



- Legend**
- Proposed Dynamic Sampler Boreholes
 - (MW) = Monitoring Well Installation
 - (DCP) = Dynamic Cone Penetrometer Testing

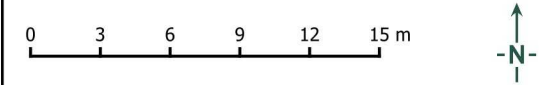


Figure Proposed Exploratory Location Plan		
Job Land at Huntley Mount Road, Bury		
Client Epsilon Environmental Ltd		
Figure No. 1	Revision 1	Date 10 February 2026
Drawn by 1	Checked by 1	Scale 1:325
Job No. B.5096		
DO NOT SCALE. NOT FOR CONSTRUCTION		
Site Plan Provided by Client 2026.		

APPENDIX 5

PROPOSED SITE PLANS / ELEVATIONS

Date: August 2025	Scale: 1:200 @ A1	Checked: PS
Project: 2108	Dwg No: A1-02	Revision: E

Date: March 2026	Scale: 1:100 @ A3	Checked: PS
Project: 2108	Dwg No: A2-01	Revision: A

Copyright of this drawing remains the sole property of Domus Architecture unless otherwise assigned in writing. Do not scale from this drawing, figured dimensions are to be worked in all cases with any discrepancies reported to Domus prior to commencement of any work. Only the original drawing should be relied on.

Scale Bar:

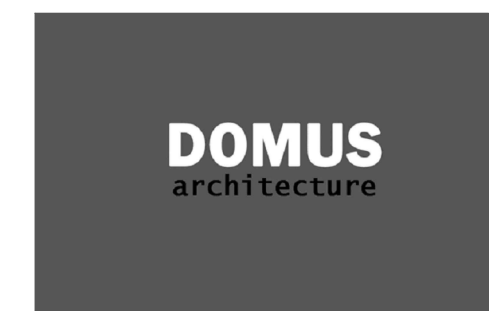
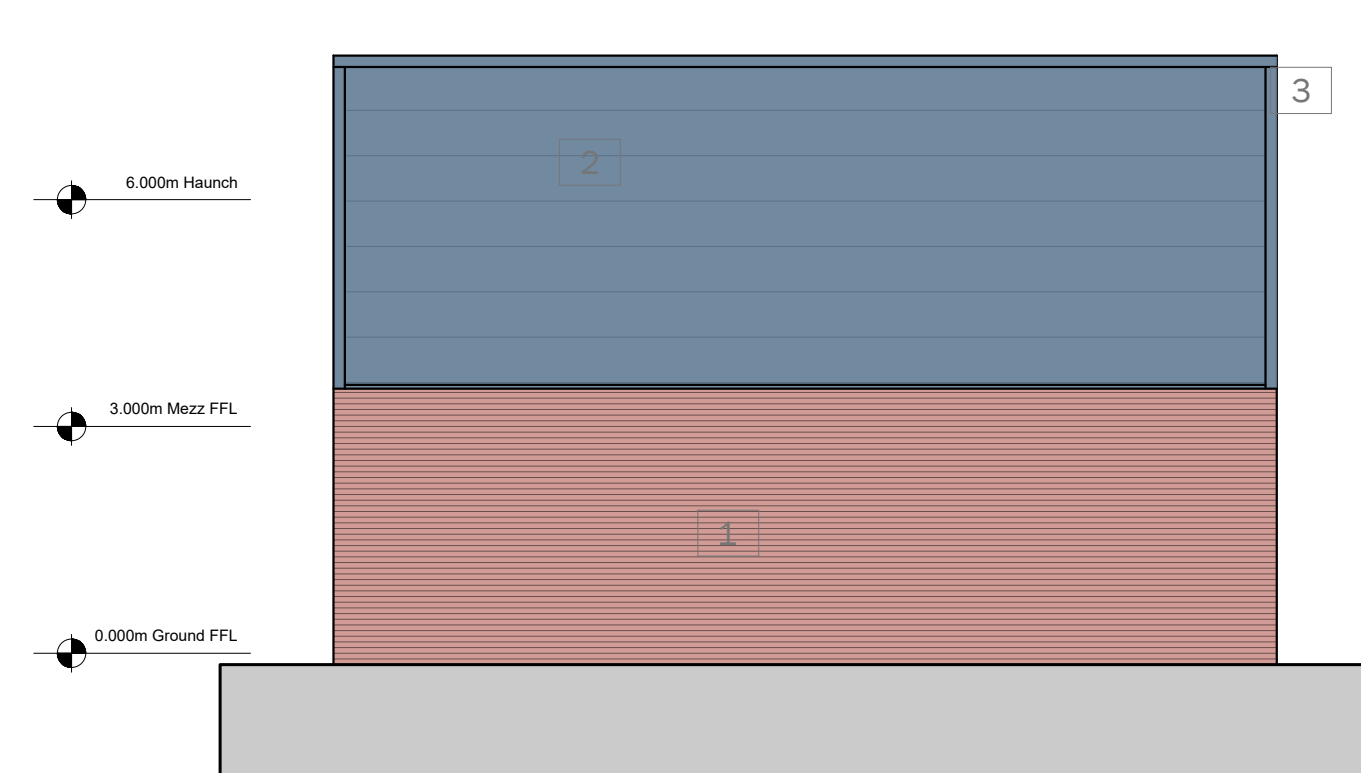
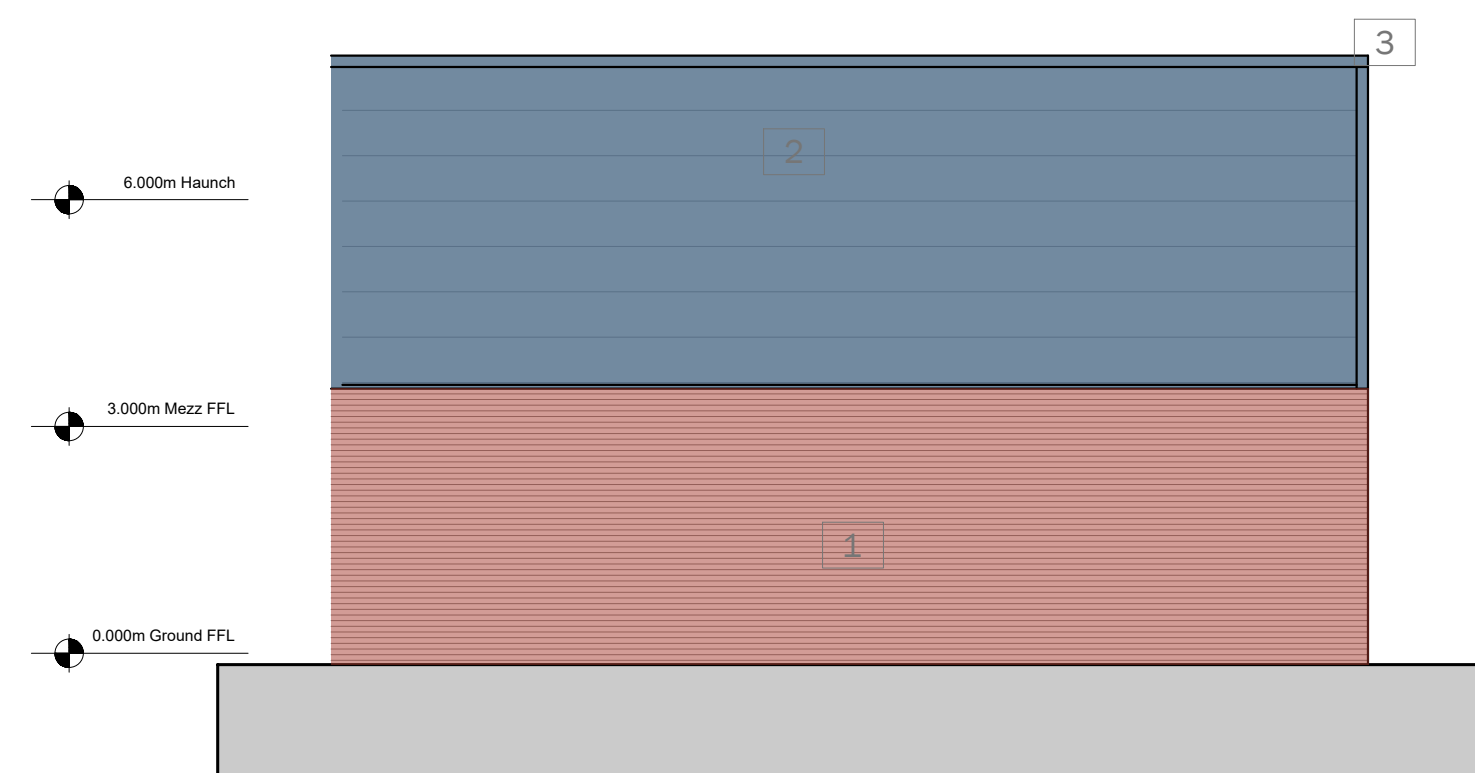
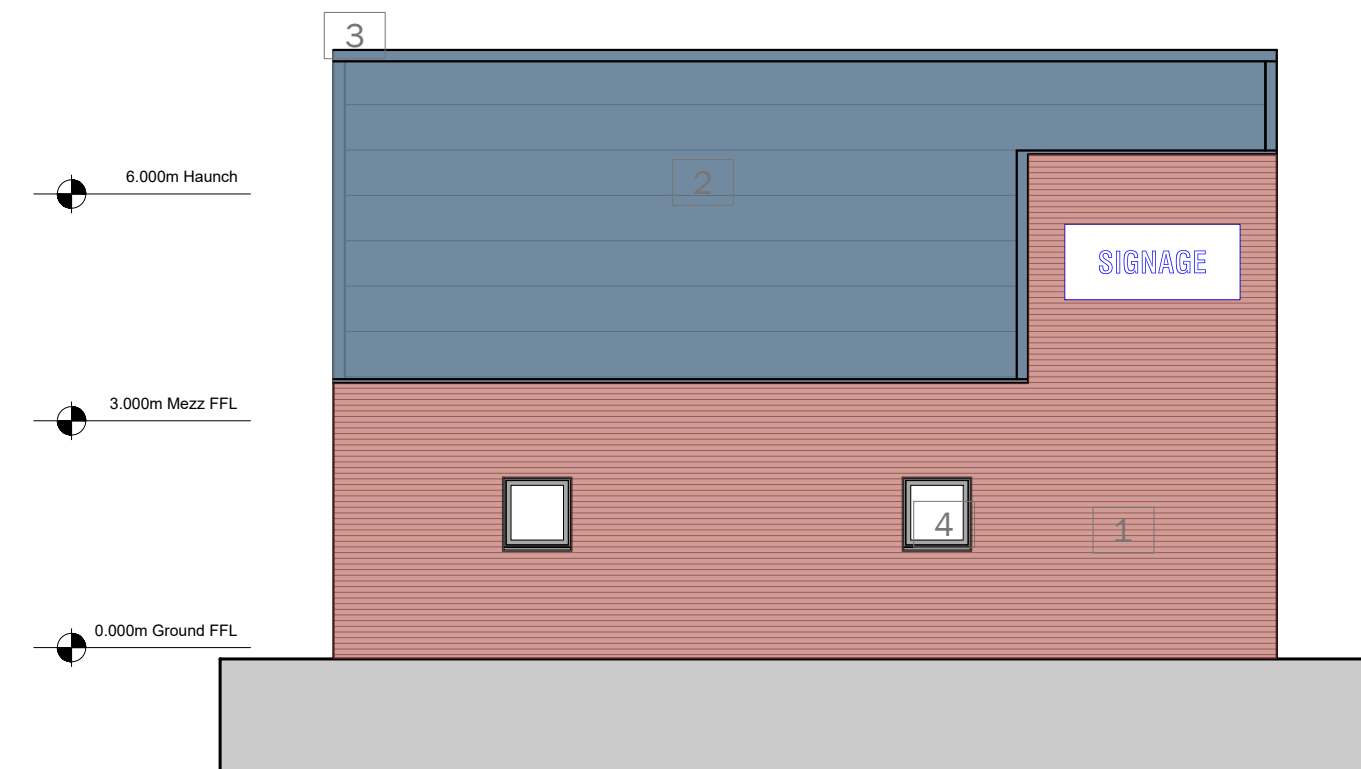
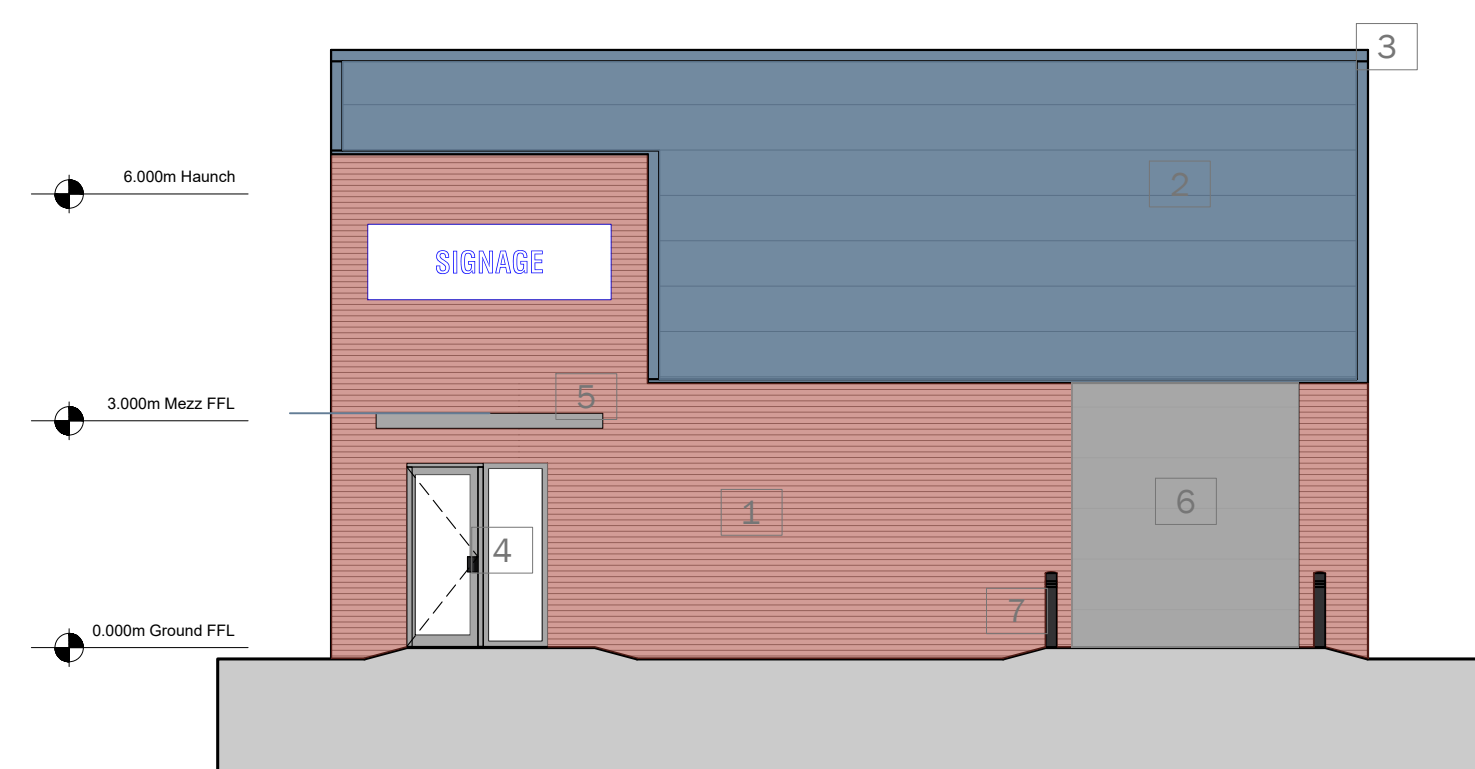
[illegible]

Roof Light Provision:

10.34% of total GIA

Schedule of Materials:

1. Facing brickwork to approved sample
2. Kingspan Opus cladding panel. Colour Zircon
3. Matching flashings
4. Aluminium door and windows. Colour: Light Grey
5. PPC Aluminium canopy. Colour to match entrance door
6. Insulated sectional door. Colour to match doors and windows
7. Security bollards



One Campbell Street
Leeds
LS28 6DP

T: 0113 518 1010
E: info@domusarchitecture.co.uk
W: domusarchitecture.co.uk

Project:		
Proposed Class E (g)(iii) Units		
Site Address:		
Land at Huntley Mount Road Bury BL9 6JA		
Client:		
JSM Commerical Lettings LLP		
Title:		
Proposed GA Elevations		
Date:	Scale:	Checked:
March 2026	1:100 @ A3	PS
Project:	Dwg No:	Revision:
2108	A4-01	A

Scale Bar:

A horizontal scale bar with major tick marks at 0, 2, 5, 10, and 20. The segment between 0 and 2 is further divided into 10 equal sub-segments by minor tick marks. Below the first sub-segment, the number '1,000' is written, indicating the scale of the map.

[illegible]

Project:	Proposed Class E (g)(iii) Units
----------	---------------------------------

Site Address:

Land at Huntley Mount Road
Bury BL9 6JA

Client: JSM Commerical Lettings LLP

Title: Proposed Street Scene Elevations

Date: March 2026	Scale: 1:200 @ A3	Checked: PS
Project: 2108	Dwg No: A4-02	Revision: -

APPENDIX 6

EXISTING DRAINAGE SURVEY



Project

Project Name: Huntley Mount Road

Project Date: 12/03/2026

Inspection Standard: MSCC5 Sewers & Drainage GB (SRM5 Scoring)



SUBSITE SURVEYS

Table of Contents

Project Name Huntley Mount Road	Project Number	Project Date 12/03/2026
---	-----------------------	-----------------------------------

Project Information	P-1
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Section Item 3: MH03 > MH01 (MH03X)	6
Section Item 4: MH02 > SA02 (MH02X)	9
Section Item 5: SA03 > MH03LAT-A (SA03X)	11
Section Item 6: SA04 > MH03LAT-B (SA04X)	13
Section Item 7: SA05 > MH03LAT-C (SA05X)	15
Section Item 8: SA06 > MH03 (SA06X)	18
Section Item 9: MH04 > SA07 (MH04X)	20
Section Item 10: SA08 > MH04LAT-A (SA08X)	22
Section Item 11: SA09 > MH04LAT-C (SA09X)	24
Section Item 12: MH05 > MH04 (MH05X)	26

Project Information

Project Name
Huntley Mount Road**Project Number****Project Date**
12/03/2026

Site

Street: Huntley Mount Rd
Town or City: Bury
Post Code: BL9 6HY

Contractor

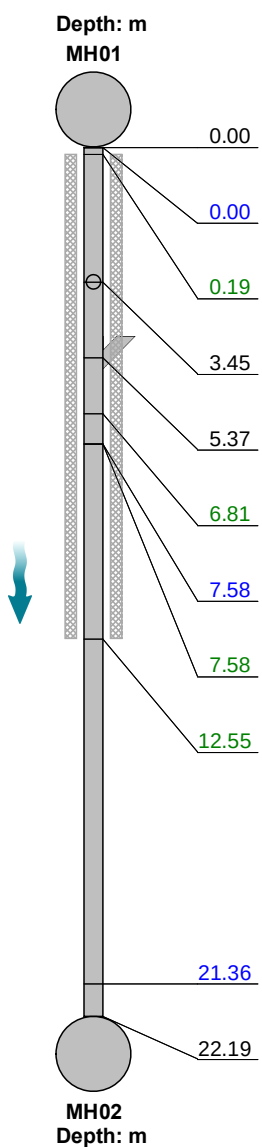
Company: Subsite Surveys
Contact: Peter Smith
Street: Willow House, Low Lane
Town or City: Braithwaite, Doncaster
Post Code: DN7 5SS
Phone: 07427401344
Email: p.smith@subsitesurveys.co.uk

Section Inspection - MH01X

Item No. 1	Insp. No. 1	Date	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR MH01X
Operator Not Specified		Vehicle Not Specified	Camera Vivax V-Cam 6	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:		Inspection Direction:	Downstream	Upstream Node:	MH01
Road:		Inspected Length:	22.19 m	Upstream Pipe Depth:	
Location:		Total Length:	22.19 m	Downstream Node:	MH02
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	225 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:
Recommendations:

Scale:	1:193	Position [m]	Code	Observation	MPEG	Photo	Grade																																																																			
Depth: m MH01  0.00 0.00 0.19 3.45 5.37 6.81 7.58 7.58 12.55 21.36 22.19 MH02 Depth: m <table><tr><td>MH</td><td>Start node, manhole, reference: MH01</td><td>00:00:00</td><td></td><td></td><td></td></tr><tr><td>WL</td><td>Water level, 20% of the vertical dimension</td><td>00:00:05</td><td></td><td></td><td></td></tr><tr><td>S01</td><td>DES</td><td>Settled deposits, fine, 20% cross-sectional area loss, start</td><td>00:00:11</td><td>1</td><td></td></tr><tr><td>JN</td><td>Junction at 12 o'clock, 150mm dia</td><td>00:00:24</td><td>2</td><td></td><td></td></tr><tr><td>JN</td><td>Junction at 10 o'clock, 150mm dia</td><td>00:00:32</td><td>3</td><td></td><td></td></tr><tr><td>OBBJ</td><td>Other obstacles, brick or masonry in invert at joint from 1 o'clock to 5 o'clock, 5% cross-sectional area loss</td><td>00:00:37</td><td>4</td><td></td><td>5</td></tr><tr><td>WL</td><td>Water level, 10% of the vertical dimension</td><td>00:00:40</td><td></td><td></td><td></td></tr><tr><td>C01</td><td>DES</td><td>Settled deposits, fine, 10% cross-sectional area loss, change</td><td>00:00:40</td><td>5</td><td></td></tr><tr><td>F01</td><td>DES</td><td>Settled deposits, fine, 10% cross-sectional area loss, finish</td><td>00:01:01</td><td></td><td></td><td>4</td></tr><tr><td>WL</td><td>Water level, 20% of the vertical dimension</td><td>00:01:27</td><td></td><td></td><td></td></tr><tr><td>MHF</td><td>Finish node, manhole, reference: MH02</td><td>00:01:31</td><td>6</td><td></td><td></td></tr></table>								MH	Start node, manhole, reference: MH01	00:00:00				WL	Water level, 20% of the vertical dimension	00:00:05				S01	DES	Settled deposits, fine, 20% cross-sectional area loss, start	00:00:11	1		JN	Junction at 12 o'clock, 150mm dia	00:00:24	2			JN	Junction at 10 o'clock, 150mm dia	00:00:32	3			OBBJ	Other obstacles, brick or masonry in invert at joint from 1 o'clock to 5 o'clock, 5% cross-sectional area loss	00:00:37	4		5	WL	Water level, 10% of the vertical dimension	00:00:40				C01	DES	Settled deposits, fine, 10% cross-sectional area loss, change	00:00:40	5		F01	DES	Settled deposits, fine, 10% cross-sectional area loss, finish	00:01:01			4	WL	Water level, 20% of the vertical dimension	00:01:27				MHF	Finish node, manhole, reference: MH02	00:01:31	6		
MH	Start node, manhole, reference: MH01	00:00:00																																																																								
WL	Water level, 20% of the vertical dimension	00:00:05																																																																								
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OBBJ	Other obstacles, brick or masonry in invert at joint from 1 o'clock to 5 o'clock, 5% cross-sectional area loss	00:00:37	4		5																																																																					
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WL	Water level, 20% of the vertical dimension	00:01:27																																																																								
MHF	Finish node, manhole, reference: MH02	00:01:31	6																																																																							

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0.0	0.0	1.0	2	15.0	3.4	75.0	5.0

Section Pictures - MH01X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Downstream	MH01X		



1, 00:00:11, 0.19 m
 Settled deposits, fine, 20% cross-sectional area loss, start



2, 00:00:24, 3.45 m
 Junction at 12 o'clock, 150mm dia



3, 00:00:32, 5.37 m
 Junction at 10 o'clock, 150mm dia



4, 00:00:37, 6.81 m
 Other obstacles, brick or masonry in invert at joint from 1 o'clock to 5 o'clock, 5% cross-sectional area loss

Section Pictures - MH01X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Downstream	MH01X		



5, 00:00:40, 7.58 m
 Settled deposits, fine, 10% cross-sectional area loss, change



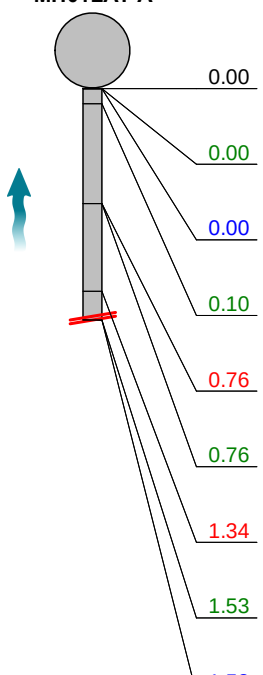
6, 00:01:31, 22.19 m
 Finish node, manhole, reference: MH02

Section Inspection - SA01X

Item No. 2	Insp. No. 1	Date	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR SA01X
Operator Not Specified	Vehicle Not Specified	Camera Vivax V-Cam 6	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified	

Town or Village:	Inspection Direction: Upstream	Upstream Node: SA01
Road:	Inspected Length: 1.53 m	Upstream Pipe Depth:
Location: Other location	Total Length: 1.53 m	Downstream Node: MH01LAT-A
Surface Type:	Joint Length:	Downstream Pipe Depth:
Use: Surface water	Pipe Shape: Circular	
Type of Pipe: Gravity drain/sewer	Dia/Height: 150 mm	
Flow Control: No flow control	Material: Vitrified clay	
Year Constructed: Not Specified	Lining Type: No Lining	
Inspection Purpose: Routine inspection	Lining Material: No Lining	

Comments:
Recommendations:

Scale: 1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: m MH01LAT-A 						
	0.00	MH	Start node, manhole, reference: MH01LAT-A	00:00:00		
	0.00	DES	Settled deposits, fine, 10% cross-sectional area loss	00:00:03		3
	0.00	WL	Water level, 5% of the vertical dimension	00:00:28		
	0.10	LR	Line deviates right	00:00:03	1	
	0.76	JDL	Joint displaced, large	00:00:16	2	1 / 4
	0.76	LR	Line deviates right	00:00:17		
	1.34	JDL	Joint displaced, large	00:00:22	3	1 / 4
	1.53	OBB	Other obstacles, brick or masonry in invert from 12 o'clock to 12 o'clock, 100% cross-sectional area loss	00:00:28	4	5
	1.53	SA	Survey abandoned: SA01	00:00:28		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
2	2.0	2.6	4.0	1.0	4	10.0	14.4	22.0	5.0

Section Pictures - SA01X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
2	Upstream	SA01X		



1, 00:00:03, 0.10 m
Line deviates right



2, 00:00:16, 0.76 m
Joint displaced, large



3, 00:00:22, 1.34 m
Joint displaced, large



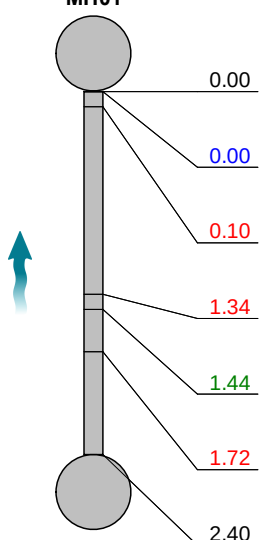
4, 00:00:28, 1.53 m
Other obstacles, brick or masonry in invert from 12 o'clock to 12 o'clock, 100% cross-sectional area loss

Section Inspection - MH03X

Item No. 3	Insp. No. 1	Date	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR MH03X
Operator Not Specified		Vehicle Not Specified	Camera Vivax V-Cam 6	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Inspection Direction:	Upstream	Upstream Node:	MH03
Road:	Inspected Length:	2.40 m	Upstream Pipe Depth:	
Location:	Total Length:	2.40 m	Downstream Node:	MH01
Surface Type:	Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular	
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm	
Flow Control:	No flow control	Material:	Vitrified clay	
Year Constructed:	Not Specified	Lining Type:	No Lining	
Inspection Purpose:	Routine inspection	Lining Material:	No Lining	

Comments:
Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade																																			
Depth: m MH01  Depth: m <table><tr><td>MH</td><td>Start node, manhole, reference: MH01</td><td>00:00:00</td><td></td><td></td></tr><tr><td>WL</td><td>Water level, 5% of the vertical dimension</td><td>00:00:09</td><td></td><td></td></tr><tr><td>JDM</td><td>Joint displaced, medium</td><td>00:00:04</td><td>1</td><td>1 / 3</td></tr><tr><td>JDL</td><td>Joint displaced, large</td><td>00:00:09</td><td>2</td><td>1 / 4</td></tr><tr><td>LL</td><td>Line deviates left</td><td>00:00:11</td><td>3</td><td></td></tr><tr><td>BJ</td><td>Broken pipe at joint from 12 o'clock to 4 o'clock</td><td>00:00:12</td><td>4</td><td>4</td></tr><tr><td>MHF</td><td>Finish node, manhole, reference: MH03</td><td>00:00:16</td><td>5</td><td></td></tr></table>								MH	Start node, manhole, reference: MH01	00:00:00			WL	Water level, 5% of the vertical dimension	00:00:09			JDM	Joint displaced, medium	00:00:04	1	1 / 3	JDL	Joint displaced, large	00:00:09	2	1 / 4	LL	Line deviates left	00:00:11	3		BJ	Broken pipe at joint from 12 o'clock to 4 o'clock	00:00:12	4	4	MHF	Finish node, manhole, reference: MH03	00:00:16	5	
MH	Start node, manhole, reference: MH01	00:00:00																																								
WL	Water level, 5% of the vertical dimension	00:00:09																																								
JDM	Joint displaced, medium	00:00:04	1	1 / 3																																						
JDL	Joint displaced, large	00:00:09	2	1 / 4																																						
LL	Line deviates left	00:00:11	3																																							
BJ	Broken pipe at joint from 12 o'clock to 4 o'clock	00:00:12	4	4																																						
MHF	Finish node, manhole, reference: MH03	00:00:16	5																																							

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
3	80.0	34.6	83.0	4.0	2	5.0	2.9	7.0	4.0

Section Pictures - MH03X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
3	Upstream	MH03X		



1, 00:00:04, 0.10 m
Joint displaced, medium



2, 00:00:09, 1.34 m
Joint displaced, large



3, 00:00:11, 1.44 m
Line deviates left



4, 00:00:12, 1.72 m
Broken pipe at joint from 12 o'clock to 4 o'clock

Section Pictures - MH03X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
3	Upstream	MH03X		



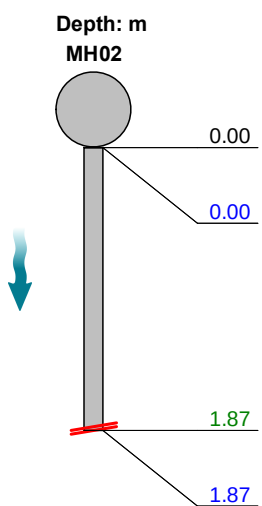
5, 00:00:16, 2.40 m
 Finish node, manhole, reference: MH03

Section Inspection - MH02X

Item No. 4	Insp. No. 1	Date	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR MH02X
Operator Not Specified		Vehicle Not Specified	Camera Vivax V-Cam 6	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Inspection Direction:	Downstream	Upstream Node:	MH02
Road:	Inspected Length:	1.87 m	Upstream Pipe Depth:	
Location: Other location	Total Length:	1.87 m	Downstream Node:	SA02
Surface Type:	Joint Length:		Downstream Pipe Depth:	
Use: Surface water	Pipe Shape:	Circular		
Type of Pipe: Gravity drain/sewer	Dia/Height:	225 mm		
Flow Control: No flow control	Material:	Vitrified clay		
Year Constructed: Not Specified	Lining Type:	No Lining		
Inspection Purpose: Routine inspection	Lining Material:	No Lining		

Comments:
Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade																				
Depth: m MH02  <table><tr><td>MH</td><td>Start node, manhole, reference: MH02</td><td>00:00:00</td><td></td><td></td></tr><tr><td>WL</td><td>Water level, 10% of the vertical dimension</td><td>00:00:03</td><td></td><td></td></tr><tr><td>RM</td><td>Roots, mass, 15% cross-sectional area loss</td><td>00:00:13</td><td>1</td><td>3</td></tr><tr><td>SA</td><td>Survey abandoned: SA02</td><td>00:00:13</td><td></td><td></td></tr></table>								MH	Start node, manhole, reference: MH02	00:00:00			WL	Water level, 10% of the vertical dimension	00:00:03			RM	Roots, mass, 15% cross-sectional area loss	00:00:13	1	3	SA	Survey abandoned: SA02	00:00:13		
MH	Start node, manhole, reference: MH02	00:00:00																									
WL	Water level, 10% of the vertical dimension	00:00:03																									
RM	Roots, mass, 15% cross-sectional area loss	00:00:13	1	3																							
SA	Survey abandoned: SA02	00:00:13																									

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0.0	0.0	1.0	1	4.0	2.1	4.0	3.0

Section Pictures - MH02X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
4	Downstream	MH02X		



1, 00:00:13, 1.87 m
 Roots, mass, 15% cross-sectional area loss

Section Inspection - SA03X

Item No. 5	Insp. No. 1	Date	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR SA03X
Operator Not Specified		Vehicle Not Specified	Camera Vivax V-Cam 6	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Inspection Direction:	Upstream	Upstream Node:	SA03
Road:	Inspected Length:	1.05 m	Upstream Pipe Depth:	
Location: Other location	Total Length:	1.05 m	Downstream Node:	MH03LAT-A
Surface Type:	Joint Length:		Downstream Pipe Depth:	
Use: Surface water	Pipe Shape:	Circular		
Type of Pipe: Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control: No flow control	Material:	Cast iron		
Year Constructed: Not Specified	Lining Type:	No Lining		
Inspection Purpose: Routine inspection	Lining Material:	No Lining		

Comments:
Recommendations:

Scale: 1:50

Position [m]

Code

Observation

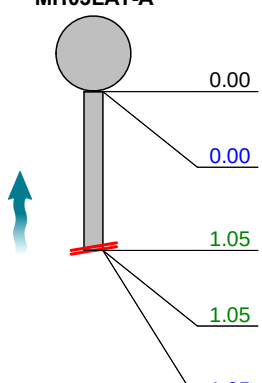
MPEG

Photo

Grade

Depth: m

MH03LAT-A



0.00

MH

Start node, manhole, reference: MH03LAT-A

00:00:00

0.00

WL

Water level, 5% of the vertical dimension

00:00:10

1.05

LL

Line deviates left

00:00:10

1.05

OBZ

Other obstacles from 12 o'clock to 12 o'clock, 85% cross-sectional area loss: Plastic rubbish

00:00:10

1

5

1.05

SA

Survey abandoned: SA03

00:00:10

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0.0	0.0	1.0	1	10.0	9.5	10.0	5.0

Section Pictures - SA03X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
5	Upstream	SA03X		



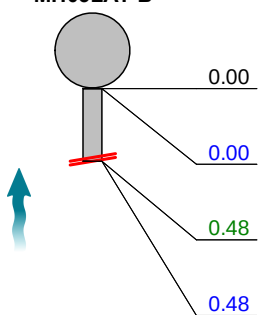
1, 00:00:10, 1.05 m
 Other obstacles from 12 o'clock to 12 o'clock, 85%
 cross-sectional area loss, Plastic rubbish

Section Inspection - SA04X

Item No. 6	Insp. No. 1	Date	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR SA04X
Operator Not Specified	Vehicle Not Specified	Camera Vivax V-Cam 6	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified	

Town or Village:	Inspection Direction: Upstream	Upstream Node: SA04
Road:	Inspected Length: 0.48 m	Upstream Pipe Depth:
Location: Other location	Total Length: 0.48 m	Downstream Node: MH03LAT-B
Surface Type:	Joint Length:	Downstream Pipe Depth:
Use: Surface water	Pipe Shape: Circular	
Type of Pipe: Gravity drain/sewer	Dia/Height: 100 mm	
Flow Control: No flow control	Material: Vitrified clay	
Year Constructed: Not Specified	Lining Type: No Lining	
Inspection Purpose: Routine inspection	Lining Material: No Lining	

Comments:
Recommendations:

Scale: 1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: m MH03LAT-B 						
	0.00	MH	Start node, manhole, reference: MH03LAT-B	00:00:00		
	0.00	WL	Water level, 0% of the vertical dimension	00:00:07		
	0.48	OBB	Other obstacles, brick or masonry in invert from 12 o'clock to 12 o'clock, 80% cross-sectional area loss	00:00:15	1	5
	0.48	SA	Survey abandoned: SA04	00:00:15		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0.0	0.0	1.0	1	10.0	20.8	10.0	5.0

Section Pictures - SA04X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
6	Upstream	SA04X		



1, 00:00:15, 0.48 m

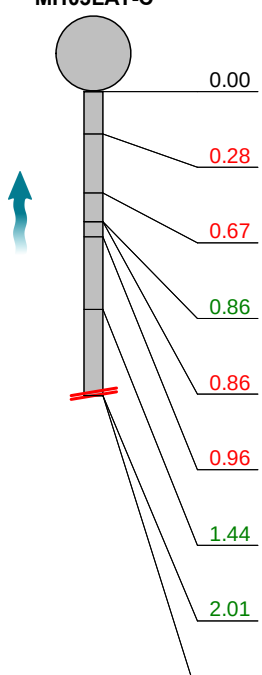
Other obstacles, brick or masonry in invert from 12 o'clock to
 12 o'clock, 80% cross-sectional area loss

Section Inspection - SA05X

Item No. 7	Insp. No. 1	Date	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR SA05X
Operator Not Specified		Vehicle Not Specified	Camera Vivax V-Cam 6	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Inspection Direction:	Upstream	Upstream Node:	SA05
Road:	Inspected Length:	2.01 m	Upstream Pipe Depth:	
Location:	Total Length:	2.01 m	Downstream Node:	MH03LAT-C
Surface Type:	Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular	
Type of Pipe:	Gravity drain/sewer	Dia/Height:	100 mm	
Flow Control:	No flow control	Material:	Vitrified clay	
Year Constructed:	Not Specified	Lining Type:	No Lining	
Inspection Purpose:	Routine inspection	Lining Material:	No Lining	

Comments:
Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade																																																						
Depth: m MH03LAT-C  <table><tr><td>0.00</td><td>MH</td><td>Start node, manhole, reference: MH03LAT-C</td><td>00:00:00</td><td></td><td></td></tr><tr><td>0.28</td><td>JDM</td><td>Joint displaced, medium</td><td>00:00:08</td><td>1</td><td>1 / 3</td></tr><tr><td>0.67</td><td>JDM</td><td>Joint displaced, medium</td><td>00:00:14</td><td>2</td><td>1 / 3</td></tr><tr><td>0.86</td><td>LL</td><td>Line deviates left</td><td>00:00:17</td><td></td><td></td></tr><tr><td>0.86</td><td>CC</td><td>Crack, circumferential from 6 o'clock to 2 o'clock</td><td>00:00:17</td><td>3</td><td>2 / 2</td></tr><tr><td>0.96</td><td>JDM</td><td>Joint displaced, medium</td><td>00:00:18</td><td>4</td><td>1 / 3</td></tr><tr><td>1.44</td><td>OBM</td><td>Other obstacles, pipe material in invert at 6 o'clock, 45% cross-sectional area loss</td><td>00:00:20</td><td>5</td><td>5</td></tr><tr><td>2.01</td><td>OBB</td><td>Other obstacles, brick or masonry in invert from 12 o'clock to 12 o'clock, 100% cross-sectional area loss</td><td>00:00:41</td><td>6</td><td>5</td></tr><tr><td>2.01</td><td>SA</td><td>Survey abandoned: SA05</td><td>00:00:41</td><td></td><td></td></tr></table>								0.00	MH	Start node, manhole, reference: MH03LAT-C	00:00:00			0.28	JDM	Joint displaced, medium	00:00:08	1	1 / 3	0.67	JDM	Joint displaced, medium	00:00:14	2	1 / 3	0.86	LL	Line deviates left	00:00:17			0.86	CC	Crack, circumferential from 6 o'clock to 2 o'clock	00:00:17	3	2 / 2	0.96	JDM	Joint displaced, medium	00:00:18	4	1 / 3	1.44	OBM	Other obstacles, pipe material in invert at 6 o'clock, 45% cross-sectional area loss	00:00:20	5	5	2.01	OBB	Other obstacles, brick or masonry in invert from 12 o'clock to 12 o'clock, 100% cross-sectional area loss	00:00:41	6	5	2.01	SA	Survey abandoned: SA05	00:00:41		
0.00	MH	Start node, manhole, reference: MH03LAT-C	00:00:00																																																										
0.28	JDM	Joint displaced, medium	00:00:08	1	1 / 3																																																								
0.67	JDM	Joint displaced, medium	00:00:14	2	1 / 3																																																								
0.86	LL	Line deviates left	00:00:17																																																										
0.86	CC	Crack, circumferential from 6 o'clock to 2 o'clock	00:00:17	3	2 / 2																																																								
0.96	JDM	Joint displaced, medium	00:00:18	4	1 / 3																																																								
1.44	OBM	Other obstacles, pipe material in invert at 6 o'clock, 45% cross-sectional area loss	00:00:20	5	5																																																								
2.01	OBB	Other obstacles, brick or masonry in invert from 12 o'clock to 12 o'clock, 100% cross-sectional area loss	00:00:41	6	5																																																								
2.01	SA	Survey abandoned: SA05	00:00:41																																																										

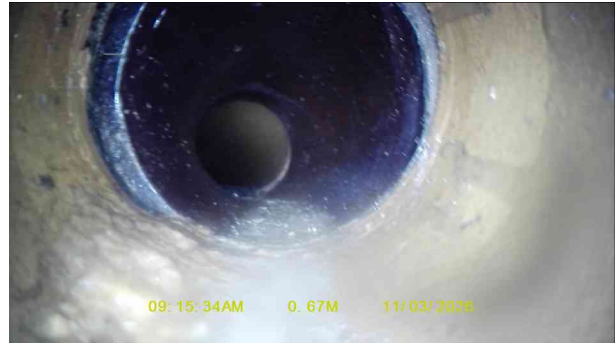
Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
4	10.0	6.5	13.0	2.0	6	10.0	13.4	27.0	5.0

Section Pictures - SA05X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
7	Upstream	SA05X		



1, 00:00:08, 0.28 m
Joint displaced, medium



2, 00:00:14, 0.67 m
Joint displaced, medium



3, 00:00:17, 0.86 m
Crack, circumferential from 6 o'clock to 2 o'clock



4, 00:00:18, 0.96 m
Joint displaced, medium

Section Pictures - SA05X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
7	Upstream	SA05X		



5, 00:00:20, 1.44 m
 Other obstacles, pipe material in invert at 6 o'clock, 45%
 cross-sectional area loss



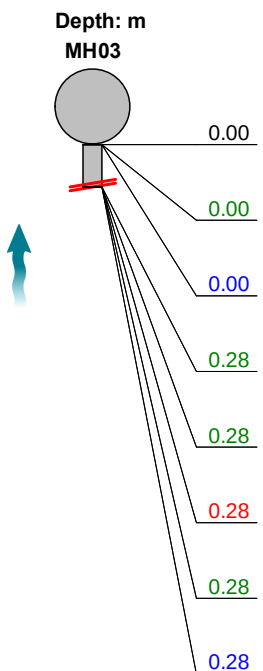
6, 00:00:41, 2.01 m
 Other obstacles, brick or masonry in invert from 12 o'clock to
 12 o'clock, 100% cross-sectional area loss

Section Inspection - SA06X

Item No. 8	Insp. No. 1	Date	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR SA06X
Operator Not Specified	Vehicle Not Specified	Camera Vivax V-Cam 6	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified	

Town or Village:	Inspection Direction: Upstream	Upstream Node: SA06
Road:	Inspected Length: 0.28 m	Upstream Pipe Depth:
Location: Other location	Total Length: 0.28 m	Downstream Node: MH03
Surface Type:	Joint Length:	Downstream Pipe Depth:
Use: Surface water	Pipe Shape: Circular	
Type of Pipe: Gravity drain/sewer	Dia/Height: 100 mm	
Flow Control: No flow control	Material: Vitrified clay	
Year Constructed: Not Specified	Lining Type: No Lining	
Inspection Purpose: Routine inspection	Lining Material: No Lining	

Comments:
Recommendations:

Scale: 1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
						
	0.00	MH	Start node, manhole, reference: MH03	00:00:00		
	0.00	LR	Line deviates right	00:00:04		
	0.00	WL	Water level, 0% of the vertical dimension	00:00:10		
	0.28	LL	Line deviates left	00:00:10		
	0.28	LU	Line deviates up	00:00:10		
	0.28	JDL	Joint displaced, large	00:00:10	1	1 / 4
	0.28	DES	Settled deposits, fine, 60% cross-sectional area loss	00:00:10	2	4
	0.28	SA	Survey abandoned: SA06	00:00:10		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	2.0	7.1	2.0	1.0	2	13.0	46.4	13.0	5.0



Section Pictures - SA06X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
8	Upstream	SA06X		



1, 00:00:10, 0.28 m
Joint displaced, large



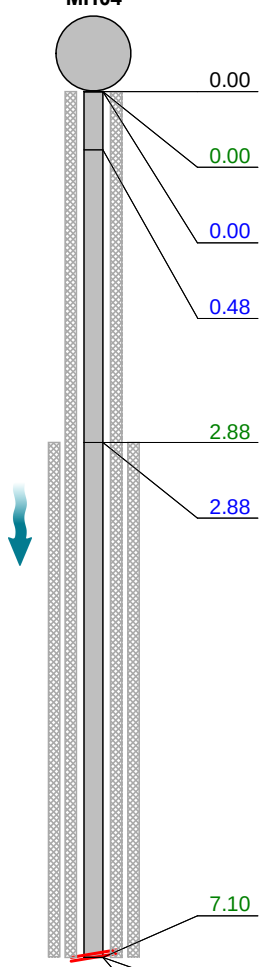
2, 00:00:10, 0.28 m
Settled deposits, fine, 60% cross-sectional area loss

Section Inspection - MH04X

Item No. 9	Insp. No. 1	Date	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR MH04X
Operator Not Specified		Vehicle Not Specified	Camera Vivax V-Cam 6	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Inspection Direction:	Downstream	Upstream Node:	MH04
Road:	Inspected Length:	7.10 m	Upstream Pipe Depth:	
Location:	Total Length:	7.10 m	Downstream Node:	SA07
Surface Type:	Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular	
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm	
Flow Control:	No flow control	Material:	Cast iron	
Year Constructed:	Not Specified	Lining Type:	No Lining	
Inspection Purpose:	Routine inspection	Lining Material:	No Lining	

Comments:
Recommendations:

Scale:	1:62	Position [m]	Code	Observation	MPEG	Photo	Grade																																																															
Depth: m MH04  <table><tr><td>0.00</td><td>MH</td><td></td><td>Start node, manhole, reference: MH04</td><td>00:00:00</td><td></td><td></td></tr><tr><td>0.00</td><td>S01</td><td>DES</td><td>Settled deposits, fine, 10% cross-sectional area loss, start</td><td>00:00:03</td><td>1</td><td></td></tr><tr><td>0.00</td><td>WL</td><td></td><td>Water level, 10% of the vertical dimension</td><td>00:00:16</td><td></td><td></td></tr><tr><td>0.48</td><td>WLT</td><td></td><td>Turbid water level, 20% of the vertical dimension</td><td>00:00:15</td><td></td><td></td></tr><tr><td>2.88</td><td>C01</td><td>DES</td><td>Settled deposits, fine, 20% cross-sectional area loss, change</td><td>00:00:22</td><td>2</td><td></td></tr><tr><td>2.88</td><td>S02</td><td>CUD</td><td>Loss of vision, silt, start</td><td>00:00:25</td><td></td><td></td></tr><tr><td>7.10</td><td>F01</td><td>DES</td><td>Settled deposits, fine, 20% cross-sectional area loss, finish</td><td>00:00:58</td><td></td><td>3</td></tr><tr><td>7.10</td><td>F02</td><td>CUD</td><td>Loss of vision, silt, finish</td><td>00:00:58</td><td></td><td></td></tr><tr><td>7.10</td><td>SA</td><td></td><td>Survey abandoned: SA07</td><td>00:00:58</td><td></td><td></td></tr></table>								0.00	MH		Start node, manhole, reference: MH04	00:00:00			0.00	S01	DES	Settled deposits, fine, 10% cross-sectional area loss, start	00:00:03	1		0.00	WL		Water level, 10% of the vertical dimension	00:00:16			0.48	WLT		Turbid water level, 20% of the vertical dimension	00:00:15			2.88	C01	DES	Settled deposits, fine, 20% cross-sectional area loss, change	00:00:22	2		2.88	S02	CUD	Loss of vision, silt, start	00:00:25			7.10	F01	DES	Settled deposits, fine, 20% cross-sectional area loss, finish	00:00:58		3	7.10	F02	CUD	Loss of vision, silt, finish	00:00:58			7.10	SA		Survey abandoned: SA07	00:00:58		
0.00	MH		Start node, manhole, reference: MH04	00:00:00																																																																		
0.00	S01	DES	Settled deposits, fine, 10% cross-sectional area loss, start	00:00:03	1																																																																	
0.00	WL		Water level, 10% of the vertical dimension	00:00:16																																																																		
0.48	WLT		Turbid water level, 20% of the vertical dimension	00:00:15																																																																		
2.88	C01	DES	Settled deposits, fine, 20% cross-sectional area loss, change	00:00:22	2																																																																	
2.88	S02	CUD	Loss of vision, silt, start	00:00:25																																																																		
7.10	F01	DES	Settled deposits, fine, 20% cross-sectional area loss, finish	00:00:58		3																																																																
7.10	F02	CUD	Loss of vision, silt, finish	00:00:58																																																																		
7.10	SA		Survey abandoned: SA07	00:00:58																																																																		

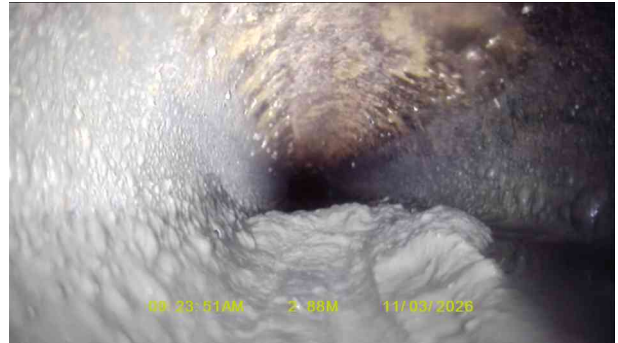
Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	2.0	2.3	16.0	3.0

Section Pictures - MH04X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
9	Downstream	MH04X		



1, 00:00:03, 0.00 m
 Settled deposits, fine, 10% cross-sectional area loss, start



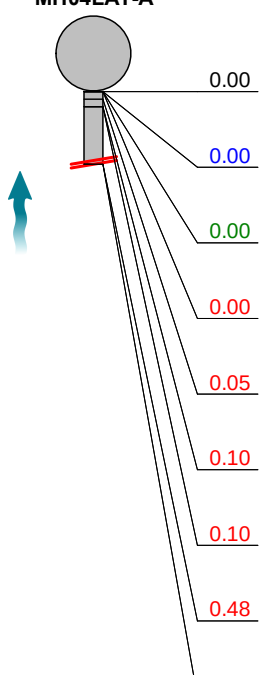
2, 00:00:22, 2.88 m
 Settled deposits, fine, 20% cross-sectional area loss, change

Section Inspection - SA08X

Item No. 10	Insp. No. 1	Date	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR SA08X
Operator Not Specified		Vehicle Not Specified	Camera Vivax V-Cam 6	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Inspection Direction:	Upstream	Upstream Node:	SA08
Road:	Inspected Length:	0.48 m	Upstream Pipe Depth:	
Location:	Total Length:	0.48 m	Downstream Node:	MH04LAT-A
Surface Type:	Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular	
Type of Pipe:	Gravity drain/sewer	Dia/Height:	100 mm	
Flow Control:	No flow control	Material:	Vitrified clay	
Year Constructed:	Not Specified	Lining Type:	No Lining	
Inspection Purpose:	Routine inspection	Lining Material:	No Lining	

Comments:
Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade																																																						
Depth: m MH04LAT-A  <table><tr><td>0.00</td><td>MH</td><td>Start node, manhole, reference: MH04LAT-A</td><td>00:00:00</td><td></td><td></td></tr><tr><td>0.00</td><td>WL</td><td>Water level, 0% of the vertical dimension</td><td></td><td></td><td></td></tr><tr><td>0.00</td><td>RF</td><td>Roots, fine</td><td>00:00:03</td><td></td><td>2</td></tr><tr><td>0.00</td><td>CC</td><td>Crack, circumferential from 8 o'clock to 4 o'clock</td><td>00:00:03</td><td>1</td><td>2 / 2</td></tr><tr><td>0.05</td><td>B</td><td>Broken pipe at 11 o'clock</td><td>00:00:09</td><td>2</td><td>4</td></tr><tr><td>0.10</td><td>BJ</td><td>Broken pipe at joint from 9 o'clock to 3 o'clock</td><td>00:00:11</td><td></td><td>4</td></tr><tr><td>0.10</td><td>JDL</td><td>Joint displaced, large</td><td>00:00:12</td><td>3</td><td>1 / 4</td></tr><tr><td>0.48</td><td>XP</td><td>Collapsed drain or sewer, 100% cross-sectional area loss</td><td>00:00:19</td><td>4</td><td>5</td></tr><tr><td>0.48</td><td>SA</td><td>Survey abandoned: SA08</td><td>00:00:19</td><td></td><td></td></tr></table>								0.00	MH	Start node, manhole, reference: MH04LAT-A	00:00:00			0.00	WL	Water level, 0% of the vertical dimension				0.00	RF	Roots, fine	00:00:03		2	0.00	CC	Crack, circumferential from 8 o'clock to 4 o'clock	00:00:03	1	2 / 2	0.05	B	Broken pipe at 11 o'clock	00:00:09	2	4	0.10	BJ	Broken pipe at joint from 9 o'clock to 3 o'clock	00:00:11		4	0.10	JDL	Joint displaced, large	00:00:12	3	1 / 4	0.48	XP	Collapsed drain or sewer, 100% cross-sectional area loss	00:00:19	4	5	0.48	SA	Survey abandoned: SA08	00:00:19		
0.00	MH	Start node, manhole, reference: MH04LAT-A	00:00:00																																																										
0.00	WL	Water level, 0% of the vertical dimension																																																											
0.00	RF	Roots, fine	00:00:03		2																																																								
0.00	CC	Crack, circumferential from 8 o'clock to 4 o'clock	00:00:03	1	2 / 2																																																								
0.05	B	Broken pipe at 11 o'clock	00:00:09	2	4																																																								
0.10	BJ	Broken pipe at joint from 9 o'clock to 3 o'clock	00:00:11		4																																																								
0.10	JDL	Joint displaced, large	00:00:12	3	1 / 4																																																								
0.48	XP	Collapsed drain or sewer, 100% cross-sectional area loss	00:00:19	4	5																																																								
0.48	SA	Survey abandoned: SA08	00:00:19																																																										

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
5	165.0	702.1	337.0	5.0	3	5.0	14.6	7.0	5.0

Section Pictures - SA08X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
10	Upstream	SA08X		



1, 00:00:03, 0.00 m
 Crack, circumferential from 8 o'clock to 4 o'clock



2, 00:00:09, 0.05 m
 Broken pipe at 11 o'clock



3, 00:00:12, 0.10 m
 Joint displaced, large



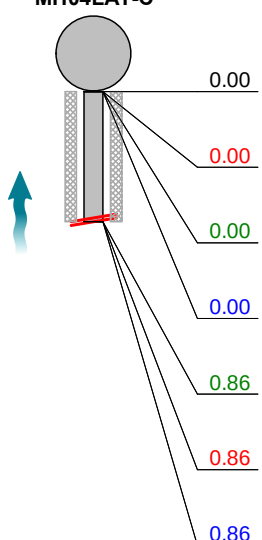
4, 00:00:19, 0.48 m
 Collapsed drain or sewer, 100% cross-sectional area loss

Section Inspection - SA09X

Item No. 11	Insp. No. 1	Date	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR SA09X
Operator Not Specified		Vehicle Not Specified	Camera Vivax V-Cam 6	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Inspection Direction:	Upstream	Upstream Node:	SA09
Road:	Inspected Length:	0.86 m	Upstream Pipe Depth:	
Location:	Total Length:	0.86 m	Downstream Node:	MH04LAT-C
Surface Type:	Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular	
Type of Pipe:	Gravity drain/sewer	Dia/Height:	100 mm	
Flow Control:	No flow control	Material:	Vitrified clay	
Year Constructed:	Not Specified	Lining Type:	No Lining	
Inspection Purpose:	Routine inspection	Lining Material:	No Lining	

Comments:
Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade																																										
Depth: m MH04LAT-C  <table><tr><td>0.00</td><td>MH</td><td>Start node, manhole, reference: MH04LAT-C</td><td>00:00:00</td><td></td><td></td></tr><tr><td>0.00</td><td>CC</td><td>Crack, circumferential from 8 o'clock to 4 o'clock</td><td>00:00:04</td><td>1</td><td>2 / 2</td></tr><tr><td>0.00</td><td>S01</td><td>DES Settled deposits, fine, 10% cross-sectional area loss, start</td><td>00:00:04</td><td></td><td></td></tr><tr><td>0.00</td><td>WL</td><td>Water level, 0% of the vertical dimension</td><td>00:00:09</td><td></td><td></td></tr><tr><td>0.86</td><td>F01</td><td>DES Settled deposits, fine, 10% cross-sectional area loss, finish</td><td>00:00:09</td><td></td><td>3</td></tr><tr><td>0.86</td><td>XP</td><td>Collapsed drain or sewer, 50% cross-sectional area loss</td><td>00:00:14</td><td>2</td><td>5</td></tr><tr><td>0.86</td><td>SA</td><td>Survey abandoned: SA09</td><td>00:00:09</td><td></td><td></td></tr></table>								0.00	MH	Start node, manhole, reference: MH04LAT-C	00:00:00			0.00	CC	Crack, circumferential from 8 o'clock to 4 o'clock	00:00:04	1	2 / 2	0.00	S01	DES Settled deposits, fine, 10% cross-sectional area loss, start	00:00:04			0.00	WL	Water level, 0% of the vertical dimension	00:00:09			0.86	F01	DES Settled deposits, fine, 10% cross-sectional area loss, finish	00:00:09		3	0.86	XP	Collapsed drain or sewer, 50% cross-sectional area loss	00:00:14	2	5	0.86	SA	Survey abandoned: SA09	00:00:09		
0.00	MH	Start node, manhole, reference: MH04LAT-C	00:00:00																																														
0.00	CC	Crack, circumferential from 8 o'clock to 4 o'clock	00:00:04	1	2 / 2																																												
0.00	S01	DES Settled deposits, fine, 10% cross-sectional area loss, start	00:00:04																																														
0.00	WL	Water level, 0% of the vertical dimension	00:00:09																																														
0.86	F01	DES Settled deposits, fine, 10% cross-sectional area loss, finish	00:00:09		3																																												
0.86	XP	Collapsed drain or sewer, 50% cross-sectional area loss	00:00:14	2	5																																												
0.86	SA	Survey abandoned: SA09	00:00:09																																														

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
2	165.0	203.5	175.0	5.0	2	3.0	3.5	3.0	4.0

Section Pictures - SA09X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
11	Upstream	SA09X		



1, 00:00:04, 0.00 m
 Crack, circumferential from 8 o'clock to 4 o'clock



2, 00:00:14, 0.86 m
 Collapsed drain or sewer, 50% cross-sectional area loss

Section Inspection - MH05X

Item No. 12	Insp. No. 1	Date	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR MH05X
Operator Not Specified		Vehicle Not Specified	Camera Vivax V-Cam 6	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Inspection Direction: Upstream	Upstream Node: MH05
Road:	Inspected Length: 3.45 m	Upstream Pipe Depth:
Location: Other location	Total Length: 3.45 m	Downstream Node: MH04
Surface Type:	Joint Length:	Downstream Pipe Depth:
Use: Surface water	Pipe Shape: Circular	
Type of Pipe: Gravity drain/sewer	Dia/Height: 150 mm	
Flow Control: No flow control	Material: Vitrified clay	
Year Constructed: Not Specified	Lining Type: No Lining	
Inspection Purpose: Routine inspection	Lining Material: No Lining	

Comments:
Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade																																				
Depth: m MH04 0.00 0.00 2.49 2.49 2.49 3.45 MH05 Depth: m <table><tr><td>MH</td><td>Start node, manhole, reference: MH04</td><td>00:00:00</td><td></td><td></td><td></td></tr><tr><td>WL</td><td>Water level, 5% of the vertical dimension</td><td>00:00:12</td><td></td><td></td><td></td></tr><tr><td>MCPVC</td><td>Pipe material changes to polyvinyl chloride at this point</td><td>00:00:16</td><td></td><td></td><td></td></tr><tr><td>DESJ</td><td>Settled deposits, fine at joint, 10% cross-sectional area loss</td><td>00:00:16</td><td></td><td></td><td>3</td></tr><tr><td>JDL</td><td>Joint displaced, large</td><td>00:00:16</td><td>1</td><td></td><td>1 / 4</td></tr><tr><td>MHF</td><td>Finish node, manhole, reference: MH05</td><td>00:00:23</td><td>2</td><td></td><td></td></tr></table>								MH	Start node, manhole, reference: MH04	00:00:00				WL	Water level, 5% of the vertical dimension	00:00:12				MCPVC	Pipe material changes to polyvinyl chloride at this point	00:00:16				DESJ	Settled deposits, fine at joint, 10% cross-sectional area loss	00:00:16			3	JDL	Joint displaced, large	00:00:16	1		1 / 4	MHF	Finish node, manhole, reference: MH05	00:00:23	2		
MH	Start node, manhole, reference: MH04	00:00:00																																									
WL	Water level, 5% of the vertical dimension	00:00:12																																									
MCPVC	Pipe material changes to polyvinyl chloride at this point	00:00:16																																									
DESJ	Settled deposits, fine at joint, 10% cross-sectional area loss	00:00:16			3																																						
JDL	Joint displaced, large	00:00:16	1		1 / 4																																						
MHF	Finish node, manhole, reference: MH05	00:00:23	2																																								

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	2.0	0.6	2.0	1.0	2	7.0	2.0	7.0	4.0

Section Pictures - MH05X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
12	Upstream	MH05X		



1, 00:00:16, 2.49 m
 Joint displaced, large



2, 00:00:23, 3.45 m
 Finish node, manhole, reference: MH05

APPENDIX 7

SURFACE WATER NETWORK ANALYSES

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	30	Maximum Rainfall (mm/hr)	75.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	1.000	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Adoptable Manhole Type

Max Width (mm)	Diameter (mm)	Max Width (mm)	Diameter (mm)
374	1200	749	1500
499	1350	900	1800

>900 Link+900 mm

Max Depth (m)	Diameter (mm)	Max Depth (m)	Diameter (mm)
1.500	1050	99.999	1200

Circular Link Type

Template	Freeform Carrier	Auto Increment (mm)	75
Shape	Circular	Follow Ground	✓
Barrels	1		

Available Diameters (mm)

100 | 150

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Depth (m)	Invert Level (m)
SW01	0.009	5.00	105.800	450	0.700	105.100
SW02	0.030	5.00	105.750	450	0.820	104.930
SW03	0.010	5.00	105.750	450	1.015	104.735
SW04	0.004	5.00	105.750	450	1.125	104.625
RE01	0.005	5.00	106.050	100	0.800	105.250
SW05	0.004	5.00	106.050	450	1.000	105.050
RE02	0.004	5.00	106.050	100	0.800	105.250
SW06	0.005	5.00	106.050	450	1.000	105.050
SW07			106.050	450	1.150	104.900
TANK	0.026	5.00	105.700	100	1.125	104.575
SW08			105.750	1200	1.205	104.545
SEWER			105.750	100	1.300	104.450

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	SW01	SW02	10.000	0.600	105.100	104.980	0.120	83.3	100	5.20	75.0
1.001	SW02	SW03	14.000	0.600	104.930	104.810	0.120	116.7	150	5.45	75.0
1.002	SW03	SW04	13.000	0.600	104.735	104.625	0.110	118.2	225	5.63	75.0
1.003	SW04	TANK	4.000	0.600	104.625	104.575	0.050	80.0	225	5.67	75.0
2.000	RE01	SW05	13.000	0.600	105.250	105.050	0.200	65.0	100	5.23	75.0
2.001	SW05	SW07	10.500	0.600	105.050	104.900	0.150	70.0	100	5.42	75.0
3.000	RE02	SW06	13.000	0.600	105.250	105.050	0.200	65.0	100	5.23	75.0
3.001	SW06	SW07	4.500	0.600	105.050	104.900	0.150	30.0	100	5.28	75.0
2.002	SW07	TANK	9.000	0.600	104.900	104.700	0.200	45.0	100	5.55	75.0
1.004	TANK	SW08	1.000	0.600	104.575	104.545	0.030	33.3	150	5.68	75.0
1.005	SW08	SEWER	1.000	0.600	104.545	104.450	0.095	10.5	150	5.69	75.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.843	6.6	2.4	0.600	0.670	0.009	0.0	42	0.777
1.001	0.929	16.4	10.6	0.670	0.790	0.039	0.0	88	0.986
1.002	1.201	47.8	13.3	0.790	0.900	0.049	0.0	81	1.034
1.003	1.463	58.2	14.4	0.900	0.900	0.053	0.0	76	1.217
2.000	0.956	7.5	1.4	0.700	0.900	0.005	0.0	29	0.720
2.001	0.921	7.2	2.4	0.900	1.050	0.009	0.0	40	0.833
3.000	0.956	7.5	1.1	0.700	0.900	0.004	0.0	25	0.674
3.001	1.414	11.1	2.4	0.900	1.050	0.009	0.0	32	1.130
2.002	1.152	9.0	4.9	1.050	0.900	0.018	0.0	52	1.170
1.004	1.749	30.9	26.3	0.975	1.055	0.097	0.0	106	1.958
1.005	3.123	55.2	26.3	1.055	1.150	0.097	0.0	73	3.087

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	10.000	83.3	100	Circular	105.800	105.100	0.600	105.750	104.980	0.670
1.001	14.000	116.7	150	Circular	105.750	104.930	0.670	105.750	104.810	0.790
1.002	13.000	118.2	225	Circular	105.750	104.735	0.790	105.750	104.625	0.900
1.003	4.000	80.0	225	Circular	105.750	104.625	0.900	105.700	104.575	0.900
2.000	13.000	65.0	100	Circular	106.050	105.250	0.700	106.050	105.050	0.900
2.001	10.500	70.0	100	Circular	106.050	105.050	0.900	106.050	104.900	1.050
3.000	13.000	65.0	100	Circular	106.050	105.250	0.700	106.050	105.050	0.900
3.001	4.500	30.0	100	Circular	106.050	105.050	0.900	106.050	104.900	1.050
2.002	9.000	45.0	100	Circular	106.050	104.900	1.050	105.700	104.700	0.900

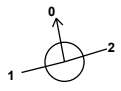
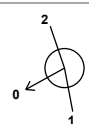
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	SW01	450	Manhole	Adoptable	SW02	450	Manhole	Adoptable
1.001	SW02	450	Manhole	Adoptable	SW03	450	Manhole	Adoptable
1.002	SW03	450	Manhole	Adoptable	SW04	450	Manhole	Adoptable
1.003	SW04	450	Manhole	Adoptable	TANK	100	Manhole	Adoptable
2.000	RE01	100	Manhole	Adoptable	SW05	450	Manhole	Adoptable
2.001	SW05	450	Manhole	Adoptable	SW07	450	Manhole	Adoptable
3.000	RE02	100	Manhole	Adoptable	SW06	450	Manhole	Adoptable
3.001	SW06	450	Manhole	Adoptable	SW07	450	Manhole	Adoptable
2.002	SW07	450	Manhole	Adoptable	TANK	100	Manhole	Adoptable

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.004	1.000	33.3	150	Circular	105.700	104.575	0.975	105.750	104.545	1.055
1.005	1.000	10.5	150	Circular	105.750	104.545	1.055	105.750	104.450	1.150

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.004	TANK	100	Manhole	Adoptable	SW08	1200	Manhole	Adoptable
1.005	SW08	1200	Manhole	Adoptable	SEWER	100	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SW01	8.323	80.385	105.800	0.700	450				
						0	1.000	105.100	100
SW02	32.872	83.514	105.750	0.820	450		1	1.000	104.980
						0	1.001	104.930	150
SW03	42.740	43.562	105.750	1.015	450		1	1.001	104.810
						0	1.002	104.735	225
SW04	11.287	36.266	105.750	1.125	450		1	1.002	104.625
						0	1.003	104.625	225
RE01	61.681	-25.535	106.050	0.800	100				
						0	2.000	105.250	100
SW05	54.533	4.380	106.050	1.000	450		1	2.000	105.050
						0	2.001	105.050	100
RE02	14.169	-38.635	106.050	0.800	100				
						0	3.000	105.250	100
SW06	8.040	-9.013	106.050	1.000	450		1	3.000	105.050
						0	3.001	105.050	100
SW07	21.440	-5.680	106.050	1.150	450		1	3.001	104.900
						2	2.001	104.900	100
						0	2.002	104.900	100
TANK	16.266	21.661	105.700	1.125	100		1	2.002	104.700
						2	1.003	104.575	225
						0	1.004	104.575	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
SW08	7.120	16.606	105.750	1.205	1200		1	1.004	104.545	150
							0	1.005	104.545	150
SEWER	-10.449	11.552	105.750	1.300	100		1	1.005	104.450	150

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
Rainfall Events	Singular	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m³/ha)	20.0
Ratio-R	0.400	Starting Level (m)	
Summer CV	1.000	Check Discharge Rate(s)	x
Winter CV	1.000	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 %)
1	0	0	0
30	30	0	0
100	30	0	0

Node SW08 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	104.545	Product Number	CTL-SHE-0082-3000-1000-3000
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	3.0	Min Node Diameter (mm)	1200

Node TANK Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	104.575
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	138

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	120.0	120.0	0.400	120.0	135.5	0.401	0.0	135.5

Approval Settings

Node Size	✓	Coordinates	✓
Node Losses	✓	Accuracy (m)	1.000
Link Size	✓	Crossings	✓
Minimum Diameter (mm)	150	Cover Depth	✓
Link Length	✓	Minimum Cover Depth (m)	
Maximum Length (m)	100.000	Maximum Cover Depth (m)	3.000

Approval Settings

Backdrops	✓	Return Period (years)	
Minimum Backdrop Height (m)		Maximum Surcharged Depth (m)	0.100
Maximum Backdrop Height (m)	1.500	Flooding	✓
Full Bore Velocity	✓	Return Period (years)	30
Minimum Full Bore Velocity (m/s)		Time to Half Empty	x
Maximum Full Bore Velocity (m/s)	3.000	Discharge Rates	✓
Proportional Velocity	✓	Discharge Volume	✓
Return Period (years)		100 year 360 minute (m³)	
Minimum Proportional Velocity (m/s)	0.750	First Flush	✓
Maximum Proportional Velocity (m/s)	3.000	Return Period (years)	30
Surcharged Depth	✓	First Flush Depth (mm)	5

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year 15 minute summer	109.521	30.991	30 year +30% CC 360 minute summer	40.588	10.445
1 year 15 minute winter	76.857	30.991	30 year +30% CC 360 minute winter	26.383	10.445
1 year 30 minute summer	71.439	20.215	30 year +30% CC 480 minute summer	31.621	8.357
1 year 30 minute winter	50.133	20.215	30 year +30% CC 480 minute winter	21.008	8.357
1 year 60 minute summer	48.435	12.800	30 year +30% CC 600 minute summer	25.682	7.025
1 year 60 minute winter	32.179	12.800	30 year +30% CC 600 minute winter	17.548	7.025
1 year 120 minute summer	30.053	7.942	30 year +30% CC 720 minute summer	22.736	6.094
1 year 120 minute winter	19.966	7.942	30 year +30% CC 720 minute winter	15.280	6.094
1 year 180 minute summer	23.233	5.979	30 year +30% CC 960 minute summer	18.479	4.866
1 year 180 minute winter	15.102	5.979	30 year +30% CC 960 minute winter	12.241	4.866
1 year 240 minute summer	18.475	4.882	30 year +30% CC 1440 minute summer	13.209	3.540
1 year 240 minute winter	12.274	4.882	30 year +30% CC 1440 minute winter	8.877	3.540
1 year 360 minute summer	14.169	3.646	100 year +30% CC 15 minute summer	453.359	128.285
1 year 360 minute winter	9.210	3.646	100 year +30% CC 15 minute winter	318.147	128.285
1 year 480 minute summer	11.185	2.956	100 year +30% CC 30 minute summer	297.655	84.226
1 year 480 minute winter	7.431	2.956	100 year +30% CC 30 minute winter	208.881	84.226
1 year 600 minute summer	9.182	2.511	100 year +30% CC 60 minute summer	199.275	52.662
1 year 600 minute winter	6.274	2.511	100 year +30% CC 60 minute winter	132.393	52.662
1 year 720 minute summer	8.203	2.199	100 year +30% CC 120 minute summer	120.330	31.800
1 year 720 minute winter	5.513	2.199	100 year +30% CC 120 minute winter	79.945	31.800
1 year 960 minute summer	6.768	1.782	100 year +30% CC 180 minute summer	90.748	23.353
1 year 960 minute winter	4.483	1.782	100 year +30% CC 180 minute winter	58.989	23.353
1 year 1440 minute summer	4.949	1.326	100 year +30% CC 240 minute summer	70.550	18.644
1 year 1440 minute winter	3.326	1.326	100 year +30% CC 240 minute winter	46.872	18.644
30 year +30% CC 15 minute summer	349.318	98.845	100 year +30% CC 360 minute summer	52.629	13.543
30 year +30% CC 15 minute winter	245.136	98.845	100 year +30% CC 360 minute winter	34.210	13.543
30 year +30% CC 30 minute summer	227.407	64.348	100 year +30% CC 480 minute summer	40.838	10.792
30 year +30% CC 30 minute winter	159.584	64.348	100 year +30% CC 480 minute winter	27.132	10.792
30 year +30% CC 60 minute summer	151.566	40.054	100 year +30% CC 600 minute summer	33.061	9.043
30 year +30% CC 60 minute winter	100.697	40.054	100 year +30% CC 600 minute winter	22.589	9.043
30 year +30% CC 120 minute summer	91.569	24.199	100 year +30% CC 720 minute summer	29.188	7.823
30 year +30% CC 120 minute winter	60.837	24.199	100 year +30% CC 720 minute winter	19.616	7.823
30 year +30% CC 180 minute summer	69.287	17.830	100 year +30% CC 960 minute summer	23.616	6.219
30 year +30% CC 180 minute winter	45.039	17.830	100 year +30% CC 960 minute winter	15.643	6.219
30 year +30% CC 240 minute summer	54.085	14.293	100 year +30% CC 1440 minute summer	16.765	4.493
30 year +30% CC 240 minute winter	35.933	14.293	100 year +30% CC 1440 minute winter	11.267	4.493

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SW01	10	105.134	0.034	1.6	0.0142	0.0000	OK
15 minute summer	SW02	10	105.001	0.071	7.0	0.0631	0.0000	OK
15 minute summer	SW03	10	104.803	0.067	8.6	0.0240	0.0000	OK
15 minute summer	SW04	9	104.696	0.071	9.3	0.0164	0.0000	OK
15 minute summer	RE01	11	105.273	0.023	0.9	0.0031	0.0000	OK
15 minute summer	SW05	11	105.082	0.032	1.6	0.0076	0.0000	OK
15 minute summer	RE02	11	105.271	0.021	0.7	0.0022	0.0000	OK
15 minute summer	SW06	11	105.076	0.026	1.6	0.0067	0.0000	OK
15 minute summer	SW07	11	104.943	0.043	3.2	0.0068	0.0000	OK
120 minute summer	TANK	80	104.653	0.078	7.7	8.9543	0.0000	OK
120 minute summer	SW08	84	104.661	0.116	4.9	0.1315	0.0000	OK
120 minute summer	SEWER	82	104.470	0.020	2.2	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW01	1.000	SW02	1.6	0.679	0.237	0.0232	
15 minute summer	SW02	1.001	SW03	6.8	0.866	0.417	0.1108	
15 minute summer	SW03	1.002	SW04	8.6	0.847	0.180	0.1350	
15 minute summer	SW04	1.003	TANK	9.3	1.483	0.160	0.0286	
15 minute summer	RE01	2.000	SW05	0.9	0.511	0.120	0.0230	
15 minute summer	SW05	2.001	SW07	1.6	0.598	0.221	0.0282	
15 minute summer	RE02	3.000	SW06	0.7	0.510	0.093	0.0179	
15 minute summer	SW06	3.001	SW07	1.6	0.685	0.144	0.0108	
15 minute summer	SW07	2.002	TANK	3.2	1.025	0.354	0.0281	
120 minute summer	TANK	1.004	SW08	4.9	0.466	0.159	0.0119	
120 minute summer	SW08	1.005	SEWER	2.2	1.356	0.040	0.0016	14.6

Results for 30 year +30% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SW01	11	105.251	0.151	5.1	0.0629	0.0000	SURCHARGED
15 minute summer	SW02	11	105.173	0.243	21.3	0.2162	0.0000	SURCHARGED
15 minute summer	SW03	11	104.867	0.132	26.6	0.0469	0.0000	OK
120 minute summer	SW04	100	104.852	0.227	13.0	0.0523	0.0000	SURCHARGED
15 minute summer	RE01	10	105.293	0.043	2.9	0.0057	0.0000	OK
15 minute summer	SW05	11	105.128	0.077	5.2	0.0185	0.0000	OK
15 minute summer	RE02	10	105.288	0.038	2.3	0.0041	0.0000	OK
15 minute summer	SW06	11	105.107	0.057	5.2	0.0147	0.0000	OK
15 minute summer	SW07	11	105.067	0.167	9.8	0.0265	0.0000	SURCHARGED
120 minute summer	TANK	100	104.852	0.277	23.4	31.7474	0.0000	SURCHARGED
120 minute summer	SW08	100	104.851	0.306	4.0	0.3464	0.0000	SURCHARGED
120 minute summer	SEWER	100	104.474	0.024	3.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW01	1.000	SW02	5.1	0.739	0.765	0.0782	
15 minute summer	SW02	1.001	SW03	21.2	1.205	1.290	0.2383	
15 minute summer	SW03	1.002	SW04	26.6	1.120	0.557	0.3144	
120 minute summer	SW04	1.003	TANK	12.7	0.918	0.218	0.1591	
15 minute summer	RE01	2.000	SW05	2.9	0.675	0.382	0.0624	
15 minute summer	SW05	2.001	SW07	4.8	0.739	0.668	0.0753	
15 minute summer	RE02	3.000	SW06	2.3	0.675	0.304	0.0470	
15 minute summer	SW06	3.001	SW07	5.0	0.830	0.448	0.0279	
15 minute summer	SW07	2.002	TANK	9.6	1.270	1.062	0.0695	
120 minute summer	TANK	1.004	SW08	4.0	0.463	0.130	0.0176	
120 minute summer	SW08	1.005	SEWER	3.0	1.459	0.054	0.0021	44.9

Results for 100 year +30% CC Critical Storm Duration. Lowest mass balance: 99.90%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SW01	11	105.468	0.368	6.7	0.1532	0.0000	SURCHARGED
15 minute summer	SW02	11	105.347	0.417	27.2	0.3715	0.0000	SURCHARGED
120 minute winter	SW03	116	104.967	0.232	10.8	0.0824	0.0000	SURCHARGED
120 minute winter	SW04	116	104.967	0.341	11.7	0.0785	0.0000	SURCHARGED
15 minute summer	RE01	12	105.304	0.054	3.7	0.0072	0.0000	OK
15 minute summer	SW05	12	105.275	0.225	6.7	0.0537	0.0000	SURCHARGED
15 minute summer	RE02	10	105.294	0.044	3.0	0.0047	0.0000	OK
15 minute summer	SW06	12	105.219	0.169	6.7	0.0438	0.0000	SURCHARGED
15 minute summer	SW07	12	105.166	0.266	11.5	0.0423	0.0000	SURCHARGED
120 minute winter	TANK	116	104.966	0.391	21.1	44.8029	0.0000	SURCHARGED
120 minute winter	SW08	116	104.965	0.420	4.6	0.4754	0.0000	SURCHARGED
30 minute summer	SEWER	42	104.474	0.024	3.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW01	1.000	SW02	6.6	0.845	0.998	0.0782	
15 minute summer	SW02	1.001	SW03	27.1	1.541	1.652	0.2435	
120 minute winter	SW03	1.002	SW04	10.8	0.796	0.226	0.5170	
120 minute winter	SW04	1.003	TANK	11.4	1.020	0.196	0.1591	
15 minute summer	RE01	2.000	SW05	3.7	0.679	0.489	0.0790	
15 minute summer	SW05	2.001	SW07	5.7	0.759	0.786	0.0822	
15 minute summer	RE02	3.000	SW06	3.0	0.669	0.396	0.0722	
15 minute summer	SW06	3.001	SW07	5.8	0.837	0.523	0.0352	
15 minute summer	SW07	2.002	TANK	11.2	1.433	1.239	0.0698	
120 minute winter	TANK	1.004	SW08	4.6	0.454	0.148	0.0176	
120 minute winter	SW08	1.005	SEWER	3.0	1.459	0.054	0.0021	55.1

APPENDIX 8

DRAINAGE STRATEGY PLAN

