*	1.001	mh2	3.740	1.140	1.925	3.350	0.040	2.635		1800
*	1.002	mh3	3.350	0.040	2.635	5.500	-0.160	4.985		1800

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
mh1	3.910	1.980	Open Manhole	1200	1.000	1.930	225				
mh2	3.740	2.600	Open Manhole	1800	1.001	1.140	675	1.000	1.590	225	
mh3	3.350	3.310	Open Manhole	1800	1.002	0.040	675	1.001	0.040	675	
	5.500	5.660	Open Manhole	0		OUTFALL		1.002	-0.160	675	

No coordinates have been specified, layout information cannot be produced.

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	225	mh1	3.910	1.930	1.755	Open Manhole	1200
1.001	o	675	mh2	3.740	1.140	1.925	Open Manhole	1800
1.002	o	675	mh3	3.350	0.040	2.635	Open Manhole	1800

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	34.000	100.0	mh2	3.740	1.590	1.925	Open Manhole	1800
1.001	25.600	23.3	mh3	3.350	0.040	2.635	Open Manhole	1800
1.002	20.000	100.0		5.500	-0.160	4.985	Open Manhole	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.002		5.500	-0.160	0.000	0	0

Simulation Criteria for Storm

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

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

Synthetic Rainfall Details

Rainfall Model	FEH	E (1km)	0.310
Return Period (years)	1	F (1km)	2.498
FEH Rainfall Version	1999	Summer Storms	Yes
Site Location GB 622800 309650 TG 22800 09650		Winter Storms	No
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370	Storm Duration (mins)	30
D3 (1km)	0.255		

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region	England and Wales	Ratio R 0.406	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	1	+0%					2.013	-0.142	0.000
1.001	mh2	15 Summer	1	+0%					1.198	-0.617	0.000
1.002	mh3	15 Summer	1	+0%					0.144	-0.571	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.28			13.5	OK	
1.001	mh2	0.02			23.6	OK	
1.002	mh3	0.06			33.2	OK	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region	England and Wales	Ratio R 0.406	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	2	+0%					2.026	-0.129	0.000
1.001	mh2	15 Summer	2	+0%					1.210	-0.605	0.000
1.002	mh3	15 Summer	2	+0%					0.162	-0.553	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.36			17.5	OK	
1.001	mh2	0.02			30.3	OK	
1.002	mh3	0.08			42.9	OK	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2, 30
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	2	+0%					2.029	-0.126	0.000
1.001	mh2	15 Summer	2	+0%					1.211	-0.604	0.000
1.002	mh3	15 Summer	2	+0%					0.166	-0.549	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.37			18.3	OK	
1.001	mh2	0.02			31.7	OK	
1.002	mh3	0.08			44.9	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2, 30
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	30	+0%					2.135	-0.020	0.000
1.001	mh2	15 Summer	30	+0%					1.256	-0.559	0.000
1.002	mh3	15 Summer	30	+0%					0.263	-0.452	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.95			46.3	OK	
1.001	mh2	0.07			90.4	OK	
1.002	mh3	0.24			134.3	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	30
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	30	+45%	30/15 Summer				2.515	0.360	0.000
1.001	mh2	15 Summer	30	+45%					1.282	-0.533	0.000
1.002	mh3	15 Summer	30	+45%					0.310	-0.405	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	1.40			68.3	SURCHARGED	
1.001	mh2	0.10			131.0	OK	
1.002	mh3	0.34			193.0	OK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	100	+0%	100/15 Summer				2.581	0.426	0.000
1.001	mh2	15 Summer	100	+0%					1.285	-0.530	0.000
1.002	mh3	15 Summer	100	+0%					0.317	-0.398	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	1.46			71.4	SURCHARGED	
1.001	mh2	0.10			137.0	OK	
1.002	mh3	0.36			201.9	OK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	100	+45%	100/15 Summer				3.369	1.214	0.000
1.001	mh2	15 Summer	100	+45%					1.312	-0.503	0.000
1.002	mh3	15 Summer	100	+45%					0.382	-0.333	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	2.09			102.2	SURCHARGED	
1.001	mh2	0.15			196.6	OK	
1.002	mh3	0.51			289.8	OK	

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
1.000	16.200	0.250	64.8	0.035	3.00	0.600	o	150	Pipe/Conduit
1.001	27.300	0.170	160.6	0.035	0.00	0.600	o	150	Pipe/Conduit
1.002	20.000	0.100	200.0	0.035	0.00	0.600	o	150	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
1.000	mh1	3.500	2.810	0.540	3.560	2.560	0.850		1200
1.001	mh2	3.560	2.560	0.850	3.730	2.390	1.190		1200
1.002	mh3	3.730	2.390	1.190	5.500	2.290	3.060		1200

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
mh1	3.500	0.690	Open Manhole	1200	1.000	2.810	150				
mh2	3.560	1.000	Open Manhole	1200	1.001	2.560	150	1.000	2.560	150	
mh3	3.730	1.340	Open Manhole	1200	1.002	2.390	150	1.001	2.390	150	
	5.500	3.210	Open Manhole	0		OUTFALL		1.002	2.290	150	

No coordinates have been specified, layout information cannot be produced.

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	mh1	3.500	2.810	0.540	Open Manhole	1200
1.001	o	150	mh2	3.560	2.560	0.850	Open Manhole	1200
1.002	o	150	mh3	3.730	2.390	1.190	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	16.200	64.8	mh2	3.560	2.560	0.850	Open Manhole	1200
1.001	27.300	160.6	mh3	3.730	2.390	1.190	Open Manhole	1200
1.002	20.000	200.0		5.500	2.290	3.060	Open Manhole	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.002		5.500	2.290	0.000	0	0

Simulation Criteria for Storm

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

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

Synthetic Rainfall Details

Rainfall Model	FEH	E (1km)	0.310
Return Period (years)	1	F (1km)	2.498
FEH Rainfall Version	1999	Summer Storms	Yes
Site Location GB 622800 309650 TG 22800 09650		Winter Storms	No
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370	Storm Duration (mins)	30
D3 (1km)	0.255		

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region England and Wales		Ratio R 0.405	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	1	+0%					2.866	-0.094	0.000
1.001	mh2	15 Summer	1	+0%	2/15 Summer				2.657	-0.053	0.000
1.002	mh3	15 Winter	1	+0%	1/15 Summer				2.552	0.012	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.29			5.9	OK	
1.001	mh2	0.71			9.5	OK	
1.002	mh3	1.08			12.7	SURCHARGED	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region England and Wales		Ratio R 0.405	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	2	+0%					2.874	-0.086	0.000
1.001	mh2	15 Summer	2	+0%	2/15 Summer				2.714	0.004	0.000
1.002	mh3	15 Winter	2	+0%	1/15 Summer				2.616	0.076	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.37			7.6	OK	
1.001	mh2	0.85			11.3	SURCHARGED	
1.002	mh3	1.34			15.8	SURCHARGED	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2, 30
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Summer	2	+0%	30/15 Summer	30/15 Summer			2.876	-0.084
1.001	mh2	15 Summer	2	+0%	2/15 Summer				2.734	0.024
1.002	mh3	15 Winter	2	+0%	2/15 Summer				2.631	0.091

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.000	0.39			8.0	OK	3
1.001	mh2	0.000	0.87			11.6	SURCHARGED	
1.002	mh3	0.000	1.39			16.4	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2, 30
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	30	+0%	30/15 Summer	30/15 Summer			3.503	0.543
1.001	mh2	15 Winter	30	+0%	2/15 Summer				3.524	0.814
1.002	mh3	15 Winter	30	+0%	2/15 Summer				3.287	0.747

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	2.756	0.89			18.2	FLOOD	3
1.001	mh2	0.000	1.59			21.2	FLOOD RISK	
1.002	mh3	0.000	2.87			33.7	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	30
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	30	+45%	30/15 Summer	30/15 Summer			3.509	0.549
1.001	mh2	15 Winter	30	+45%	30/15 Summer	30/15 Summer			3.561	0.851
1.002	mh3	15 Winter	30	+45%	30/15 Summer				3.477	0.937

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	8.863	1.06			21.7	FLOOD	5
1.001	mh2	1.320	1.63			21.7	FLOOD	2
1.002	mh3	0.000	3.20			37.6	FLOOD RISK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	100	+0%	100/15 Summer	100/15 Summer			3.510	0.550
1.001	mh2	15 Winter	100	+0%	100/15 Summer	100/15 Summer			3.562	0.852
1.002	mh3	15 Winter	100	+0%	100/15 Summer				3.492	0.952

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	9.653	1.06			21.7	FLOOD	5
1.001	mh2	1.731	1.63			21.7	FLOOD	2
1.002	mh3	0.000	3.22			37.9	FLOOD RISK	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	100	+45%	100/15 Summer	100/15 Summer			3.518	0.558
1.001	mh2	15 Winter	100	+45%	100/15 Summer	100/15 Summer			3.567	0.857
1.002	mh3	15 Winter	100	+45%	100/15 Summer				3.568	1.028

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	17.703	1.06			21.8	FLOOD	7
1.001	mh2	7.432	1.85			24.7	FLOOD	4
1.002	mh3	0.000	3.37			39.6	FLOOD RISK	

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
1.000	43.200	0.750	57.6	0.133	3.00	0.600	o	225	Pipe/Conduit
1.001	24.300	0.115	211.3	0.133	0.00	0.600	o	225	Pipe/Conduit
1.002	6.400	0.070	91.4	0.133	0.00	0.600	o	300	Pipe/Conduit
1.003	51.700	0.355	145.6	0.133	0.00	0.600	o	300	Pipe/Conduit
2.000	32.400	0.430	75.3	0.133	5.00	0.600	o	225	Pipe/Conduit
2.001	8.500	1.070	7.9	0.133	0.00	0.600	o	225	Pipe/Conduit
1.004	20.000	0.067	298.5	0.399	0.00	0.600	o	675	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
1.000	mh1	4.070	2.810	1.035	3.540	2.060	1.255		1200
1.001	mh2	3.540	2.060	1.255	3.190	1.945	1.020		1200
1.002	mh3	3.190	1.870	1.020	2.900	1.800	0.800		1200
1.003	mh4	2.900	1.800	0.800	3.930	1.445	2.185		1200
2.000	mh5	3.840	3.020	0.595	3.890	2.590	1.075		1200
2.001	mh6	3.890	2.590	1.075	3.930	1.520	2.185		1200
1.004	mh7	3.930	1.070	2.185	5.500	1.003	3.822		1800

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
mh1	4.070	1.260	Open Manhole	1200	1.000	2.810	225				
mh2	3.540	1.480	Open Manhole	1200	1.001	2.060	225	1.000	2.060	225	
mh3	3.190	1.320	Open Manhole	1200	1.002	1.870	300	1.001	1.945	225	
mh4	2.900	1.100	Open Manhole	1200	1.003	1.800	300	1.002	1.800	300	
mh5	3.840	0.820	Open Manhole	1200	2.000	3.020	225				
mh6	3.890	1.300	Open Manhole	1200	2.001	2.590	225	2.000	2.590	225	
mh7	3.930	2.860	Open Manhole	1800	1.004	1.070	675	1.003	1.445	300	
								2.001	1.520	225	
	5.500	4.497	Open Manhole	0		OUTFALL		1.004	1.003	675	

No coordinates have been specified, layout information cannot be produced.

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	225	mh1	4.070	2.810	1.035	Open Manhole	1200
1.001	o	225	mh2	3.540	2.060	1.255	Open Manhole	1200
1.002	o	300	mh3	3.190	1.870	1.020	Open Manhole	1200
1.003	o	300	mh4	2.900	1.800	0.800	Open Manhole	1200
2.000	o	225	mh5	3.840	3.020	0.595	Open Manhole	1200
2.001	o	225	mh6	3.890	2.590	1.075	Open Manhole	1200
1.004	o	675	mh7	3.930	1.070	2.185	Open Manhole	1800

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	43.200	57.6	mh2	3.540	2.060	1.255	Open Manhole	1200
1.001	24.300	211.3	mh3	3.190	1.945	1.020	Open Manhole	1200
1.002	6.400	91.4	mh4	2.900	1.800	0.800	Open Manhole	1200
1.003	51.700	145.6	mh7	3.930	1.445	2.185	Open Manhole	1800
2.000	32.400	75.3	mh6	3.890	2.590	1.075	Open Manhole	1200
2.001	8.500	7.9	mh7	3.930	1.520	2.185	Open Manhole	1800
1.004	20.000	298.5		5.500	1.003	3.822	Open Manhole	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.004		5.500	1.003	0.000	0	0

Simulation Criteria for Storm

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

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

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
Return Period (years)	1	E (1km)	0.310
FEH Rainfall Version	1999	F (1km)	2.498
Site Location	GB 622800 309650 TG 22800 09650	Summer Storms	Yes
C (1km)	-0.024	Winter Storms	No
D1 (1km)	0.275	Cv (Summer)	0.750
D2 (1km)	0.370	Cv (Winter)	0.840

Synthetic Rainfall Details

Storm Duration (mins) 30

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region	England and Wales	Ratio R 0.404	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	1	+0%					2.902	-0.133	0.000
1.001	mh2	15 Winter	1	+0%	1/15 Summer				2.298	0.013	0.000
1.002	mh3	15 Winter	1	+0%					2.070	-0.100	0.000
1.003	mh4	15 Winter	1	+0%					1.998	-0.102	0.000
2.000	mh5	15 Winter	1	+0%					3.109	-0.136	0.000
2.001	mh6	15 Winter	1	+0%					2.664	-0.151	0.000
1.004	mh7	15 Winter	1	+0%					1.354	-0.391	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.33			21.4	OK	
1.001	mh2	1.07			35.1	SURCHARGED	
1.002	mh3	0.77			51.1	OK	
1.003	mh4	0.76			65.8	OK	
2.000	mh5	0.32			18.3	OK	
2.001	mh6	0.23			33.9	OK	
1.004	mh7	0.37			145.1	OK	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region	England and Wales	Ratio R 0.404	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	2	+0%					2.917	-0.118	0.000
1.001	mh2	15 Winter	2	+0%	1/15 Summer				2.391	0.106	0.000
1.002	mh3	15 Winter	2	+0%					2.111	-0.059	0.000
1.003	mh4	15 Winter	2	+0%					2.038	-0.062	0.000
2.000	mh5	15 Winter	2	+0%					3.123	-0.122	0.000
2.001	mh6	15 Winter	2	+0%					2.675	-0.140	0.000
1.004	mh7	15 Winter	2	+0%					1.399	-0.346	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.42			27.7	OK	
1.001	mh2	1.39			45.6	SURCHARGED	
1.002	mh3	1.00			66.1	OK	
1.003	mh4	0.98			85.3	OK	
2.000	mh5	0.42			23.6	OK	
2.001	mh6	0.30			43.8	OK	
1.004	mh7	0.47			186.5	OK	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2, 30
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Summer	2	+0%	30/15 Summer	30/15 Summer			2.920	-0.115
1.001	mh2	15 Winter	2	+0%	2/15 Summer	30/15 Summer			2.413	0.128
1.002	mh3	15 Winter	2	+0%	30/15 Summer	30/15 Summer			2.153	-0.017
1.003	mh4	15 Winter	2	+0%	30/15 Summer	30/15 Summer			2.055	-0.045
2.000	mh5	15 Winter	2	+0%	30/15 Summer				3.126	-0.119
2.001	mh6	15 Winter	2	+0%					2.678	-0.137
1.004	mh7	15 Winter	2	+0%	30/15 Summer				1.407	-0.338

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.000	0.44			29.0	OK	2
1.001	mh2	0.000	1.46			47.8	SURCHARGED	4
1.002	mh3	0.000	1.00			66.3	OK	
1.003	mh4	0.000	1.00			86.8	OK	3
2.000	mh5	0.000	0.44			24.8	OK	
2.001	mh6	0.000	0.31			45.9	OK	
1.004	mh7	0.000	0.49			194.5	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2, 30
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Summer	30	+0%	30/15 Summer	30/15 Summer			4.072	1.037
1.001	mh2	15 Winter	30	+0%	2/15 Summer	30/15 Summer			3.554	1.269
1.002	mh3	15 Summer	30	+0%	30/15 Summer	30/15 Summer			3.164	0.994
1.003	mh4	15 Winter	30	+0%	30/15 Summer	30/15 Summer			2.906	0.806
2.000	mh5	15 Winter	30	+0%	30/15 Summer				3.351	0.106
2.001	mh6	15 Winter	30	+0%					2.756	-0.059
1.004	mh7	15 Winter	30	+0%	30/15 Summer				1.791	0.046

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	1.953	0.84			54.6	FLOOD	2
1.001	mh2	13.521	2.99			98.0	FLOOD	4
1.002	mh3	0.026	1.93			128.0	FLOOD	
1.003	mh4	6.371	1.82			157.7	FLOOD	3
2.000	mh5	0.000	1.11			62.3	SURCHARGED	
2.001	mh6	0.000	0.87			127.3	OK	
1.004	mh7	0.000	1.21			475.4	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	30
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Summer	30	+45%	30/15 Summer	30/15 Summer			4.078	1.043
1.001	mh2	15 Winter	30	+45%	30/15 Summer	30/15 Summer			3.569	1.284
1.002	mh3	15 Summer	30	+45%	30/15 Summer	30/15 Summer			3.194	1.024
1.003	mh4	15 Winter	30	+45%	30/15 Summer	30/15 Summer			2.921	0.821
2.000	mh5	15 Winter	30	+45%	30/15 Summer	30/15 Summer			3.843	0.598
2.001	mh6	15 Winter	30	+45%	30/15 Summer				3.264	0.449
1.004	mh7	15 Winter	30	+45%	30/15 Summer				1.875	0.130

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	8.327	0.84			54.7	FLOOD	4
1.001	mh2	28.930	3.16			103.7	FLOOD	5
1.002	mh3	3.566	2.02			133.9	FLOOD	2
1.003	mh4	21.015	1.83			158.7	FLOOD	5
2.000	mh5	2.682	1.51			84.9	FLOOD	2
2.001	mh6	0.000	1.11			161.9	SURCHARGED	
1.004	mh7	0.000	1.52			598.6	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Summer	100	+0%	100/15 Summer	100/15 Summer			4.080	1.045
1.001	mh2	15 Winter	100	+0%	100/15 Summer	100/15 Summer			3.571	1.286
1.002	mh3	15 Summer	100	+0%	100/15 Summer	100/15 Summer			3.195	1.025
1.003	mh4	15 Winter	100	+0%	100/15 Summer	100/15 Summer			2.923	0.823
2.000	mh5	15 Winter	100	+0%	100/15 Summer	100/15 Summer			3.844	0.599
2.001	mh6	15 Winter	100	+0%	100/15 Summer				3.295	0.480
1.004	mh7	15 Winter	100	+0%	100/15 Summer				1.887	0.142

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	9.518	0.84			54.7	FLOOD	4
1.001	mh2	31.113	3.17			103.9	FLOOD	6
1.002	mh3	4.576	2.02			133.9	FLOOD	3
1.003	mh4	22.879	1.83			158.9	FLOOD	5
2.000	mh5	3.961	1.54			86.5	FLOOD	2
2.001	mh6	0.000	1.14			166.3	SURCHARGED	
1.004	mh7	0.000	1.56			617.1	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Summer	100	+45%	100/15 Summer	100/15 Summer			4.092	1.057
1.001	mh2	15 Winter	100	+45%	100/15 Summer	100/15 Summer			3.592	1.307
1.002	mh3	15 Summer	100	+45%	100/15 Summer	100/15 Summer			3.205	1.035
1.003	mh4	15 Winter	100	+45%	100/15 Summer	100/15 Summer			2.943	0.843
2.000	mh5	15 Winter	100	+45%	100/15 Summer	100/15 Summer			3.863	0.618
2.001	mh6	15 Winter	100	+45%	100/15 Summer				3.705	0.890
1.004	mh7	15 Winter	100	+45%	100/15 Summer				2.015	0.270

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	21.872	0.84			54.7	FLOOD	6
1.001	mh2	52.445	3.18			104.3	FLOOD	7
1.002	mh3	15.174	2.02			133.8	FLOOD	4
1.003	mh4	43.311	1.85			160.3	FLOOD	6
2.000	mh5	23.098	1.57			88.1	FLOOD	4
2.001	mh6	0.000	1.26			183.2	FLOOD RISK	
1.004	mh7	0.000	1.95			770.8	SURCHARGED	

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
1.000	41.600	0.735	56.6	0.123	3.00	0.600	o	225	Pipe/Conduit
2.000	17.900	0.015	1193.3	0.123	5.00	0.600	o	225	Pipe/Conduit
1.001	52.600	0.400	131.5	0.123	0.00	0.600	o	300	Pipe/Conduit
1.002	44.400	0.380	116.8	0.123	0.00	0.600	o	300	Pipe/Conduit
3.000	16.400	0.230	71.3	0.123	5.00	0.600	o	225	Pipe/Conduit
3.001	44.400	0.400	111.0	0.123	0.00	0.600	o	225	Pipe/Conduit
3.002	38.000	0.065	584.6	0.123	0.00	0.600	o	225	Pipe/Conduit
3.003	3.400	0.750	4.5	0.123	0.00	0.600	o	300	Pipe/Conduit
3.004	10.000	0.050	200.0	0.124	0.00	0.600	o	300	Pipe/Conduit
1.003	18.000	0.090	200.0	0.124	0.00	0.600	o	375	Pipe/Conduit
1.004	14.100	0.071	198.6	0.123	0.00	0.600	o	375	Pipe/Conduit
1.005	10.000	0.023	434.8	0.124	0.00	0.600	o	675	Pipe/Conduit

PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
1.000	mh1	4.480	2.990	1.265	4.180	2.255	1.700		1200
2.000	mh2	4.190	2.270	1.695	4.180	2.255	1.700		1200
1.001	mh3	4.180	2.180	1.700	4.520	1.780	2.440		1200
1.002	mh4	4.520	1.780	2.440	4.100	1.400	2.400		1200
3.000	mh5	4.290	2.970	1.095	4.310	2.740	1.345		1200
3.001	mh6	4.310	2.740	1.345	4.260	2.340	1.695		1200
3.002	mh7	4.260	2.340	1.695	4.160	2.275	1.660		1200
3.003	mh8	4.160	2.200	1.660	4.100	1.450	2.350		1200
3.004	mh9	4.100	1.450	2.350	4.100	1.400	2.400		1200
1.003	mh10	4.100	1.325	2.400	4.100	1.235	2.490		1500
1.004	mh11	4.100	1.235	2.490	4.840	1.164	3.301		1500
1.005	mh12	4.840	0.864	3.301	5.500	0.841	3.984		1800

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
mh1	4.480	1.490	Open Manhole	1200	1.000	2.990	225				
mh2	4.190	1.920	Open Manhole	1200	2.000	2.270	225				
mh3	4.180	2.000	Open Manhole	1200	1.001	2.180	300	1.000	2.255	225	
								2.000	2.255	225	
mh4	4.520	2.740	Open Manhole	1200	1.002	1.780	300	1.001	1.780	300	
mh5	4.290	1.320	Open Manhole	1200	3.000	2.970	225				
mh6	4.310	1.570	Open Manhole	1200	3.001	2.740	225	3.000	2.740	225	
mh7	4.260	1.920	Open Manhole	1200	3.002	2.340	225	3.001	2.340	225	
mh8	4.160	1.960	Open Manhole	1200	3.003	2.200	300	3.002	2.275	225	
mh9	4.100	2.650	Open Manhole	1200	3.004	1.450	300	3.003	1.450	300	
mh10	4.100	2.775	Open Manhole	1500	1.003	1.325	375	1.002	1.400	300	
								3.004	1.400	300	
mh11	4.100	2.865	Open Manhole	1500	1.004	1.235	375	1.003	1.235	375	
mh12	4.840	3.976	Open Manhole	1800	1.005	0.864	675	1.004	1.164	375	
	5.500	4.659	Open Manhole	0		OUTFALL		1.005	0.841	675	

No coordinates have been specified, layout information cannot be produced.

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	225	mh1	4.480	2.990	1.265	Open Manhole	1200
2.000	o	225	mh2	4.190	2.270	1.695	Open Manhole	1200
1.001	o	300	mh3	4.180	2.180	1.700	Open Manhole	1200
1.002	o	300	mh4	4.520	1.780	2.440	Open Manhole	1200
3.000	o	225	mh5	4.290	2.970	1.095	Open Manhole	1200
3.001	o	225	mh6	4.310	2.740	1.345	Open Manhole	1200
3.002	o	225	mh7	4.260	2.340	1.695	Open Manhole	1200
3.003	o	300	mh8	4.160	2.200	1.660	Open Manhole	1200
3.004	o	300	mh9	4.100	1.450	2.350	Open Manhole	1200
1.003	o	375	mh10	4.100	1.325	2.400	Open Manhole	1500
1.004	o	375	mh11	4.100	1.235	2.490	Open Manhole	1500
1.005	o	675	mh12	4.840	0.864	3.301	Open Manhole	1800

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	41.600	56.6	mh3	4.180	2.255	1.700	Open Manhole	1200
2.000	17.900	1193.3	mh3	4.180	2.255	1.700	Open Manhole	1200
1.001	52.600	131.5	mh4	4.520	1.780	2.440	Open Manhole	1200
1.002	44.400	116.8	mh10	4.100	1.400	2.400	Open Manhole	1500
3.000	16.400	71.3	mh6	4.310	2.740	1.345	Open Manhole	1200
3.001	44.400	111.0	mh7	4.260	2.340	1.695	Open Manhole	1200
3.002	38.000	584.6	mh8	4.160	2.275	1.660	Open Manhole	1200
3.003	3.400	4.5	mh9	4.100	1.450	2.350	Open Manhole	1200
3.004	10.000	200.0	mh10	4.100	1.400	2.400	Open Manhole	1500
1.003	18.000	200.0	mh11	4.100	1.235	2.490	Open Manhole	1500
1.004	14.100	198.6	mh12	4.840	1.164	3.301	Open Manhole	1800
1.005	10.000	434.8		5.500	0.841	3.984	Open Manhole	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.005		5.500	0.841	0.000	0	0

Simulation Criteria for Storm

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

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

Synthetic Rainfall Details

Rainfall Model	FEH	E (1km)	0.310
Return Period (years)	1	F (1km)	2.498
FEH Rainfall Version	1999	Summer Storms	Yes
Site Location	GB 622800 309650 TG 22800 09650	Winter Storms	No
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370	Storm Duration (mins)	30
D3 (1km)	0.255		

1 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region	England and Wales	Ratio R 0.405	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	1	+0%					3.078	-0.137	0.000
2.000	mh2	15 Winter	1	+0%	1/15 Summer				2.503	0.008	0.000
1.001	mh3	15 Winter	1	+0%					2.339	-0.141	0.000
1.002	mh4	15 Winter	1	+0%	2/15 Summer				1.959	-0.121	0.000
3.000	mh5	15 Winter	1	+0%	2/15 Winter				3.057	-0.138	0.000
3.001	mh6	15 Winter	1	+0%	2/15 Summer				2.936	-0.029	0.000
3.002	mh7	15 Winter	1	+0%	1/15 Summer				2.779	0.214	0.000
3.003	mh8	15 Winter	1	+0%					2.302	-0.198	0.000
3.004	mh9	15 Winter	1	+0%	1/15 Summer				1.877	0.127	0.000
1.003	mh10	15 Winter	1	+0%	1/15 Summer				1.803	0.103	0.000
1.004	mh11	15 Winter	1	+0%	1/15 Summer				1.673	0.063	0.000
1.005	mh12	15 Winter	1	+0%					1.299	-0.240	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.30			20.0	OK	
2.000	mh2	1.68			16.9	SURCHARGED	
1.001	mh3	0.54			49.1	OK	
1.002	mh4	0.65			62.6	OK	
3.000	mh5	0.31			17.2	OK	
3.001	mh6	0.63			29.4	OK	
3.002	mh7	2.08			41.8	SURCHARGED	
3.003	mh8	0.25			54.4	OK	
3.004	mh9	1.10			67.2	SURCHARGED	
1.003	mh10	1.19			138.8	SURCHARGED	
1.004	mh11	1.41			151.1	SURCHARGED	
1.005	mh12	0.73			164.1	OK	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 20.000	Cv (Summer) 0.750
Region	England and Wales	Ratio R 0.405	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
1.000	mh1	15 Summer	2	+0%					3.092	-0.123	0.000
2.000	mh2	15 Winter	2	+0%	1/15 Summer				2.514	0.019	0.000
1.001	mh3	15 Winter	2	+0%					2.368	-0.112	0.000
1.002	mh4	15 Winter	2	+0%	2/15 Summer				2.148	0.068	0.000
3.000	mh5	15 Summer	2	+0%	2/15 Winter				3.131	-0.064	0.000
3.001	mh6	15 Winter	2	+0%	2/15 Summer				3.160	0.195	0.000
3.002	mh7	15 Winter	2	+0%	1/15 Summer				2.925	0.360	0.000
3.003	mh8	15 Winter	2	+0%					2.315	-0.185	0.000
3.004	mh9	15 Winter	2	+0%	1/15 Summer				2.054	0.304	0.000
1.003	mh10	15 Winter	2	+0%	1/15 Summer				1.941	0.241	0.000
1.004	mh11	15 Winter	2	+0%	1/15 Summer				1.747	0.137	0.000
1.005	mh12	15 Winter	2	+0%					1.354	-0.185	0.000

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.39			25.9	OK	
2.000	mh2	2.18			21.8	SURCHARGED	
1.001	mh3	0.69			63.4	OK	
1.002	mh4	0.74			71.1	SURCHARGED	
3.000	mh5	0.38			21.0	OK	
3.001	mh6	0.75			35.4	SURCHARGED	
3.002	mh7	2.55			51.3	SURCHARGED	
3.003	mh8	0.31			66.9	OK	
3.004	mh9	1.36			83.2	SURCHARGED	
1.003	mh10	1.46			169.9	SURCHARGED	
1.004	mh11	1.73			185.2	SURCHARGED	
1.005	mh12	0.90			200.8	OK	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2, 30
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Summer	2	+0%	30/15 Summer	30/15 Summer			3.094	-0.121
2.000	mh2	15 Winter	2	+0%	2/15 Summer	30/15 Summer			2.516	0.021
1.001	mh3	15 Winter	2	+0%	30/15 Summer	30/15 Summer			2.374	-0.106
1.002	mh4	15 Winter	2	+0%	2/15 Summer				2.199	0.119
3.000	mh5	15 Winter	2	+0%	2/15 Winter	30/15 Summer			3.261	0.066
3.001	mh6	15 Winter	2	+0%	2/15 Summer	30/15 Summer			3.223	0.258
3.002	mh7	15 Winter	2	+0%	2/15 Summer	30/15 Summer			2.968	0.403
3.003	mh8	15 Winter	2	+0%	30/15 Summer				2.318	-0.182
3.004	mh9	15 Winter	2	+0%	2/15 Summer				2.099	0.349
1.003	mh10	15 Winter	2	+0%	2/15 Summer				1.976	0.276
1.004	mh11	15 Winter	2	+0%	2/15 Summer				1.766	0.156
1.005	mh12	15 Winter	2	+0%	30/15 Summer				1.365	-0.174

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	0.000	0.41			27.1	OK	2
2.000	mh2	0.000	2.28			22.9	SURCHARGED	4
1.001	mh3	0.000	0.73			66.5	OK	3
1.002	mh4	0.000	0.76			73.3	SURCHARGED	
3.000	mh5	0.000	0.39			21.4	SURCHARGED	5
3.001	mh6	0.000	0.79			37.0	SURCHARGED	4
3.002	mh7	0.000	2.66			53.6	SURCHARGED	3
3.003	mh8	0.000	0.32			69.8	OK	
3.004	mh9	0.000	1.42			86.7	SURCHARGED	

2 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.003	mh10	0.000	1.52			176.7	SURCHARGED	
1.004	mh11	0.000	1.80			192.7	SURCHARGED	
1.005	mh12	0.000	0.94			209.1	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2, 30
Climate Change (%)	0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Summer	30	+0%	30/15 Summer	30/15 Summer			4.482	1.267
2.000	mh2	15 Winter	30	+0%	2/15 Summer	30/15 Summer			4.203	1.708
1.001	mh3	15 Winter	30	+0%	30/15 Summer	30/15 Summer			4.188	1.708
1.002	mh4	15 Winter	30	+0%	2/15 Summer				4.083	2.003
3.000	mh5	15 Winter	30	+0%	2/15 Winter	30/15 Summer			4.311	1.116
3.001	mh6	15 Winter	30	+0%	2/15 Summer	30/15 Summer			4.319	1.354
3.002	mh7	15 Winter	30	+0%	2/15 Summer	30/15 Summer			4.267	1.702
3.003	mh8	15 Summer	30	+0%	30/15 Summer				4.149	1.649
3.004	mh9	15 Winter	30	+0%	2/15 Summer				3.989	2.239
1.003	mh10	15 Summer	30	+0%	2/15 Summer				3.516	1.816
1.004	mh11	15 Winter	30	+0%	2/15 Summer				2.722	1.112
1.005	mh12	15 Winter	30	+0%	30/15 Summer				1.611	0.072

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	1.797	0.72			47.6	FLOOD	2
2.000	mh2	13.158	9.28			93.1	FLOOD	4
1.001	mh3	7.788	1.28			117.1	FLOOD	3
1.002	mh4	0.000	1.43			137.3	SURCHARGED	
3.000	mh5	21.361	1.20			65.9	FLOOD	5
3.001	mh6	8.840	1.45			68.1	FLOOD	4
3.002	mh7	6.747	4.12			82.8	FLOOD	3
3.003	mh8	0.000	0.52			112.9	FLOOD RISK	
3.004	mh9	0.000	2.75			168.4	FLOOD RISK	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.003	mh10	0.000	2.99			348.0	SURCHARGED	
1.004	mh11	0.000	3.79			406.5	SURCHARGED	
1.005	mh12	0.000	2.08			465.7	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	30
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Winter	30	+45%	30/15 Summer	30/15 Summer			4.490	1.275
2.000	mh2	15 Winter	30	+45%	30/15 Summer	30/15 Summer			4.217	1.722
1.001	mh3	15 Winter	30	+45%	30/15 Summer	30/15 Summer			4.207	1.727
1.002	mh4	15 Winter	30	+45%	30/15 Summer				4.228	2.148
3.000	mh5	15 Summer	30	+45%	30/15 Summer	30/15 Summer			4.320	1.125
3.001	mh6	15 Winter	30	+45%	30/15 Summer	30/15 Summer			4.330	1.365
3.002	mh7	15 Winter	30	+45%	30/15 Summer	30/15 Summer			4.282	1.717
3.003	mh8	15 Summer	30	+45%	30/15 Summer	30/15 Summer			4.169	1.669
3.004	mh9	15 Summer	30	+45%	30/15 Summer	30/15 Summer			4.101	2.351
1.003	mh10	15 Winter	30	+45%	30/15 Summer				3.734	2.034
1.004	mh11	15 Summer	30	+45%	30/15 Summer				3.014	1.404
1.005	mh12	15 Summer	30	+45%	30/15 Summer				1.667	0.128

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	10.403	0.66			43.4	FLOOD	5
2.000	mh2	27.419	10.97			110.1	FLOOD	5
1.001	mh3	27.164	1.56			142.7	FLOOD	5
1.002	mh4	0.000	1.49			143.2	FLOOD RISK	
3.000	mh5	30.269	1.21			66.5	FLOOD	6
3.001	mh6	19.760	1.58			74.5	FLOOD	5
3.002	mh7	22.656	4.88			98.1	FLOOD	5
3.003	mh8	8.972	0.72			156.8	FLOOD	3
3.004	mh9	1.296	3.08			188.8	FLOOD	2

30 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.003	mh10	0.000	3.06			356.1	SURCHARGED	
1.004	mh11	0.000	4.14			444.0	SURCHARGED	
1.005	mh12	0.000	2.40			536.9	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	15 Summer	100	+0%	100/15 Summer	100/15 Summer			4.490	1.275
2.000	mh2	15 Winter	100	+0%	100/15 Summer	100/15 Summer			4.220	1.725
1.001	mh3	15 Winter	100	+0%	100/15 Summer	100/15 Summer			4.210	1.730
1.002	mh4	15 Winter	100	+0%	100/15 Summer				4.224	2.144
3.000	mh5	15 Winter	100	+0%	100/15 Summer	100/15 Summer			4.327	1.132
3.001	mh6	15 Summer	100	+0%	100/15 Summer	100/15 Summer			4.328	1.363
3.002	mh7	15 Winter	100	+0%	100/15 Summer	100/15 Summer			4.285	1.720
3.003	mh8	15 Winter	100	+0%	100/15 Summer	100/15 Summer			4.172	1.672
3.004	mh9	15 Summer	100	+0%	100/15 Summer	100/15 Summer			4.102	2.352
1.003	mh10	15 Winter	100	+0%	100/15 Summer				3.754	2.054
1.004	mh11	15 Summer	100	+0%	100/15 Summer				3.026	1.416
1.005	mh12	15 Summer	100	+0%	100/15 Summer				1.674	0.135

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	9.879	0.67			44.1	FLOOD	5
2.000	mh2	29.582	11.04			110.8	FLOOD	6
1.001	mh3	30.365	1.59			145.0	FLOOD	5
1.002	mh4	0.000	1.50			144.4	FLOOD RISK	
3.000	mh5	36.923	1.21			66.4	FLOOD	6
3.001	mh6	17.722	1.59			74.7	FLOOD	6
3.002	mh7	24.793	4.98			100.0	FLOOD	5
3.003	mh8	12.086	0.73			159.2	FLOOD	3
3.004	mh9	2.308	3.09			189.0	FLOOD	2

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.003	mh10	0.000	3.04			354.5	SURCHARGED	
1.004	mh11	0.000	4.16			446.3	SURCHARGED	
1.005	mh12	0.000	2.44			544.4	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet 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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.255
FEH Rainfall Version	1999	E (1km)	0.310
Site Location	GB 622800 309650 TG 22800 09650	F (1km)	2.498
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.275	Cv (Winter)	0.840
D2 (1km)	0.370		

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	ON
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	mh1	60 Winter	100	+45%	100/15 Summer	100/15 Summer			4.484	1.269
2.000	mh2	15 Winter	100	+45%	100/15 Summer	100/15 Summer			4.241	1.746
1.001	mh3	15 Summer	100	+45%	100/15 Summer	100/15 Summer			4.232	1.752
1.002	mh4	15 Summer	100	+45%	100/15 Summer	100/15 Summer			4.520	2.440
3.000	mh5	15 Summer	100	+45%	100/15 Summer	100/15 Summer			4.339	1.144
3.001	mh6	15 Winter	100	+45%	100/15 Summer	100/15 Summer			4.349	1.384
3.002	mh7	15 Winter	100	+45%	100/15 Summer	100/15 Summer			4.304	1.739
3.003	mh8	15 Winter	100	+45%	100/15 Summer	100/15 Summer			4.194	1.694
3.004	mh9	15 Summer	100	+45%	100/15 Summer	100/15 Summer			4.119	2.369
1.003	mh10	15 Summer	100	+45%	100/15 Summer				3.964	2.264
1.004	mh11	15 Summer	100	+45%	100/15 Summer				3.217	1.607
1.005	mh12	15 Winter	100	+45%	100/15 Summer				1.722	0.183

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	mh1	3.779	0.64			42.0	FLOOD	6
2.000	mh2	51.394	11.22			112.5	FLOOD	7
1.001	mh3	52.378	1.64			149.8	FLOOD	6
1.002	mh4	0.548	1.54			147.7	FLOOD	1
3.000	mh5	48.940	1.20			65.7	FLOOD	8
3.001	mh6	39.171	1.60			75.1	FLOOD	7
3.002	mh7	44.090	4.88			98.2	FLOOD	6
3.003	mh8	33.935	0.72			157.1	FLOOD	5
3.004	mh9	18.661	3.49			213.6	FLOOD	3

100 year Return Period Summary of Critical Results by Maximum Outflow (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.003	mh10	0.000	3.06			356.4	FLOOD RISK	
1.004	mh11	0.000	4.46			478.1	SURCHARGED	
1.005	mh12	0.000	2.76			616.8	SURCHARGED	

Appendix: I – Greenfield Run-off Rate Calculations

Simulation Settings

Rainfall Methodology	FEH-13	Skip Steady State	x	1 year (l/s)	0.5
Summer CV	0.750	Drain Down Time (mins)	240	30 year (l/s)	1.4
Winter CV	0.840	Additional Storage (m³/ha)	20.0	100 year (l/s)	2.0
Analysis Speed	Normal	Check Discharge Rate(s)	✓	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	2.55
Greenfield Method	FEH	Growth Factor 100 year	3.56
Positively Drained Area (ha)	1.000	Betterment (%)	0
SAAR (mm)	634	QMed	0.5
Host	1	QBar	0.6
BFIHost	0.859	Q 1 year (l/s)	0.5
Region	5	Q 30 year (l/s)	1.4
QBar/QMed conversion factor	1.124	Q 100 year (l/s)	2.0
Growth Factor 1 year	0.87		

Simulation Settings

Rainfall Methodology	FEH-13	Skip Steady State	x	1 year (l/s)	0.5
Summer CV	0.750	Drain Down Time (mins)	240	30 year (l/s)	1.4
Winter CV	0.840	Additional Storage (m³/ha)	20.0	100 year (l/s)	2.0
Analysis Speed	Normal	Check Discharge Rate(s)	✓	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Betterment (%)	0
Greenfield Method	ReFH2	Q 1 year (l/s)	0.9
Region	England, Wales, NI	Q 30 year (l/s)	3.0
Include Baseflow	x	Q 100 year (l/s)	4.1
Positively Drained Area (ha)	1.000		

Anglia Square
Greenfield Run-off Rates using FEH Methods

			FEH GRR					RFEH2 GRR				
			1 in 1 year Greenfield Runoff Rate (based on 0.5 l/s/ha)	1 in 30 year Greenfield Runoff Rate (based on 1.4 l/s/ha)	1 in 30 year + 45% Climate Change Greenfield Runoff Rate (based on 2.9 l/s/ha)	1 in 100 year Greenfield Runoff Rate (based on 2.0 l/s/ha)	1 in 100 year + 45% Climate Change Greenfield Runoff Rate (based on 1.4 l/s/ha)	1 in 1 year Greenfield Runoff Rate (based on 0.9 l/s/ha)	1 in 30 year Greenfield Runoff Rate (based on 3.0 l/s/ha)	1 in 30 year + 45% Climate Change Greenfield Runoff Rate (based on 4.35 l/s/ha)	1 in 100 year Greenfield Runoff Rate (based on 4.1 l/s/ha)	1 in 100 year + 45% Climate Change Greenfield Runoff Rate (based on 5.9 l/s/ha)
			0.5	1.4	2.03	2	2.9	0.9	3	4.35	4.1	5.9
	(ha)											
Total Site Area	4.65		2.325	6.51	9.4395	9.3	13.485	4.185	13.95	20.2275	19.065	27.435
Block B Total Area	0.2692		0.1346	0.37688	0.546476	0.5384	0.78068	0.24228	0.8076	1.17102	1.10372	1.58828
Block B Impermeable Area	0.1651		0.08255	0.23114	0.335153	0.3302	0.47879	0.14859	0.4953	0.718185	0.67691	0.97409
Block C Total Area	0.1263		0.06315	0.17682	0.256389	0.2526	0.36627	0.11367	0.3789	0.549405	0.51783	0.74517
Block C Impermeable Area	0.075		0.0375	0.105	0.15225	0.15	0.2175	0.0675	0.225	0.32625	0.3075	0.4425
Block D Total Area	0.258		0.129	0.3612	0.52374	0.516	0.7482	0.2322	0.774	1.1223	1.0578	1.5222
(NB: total catchment considered impermeable)												
Block A, M, K/L and J3 Total Area	1.485		0.7425	2.079	3.01455	2.97	4.3065	1.3365	4.455	6.45975	6.0885	8.7615
(NB: total catchment considered impermeable)												
Botolph Street Total Area	0.163		0.0815	0.2282	0.33089	0.326	0.4727	0.1467	0.489	0.70905	0.6683	0.9617
(NB: total catchment considered impermeable)												
Block E Total Area	0.642		0.321	0.8988	1.30326	1.284	1.8618	0.5778	1.926	2.7927	2.6322	3.7878
(NB: total catchment considered impermeable)												
Block F Total Area	0.446		0.223	0.6244	0.90538	0.892	1.2934	0.4014	1.338	1.9401	1.8286	2.6314
(NB: total catchment considered impermeable)												
Block G&J Total Area	0.964		0.482	1.3496	1.95692	1.928	2.7956	0.8676	2.892	4.1934	3.9524	5.6876
(NB: total catchment considered impermeable)												
Block H Total Area	0.346		0.173	0.4844	0.70238	0.692	1.0034	0.3114	1.038	1.5051	1.4186	2.0414
(NB: total catchment considered impermeable)												
Total Proposed Contributing Area	4.7		2.35	6.58	9.541	9.4	13.63	4.23	14.1	20.445	19.27	27.73

NB: Causeway Flow (and also MicroDrainage) hydraulic modeling software does not generate greenfield runoff rates including Climate Change Allowance. Causeway Flow were contacted to ascertain how a Climate Change Allowance could be applied to the generated greenfield flow rate, but they were unable to confirm how this could be done. For the purpose of discussion, it is proposed to apply a growth-factor to the greenfield run-off rates. As such, for 45% Climate Change Allowance, for that storm event, the greenfield runoff rate shall be multiplied by 1.45.					**As such 1:30yr +45% CC is calculated at 1.4 x 1.45 = 2.03**		**As such 1:100yr +45% CC is calculated at 2.0 x 1.45 = 2.9**			**As such 1:30yr +45% CC is calculated at 3.0 x 1.45 = 4.35**		**As such 1:100yr +45% CC is calculated at 4.1 x 1.45 = 5.9**