PRP Leicester
Park House 21-22 Warren Park Way
Enderby Leicester LE19 4SA

Telephone: 0116 275 1710

leicester@prp.uk.com
www.prp.uk.com

Technical Note responding to LLFA comments

for

Proposed Residential Development

at

Station Road, Bagworth, Leicestershire LE67 1BA

for:

A R Cartwright Ltd, Vicarage Street, Nuneaton, CV11 4AZ

Date	Issued	Revision
13 March 2026	Issued	A

Reference: 83847-01

Prepared by:

Elliot Cant
MEng
Project Civil Engineer

Approved by:

Dan Edwards
MEng CEng MICE
Director

APPENDICES

Appendix I	LCC LLFA Comments
Appendix II	Updated Hydraulic Modelling Calculations
Appendix III	Architects Site Plan
Appendix IV	Updated Drainage Strategy
Appendix V	CCTV Survey
Appendix VI	Watercourse Outfall Drawings

1. INTRODUCTION

1.1 This technical note has been prepared to respond to Leicestershire County Council's Lead Local Flood Authority comments regarding application number 25/00990/FUL.

1.2 The format of this technical note is to consider the information within the document and provide a response immediately below.

1.3 A copy of the Leicestershire County Council LLFA Comments can be found within Appendix I.

2. LLFA Comments

2.1 LLFA Comment:

Updated drainage strategy to include an allowance for urban creep

PRP Response:

10% Urban Creep has been added to private areas and the hydraulic model updated. The updated Hydraulic Modelling can be found within Appendix II.

2.2 LLFA Comment:

Calculations or modelling to understand the effect the construction of the pond will have on the surface water flood risk outline, ensuring flood risk is not increased off site.

PRP Response:

The construction of the pond is not believed to have any detrimental effect on the surface water flood risk either within the site or to the adjacent land, which is also under the same land ownership. The pond has been considered to provide additional storage for any flood volume, by oversizing the pond such that in a surcharged outfall event the basin would have capacity for a further 1000-2000m^3 of flood volume. The Surcharged outfall event has been calculated and the results can be found within Appendix II, showing that the system is able to withstand the surcharged event.

2.3 LLFA Comment:

Calculations or modelling to show the drainage strategy still functions as required with a surcharged outfall

PRP Response:

The hydraulic modelling has been completed with a surcharged outfall. The updated results illustrating that the system is functional in a surcharged event can be found within Appendix II.

2.4 LLFA Comment:

Updated site plan and drainage strategy to include all drainage ditches on site, and clearly marked any crossing that will be required.

PRP Response:

The site plans and drainage strategy have been updated to illustrate the existing drainage ditches within the site with any crossings highlighted on the plans. The updated Architects plan can be found within Appendix III and the updated drainage strategy plan within Appendix IV

2.5 LLFA Comment:

Maintenance easements on all ditches of a minimum of 3m easement.

PRP Response:

A 3m Easement has been added to the Architects site plan, this can be found within Appendix III.

2.6 LLFA Comment:

Consideration of de-culverting the western watercourse

PRP Response:

Consideration has been given to de-culverting the western watercourse, although the watercourse is within the land ownership of our client, it is outside of the development boundary. In order to open up the culverted watercourse this would involve extensive works with the length of culverted watercourse being over 550m and in some places the depth is greater than 1.5m.

2.7 LLFA Comment:

Evidence of onward connectivity of the western watercourse

PRP Response:

The watercourse has been walked and a cctv survey of the watercourse has been undertaken to prove the onward connectivity. The CCTV survey plan can be found within Appendix V and a Watercourse outfall plan highlighting the onward connectivity of the watercourse can be found within Appendix VI.

The CCTV survey highlights that the British coal drain has collapsed in a couple of places. As the persimmon site also wishes to utilise this drain they have proposed to reinstate and realign the drain. The proposed route of the realigned drain can be found within Appendix VI.

APPENDIX I

LCC LLFA COMMENTS

RESPONSE OF THE LEAD LOCAL FLOOD AUTHORITY TO CONSULTATION BY HINCKLEY & BOSWORTH BOROUGH COUNCIL

Application address Land Off Station Road, Bagworth		**Planning ref.**	25/00990/FUL
		Our ref.	2025/0990/04/F
Description Full Planning Permission for the Erection of 46 Dwellings, Formation of Access, Associated Landscaping and Attenuation Pond		**Consultation date**	27/10/2025
		Response date	17/11/2025
Planning officer	Faizal Jasat	**Reviewing officer**	Danielle Degville
Application type	Full	**Extension requested**	☐

Refer to standing advice	Conditions	Further consultation required	Concerns
☐	☐	☒	☐

Consultation checklist

No.	Description	Check
1	Location plan	☒
2	Proposed layout plan	☒
3	Evidence that the site can be drained	☒
4	Topographic and ground investigation details	☒
5	The total impermeable area pre and post development	☒
6	All potential flood risk sources have been identified and assessed	☐
7	Existing and proposed peak discharge rates	☐
8	Consideration of sustainable drainage systems	☒
9	Attenuation volume calculations	☐
10	Consideration of the maintenance and management of all drainage elements	☒

LLFA Key Observations and Advice

Leicestershire County Council as Lead Local Flood Authority (LLFA) notes that the 2.1ha greenfield site is located within Flood Zone 1 being at low risk of fluvial flooding and a low to high risk of surface water flooding. The proposals seek to discharge at 2 l/s via pervious paving and a attenuation basin to the watercourse along the western boundary.

Over the lifetime of a development, it is possible that the overall impermeable area contributing to surface water runoff within the site could significantly increase (known as ‘urban creep). A 10% increase in impermeable area should therefore be included where appropriate to ensure that surface water drainage designs can cope with future increases in impermeable areas. Note that

the National Standards for SuDS requires the conveyance and attenuation to take account of all areas intercepted by the surface water proposals, including permeable surfaces.

The attenuation basin sits fully within the 100-year surface water outline. No information is provided on the effect the construction of the pond in this area will have on this risk. Care needs to be taken to ensure it does not increase flood risk off site. The LLFA request to see robust calculations or modelling to ensure this risk is not increased.

Given the flood risk in this part of the site, the LLFA request that the developer demonstrates that the proposed drainage strategy is able to function as required during a surface water event. A surcharged outfall needs to be considered. This information needs to be submitted for review.

There are several ditches shown on OS maps that do not appear on the site plan or drainage strategy. There are 3 mapped ditches on site: the western watercourse; a ditch along the southern site boundary; and a ditch separating the 2 land parcels forming the site, up in the northeast of the site area. The drainage strategy should include all ditches shown clearly on the plan. Any crossings of ditches should be clearly noted on the plan, and a separate land drainage consent will be required for these crossings, see advice note 2 below. The developer should also ensure that all watercourses have a minimum 3m easement for maintenance access.

It is suggested that the western watercourse is culverted along the site boundary. The LLFA would request that this culvert is daylighted where possible, if this is not possible then the reasons why should be provided for review.

The drainage strategy for the site looks to discharge to the western watercourse. The onward connectivity of the western watercourse is not clear. The watercourse should be traced to a suitable outfall and proof of onward connectivity provided for review by the LLFA.

Leicestershire County Council as Lead Local Flood Authority (LLFA) advises the Local Planning Authority (LPA) that the application documents as submitted are insufficient for the LLFA to provide a substantive response at this stage. In order to provide a substantive response, the following information is required:

- Updated drainage strategy to include an allowance for urban creep
- Calculations or modelling to understand the effect the construction of the pond will have on the surface water flood risk outline, ensuring flood risk is not increased off site
- Calculations or modelling to show the drainage strategy still functions as required with a surcharged outfall
- Updated site plan and drainage strategy to include all drainage ditches on site, and clearly marked any crossing that will be required
- Maintenance easements on all ditches of a minimum of 3m easement
- Consideration of de-culverting the western watercourse
- Evidence of onward connectivity of the western watercourse

Advice to the Local Planning Authority

1. **Standing Advice – National Planning Policy Framework**
   When determining planning applications, the local planning authority should ensure flood risk is not increased elsewhere and only consider development appropriate in areas at risk of flooding where informed by a site-specific Flood Risk Assessment (FRA) confirming it will not put the users of the development at risk. Where an FRA is applicable this should be

undertaken in accordance with the requirements of the National Planning Policy Framework and accompanying Planning Practice Guidance.

2. **Standing Advice – Consent**
   Where there are any works proposed as part of an application which are likely to affect flows in an ordinary watercourse or ditch, the applicant will require consent under Section 23 of the Land Drainage Act 1991. This is in addition to any planning permission that may be granted. Guidance on this process and a sample application form can be found via the following website: http://www.leicestershire.gov.uk/flood-risk-management

   Applicants are advised to refer to Leicestershire County Council's culverting policy contained within the Local Flood Risk Management Strategy Appendix document, available at the above link. No development should take place within 5 metres of any watercourse or ditch without first contacting the County Council for advice.

   This consent does not consider local watercourse bylaws. It is the responsibility of the applicant to check if the local borough or district council has their own bylaws which the proposals will also need to consider.

3. **Standing Advice – Maintenance**
   Note that it is the responsibility of the Local Planning Authority under the DEFRA/DCLG legislation (April 2015) to ensure that a system to facilitate the future maintenance of SuDS features can be managed and maintained in perpetuity before commencement of the works.

Additional information and guidance is available here:
https://www.leicestershire.gov.uk/environment-and-planning/flooding-and-drainage/

Note: Response provided by the Lead Local Flood Authority under the delegated authority of the Director of Environment and Transport.

APPENDIX II

PROPOSED HYDRAULIC MODELLING CALCULATIONS

PRP:
consulting engineers & surveyors

PRP Leicester
Park House 21-22 Warren Park Way
Enderby Leicester LE19 4SA

Telephone: 0116 275 1710

leicester@prp.uk.com
www.prp.uk.com

Drainage Calculations

for

Station Road, Bagworth

Surface Water Design

For:

A R Cartwright Ltd, Vicarage Street, Nuneaton, CV11 4AZ

Date	Issued	Revision
26/02/2026	Issued	A

Reference: 83047

Prepared by: Elliot Cant
Project Engineer
MEng.

Approved by:	Dan Edwards MEng CEng MICE Director	

Contents

1. Surface Water Calculations for Critical Storm Events up to and including the 1 in 100year + 40% Climate Change + 10% Urban Creep.....3

2. Surface Water Calculations for Critical Storm Events up to and including the 1 in 100year + 40% Climate Change + 10% Urban Creep - Surcharged Outfall.....21

1. Surface Water Calculations for Critical Storm Events up to and including the 1 in 100 year + 40% Climate Change + 10% Urban Creep

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	100	PIMP (%)	100
M5-60 (mm)	20.900	Add Flow / Climate Change (%)	0
Ratio R	0.400	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	5.473	0.080	68.4	0.055	4.00	0.0	0.600	o	225	Pipe/Conduit	
1.001	14.562	0.100	145.6	0.035	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.002	18.958	0.126	150.5	0.017	0.00	0.0	0.600	o	225	Pipe/Conduit	
2.000	7.171	0.626	11.5	0.054	4.00	0.0	0.600	o	150	Pipe/Conduit	
1.003	12.186	0.203	60.0	0.009	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.004	15.217	0.499	30.5	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
3.000	7.014	0.070	100.2	0.015	4.00	0.0	0.600	o	150	Pipe/Conduit	
1.005	42.371	3.202	13.2	0.029	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	4.06	154.180	0.055	0.0	0.0	0.0	1.58	63.0	7.4
1.001	50.00	4.28	154.100	0.090	0.0	0.0	0.0	1.08	43.0	12.2
1.002	50.00	4.58	154.000	0.107	0.0	0.0	0.0	1.06	42.3	14.5
2.000	50.00	4.04	154.500	0.054	0.0	0.0	0.0	2.99	52.9	7.3
1.003	50.00	4.70	153.799	0.170	0.0	0.0	0.0	1.69	67.2	23.0
1.004	50.00	4.81	153.596	0.170	0.0	0.0	0.0	2.38	94.5	23.0
3.000	50.00	4.12	153.250	0.015	0.0	0.0	0.0	1.00	17.7	2.0
1.005	50.00	5.00	153.097	0.214	0.0	0.0	0.0	3.62	143.8	29.0

©1982-2020 Innovyze

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
4.000	2.983	0.298	10.0	0.051	4.00	0.0	0.600	o	150	Pipe/Conduit	
5.000	6.657	0.665	10.0	0.016	4.00	0.0	0.600	o	150	Pipe/Conduit	
1.006	23.275	2.328	10.0	0.034	0.00	0.0	0.600	o	300	Pipe/Conduit	
6.000	12.000	0.080	150.0	0.092	4.00	0.0	0.600	o	225	Pipe/Conduit	
6.001	35.238	0.310	113.7	0.056	0.00	0.0	0.600	o	225	Pipe/Conduit	
7.000	6.422	0.642	10.0	0.072	4.00	0.0	0.600	o	150	Pipe/Conduit	
6.002	14.684	0.098	149.8	0.014	0.00	0.0	0.600	o	225	Pipe/Conduit	
8.000	4.934	0.033	149.5	0.042	4.00	0.0	0.600	o	150	Pipe/Conduit	
8.001	7.996	0.053	150.9	0.014	0.00	0.0	0.600	o	150	Pipe/Conduit	
9.000	5.938	0.086	69.0	0.039	4.00	0.0	0.600	o	150	Pipe/Conduit	
8.002	20.055	1.487	13.5	0.013	0.00	0.0	0.600	o	150	Pipe/Conduit	
6.003	14.095	0.094	149.9	0.003	0.00	0.0	0.600	o	300	Pipe/Conduit	
6.004	18.469	0.662	27.9	0.019	0.00	0.0	0.600	o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
4.000	50.00	4.02	150.276	0.051	0.0	0.0	0.0	3.20	56.6	6.9
5.000	50.00	4.03	150.643	0.016	0.0	0.0	0.0	3.20	56.6	2.2
1.006	50.00	5.08	149.820	0.315	0.0	0.0	0.0	5.00	353.5	42.7
6.000	50.00	4.19	150.840	0.092	0.0	0.0	0.0	1.07	42.4	12.5
6.001	50.00	4.67	150.760	0.148	0.0	0.0	0.0	1.23	48.7	20.0
7.000	50.00	4.03	151.167	0.072	0.0	0.0	0.0	3.20	56.6	9.7
6.002	50.00	4.90	150.450	0.234	0.0	0.0	0.0	1.07	42.4	31.7
8.000	50.00	4.10	152.000	0.042	0.0	0.0	0.0	0.82	14.5	5.7
8.001	50.00	4.26	151.967	0.056	0.0	0.0	0.0	0.82	14.4	7.6
9.000	50.00	4.08	152.000	0.039	0.0	0.0	0.0	1.21	21.4	5.3
8.002	50.00	4.38	151.914	0.108	0.0	0.0	0.0	2.76	48.7	14.6
6.003	50.00	5.08	150.277	0.345	0.0	0.0	0.0	1.28	90.6	46.7
6.004	50.00	5.18	150.183	0.364	0.0	0.0	0.0	2.99	211.2	49.3

©1982-2020 Innovyze

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
10.000	4.411	0.029	152.1	0.032	4.00	0.0	0.600	o	150	Pipe/Conduit	
6.005	17.467	0.874	20.0	0.016	0.00	0.0	0.600	o	300	Pipe/Conduit	
11.000	7.128	0.453	15.7	0.078	4.00	0.0	0.600	o	150	Pipe/Conduit	
6.006	24.000	1.155	20.8	0.017	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.007	4.000	0.027	148.1	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
1.008	10.000	0.066	151.5	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
1.009	30.000	0.200	150.0	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
10.000	50.00	4.09	149.700	0.032	0.0	0.0	0.0	0.81	14.4	4.3
6.005	50.00	5.27	149.521	0.412	0.0	0.0	0.0	3.53	249.7	55.8
11.000	50.00	4.05	149.250	0.078	0.0	0.0	0.0	2.55	45.1	10.6
6.006	50.00	5.38	148.647	0.507	0.0	0.0	0.0	3.46	244.9	68.7
1.007	50.00	5.43	147.417	0.822	0.0	0.0	0.0	1.49	164.2	111.3
1.008	50.00	5.54	147.390	0.822	0.0	0.0	0.0	1.47	162.3	111.3
1.009	50.00	5.88	147.324	0.822	0.0	0.0	0.0	1.48	163.1	111.3

©1982-2020 Innovyze

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	S1L	156.000	154.180	1.595	Open Manhole	1200
1.001	o	225	S1	156.000	154.100	1.675	Open Manhole	1200
1.002	o	225	S2	155.800	154.000	1.575	Open Manhole	1200
2.000	o	150	S3L	155.800	154.500	1.150	Open Manhole	1200
1.003	o	225	S3	155.650	153.799	1.626	Open Manhole	1200
1.004	o	225	6	155.650	153.596	1.829	Open Manhole	1200
3.000	o	150	S4L	154.750	153.250	1.350	Open Manhole	1200
1.005	o	225	S4	154.650	153.097	1.328	Open Manhole	1200
4.000	o	150	S5LA	152.500	150.276	2.074	Open Manhole	1200
5.000	o	150	S5LB	152.500	150.643	1.707	Open Manhole	1200
1.006	o	300	S5	152.500	149.820	2.380	Open Manhole	1200
6.000	o	225	S6L	153.400	150.840	2.335	Open Manhole	1200
6.001	o	225	S6	154.000	150.760	3.015	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	5.473	68.4	S1	156.000	154.100	1.675	Open Manhole	1200
1.001	14.562	145.6	S2	155.800	154.000	1.575	Open Manhole	1200
1.002	18.958	150.5	S3	155.650	153.874	1.551	Open Manhole	1200
2.000	7.171	11.5	S3	155.650	153.874	1.626	Open Manhole	1200
1.003	12.186	60.0	6	155.650	153.596	1.829	Open Manhole	1200
1.004	15.217	30.5	S4	154.650	153.097	1.328	Open Manhole	1200
3.000	7.014	100.2	S4	154.650	153.180	1.320	Open Manhole	1200
1.005	42.371	13.2	S5	152.500	149.895	2.380	Open Manhole	1200
4.000	2.983	10.0	S5	152.500	149.978	2.372	Open Manhole	1200
5.000	6.657	10.0	S5	152.500	149.978	2.372	Open Manhole	1200
1.006	23.275	10.0	Basin	149.000	147.492	1.208	Open Manhole	1350
6.000	12.000	150.0	S6	154.000	150.760	3.015	Open Manhole	1200
6.001	35.238	113.7	S7	153.700	150.450	3.025	Open Manhole	1200

©1982-2020 Innovyze

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)
7.000	o	150	S7L	153.700	151.167	2.383	Open Manhole	1200
6.002	o	225	S7	153.700	150.450	3.025	Open Manhole	1200
8.000	o	150	S8L	153.500	152.000	1.350	Open Manhole	1200
8.001	o	150	S8	153.500	151.967	1.383	Open Manhole	1200
9.000	o	150	S9L	153.500	152.000	1.350	Open Manhole	1200
8.002	o	150	S9	153.400	151.914	1.336	Open Manhole	1200
6.003	o	300	S10	153.200	150.277	2.623	Open Manhole	1200
6.004	o	300	S11	152.500	150.183	2.017	Open Manhole	1200
10.000	o	150	S12L	151.670	149.700	1.820	Open Manhole	1200
6.005	o	300	S12	151.600	149.521	1.779	Open Manhole	1200
11.000	o	150	S13L	150.850	149.250	1.450	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)
7.000	6.422	10.0	S7	153.700	150.525	3.025	Open Manhole	1200
6.002	14.684	149.8	S10	153.200	150.352	2.623	Open Manhole	1200
8.000	4.934	149.5	S8	153.500	151.967	1.383	Open Manhole	1200
8.001	7.996	150.9	S9	153.400	151.914	1.336	Open Manhole	1200
9.000	5.938	69.0	S9	153.400	151.914	1.336	Open Manhole	1200
8.002	20.055	13.5	S10	153.200	150.427	2.623	Open Manhole	1200
6.003	14.095	149.9	S11	152.500	150.183	2.017	Open Manhole	1200
6.004	18.469	27.9	S12	151.600	149.521	1.779	Open Manhole	1200
10.000	4.411	152.1	S12	151.600	149.671	1.779	Open Manhole	1200
6.005	17.467	20.0	S13	150.700	148.647	1.753	Open Manhole	1200
11.000	7.128	15.7	S13	150.700	148.797	1.753	Open Manhole	1200

©1982-2020 Innovyze

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)
6.006	o	300	S13	150.700	148.647	1.753	Open Manhole	1200
1.007	o	375	Basin	149.000	147.417	1.208	Open Manhole	1350
1.008	o	375	26	149.250	147.390	1.485	Open Manhole	1350
1.009	o	375	27	148.600	147.324	0.901	Open Manhole	1350

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)
6.006	24.000	20.8	Basin	149.000	147.492	1.208	Open Manhole	1350
1.007	4.000	148.1	26	149.250	147.390	1.485	Open Manhole	1350
1.008	10.000	151.5	27	148.600	147.324	0.901	Open Manhole	1350
1.009	30.000	150.0		149.500	147.124	2.001	Open Manhole	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	2.000
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	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.900	Storm Duration (mins)	30
Ratio R	0.400		

©1982-2020 Innovyze

Online Controls for Storm

Hydro-Brake® Optimum Manhole: Basin, DS/PN: 1.007, Volume (m³): 5.4

Unit Reference	MD-SHE-0069-2000-0900-2000
Design Head (m)	0.900
Design Flow (l/s)	2.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	69
Invert Level (m)	147.417
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.900	2.0
Flush-Flo™	0.278	2.0
Kick-Flo®	0.568	1.6
Mean Flow over Head Range	-	1.8

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.7	1.200	2.3	3.000	3.5	7.000	5.2
0.200	2.0	1.400	2.4	3.500	3.7	7.500	5.3
0.300	2.0	1.600	2.6	4.000	4.0	8.000	5.5
0.400	1.9	1.800	2.7	4.500	4.2	8.500	5.7
0.500	1.8	2.000	2.9	5.000	4.4	9.000	5.8
0.600	1.7	2.200	3.0	5.500	4.6	9.500	6.0
0.800	1.9	2.400	3.1	6.000	4.8		
1.000	2.1	2.600	3.2	6.500	5.0		

©1982-2020 Innovyze

Storage Structures for Storm

Infiltration Basin Manhole: Basin, DS/PN: 1.007

Invert Level (m) 147.425 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	1415.0	1.500	2340.0

©1982-2020 Innovyze

1 year Return Period Summary of Critical Results by Maximum Level (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 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

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

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 20.900 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	S1L	15 Summer	1	+0%	100/15 Summer				154.250
1.001	S1	15 Winter	1	+0%	100/15 Summer				154.191
1.002	S2	15 Winter	1	+0%	100/15 Summer				154.098
2.000	S3L	15 Winter	1	+0%	100/15 Summer				154.544
1.003	S3	15 Winter	1	+0%	30/15 Summer				153.901
1.004	6	15 Winter	1	+0%	100/15 Summer				153.679
3.000	S4L	15 Summer	1	+0%					153.289
1.005	S4	15 Winter	1	+0%					153.169
4.000	S5LA	15 Winter	1	+0%	100/15 Summer				150.325
5.000	S5LB	15 Winter	1	+0%					150.665
1.006	S5	15 Winter	1	+0%					149.895
6.000	S6L	15 Summer	1	+0%	30/15 Summer				150.938
6.001	S6	15 Winter	1	+0%	30/15 Summer				150.868
7.000	S7L	15 Winter	1	+0%	100/15 Summer				151.216
6.002	S7	15 Winter	1	+0%	30/15 Summer				150.619
8.000	S8L	15 Summer	1	+0%	30/15 Summer				152.082
8.001	S8	15 Winter	1	+0%	30/15 Summer				152.056
9.000	S9L	15 Summer	1	+0%	100/15 Summer				152.060
8.002	S9	15 Winter	1	+0%	100/15 Summer				151.975
6.003	S10	15 Winter	1	+0%	30/15 Summer				150.457

©1982-2020 Innovyze

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

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	S1L	-0.155	0.000	0.22			8.6	OK	
1.001	S1	-0.134	0.000	0.34			12.9	OK	
1.002	S2	-0.127	0.000	0.39			14.9	OK	
2.000	S3L	-0.106	0.000	0.19			8.4	OK	
1.003	S3	-0.123	0.000	0.42			24.0	OK	
1.004	6	-0.142	0.000	0.29			24.2	OK	
3.000	S4L	-0.111	0.000	0.15			2.3	OK	
1.005	S4	-0.153	0.000	0.22			30.1	OK	
4.000	S5LA	-0.101	0.000	0.23			8.0	OK	
5.000	S5LB	-0.128	0.000	0.05			2.5	OK	
1.006	S5	-0.225	0.000	0.14			43.9	OK	
6.000	S6L	-0.127	0.000	0.40			14.4	OK	
6.001	S6	-0.117	0.000	0.45			20.8	OK	
7.000	S7L	-0.101	0.000	0.24			11.2	OK	
6.002	S7	-0.056	0.000	0.90			33.5	OK	
8.000	S8L	-0.068	0.000	0.58			6.6	OK	
8.001	S8	-0.061	0.000	0.66			8.3	OK	
9.000	S9L	-0.090	0.000	0.34			6.1	OK	
8.002	S9	-0.089	0.000	0.35			15.9	OK	
6.003	S10	-0.120	0.000	0.66			50.0	OK	

©1982-2020 Innovyze

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
6.004	S11	15 Winter	1	+0%	100/15 Summer			
10.000	S12L	15 Summer	1	+0%	30/15 Summer			
6.005	S12	15 Winter	1	+0%	100/15 Summer			
11.000	S13L	15 Winter	1	+0%	100/15 Summer			
6.006	S13	15 Winter	1	+0%	100/15 Summer			
1.007	Basin	1440 Winter	1	+0%	100/360 Winter			
1.008	26	1440 Winter	1	+0%				
1.009	27	1440 Winter	1	+0%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
6.004	S11	150.293	-0.190	0.000	0.29			52.4	OK	
10.000	S12L	149.772	-0.078	0.000	0.46			5.0	OK	
6.005	S12	149.628	-0.193	0.000	0.28			58.9	OK	
11.000	S13L	149.308	-0.092	0.000	0.32			12.2	OK	
6.006	S13	148.766	-0.181	0.000	0.33			71.9	OK	
1.007	Basin	147.537	-0.255	0.000	0.02		1344	1.5	OK	
1.008	26	147.414	-0.351	0.000	0.01			1.5	OK	
1.009	27	147.342	-0.357	0.000	0.01			1.5	OK	

©1982-2020 Innovyze

30 year Return Period Summary of Critical Results by Maximum Level (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 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

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

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 20.900 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

WARNING: Half Drain Time has not been calculated as the structure is too full.

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	S1L	15 Winter	30	+0%	100/15 Summer				154.314
1.001	S1	15 Winter	30	+0%	100/15 Summer				154.297
1.002	S2	15 Winter	30	+0%	100/15 Summer				154.222
2.000	S3L	15 Winter	30	+0%	100/15 Summer				154.571
1.003	S3	15 Winter	30	+0%	30/15 Summer				154.042
1.004	6	15 Winter	30	+0%	100/15 Summer				153.740
3.000	S4L	15 Summer	30	+0%					153.314
1.005	S4	15 Winter	30	+0%					153.218
4.000	S5LA	15 Winter	30	+0%	100/15 Summer				150.357
5.000	S5LB	15 Winter	30	+0%					150.678
1.006	S5	15 Winter	30	+0%					149.946
6.000	S6L	15 Winter	30	+0%	30/15 Summer				151.512
6.001	S6	15 Winter	30	+0%	30/15 Summer				151.456
7.000	S7L	15 Winter	30	+0%	100/15 Summer				151.289
6.002	S7	15 Winter	30	+0%	30/15 Summer				151.107
8.000	S8L	15 Winter	30	+0%	30/15 Summer				152.270
8.001	S8	15 Winter	30	+0%	30/15 Summer				152.206

©1982-2020 Innovyze

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

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	S1L	-0.091	0.000	0.52			20.6	OK	
1.001	S1	-0.028	0.000	0.88			33.2	OK	
1.002	S2	-0.003	0.000	1.00			38.1	OK	
2.000	S3L	-0.079	0.000	0.46			20.7	OK	
1.003	S3	0.018	0.000	1.06			61.0	SURCHARGED	
1.004	6	-0.081	0.000	0.73			61.1	OK	
3.000	S4L	-0.086	0.000	0.38			5.8	OK	
1.005	S4	-0.104	0.000	0.56			76.1	OK	
4.000	S5LA	-0.069	0.000	0.57			19.6	OK	
5.000	S5LB	-0.115	0.000	0.13			6.1	OK	
1.006	S5	-0.174	0.000	0.36			112.6	OK	
6.000	S6L	0.447	0.000	0.83			30.2	SURCHARGED	
6.001	S6	0.471	0.000	1.04			47.6	SURCHARGED	
7.000	S7L	-0.028	0.000	0.56			26.8	OK	
6.002	S7	0.432	0.000	2.05			76.3	SURCHARGED	
8.000	S8L	0.120	0.000	1.36			15.4	SURCHARGED	
8.001	S8	0.089	0.000	1.63			20.4	SURCHARGED	

©1982-2020 Innovyze

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
9.000	S9L	15 Summer	30	+0%	100/15 Summer			
8.002	S9	15 Winter	30	+0%	100/15 Summer			
6.003	S10	15 Winter	30	+0%	30/15 Summer			
6.004	S11	15 Winter	30	+0%	100/15 Summer			
10.000	S12L	15 Summer	30	+0%	30/15 Summer			
6.005	S12	15 Winter	30	+0%	100/15 Summer			
11.000	S13L	15 Winter	30	+0%	100/15 Summer			
6.006	S13	15 Winter	30	+0%	100/15 Summer			
1.007	Basin	1440 Winter	30	+0%	100/360 Winter			
1.008	26	1440 Winter	30	+0%				
1.009	27	1440 Winter	30	+0%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
9.000	S9L	152.106	-0.044	0.000	0.84			15.0	OK
8.002	S9	152.024	-0.040	0.000	0.87			39.9	OK
6.003	S10	150.695	0.118	0.000	1.55			116.5	SURCHARGED
6.004	S11	150.364	-0.119	0.000	0.67			122.7	OK
10.000	S12L	149.853	0.003	0.000	1.13			12.3	SURCHARGED
6.005	S12	149.699	-0.122	0.000	0.65			139.1	OK
11.000	S13L	149.350	-0.050	0.000	0.78			29.9	OK
6.006	S13	148.852	-0.095	0.000	0.79			171.7	OK
1.007	Basin	147.668	-0.124	0.000	0.02			2.0	OK
1.008	26	147.423	-0.342	0.000	0.02			2.0	OK
1.009	27	147.348	-0.351	0.000	0.01			2.0	OK

PN	US/MH Name	Level Exceeded
9.000	S9L	
8.002	S9	
6.003	S10	
6.004	S11	
10.000	S12L	
6.005	S12	
11.000	S13L	
6.006	S13	
1.007	Basin	
1.008	26	
1.009	27	

©1982-2020 Innovyze

100 year Return Period Summary of Critical Results by Maximum Level (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 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

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

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 20.900 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

WARNING: Half Drain Time has not been calculated as the structure is too full.

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	S1L	15 Winter	100	+40%	100/15 Summer				155.078
1.001	S1	15 Winter	100	+40%	100/15 Summer				155.028
1.002	S2	15 Winter	100	+40%	100/15 Summer				154.844
2.000	S3L	15 Winter	100	+40%	100/15 Summer				154.823
1.003	S3	15 Winter	100	+40%	30/15 Summer				154.530
1.004	6	15 Winter	100	+40%	100/15 Summer				153.968
3.000	S4L	15 Summer	100	+40%					153.342
1.005	S4	15 Winter	100	+40%					153.262
4.000	S5LA	15 Winter	100	+40%	100/15 Summer				150.443
5.000	S5LB	15 Winter	100	+40%					150.692
1.006	S5	15 Winter	100	+40%					149.989
6.000	S6L	15 Winter	100	+40%	30/15 Summer				153.202
6.001	S6	15 Winter	100	+40%	30/15 Summer				153.056
7.000	S7L	15 Winter	100	+40%	100/15 Summer				152.571
6.002	S7	15 Winter	100	+40%	30/15 Summer				152.163
8.000	S8L	15 Winter	100	+40%	30/15 Summer				153.164
8.001	S8	15 Winter	100	+40%	30/15 Summer				153.055

©1982-2020 Innovyze

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

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	S1L	0.673	0.000	0.79			31.5	SURCHARGED	
1.001	S1	0.703	0.000	1.36			51.1	SURCHARGED	
1.002	S2	0.619	0.000	1.56			59.5	SURCHARGED	
2.000	S3L	0.173	0.000	0.75			34.0	SURCHARGED	
1.003	S3	0.506	0.000	1.65			95.2	SURCHARGED	
1.004	6	0.147	0.000	1.15			95.3	SURCHARGED	
3.000	S4L	-0.058	0.000	0.69			10.5	OK	
1.005	S4	-0.060	0.000	0.87			119.7	OK	
4.000	S5LA	0.017	0.000	1.04			35.4	SURCHARGED	
5.000	S5LB	-0.101	0.000	0.23			11.2	OK	
1.006	S5	-0.131	0.000	0.59			185.1	OK	
6.000	S6L	2.137	0.000	1.36			49.3	FLOOD RISK	
6.001	S6	2.071	0.000	1.67			76.9	SURCHARGED	
7.000	S7L	1.254	0.000	0.83			39.6	SURCHARGED	
6.002	S7	1.488	0.000	3.24			120.6	SURCHARGED	
8.000	S8L	1.014	0.000	1.85			21.1	SURCHARGED	
8.001	S8	0.938	0.000	2.05			25.7	SURCHARGED	

©1982-2020 Innovyze

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
9.000	S9L	15 Winter	100	+40%	100/15 Summer			
8.002	S9	15 Winter	100	+40%	100/15 Summer			
6.003	S10	15 Winter	100	+40%	30/15 Summer			
6.004	S11	15 Winter	100	+40%	100/15 Summer			
10.000	S12L	15 Winter	100	+40%	30/15 Summer			
6.005	S12	15 Winter	100	+40%	100/15 Summer			
11.000	S13L	15 Winter	100	+40%	100/15 Summer			
6.006	S13	15 Winter	100	+40%	100/15 Summer			
1.007	Basin	1440 Winter	100	+40%	100/360 Winter			
1.008	26	1440 Summer	100	+40%				
1.009	27	960 Winter	100	+40%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
9.000	S9L	152.928	0.778	0.000	1.11			19.7	SURCHARGED
8.002	S9	152.832	0.768	0.000	1.08			49.4	SURCHARGED
6.003	S10	151.145	0.568	0.000	2.26			169.8	SURCHARGED
6.004	S11	150.670	0.187	0.000	0.97			177.3	SURCHARGED
10.000	S12L	150.085	0.235	0.000	1.94			21.1	SURCHARGED
6.005	S12	150.035	0.214	0.000	0.93			199.7	SURCHARGED
11.000	S13L	149.931	0.531	0.000	1.22			47.1	SURCHARGED
6.006	S13	149.282	0.335	0.000	1.14			248.3	SURCHARGED
1.007	Basin	147.881	0.089	0.000	0.02			2.0	SURCHARGED
1.008	26	147.423	-0.342	0.000	0.02			2.0	OK
1.009	27	147.348	-0.351	0.000	0.01			2.0	OK

PN	US/MH Name	Level Exceeded
9.000	S9L	
8.002	S9	
6.003	S10	
6.004	S11	
10.000	S12L	
6.005	S12	
11.000	S13L	
6.006	S13	
1.007	Basin	
1.008	26	
1.009	27	

©1982-2020 Innovyze

2. Surface Water Calculations for Critical Storm Events up to and including the 1 in 100 year + 40% Climate Change + 10% Urban Creep - Surcharged Outfall

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	100	PIMP (%)	100
M5-60 (mm)	20.900	Add Flow / Climate Change (%)	0
Ratio R	0.400	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	5.473	0.080	68.4	0.055	4.00	0.0	0.600	o	225	Pipe/Conduit	
1.001	14.562	0.100	145.6	0.035	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.002	18.958	0.126	150.5	0.017	0.00	0.0	0.600	o	225	Pipe/Conduit	
2.000	7.171	0.626	11.5	0.054	4.00	0.0	0.600	o	150	Pipe/Conduit	
1.003	12.186	0.203	60.0	0.009	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.004	15.217	0.499	30.5	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
3.000	7.014	0.070	100.2	0.015	4.00	0.0	0.600	o	150	Pipe/Conduit	
1.005	42.371	3.202	13.2	0.029	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	4.06	154.180	0.055	0.0	0.0	0.0	1.58	63.0	7.4
1.001	50.00	4.28	154.100	0.090	0.0	0.0	0.0	1.08	43.0	12.2
1.002	50.00	4.58	154.000	0.107	0.0	0.0	0.0	1.06	42.3	14.5
2.000	50.00	4.04	154.500	0.054	0.0	0.0	0.0	2.99	52.9	7.3
1.003	50.00	4.70	153.799	0.170	0.0	0.0	0.0	1.69	67.2	23.0
1.004	50.00	4.81	153.596	0.170	0.0	0.0	0.0	2.38	94.5	23.0
3.000	50.00	4.12	153.250	0.015	0.0	0.0	0.0	1.00	17.7	2.0
1.005	50.00	5.00	153.097	0.214	0.0	0.0	0.0	3.62	143.8	29.0

©1982-2020 Innovyze

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
4.000	2.983	0.298	10.0	0.051	4.00	0.0	0.600	o	150	Pipe/Conduit	
5.000	6.657	0.665	10.0	0.016	4.00	0.0	0.600	o	150	Pipe/Conduit	
1.006	23.275	2.328	10.0	0.034	0.00	0.0	0.600	o	300	Pipe/Conduit	
6.000	12.000	0.080	150.0	0.092	4.00	0.0	0.600	o	225	Pipe/Conduit	
6.001	35.238	0.310	113.7	0.056	0.00	0.0	0.600	o	225	Pipe/Conduit	
7.000	6.422	0.642	10.0	0.072	4.00	0.0	0.600	o	150	Pipe/Conduit	
6.002	14.684	0.098	149.8	0.014	0.00	0.0	0.600	o	225	Pipe/Conduit	
8.000	4.934	0.033	149.5	0.042	4.00	0.0	0.600	o	150	Pipe/Conduit	
8.001	7.996	0.053	150.9	0.014	0.00	0.0	0.600	o	150	Pipe/Conduit	
9.000	5.938	0.086	69.0	0.039	4.00	0.0	0.600	o	150	Pipe/Conduit	
8.002	20.055	1.487	13.5	0.013	0.00	0.0	0.600	o	150	Pipe/Conduit	
6.003	14.095	0.094	149.9	0.003	0.00	0.0	0.600	o	300	Pipe/Conduit	
6.004	18.469	0.662	27.9	0.019	0.00	0.0	0.600	o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
4.000	50.00	4.02	150.276	0.051	0.0	0.0	0.0	3.20	56.6	6.9
5.000	50.00	4.03	150.643	0.016	0.0	0.0	0.0	3.20	56.6	2.2
1.006	50.00	5.08	149.820	0.315	0.0	0.0	0.0	5.00	353.5	42.7
6.000	50.00	4.19	150.840	0.092	0.0	0.0	0.0	1.07	42.4	12.5
6.001	50.00	4.67	150.760	0.148	0.0	0.0	0.0	1.23	48.7	20.0
7.000	50.00	4.03	151.167	0.072	0.0	0.0	0.0	3.20	56.6	9.7
6.002	50.00	4.90	150.450	0.234	0.0	0.0	0.0	1.07	42.4	31.7
8.000	50.00	4.10	152.000	0.042	0.0	0.0	0.0	0.82	14.5	5.7
8.001	50.00	4.26	151.967	0.056	0.0	0.0	0.0	0.82	14.4	7.6
9.000	50.00	4.08	152.000	0.039	0.0	0.0	0.0	1.21	21.4	5.3
8.002	50.00	4.38	151.914	0.108	0.0	0.0	0.0	2.76	48.7	14.6
6.003	50.00	5.08	150.277	0.345	0.0	0.0	0.0	1.28	90.6	46.7
6.004	50.00	5.18	150.183	0.364	0.0	0.0	0.0	2.99	211.2	49.3

©1982-2020 Innovyze

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
10.000	4.411	0.029	152.1	0.032	4.00	0.0	0.600	o	150	Pipe/Conduit	
6.005	17.467	0.874	20.0	0.016	0.00	0.0	0.600	o	300	Pipe/Conduit	
11.000	7.128	0.453	15.7	0.078	4.00	0.0	0.600	o	150	Pipe/Conduit	
6.006	24.000	1.155	20.8	0.017	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.007	4.000	0.027	148.1	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
1.008	10.000	0.066	151.5	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
1.009	30.000	0.200	150.0	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
10.000	50.00	4.09	149.700	0.032	0.0	0.0	0.0	0.81	14.4	4.3
6.005	50.00	5.27	149.521	0.412	0.0	0.0	0.0	3.53	249.7	55.8
11.000	50.00	4.05	149.250	0.078	0.0	0.0	0.0	2.55	45.1	10.6
6.006	50.00	5.38	148.647	0.507	0.0	0.0	0.0	3.46	244.9	68.7
1.007	50.00	5.43	147.417	0.822	0.0	0.0	0.0	1.49	164.2	111.3
1.008	50.00	5.54	147.390	0.822	0.0	0.0	0.0	1.47	162.3	111.3
1.009	50.00	5.88	147.324	0.822	0.0	0.0	0.0	1.48	163.1	111.3

©1982-2020 Innovyze

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	S1L	156.000	154.180	1.595	Open Manhole	1200
1.001	o	225	S1	156.000	154.100	1.675	Open Manhole	1200
1.002	o	225	S2	155.800	154.000	1.575	Open Manhole	1200
2.000	o	150	S3L	155.800	154.500	1.150	Open Manhole	1200
1.003	o	225	S3	155.650	153.799	1.626	Open Manhole	1200
1.004	o	225	6	155.650	153.596	1.829	Open Manhole	1200
3.000	o	150	S4L	154.750	153.250	1.350	Open Manhole	1200
1.005	o	225	S4	154.650	153.097	1.328	Open Manhole	1200
4.000	o	150	S5LA	152.500	150.276	2.074	Open Manhole	1200
5.000	o	150	S5LB	152.500	150.643	1.707	Open Manhole	1200
1.006	o	300	S5	152.500	149.820	2.380	Open Manhole	1200
6.000	o	225	S6L	153.400	150.840	2.335	Open Manhole	1200
6.001	o	225	S6	154.000	150.760	3.015	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	5.473	68.4	S1	156.000	154.100	1.675	Open Manhole	1200
1.001	14.562	145.6	S2	155.800	154.000	1.575	Open Manhole	1200
1.002	18.958	150.5	S3	155.650	153.874	1.551	Open Manhole	1200
2.000	7.171	11.5	S3	155.650	153.874	1.626	Open Manhole	1200
1.003	12.186	60.0	6	155.650	153.596	1.829	Open Manhole	1200
1.004	15.217	30.5	S4	154.650	153.097	1.328	Open Manhole	1200
3.000	7.014	100.2	S4	154.650	153.180	1.320	Open Manhole	1200
1.005	42.371	13.2	S5	152.500	149.895	2.380	Open Manhole	1200
4.000	2.983	10.0	S5	152.500	149.978	2.372	Open Manhole	1200
5.000	6.657	10.0	S5	152.500	149.978	2.372	Open Manhole	1200
1.006	23.275	10.0	Basin	149.000	147.492	1.208	Open Manhole	1350
6.000	12.000	150.0	S6	154.000	150.760	3.015	Open Manhole	1200
6.001	35.238	113.7	S7	153.700	150.450	3.025	Open Manhole	1200

©1982-2020 Innovyze

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)
7.000	o	150	S7L	153.700	151.167	2.383	Open Manhole	1200
6.002	o	225	S7	153.700	150.450	3.025	Open Manhole	1200
8.000	o	150	S8L	153.500	152.000	1.350	Open Manhole	1200
8.001	o	150	S8	153.500	151.967	1.383	Open Manhole	1200
9.000	o	150	S9L	153.500	152.000	1.350	Open Manhole	1200
8.002	o	150	S9	153.400	151.914	1.336	Open Manhole	1200
6.003	o	300	S10	153.200	150.277	2.623	Open Manhole	1200
6.004	o	300	S11	152.500	150.183	2.017	Open Manhole	1200
10.000	o	150	S12L	151.670	149.700	1.820	Open Manhole	1200
6.005	o	300	S12	151.600	149.521	1.779	Open Manhole	1200
11.000	o	150	S13L	150.850	149.250	1.450	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)
7.000	6.422	10.0	S7	153.700	150.525	3.025	Open Manhole	1200
6.002	14.684	149.8	S10	153.200	150.352	2.623	Open Manhole	1200
8.000	4.934	149.5	S8	153.500	151.967	1.383	Open Manhole	1200
8.001	7.996	150.9	S9	153.400	151.914	1.336	Open Manhole	1200
9.000	5.938	69.0	S9	153.400	151.914	1.336	Open Manhole	1200
8.002	20.055	13.5	S10	153.200	150.427	2.623	Open Manhole	1200
6.003	14.095	149.9	S11	152.500	150.183	2.017	Open Manhole	1200
6.004	18.469	27.9	S12	151.600	149.521	1.779	Open Manhole	1200
10.000	4.411	152.1	S12	151.600	149.671	1.779	Open Manhole	1200
6.005	17.467	20.0	S13	150.700	148.647	1.753	Open Manhole	1200
11.000	7.128	15.7	S13	150.700	148.797	1.753	Open Manhole	1200

©1982-2020 Innovyze

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)
6.006	o	300	S13	150.700	148.647	1.753	Open Manhole	1200
1.007	o	375	Basin	149.000	147.417	1.208	Open Manhole	1350
1.008	o	375	26	149.250	147.390	1.485	Open Manhole	1350
1.009	o	375	27	148.600	147.324	0.901	Open Manhole	1350

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)
6.006	24.000	20.8	Basin	149.000	147.492	1.208	Open Manhole	1350
1.007	4.000	148.1	26	149.250	147.390	1.485	Open Manhole	1350
1.008	10.000	151.5	27	148.600	147.324	0.901	Open Manhole	1350
1.009	30.000	150.0		149.500	147.124	2.001	Open Manhole	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	2.000
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	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.900	Storm Duration (mins)	30
Ratio R	0.400		

©1982-2020 Innovyze

Online Controls for Storm

Weir Manhole: Basin, DS/PN: 1.007, Volume (m³): 5.4

Discharge Coef 0.544 Width (m) 1.350 Invert Level (m) 148.900

©1982-2020 Innovyze

Storage Structures for Storm

Infiltration Basin Manhole: Basin, DS/PN: 1.007

Invert Level (m) 147.425 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	1415.0	1.500	2340.0

©1982-2020 Innovyze

1 year Return Period Summary of Critical Results by Maximum Level (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 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

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

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 20.900 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

WARNING: Half Drain Time has not been calculated as the structure is too full.

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	S1L	15 Summer	1	+0%	100/15 Summer				154.250
1.001	S1	15 Winter	1	+0%	100/15 Summer				154.191
1.002	S2	15 Winter	1	+0%	100/15 Summer				154.098
2.000	S3L	15 Winter	1	+0%	100/15 Summer				154.544
1.003	S3	15 Winter	1	+0%	30/15 Summer				153.901
1.004	6	15 Winter	1	+0%	100/15 Summer				153.679
3.000	S4L	15 Summer	1	+0%					153.289
1.005	S4	15 Winter	1	+0%					153.169
4.000	S5LA	15 Winter	1	+0%	100/15 Summer				150.325
5.000	S5LB	15 Winter	1	+0%					150.665
1.006	S5	15 Winter	1	+0%					149.895
6.000	S6L	15 Summer	1	+0%	30/15 Summer				150.938
6.001	S6	15 Winter	1	+0%	30/15 Summer				150.868
7.000	S7L	15 Winter	1	+0%	100/15 Summer				151.216
6.002	S7	15 Winter	1	+0%	30/15 Summer				150.619
8.000	S8L	15 Summer	1	+0%	30/15 Summer				152.082
8.001	S8	15 Winter	1	+0%	30/15 Summer				152.056

©1982-2020 Innovyze

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

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	S1L	-0.155	0.000	0.22			8.6	OK	
1.001	S1	-0.134	0.000	0.34			12.9	OK	
1.002	S2	-0.127	0.000	0.39			14.9	OK	
2.000	S3L	-0.106	0.000	0.19			8.4	OK	
1.003	S3	-0.123	0.000	0.42			24.0	OK	
1.004	6	-0.142	0.000	0.29			24.2	OK	
3.000	S4L	-0.111	0.000	0.15			2.3	OK	
1.005	S4	-0.153	0.000	0.22			30.1	OK	
4.000	S5LA	-0.101	0.000	0.23			8.0	OK	
5.000	S5LB	-0.128	0.000	0.05			2.5	OK	
1.006	S5	-0.225	0.000	0.14			43.9	OK	
6.000	S6L	-0.127	0.000	0.40			14.4	OK	
6.001	S6	-0.117	0.000	0.45			20.8	OK	
7.000	S7L	-0.101	0.000	0.24			11.2	OK	
6.002	S7	-0.056	0.000	0.90			33.5	OK	
8.000	S8L	-0.068	0.000	0.58			6.6	OK	
8.001	S8	-0.061	0.000	0.66			8.3	OK	

©1982-2020 Innovyze

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
9.000	S9L	15 Summer	1	+0%	100/15 Summer			
8.002	S9	15 Winter	1	+0%	100/15 Summer			
6.003	S10	15 Winter	1	+0%	30/15 Summer			
6.004	S11	15 Winter	1	+0%	100/15 Summer			
10.000	S12L	15 Summer	1	+0%	30/15 Summer			
6.005	S12	15 Winter	1	+0%	100/15 Summer			
11.000	S13L	15 Winter	1	+0%	100/15 Summer			
6.006	S13	15 Winter	1	+0%	100/15 Summer			
1.007	Basin	1440 Winter	1	+0%	100/240 Winter			
1.008	26	30 Summer	1	+0%				
1.009	27	15 Summer	1	+0%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
9.000	S9L	152.060	-0.090	0.000	0.34			6.1	OK	
8.002	S9	151.975	-0.089	0.000	0.35			15.9	OK	
6.003	S10	150.457	-0.120	0.000	0.66			50.0	OK	
6.004	S11	150.293	-0.190	0.000	0.29			52.4	OK	
10.000	S12L	149.772	-0.078	0.000	0.46			5.0	OK	
6.005	S12	149.628	-0.193	0.000	0.28			58.9	OK	
11.000	S13L	149.308	-0.092	0.000	0.32			12.2	OK	
6.006	S13	148.766	-0.181	0.000	0.33			71.9	OK	
1.007	Basin	147.583	-0.209	0.000	0.00			0.0	OK	
1.008	26	147.390	-0.375	0.000	0.00			0.0	OK	
1.009	27	147.324	-0.375	0.000	0.00			0.0	OK	

©1982-2020 Innovyze

30 year Return Period Summary of Critical Results by Maximum Level (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 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

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

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 20.900 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

WARNING: Half Drain Time has not been calculated as the structure is too full.

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	S1L	15 Winter	30	+0%	100/15 Summer				154.314
1.001	S1	15 Winter	30	+0%	100/15 Summer				154.297
1.002	S2	15 Winter	30	+0%	100/15 Summer				154.222
2.000	S3L	15 Winter	30	+0%	100/15 Summer				154.571
1.003	S3	15 Winter	30	+0%	30/15 Summer				154.042
1.004	6	15 Winter	30	+0%	100/15 Summer				153.740
3.000	S4L	15 Summer	30	+0%					153.314
1.005	S4	15 Winter	30	+0%					153.218
4.000	S5LA	15 Winter	30	+0%	100/15 Summer				150.357
5.000	S5LB	15 Winter	30	+0%					150.678
1.006	S5	15 Winter	30	+0%					149.946
6.000	S6L	15 Winter	30	+0%	30/15 Summer				151.512
6.001	S6	15 Winter	30	+0%	30/15 Summer				151.456
7.000	S7L	15 Winter	30	+0%	100/15 Summer				151.289
6.002	S7	15 Winter	30	+0%	30/15 Summer				151.107
8.000	S8L	15 Winter	30	+0%	30/15 Summer				152.270
8.001	S8	15 Winter	30	+0%	30/15 Summer				152.206

©1982-2020 Innovyze

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

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	S1L	-0.091	0.000	0.52			20.6	OK	
1.001	S1	-0.028	0.000	0.88			33.2	OK	
1.002	S2	-0.003	0.000	1.00			38.1	OK	
2.000	S3L	-0.079	0.000	0.46			20.7	OK	
1.003	S3	0.018	0.000	1.06			61.0	SURCHARGED	
1.004	6	-0.081	0.000	0.73			61.1	OK	
3.000	S4L	-0.086	0.000	0.38			5.8	OK	
1.005	S4	-0.104	0.000	0.56			76.1	OK	
4.000	S5LA	-0.069	0.000	0.57			19.6	OK	
5.000	S5LB	-0.115	0.000	0.13			6.1	OK	
1.006	S5	-0.174	0.000	0.36			112.6	OK	
6.000	S6L	0.447	0.000	0.83			30.2	SURCHARGED	
6.001	S6	0.471	0.000	1.04			47.6	SURCHARGED	
7.000	S7L	-0.028	0.000	0.56			26.8	OK	
6.002	S7	0.432	0.000	2.05			76.3	SURCHARGED	
8.000	S8L	0.120	0.000	1.36			15.4	SURCHARGED	
8.001	S8	0.089	0.000	1.63			20.4	SURCHARGED	

©1982-2020 Innovyze

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
9.000	S9L	15 Summer	30	+0%	100/15 Summer			
8.002	S9	15 Winter	30	+0%	100/15 Summer			
6.003	S10	15 Winter	30	+0%	30/15 Summer			
6.004	S11	15 Winter	30	+0%	100/15 Summer			
10.000	S12L	15 Summer	30	+0%	30/15 Summer			
6.005	S12	15 Winter	30	+0%	100/15 Summer			
11.000	S13L	15 Winter	30	+0%	100/15 Summer			
6.006	S13	15 Winter	30	+0%	100/15 Summer			
1.007	Basin 1440	Winter	30	+0%	100/240 Winter			
1.008	26	15 Summer	30	+0%				
1.009	27	15 Summer	30	+0%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
9.000	S9L	152.106	-0.044	0.000	0.84			15.0	OK
8.002	S9	152.024	-0.040	0.000	0.87			39.9	OK
6.003	S10	150.695	0.118	0.000	1.55			116.5	SURCHARGED
6.004	S11	150.364	-0.119	0.000	0.67			122.7	OK
10.000	S12L	149.853	0.003	0.000	1.13			12.3	SURCHARGED
6.005	S12	149.699	-0.122	0.000	0.65			139.1	OK
11.000	S13L	149.350	-0.050	0.000	0.78			29.9	OK
6.006	S13	148.852	-0.095	0.000	0.79			171.7	OK
1.007	Basin	147.736	-0.056	0.000	0.00			0.0	OK
1.008	26	147.390	-0.375	0.000	0.00			0.0	OK
1.009	27	147.324	-0.375	0.000	0.00			0.0	OK

PN	US/MH Name	Level Exceeded
9.000	S9L	
8.002	S9	
6.003	S10	
6.004	S11	
10.000	S12L	
6.005	S12	
11.000	S13L	
6.006	S13	
1.007	Basin	
1.008	26	
1.009	27	

©1982-2020 Innovyze

100 year Return Period Summary of Critical Results by Maximum Level (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 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

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

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.400
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 20.900 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

WARNING: Half Drain Time has not been calculated as the structure is too full.

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	S1L	15 Winter	100	+40%	100/15 Summer				155.078
1.001	S1	15 Winter	100	+40%	100/15 Summer				155.028
1.002	S2	15 Winter	100	+40%	100/15 Summer				154.844
2.000	S3L	15 Winter	100	+40%	100/15 Summer				154.823
1.003	S3	15 Winter	100	+40%	30/15 Summer				154.530
1.004	6	15 Winter	100	+40%	100/15 Summer				153.968
3.000	S4L	15 Summer	100	+40%					153.342
1.005	S4	15 Winter	100	+40%					153.262
4.000	S5LA	15 Winter	100	+40%	100/15 Summer				150.443
5.000	S5LB	15 Winter	100	+40%					150.692
1.006	S5	15 Winter	100	+40%					149.989
6.000	S6L	15 Winter	100	+40%	30/15 Summer				153.202
6.001	S6	15 Winter	100	+40%	30/15 Summer				153.056
7.000	S7L	15 Winter	100	+40%	100/15 Summer				152.571
6.002	S7	15 Winter	100	+40%	30/15 Summer				152.163
8.000	S8L	15 Winter	100	+40%	30/15 Summer				153.164
8.001	S8	15 Winter	100	+40%	30/15 Summer				153.055

©1982-2020 Innovyze

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

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	S1L	0.673	0.000	0.79			31.5	SURCHARGED	
1.001	S1	0.703	0.000	1.36			51.1	SURCHARGED	
1.002	S2	0.619	0.000	1.56			59.5	SURCHARGED	
2.000	S3L	0.173	0.000	0.75			34.0	SURCHARGED	
1.003	S3	0.506	0.000	1.65			95.2	SURCHARGED	
1.004	6	0.147	0.000	1.15			95.3	SURCHARGED	
3.000	S4L	-0.058	0.000	0.69			10.5	OK	
1.005	S4	-0.060	0.000	0.87			119.7	OK	
4.000	S5LA	0.017	0.000	1.04			35.4	SURCHARGED	
5.000	S5LB	-0.101	0.000	0.23			11.2	OK	
1.006	S5	-0.131	0.000	0.59			185.1	OK	
6.000	S6L	2.137	0.000	1.36			49.3	FLOOD RISK	
6.001	S6	2.071	0.000	1.67			76.9	SURCHARGED	
7.000	S7L	1.254	0.000	0.83			39.6	SURCHARGED	
6.002	S7	1.488	0.000	3.24			120.6	SURCHARGED	
8.000	S8L	1.014	0.000	1.85			21.1	SURCHARGED	
8.001	S8	0.938	0.000	2.05			25.7	SURCHARGED	

©1982-2020 Innovyze

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
9.000	S9L	15 Winter	100	+40%	100/15 Summer			
8.002	S9	15 Winter	100	+40%	100/15 Summer			
6.003	S10	15 Winter	100	+40%	30/15 Summer			
6.004	S11	15 Winter	100	+40%	100/15 Summer			
10.000	S12L	15 Winter	100	+40%	30/15 Summer			
6.005	S12	15 Winter	100	+40%	100/15 Summer			
11.000	S13L	15 Winter	100	+40%	100/15 Summer			
6.006	S13	15 Winter	100	+40%	100/15 Summer			
1.007	Basin	1440 Winter	100	+40%	100/240 Winter			
1.008	26	15 Summer	100	+40%				
1.009	27	15 Summer	100	+40%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
9.000	S9L	152.928	0.778	0.000	1.11			19.7	SURCHARGED
8.002	S9	152.832	0.768	0.000	1.08			49.4	SURCHARGED
6.003	S10	151.145	0.568	0.000	2.26			169.8	SURCHARGED
6.004	S11	150.670	0.187	0.000	0.97			177.3	SURCHARGED
10.000	S12L	150.085	0.235	0.000	1.94			21.1	SURCHARGED
6.005	S12	150.035	0.214	0.000	0.93			199.7	SURCHARGED
11.000	S13L	149.931	0.531	0.000	1.22			47.1	SURCHARGED
6.006	S13	149.282	0.335	0.000	1.14			248.3	SURCHARGED
1.007	Basin	147.955	0.163	0.000	0.00			0.0	SURCHARGED
1.008	26	147.390	-0.375	0.000	0.00			0.0	OK
1.009	27	147.324	-0.375	0.000	0.00			0.0	OK

PN	US/MH Name	Level Exceeded
9.000	S9L	
8.002	S9	
6.003	S10	
6.004	S11	
10.000	S12L	
6.005	S12	
11.000	S13L	
6.006	S13	
1.007	Basin	
1.008	26	
1.009	27	

©1982-2020 Innovyze

APPENDIX III

ARCHITECT'S SITE PLAN

@ 1:500

SCHEDULE

AFFORDABLE HOUSING @ 40% of 46 = 19

AFFORDABLE RENT @ 75% of 19 = 14

Small dwellings
1 bed apartments - 2
2 bed bungalow - 2
2 bed houses - 4
TOTAL - 8 = 42.1% of 19

Medium / large dwellings
3 bed houses - 4
4 bed houses - 2
TOTAL - 6 = 31.5% of 19

FIRST HOMES @ 25% of 19 = 5

Small dwellings
2 bed houses - 2
TOTAL - 2 = 10.6% of 23

Medium / large dwellings
3 bed houses - 3
TOTAL - 3 = 15.8% of 23

TOTAL = 19

MARKET HOUSING

2 bed bungalows - 4
2 bed houses - 20 **= 70% of 34**
3 bed houses - 7
4 bed houses - 3 **= 30% of 34**
TOTAL = 34

TOTAL DWELLINGS = 57

Total housing split

36 x smaller and medium size units = **53%** of which 2 (5%) are flats.

21 x medium and larger family units = **37%**

LANDSCAPING

Proposed new tree planting
- total area = approx. 2187m²
= 10% of total site area

Proposed new BNG planting
- total area = approx. 5050m²

Root protection areas

Easement to existing ditch

Cartwright HOMES

Station Road Bagworth

N

Client: **Cartwright Homes**

Project Title: Proposed development
Station Road
Bagworth

Drawing Title: **Site layout**

Scale: 1:500 | Date: Aug 2024 | Sheet: A1

Author: ZLM | Checked by: -

hayward ARCHITECTS LTD
19 Station Road
Hinckley
Leicestershire
LE10 1AW
Tel: 01455 635 665
Fax: 01455 618 971
www.hayward-architects.co.uk

Job No. 24/19 | Drawing No. 04h

Status: PLANNING

THE COPYRIGHT OF THIS DRAWING IS VESTED IN HAYWARD ARCHITECTS LTD
REPRODUCTION IN ANY FORM, EITHER IN WHOLE OR IN PART IS FORBIDDEN WITHOUT THE PRIOR WRITTEN PERMISSION OF THE COPYRIGHT HOLDER. DO NOT SCALE FROM DRAWING AND ONLY FIGURED DIMENSIONS ARE TO BE USED

Sheet 1

APPENDIX IV

DRAINAGE STRATEGY PLAN

Drainage Strategy

Surface Water Drainage

- Under part H of the Building Regulations the following discharge heirarchy shall be considered:

1. Soakaways - The British Geological Survey Map of Britain indicates the bedrock here to be Edwalton Member, which weathers into mudstone and siltstone with a negligable permeability. The nearest borehole data indicates a high mudstone and clay content. Due to this information soakaways are deemed unfeasible for this development.
2. Watercourses - There is a culverted watercourse located to the west of the site.
3. Sewers - There are no surface water sewers present in the immediate vicinity of the site.

- A gravity system will be constructed carrying flows to a attenuation basin and a flow control device
- Permeable paving will provide treatment and storage of surface water runoff, as well as retaining the first 5mm of runoff within the site.
- Attenuation basin is proposed to cater for all storms up to and including 100yr + 40% climate change storm.
- A Hydro-brake flow control will be used to restrict flows discharging into the culverted watercourse at 2 l/s.
- Discharging into the culverted watercourse will be subject to LLFA and Ordinary Watercourse agreement.

Foul Water Drainage

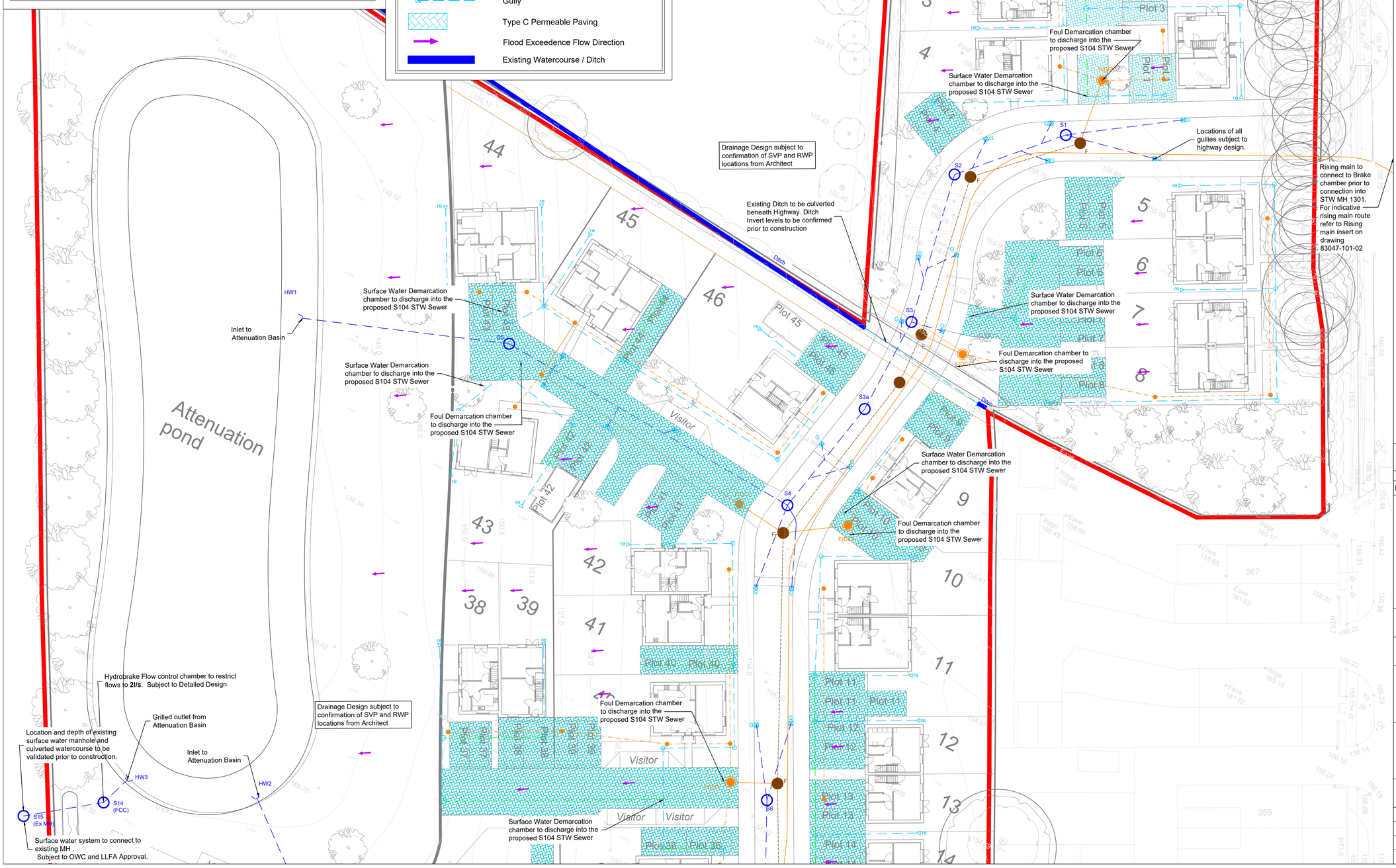
- A gravity system will be constructed, connecting flows discharging into a Type 3 pumping station prior to discharging into the XXmm Ø Severn Trent Water foul sewer located along Station Road.
- Discharging in the Severn Trent Water Sewer will be subject to a direct S106 agreement.

Flood Exceedance

- The voids within the subbase of the permeable paving will provide storage for the first 5mm of rainfall.
- In the event of system failure or an excessive rainfall event, some overland flows will travel westwards, towards the attenuation basin, away from any buildings and properties, and some will flow and be retained within the attenuation basin, hence preventing any adverse effects on properties.

Drainage Legend:

- Site Boundary
- Proposed Public Surface Water Sewer
- Proposed Public Foul Water Sewer
- Proposed Public Foul Water Rising Main
- Proposed Private Surface Water Drainage
- Surface Water Demarcation Chamber
- Perforated Pipe
- Proposed Private Foul Water Drainage
- Foul Water Demarcation Chamber
- Rodding Eye
- Gully
- Type C Permeable Paving
- Flood Exceedence Flow Direction
- Existing Watercourse / Ditch



SAFETY,HEALTH & ENVIRONMENTAL HAZARD INFORMATION BOX.

The hazards noted below are in addition to the normal hazards and risks faced by a competent contractor when dealing with the types of works detailed on this drawing.

DEMOLITION RISKS:

CONSTRUCTION RISKS:

MAINTENANCE / CLEANING RISKS:

Notes:

1. DO NOT SCALE FROM THIS DRAWING.
2. PRINT IN COLOUR.
3. All dimensions are in millimetres Unless Noted Otherwise (u.n.o.)
4. Drawing is to be read in conjunction with all relevant architect's drawings. Any inconsistencies should be reported to PRP immediately.
5. All levels and dimensions are to be checked on site before any work commences.
6. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, reflectorised clothing, and the use of any other required safety equipment.

Drainage:

1. Invert levels of existing manholes to be checked on site prior to commencing any drainage works.
2. For positions of all rainwater pipes & foul outlets refer to Architect's drawings.
3. All joints between precast manhole components shall have a minimum uncompressed thickness of 10mm of proprietary bitumen or resin mastic sealant.
4. Storm & foul branch connections are to be laid at gradients of between 1:10 & 1:80
5. All in-situ concrete shall be minimum grade GEN3.
6. Precast concrete cover & reducing slabs to be heavy duty reinforced concrete to BS 5911.
7. Rising mains shall be black MDPE SDR11 as WI 4-32-03 & joints & fittings to be in accordance with WI 4-32-04. Other approved pipe materials to be in accordance with their relevant BS.
8. Manhole covers & frames shall be manufactured in cast iron or ductile iron & shall comply with requirements of BS EN 124 & shall be kite marked or equivalent.
9. Where there is no intermediate manhole between the start of a surface water pipe run and the soakaway the gradient of the run shall be not less than 1 : 60.
10. All completed work shall be suitably protected from damage by construction work. Damaged drainage will not be accepted. It is recommended that no heavy loading or underground work is permitted above or near unprotected drainage, and that dumpers, trucks, fork lifts or other heavy vehicles are not driven along or near pipe runs.

Rev	Date	Description	By / Chk
P2	13/03/2026	Drainage Strategy updated to suit Architect Plan update and LLFA comments.	EC /JMN
P1	13/08/2025	Issued for comments	EC /JMN

PRP
consulting engineers & surveyors

21-22 Warren Park Way
Enderby
Leicester LE19 4SA

Telephone: 0116 275 1710
leicester@prp.uk.com
www.prp.uk.com

Leicester
Northampton
London

engineering excellence | creating advantage

Client: Cartwright Homes

Architect: Hayward Architects Ltd

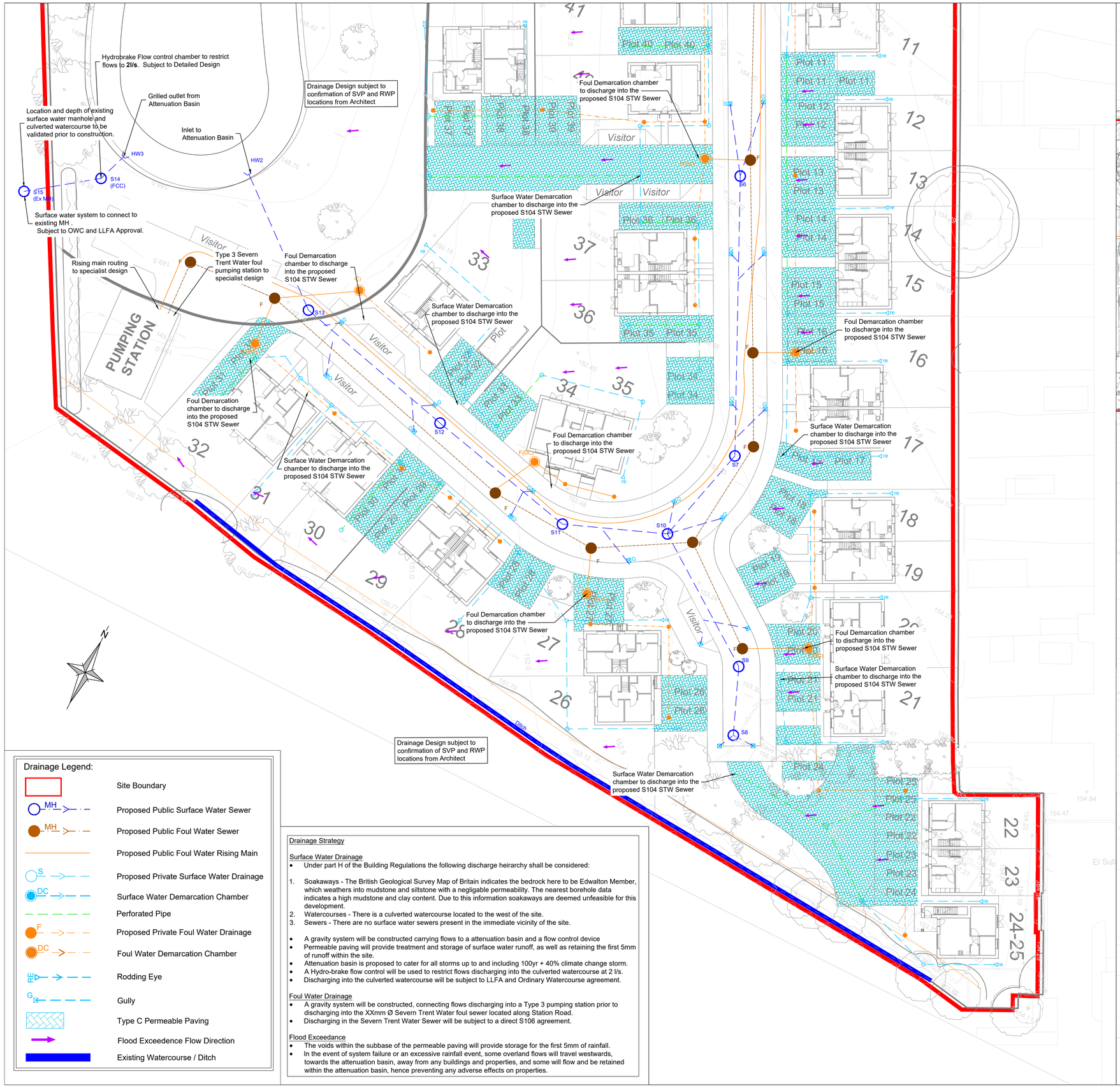
Project: Station Road, Bagworth

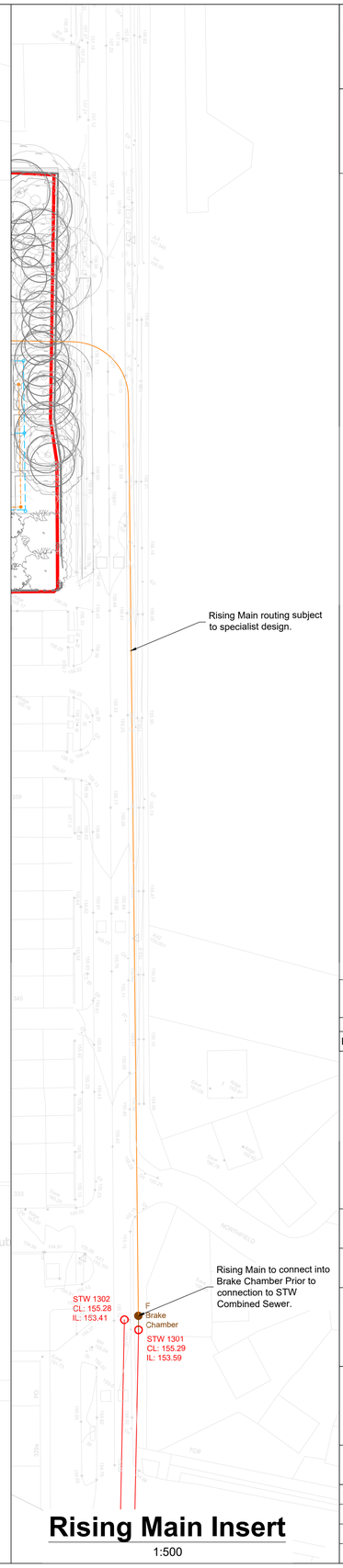
Title: Drainage Strategy Sheet 1 of 2

Status: **PRELIMINARY**

Engineer:	EC	Date:	August 2025
Drawn:	EC	Scales @ A1:	1:250
Checked:	JMN		
Project No:	83047	Drg No: 101-01	Rev: P2

© copyright all rights reserved PRP.UK Ltd





Rising Main Insert

1:500

Drainage Legend:

- Site Boundary
- Proposed Public Surface Water Sewer
- Proposed Public Foul Water Sewer
- Proposed Public Foul Water Rising Main
- Proposed Private Surface Water Drainage
- Surface Water Demarcation Chamber
- Perforated Pipe
- Proposed Private Foul Water Drainage
- Foul Water Demarcation Chamber
- Rodding Eye
- Gully
- Type C Permeable Paving
- Flood Exceedence Flow Direction
- Existing Watercourse / Ditch

Drainage Strategy

Surface Water Drainage

- Under part H of the Building Regulations the following discharge heirarchy shall be considered:

1. Soakaways - The British Geological Survey Map of Britain indicates the bedrock here to be Edwalton Member, which weathers into mudstone and siltstone with a negligable permeability. The nearest borehole data indicates a high mudstone and clay content. Due to this information soakaways are deemed unfeasible for this development.
2. Watercourses - There is a culverted watercourse located to the west of the site.
3. Sewers - There are no surface water sewers present in the immediate vicinity of the site.

- A gravity system will be constructed carrying flows to a attenuation basin and a flow control device
- Permeable paving will provide treatment and storage of surface water runoff, as well as retaining the first 5mm of runoff within the site.
- Attenuation basin is proposed to cater for all storms up to and including 100yr + 40% climate change storm.
- A Hydro-brake flow control will be used to restrict flows discharging into the culverted watercourse at 2 l/s.
- Discharging into the culverted watercourse will be subject to LLFA and Ordinary Watercourse agreement.

Foul Water Drainage

- A gravity system will be constructed, connecting flows discharging into a Type 3 pumping station prior to discharging into the XXmm Ø Severn Trent Water foul sewer located along Station Road.
- Discharging in the Severn Trent Water Sewer will be subject to a direct S106 agreement.

Flood Exceedance

- The voids within the subbase of the permeable paving will provide storage for the first 5mm of rainfall.
- In the event of system failure or an excessive rainfall event, some overland flows will travel westwards, towards the attenuation basin, away from any buildings and properties, and some will flow and be retained within the attenuation basin, hence preventing any adverse effects on properties.

SAFETY,HEALTH & ENVIRONMENTAL HAZARD INFORMATION BOX.

The hazards noted below are in addition to the normal hazards and risks faced by a competent contractor when dealing with the types of works detailed on this drawing.

DEMOLITION RISKS:

- Leptospirosis

CONSTRUCTION RISKS:

- Deep Trenches
- Unforeseen Services

Notes:

1. DO NOT SCALE FROM THIS DRAWING.
2. PRINT IN COLOUR.
3. All dimensions are in millimetres Unless Noted Otherwise (u.n.o.)
4. Drawing is to be read in conjunction with all relevant architect's drawings. Any inconsistencies should be reported to PRP immediately.
5. All levels and dimensions are to be checked on site before any work commences.
6. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, reflectorised clothing, and the use of any other required safety equipment.

Drainage:

1. Invert levels of existing manholes to be checked on site prior to commencing any drainage works.
2. For positions of all rainwater pipes & foul outlets refer to Architect's drawings.
3. All joints between precast manhole components shall have a minimum uncompressed thickness of 10mm of proprietary bitumen or resin mastic sealant.
4. Storm & foul branch connections are to be laid at gradients of between 1:10 & 1:80
5. All in-situ concrete shall be minimum grade GEN3.
6. Precast concrete cover & reducing slabs to be heavy duty reinforced concrete to BS 5911.
7. Rising mains shall be black MDPE SDR11 as WI 4-32-03 & joints & fittings to be in accordance with WI 4-32-04. Other approved pipe materials to be in accordance with their relevant BS.
8. Manhole covers & frames shall be manufactured in cast iron or ductile iron & shall comply with requirements of BS EN 124 & shall be kite marked or equivalent.
9. Where there is no intermediate manhole between the start of a surface water pipe run and the soakaway the gradient of the run shall be not less than 1 : 60.
10. All completed work shall be suitably protected from damage by construction work. Damaged drainage will not be accepted. It is recommended that no heavy loading or underground work is permitted above or near unprotected drainage, and that dumpers, trucks, fork lifts or other heavy vehicles are not driven along or near pipe runs.

Rev	Date	Description	By / Chk
P2	13/03/2026	Drainage Strategy updated to suit Architect Plan update and LLFA comments.	EC / JMN
P1	13/08/2025	Issued for comments	EC / JMN

PRP
consulting engineers & surveyors

21-22 Warren Park Way
Enderby
Leicester LE19 4SA

Telephone: 0116 275 1710
leicester@prp.uk.com
www.prp.uk.com

Leicester
Northampton
London

engineering excellence | creating advantage

Client: Cartwright Homes

Architect: Hayward Architects Ltd.

Project: Station Road, Bagworth

Title: Drainage Strategy Sheet 2 of 2

Status: **PRELIMINARY**

Engineer:	EC	Date:	August 2025
Drawn:	EC	Scales @ A1:	1:250
Checked:	JMN		
Project No:	83047	Drg No: 101-02	Rev: P1

© copyright all rights reserved PRP.UK Ltd

APPENDIX V

CCTV SURVEY PLAN

Project

Project Name: Pall Ex Station Rd Battram Leicestershire 2025_09_02

Project Date: 02/09/2025

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

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Table of Contents

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

Project Information P-1
Scoring Summary P-2
Project Pictures P-4
Defect Grade Description (Section) P-7
Section Profile P-8
Section Summary P-9
Project Summary P-14
Section Item 1: LINE A > POND (LINE AX) 1
Section Item 2: LINE B > POND (LINE BX) 4
Section Item 3: LINE C > POND (LINE CX) 7
Section Item 4: POND > LINE X (POND X) 11
Section Item 5: DITCH > OUTLET (DITCHX) 13
Section Item 6: LINE A > DITCH (LINE AX) 14
Section Item 7: LINE B > DITCH (LINE BX) 18
Section Item 8: LINE C > DITCH (LINE CX) 23
Section Item 9: LINE A > MH01 (LINE AX) 29
Section Item 10: DITCH > MH01 (DITCHX) 32
Section Item 11: MH01 > MH02 (MH01X) 40
Section Item 12: MH02 > LINE X (MH02X) 46
Section Item 13: LINE A > EXCAVATION (LINE AX) 50
Section Item 14: EXCAVATION > LINE X (EXCAVATIONX) 55

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Project Information

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

Contractor

Company: GENERAL UTILITIES NORTHWEST LTD
Description: DRAINAGE COMPANY
Contact: CRAIG MORRIS
Department: OPERATIONS MANAGER
Street: LIVERPOOL ROAD
Town or City: IRLAM
County: MANCHESTER
Post Code: M44 6FB
Phone: 0161 776 0011
Mobile: 07920 792753
Email: generalutilities@btconnect.com

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Scoring Summary

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

Structural Defects

Grade 3: Best practice suggests consideration should be given to repairs in the medium term.

Grade 4: Best practice suggests consideration should be given to repairs to avoid a potential collapse.

Grade 5: Best practice suggests that this pipe is at risk of collapse at any time. Urgent consideration should be given to repairs to avoid total failure.

Section	PLR	Grade	Description
6	LINE A X	5	Deformed sewer or drain, 40%
7	LINE B X	5	Deformed sewer or drain, 40%
8	LINE C X	5	Multiple defects
9	LINE A X	5	Deformed sewer or drain, 90%
14	EXCAVATIONX	5	Hole in drain or sewer from 7 o'clock to 10 o'clock

Service / Operational Condition

Grade 3: Best practice suggests consideration should be given to maintenance activities in the medium term.

Grade 4: Best practice suggests consideration should be given to maintenance activity to avoid potential blockages.

Grade 5: Best practice suggests that this pipe is at a high risk of backing up or causing flooding.

Section	PLR	Grade	Description
1	LINE A X	5	Other obstacles from 4 o'clock to 8 o'clock, 45% cross-sectional area loss
2	LINE B X	5	Settled deposits, fine, 90% cross-sectional area loss
3	LINE C X	5	Settled deposits, fine, 90% cross-sectional area loss
7	LINE B X	5	Multiple defects
9	LINE A X	5	Deformed sewer or drain, 90%
10	DITCHX	4	Roots, tap at joint
12	MH02X	4	Settled deposits, fine, 60% cross-sectional area loss
13	LINE A X	5	Multiple defects
14	EXCAVATIONX	2	Multiple defects

Abandoned Surveys

Section	PLR	Description
2	LINE B X	Survey abandoned
3	LINE C X	Survey abandoned
6	LINE A X	Survey abandoned
7	LINE B X	Survey abandoned
8	LINE C X	Survey abandoned
9	LINE A X	Survey abandoned
12	MH02X	Survey abandoned

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Scoring Summary

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

Section	PLR	Description
13	LINE A X	Survey abandoned
14	EXCAVATIONX	Survey abandoned

Information

These scoring summaries are based on the SRM grading from the WRc.

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Project Pictures

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

Snapchat-74061426

Snapchat-120889281

Snapchat-199188892

Snapchat-252747469

Snapchat-675489169

Snapchat-843228196

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Project Pictures

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

Snapchat-1044875286

Snapchat-1262233059

Snapchat-1320506491

Snapchat-1349620466

Snapchat-1524057315

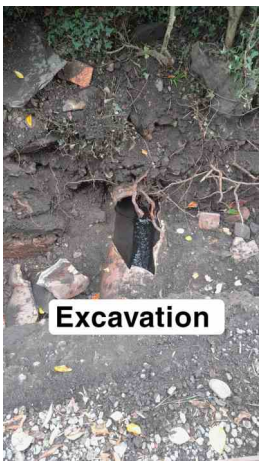
Snapchat-1827571583

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Project Pictures

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

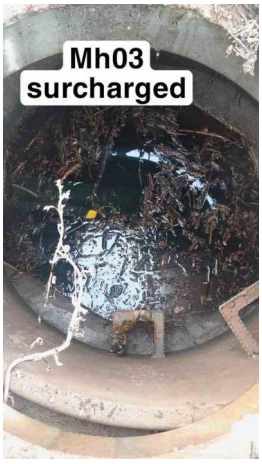
Snapchat-1843120201



Snapchat-1876488196

Snapchat-1916209883

Snapchat-1960546383



Snapchat-1969039664

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Defect Grade Description (Section)

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

1:	Brick: Minor structural defects. Other: Minor structural defects, i.e. open or displaced joints without additional characteristics. **Acceptable structural condition.**
2:	Brick: Circumferential cracking. Single longitudinal crack. Surface mortar loss (depth missing < 15 mm). Surface damage - spalling slight (breaking away of small fragments from the surface). Surface damage - wear slight (increased roughness). Other: Circumferential cracking. Surface damage - spalling slight (breaking away of small fragments from the surface). Surface damage - wear slight (increased roughness). **Minimal collapse likelihood in the short term but potential for further deterioration.**
3:	Brick: Total mortar loss (depth missing > 50 mm) without other defects. More than one longitudinal crack (at a single location). Multiple cracking. Single bricks displaced. Deformation < 5%, no fracture and only moderate mortar loss. Surface damage - spalling medium (large areas of chipped brick). Surface damage - wear medium (entire surface of brick is missing). Other: Fracture with no deformation or deformation < 5%. Longitudinal cracking or multiple cracking. Minor loss of level. Severe joint defects i.e. Surface damage - spalling medium. Surface damage - wear medium. **Collapse unlikely in the near future but further deterioration likely.**
4:	Brick: Total mortar loss (depth missing > 50mm) with deformation > 10%; deformation up to 10% and fractured; displaced or hanging brickwork; small number of missing bricks; dropped invert (drop > 20mm); moderate loss of level; surface damage - large spalling (entire surface of brick is missing); surface damage - large wear (entire surface of brick is missing). Other: Broken; deformation up to 10% and broken; fracture with deformation 5-10%; multiple fractures; serious loss of level; serious joint defects with voids or soil visible (open joint with > 50mm soil or void visible or joint displacement > 25% of diameter); surface damage - entire area of pipe surface is missing or severly worn. **Collapse likely in the foreseeable future.**
5:	Brick: Already collapsed; missing Invert; deformation > 10% and fractured; displaced or hanging brickwork and deformation < 10%; extensive areas of missing brickwork. Other: Already collapsed; deformation > 10% and broken; extensive areas of pipe fabric missing; fractures with deformation > 10% **Collapsed or collapse imminent.**

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Profile

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

Circular, 0 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
5	DITCH	OUTLET	02/09/2025	Station Rd	Other material	1.98 m	1.98 m

Total: 1 Inspection x Circular 0 mm = 1.98 m Total Length and 1.98 m Inspected Length

Circular, 150 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
1	LINE A	POND	02/09/2025	Station Rd	Polyvinyl chloride	6.94 m	6.94 m
4	POND	LINE X	02/09/2025	Station Rd	Polyvinyl chloride	3.19 m	3.19 m

Total: 2 Inspections x Circular 150 mm = 10.13 m Total Length and 10.13 m Inspected Length

Circular, 300 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
10	DITCH	MH01	03/09/2025	Station Rd	Concrete	61.83 m	61.83 m
11	MH01	MH02	02/09/2025	Station Rd	Concrete	64.60 m	64.60 m

Total: 2 Inspections x Circular 300 mm = 126.43 m Total Length and 126.43 m Inspected Length

Total: 5 Inspections = 138.54 m Total Length and 138.54 m Inspected Length

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Summary

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

Number of sections	14
Total length of sections	316.70 m
Total length of inspected sections	316.70 m
Total length of not inspected sections	0.00 m
Number of abandoned inspections	9
Number of section inspection photos	82
Number of section inspection videos	14
Number of section inspection scans	0
Number of section inclination measurements	0

PLR:	LINE A X	**Upstream Node:**	LINE A
Inspection Direction:	Upstream	**Downstream Node:**	POND
Inspected Length:	6.94 m	**Dia/Height:**	150 mm
Total Length:	6.94 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	OC	Start node, other special chamber, reference: POND
2	0.00	WL	Water level, 5% of the vertical dimension
3	3.18	D	Deformed sewer or drain, 20%
4	3.31	OBZ	Other obstacles from 4 o'clock to 8 o'clock, 45% cross-sectional area loss
5	6.94	OCF	Finish node, other special chamber, reference: LINE A

PLR:	LINE B X	**Upstream Node:**	LINE B
Inspection Direction:	Upstream	**Downstream Node:**	POND
Inspected Length:	0.27 m	**Dia/Height:**	100 mm
Total Length:	0.27 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	OC	Start node, other special chamber, reference: POND
2	0.00	WL	Water level, 5% of the vertical dimension
3	0.10	DES	Settled deposits, fine, 90% cross-sectional area loss
4	0.26	CUD	Loss of vision, silt
5	0.27	SA	Survey abandoned

PLR:	LINE C X	**Upstream Node:**	LINE C
Inspection Direction:	Upstream	**Downstream Node:**	POND
Inspected Length:	2.33 m	**Dia/Height:**	100 mm
Total Length:	2.33 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	OC	Start node, other special chamber, reference: POND

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Summary

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

No.	m+	Code	Observation
2	0.00	WL	Water level, 5% of the vertical dimension
3	0.00	DES	Settled deposits, fine, 20% cross-sectional area loss
4	1.69	DEX	Settled deposits, other, 75% cross-sectional area loss
5	2.33	DES	Settled deposits, fine, 90% cross-sectional area loss
6	2.33	SA	Survey abandoned

PLR:	POND X	**Upstream Node:**	POND
Inspection Direction:	Downstream	**Downstream Node:**	LINE X
Inspected Length:	3.19 m	**Dia/Height:**	150 mm
Total Length:	3.19 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	OC	Start node, other special chamber, reference: POND
2	0.00	WL	Water level, 5% of the vertical dimension
3	3.19	OFF	Finish node, outfall, reference: LINE X

PLR:	DITCHX	**Upstream Node:**	DITCH
Inspection Direction:	Downstream	**Downstream Node:**	OUTLET
Inspected Length:	1.98 m	**Dia/Height:**	
Total Length:	1.98 m	**Material:**	Other material

No.	m+	Code	Observation
1	0.00	OC	Start node, other special chamber, reference: DITCH
2	1.98	OCF	Finish node, other special chamber, reference: OUTLET

PLR:	LINE A X	**Upstream Node:**	LINE A
Inspection Direction:	Upstream	**Downstream Node:**	DITCH
Inspected Length:	12.07 m	**Dia/Height:**	150 mm
Total Length:	12.07 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	OC	Start node, other special chamber, reference: DITCH
2	0.00	WL	Water level, 5% of the vertical dimension
3	3.36	D	Deformed sewer or drain, 40%
4	5.30	MCVC	Pipe material changes to vitrified clay at this point
5	11.39	DES	Settled deposits, fine, 60% cross-sectional area loss
6	12.07	SA	Survey abandoned

PLR:	LINE B X	**Upstream Node:**	LINE B
Inspection Direction:	Upstream	**Downstream Node:**	DITCH
Inspected Length:	65.69 m	**Dia/Height:**	150 mm
Total Length:	65.69 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	OC	Start node, other special chamber, reference: DITCH
2	0.00	WL	Water level, 5% of the vertical dimension
3	0.21	RM	Roots, mass, 45% cross-sectional area loss
4	1.99	MCPVC	Pipe material changes to polyvinyl chloride at this point
5	1.99	RM	Roots, mass, 30% cross-sectional area loss
6	3.16	D	Deformed sewer or drain, 40%

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Summary

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

No.	m+	Code	Observation
7	46.05	DES	Settled deposits, fine, 25% cross-sectional area loss
8	65.69	SA	Survey abandoned

PLR:	LINE C X	**Upstream Node:**	LINE C
Inspection Direction:	Upstream	**Downstream Node:**	DITCH
Inspected Length:	58.70 m	**Dia/Height:**	150 mm
Total Length:	58.70 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	OC	Start node, other special chamber, reference: DITCH
2	0.00	WL	Water level, 5% of the vertical dimension
3	0.56	MCPVC	Pipe material changes to polyvinyl chloride at this point
4	1.71	D	Deformed sewer or drain, 50%
5	5.59	D	Deformed sewer or drain, 45%
6	11.57	D	Deformed sewer or drain, 40%
7	25.98	D	Deformed sewer or drain, 40%
8	41.89	D	Deformed sewer or drain, 35%
9	55.02	D	Deformed sewer or drain, 50%
10	58.70	SA	Survey abandoned

PLR:	LINE A X	**Upstream Node:**	LINE A
Inspection Direction:	Upstream	**Downstream Node:**	MH01
Inspected Length:	0.15 m	**Dia/Height:**	100 mm
Total Length:	0.15 m	**Material:**	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	CP	Start node, catchpit, reference: MH01
2	0.00	WL	Water level, 5% of the vertical dimension
3	0.15	D	Deformed sewer or drain, 90%
4	0.15	SA	Survey abandoned

PLR:	DITCHX	**Upstream Node:**	DITCH
Inspection Direction:	Upstream	**Downstream Node:**	MH01
Inspected Length:	61.83 m	**Dia/Height:**	300 mm
Total Length:	61.83 m	**Material:**	Concrete

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH01
2	0.00	WL	Water level, 20% of the vertical dimension
3	0.67	OJL	Open joint, large
4	0.67	LR	Line deviates right
5	9.91	WL	Water level, 10% of the vertical dimension
6	14.64	OJL	Open joint, large
7	15.38	MCCI	Pipe material changes to cast iron at this point
8	26.12	MCCO	Pipe material changes to concrete at this point
9	27.74	JDM	Joint displaced, medium
10	27.74	LR	Line deviates right
11	29.42	RMJ	Roots, mass at joint, 5% cross-sectional area loss

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Summary

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

No.	m+	Code	Observation
12	30.13	RTJ	Roots, tap at joint
13	37.94	LR	Line deviates right
14	58.05	OJL	Open joint, large
15	61.83	OCF	Finish node, other special chamber, reference: DITCH

PLR:	MH01X	**Upstream Node:**	MH01
Inspection Direction:	Downstream	**Downstream Node:**	MH02
Inspected Length:	64.60 m	**Dia/Height:**	300 mm
Total Length:	64.60 m	**Material:**	Concrete

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH01
2	0.00	WL	Water level, 10% of the vertical dimension
3	58.29	LR	Line deviates right
4	60.57	OJL	Open joint, large
5	60.57	CCJ	Crack, circumferential at joint from 7 o'clock to 11 o'clock
6	60.57	LR	Line deviates right
7	62.41	OJL	Open joint, large
8	62.41	CCJ	Crack, circumferential at joint from 12 o'clock to 3 o'clock
9	62.62	LR	Line deviates right
10	64.60	MHF	Finish node, manhole, reference: MH02

PLR:	MH02X	**Upstream Node:**	MH02
Inspection Direction:	Downstream	**Downstream Node:**	LINE X
Inspected Length:	8.15 m	**Dia/Height:**	700 mm
Total Length:	8.15 m	**Material:**	Concrete

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: MH02
2	0.00	WL	Water level, 5% of the vertical dimension
3	4.79	WL	Water level, 60% of the vertical dimension
4	5.76	DES	Settled deposits, fine, 60% cross-sectional area loss
5	8.14	REM	General remark
6	8.15	SA	Survey abandoned

PLR:	LINE A X	**Upstream Node:**	LINE A
Inspection Direction:	Upstream	**Downstream Node:**	EXCAVATION
Inspected Length:	27.77 m	**Dia/Height:**	450 mm
Total Length:	27.77 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	OC	Start node, other special chamber, reference: EXCAVATION
2	0.00	WL	Water level, 20% of the vertical dimension
3	3.49	CN	Connection other than junction at 3 o'clock, 100mm dia
4	11.34	OBMJ	Other obstacles, pipe material in invert at joint from 6 o'clock to 8 o'clock, 20% cross-sectional area loss
5	11.34	MCPVC	Pipe material changes to polyvinyl chloride at this point
6	15.63	RMJ	Roots, mass at joint, 35% cross-sectional area loss
7	26.69	RM	Roots, mass, 80% cross-sectional area loss

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Summary

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

No.	m+	Code	Observation
8	27.77	SA	Survey abandoned

PLR:	EXCAVATIONX	**Upstream Node:**	EXCAVATION
Inspection Direction:	Downstream	**Downstream Node:**	LINE X
Inspected Length:	3.03 m	**Dia/Height:**	450 mm
Total Length:	3.03 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	OC	Start node, other special chamber, reference: EXCAVATION
2	0.00	WL	Water level, 20% of the vertical dimension
3	0.80	CM	Cracks, multiple from 8 o'clock to 2 o'clock
4	1.44	OJL	Open joint, large
5	1.66	CM	Cracks, multiple from 8 o'clock to 5 o'clock
6	2.38	B	Broken pipe from 7 o'clock to 5 o'clock
7	2.38	CM	Cracks, multiple from 12 o'clock to 12 o'clock
8	3.03	H	Hole in drain or sewer from 7 o'clock to 10 o'clock
9	3.03	SA	Survey abandoned

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Project Summary

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

Pipe Summary

No.	Type	PLR	Upstream Node	Downstream Node	Road	Town	Use	Mat.	Profile	Length
1	SEC	LINE A X	LINE A	POND	Station Rd	Battram	S	PVC	Circular 150mm	6.94 m
2	SEC	LINE B X	LINE B	POND	Station Rd	Battram	S	PVC	Circular 100mm	0.27 m
3	SEC	LINE C X	LINE C	POND	Station Rd	Battram	S	PVC	Circular 100mm	2.33 m
4	SEC	POND X	POND	LINE X	Station Rd	Battram	S	PVC	Circular 150mm	3.19 m
5	SEC	DITCHX	DITCH	OUTLET	Station Rd	Battram	S	Z	Circular	1.98 m
6	SEC	LINE A X	LINE A	DITCH	Station Rd	Battram	S	PVC	Circular 150mm	12.07 m
7	SEC	LINE B X	LINE B	DITCH	Station Rd	Battram	S	VC	Circular 150mm	65.69 m
8	SEC	LINE C X	LINE C	DITCH	Station Rd	Battram	S	VC	Circular 150mm	58.70 m
9	SEC	LINE A X	LINE A	MH01	Station Rd	Battram	S	PVC	Circular 100mm	0.15 m
10	SEC	DITCHX	DITCH	MH01	Station Rd	Battram	S	CO	Circular 300mm	61.83 m
11	SEC	MH01X	MH01	MH02	Station Rd	Battram	S	CO	Circular 300mm	64.60 m
12	SEC	MH02X	MH02	LINE X	Station Rd	Battram	S	CO	Circular 700mm	8.15 m
13	SEC	LINE A X	LINE A	EXCAVATION	Station Rd	Battram	S	VC	Circular 450mm	27.77 m
14	SEC	EXCAVATIONX	EXCAVATION	LINE X	Station Rd	Battram	S	VC	Circular 450mm	3.03 m
									Total:	**316.70 m**

Pipe Levels

No.	PLR	Upstream Node	Upstream C.L.	Upstream I.L.	Upstream I.D.	Downstream Node	Downstream C.L.	Downstream I.L.	Downstream I.D.
1	LINE A X	LINE A			0.000 m	POND			0.000 m
2	LINE B X	LINE B			0.000 m	POND			0.000 m
3	LINE C X	LINE C			0.000 m	POND			0.000 m
4	POND X	POND			0.000 m	LINE X			0.000 m
5	DITCHX	DITCH			0.000 m	OUTLET			0.000 m
6	LINE A X	LINE A			0.000 m	DITCH			0.000 m
7	LINE B X	LINE B			0.000 m	DITCH			0.000 m
8	LINE C X	LINE C			0.000 m	DITCH			0.000 m
9	LINE A X	LINE A			0.000 m	MH01			3.000 m

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Project Summary

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

No.	PLR	Upstream Node	Upstream C.L.	Upstream I.L.	Upstream I.D.	Downstream Node	Downstream C.L.	Downstream I.L.	Downstream I.D.
10	DITCHX	DITCH			0.000 m	MH01			3.000 m
11	MH01X	MH01			3.000 m	MH02			0.000 m
12	MH02X	MH02			1.600 m	LINE X			0.000 m
13	LINE A X	LINE A			0.000 m	EXCAVATION			0.000 m
14	EXCAVATIONX	EXCAVATION			0.000 m	LINE X			0.000 m

Pipe Summary by Profile

Profile		Total Length	No. Pipes
Circular		1.98 m	
Circular	=	1.98 m	1
Circular 100mm Circular 100mm Circular 100mm		0.27 m 2.33 m 0.15 m	
Circular 100mm	=	2.75 m	3
Circular 150mm Circular 150mm Circular 150mm Circular 150mm Circular 150mm		6.94 m 3.19 m 12.07 m 65.69 m 58.70 m	
Circular 150mm	=	146.59 m	5
Circular 300mm Circular 300mm		61.83 m 64.60 m	
Circular 300mm	=	126.43 m	2
Circular 450mm Circular 450mm		27.77 m 3.03 m	
Circular 450mm	=	30.80 m	2
Circular 700mm		8.15 m	
Circular 700mm	=	8.15 m	1
Total	**=**	**316.70 m**	**14**

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Project Summary

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

Inspection Summary

Pipe No.	Insp. No.	Upstream Node	Downstream Node	Dir.	Operator	Insp. Date	Insp. Time	Str	Ser	Final Observation	Length
1	1	LINE A	POND	US	Mike	02/09/2025	10:20	3	5	OCF, INLET	6.94 m
2	**1**	**LINE B**	**POND**	**US**	**Mike**	**02/09/2025**	**10:35**	**1**	**5**	**SA, UNABLE TO PUSH ON**	**0.27 m**
3	**1**	**LINE C**	**POND**	**US**	**Mike**	**02/09/2025**	**10:43**	**1**	**5**	**SA, ON DEBRIS**	**2.33 m**
4	1	POND	LINE X	DS	Mike	02/09/2025	10:55	1	1	OFF	3.19 m
5	1	DITCH	OUTLET	DS	Mike	02/09/2025	11:10	1	1	OCF, OUTLET	1.98 m
6	**1**	**LINE A**	**DITCH**	**US**	**Mike**	**02/09/2025**	**11:14**	**5**	**4**	**SA, UNABLE TO PUSH ON**	**12.07 m**
7	**1**	**LINE B**	**DITCH**	**US**	**Mike**	**02/09/2025**	**11:17**	**5**	**5**	**SA, UNABLE TO PUSH ON**	**65.69 m**
8	**1**	**LINE C**	**DITCH**	**US**	**Mike**	**02/09/2025**	**11:27**	**5**	**4**	**SA, UNABLE TO PUSH ON**	**58.70 m**
9	**1**	**LINE A**	**MH01**	**US**	**Mike**	**02/09/2025**	**14:13**	**5**	**5**	**SA, ON SQUASHED PIEWORK**	**0.15 m**
10	1	DITCH	MH01	US	Mike	03/09/2025	8:09	1	4	OCF, OPEN DITCH BY THE POND	61.83 m
11	1	MH01	MH02	DS	Mike	02/09/2025	14:30	2	2	MHF	64.60 m
12	**1**	**MH02**	**LINE X**	**DS**	**Mike**	**03/09/2025**	**9:09**	**1**	**4**	**SA, UNABLE TO DRIVE ON**	**8.15 m**
13	**1**	**LINE A**	**EXCAVATION**	**US**	**Mike**	**03/09/2025**	**10:56**	**1**	**5**	**SA, ON MASS ROOTS**	**27.77 m**
14	**1**	**EXCAVATION**	**LINE X**	**DS**	**Mike**	**03/09/2025**	**10:45**	**5**	**3**	**SA, UNABLE TO PASS HOLE**	**3.03 m**
										Total:	**316.70 m**

Inspection Summary by Profile

Profile		Total Length	No. Inspections
Circular		1.98 m	
Circular	=	1.98 m	1
Circular 100mm Circular 100mm Circular 100mm		0.27 m 2.33 m 0.15 m	
Circular 100mm	=	2.75 m	3
Circular 150mm Circular 150mm Circular 150mm Circular 150mm Circular 150mm		6.94 m 3.19 m 12.07 m 65.69 m 58.70 m	
Circular 150mm	=	146.59 m	5

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Project Summary

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

Profile		Total Length	No. Inspections
Circular 300mm Circular 300mm		61.83 m 64.60 m	
Circular 300mm	=	126.43 m	2
Circular 450mm Circular 450mm		27.77 m 3.03 m	
Circular 450mm	=	30.80 m	2
Circular 700mm		8.15 m	
Circular 700mm	=	8.15 m	1
Total	**=**	**316.70 m**	**14**

Defect Summary

				CCTV Drainage Survey Observation Count																					
				General				Structural Condition									Service Condition						Misc	
Sect. No.	Insp. No.	Upstream Node	Downstream Node	Insp. Length (m)	No. Grade 4/5 Obs.	Survey Abandoned	Camera Under Water	Cracks	Fractures	Broken	Deformed	Collapsed	Holes	Surface Damage	Displaced Joints	Open Joints	Roots	Infiltration	Encrustation	Silt	Grease	Obstruction	Water Level	Line Deviates
1	1	LINE A	POND	6.9	2						1											1	1	
2	**1**	**LINE B**	**POND**	**0.3**	**1**	**1**														**1**			**1**	
3	**1**	**LINE C**	**POND**	**2.3**	**2**	**1**														**2**			**1**	
4	1	POND	LINE X	3.2																			1	
5	1	DITCH	OUTLET	2.0																				
6	**1**	**LINE A**	**DITCH**	**12.1**	**3**	**1**					**1**									**1**			**1**	
7	**1**	**LINE B**	**DITCH**	**65.7**	**5**	**1**					**1**						**2**			**1**			**1**	
8	**1**	**LINE C**	**DITCH**	**58.7**	**12**	**1**					**6**												**1**	
9	**1**	**LINE A**	**MH01**	**0.2**	**2**	**1**					**1**												**1**	
10	1	DITCH	MH01	61.8	1										1	3	2						2	3
11	1	MH01	MH02	64.6				2								2							1	3
12	**1**	**MH02**	**LINE X**	**8.2**	**1**	**1**											**1**			**1**			**2**	
13	**1**	**LINE A**	**EXCAVATION**	**27.8**	**3**	**1**											**2**					**1**	**1**	
14	**1**	**EXCAVATION**	**LINE X**	**3.0**	**2**	**1**		**3**		**1**			**1**			**1**							**1**	

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Project Summary

Project Name	Project Number	Project Date
Pall Ex Station Rd Battram Leicestershire 2025_09_02		02/09/2025

Sect. No.	Insp. No.	Upstream Node	Downstream Node	Insp. Length (m)	No. Grade 4/5 Obs.	Survey Abandoned	Camera Under Water	Cracks	Fractures	Broken	Deformed	Collapsed	Holes	Surface Damage	Displaced Joints	Open Joints	Roots	Infiltration	Encrustation	Silt	Grease	Obstruction	Water Level	Line Deviates
			Total:	**316.7**	**34**	**9**		**5**									**7**			**6**		**2**	**15**	**6**

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 02/09/2025 - LINE A X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
1	1	02/09/25	10:20	Not Specified	No Rain Or Snow	No	LINE A X

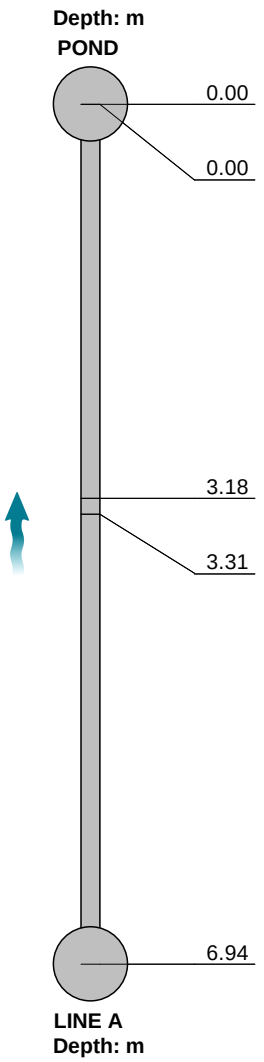
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

Town or Village:	Battram	**Inspection Direction:**	Upstream	**Upstream Node:**	LINE A
Road:	Station Rd	**Inspected Length:**	6.94 m	**Upstream Pipe Depth:**	
Location:	Fields, farmland etc	**Total Length:**	6.94 m	**Downstream Node:**	POND
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:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:61



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	OC	Start node, other special chamber, reference: POND: US LINE A	00:00:01		
0.00	WL	Water level, 5% of the vertical dimension	00:00:01	LINE A X_cf1efcf2-1ca3-4c3	
3.18	D	Deformed sewer or drain, 20%	00:00:35	LINE A X_f8dc6610-d613-44	3 / 4
3.31	OBZ	Other obstacles from 4 o'clock to 8 o'clock, 45% cross-sectional area loss: WOOD	00:00:41	LINE A X_4dbd1224-afce-49	5
6.94	OCF	Finish node, other special chamber, reference: LINE A: INLET	00:01:25	LINE A X_d28df908-7189-41f	

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	40.0	5.8	40.0	3.0	2	10.0	2.2	15.0	5.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE A X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
1	Upstream	LINE A X		

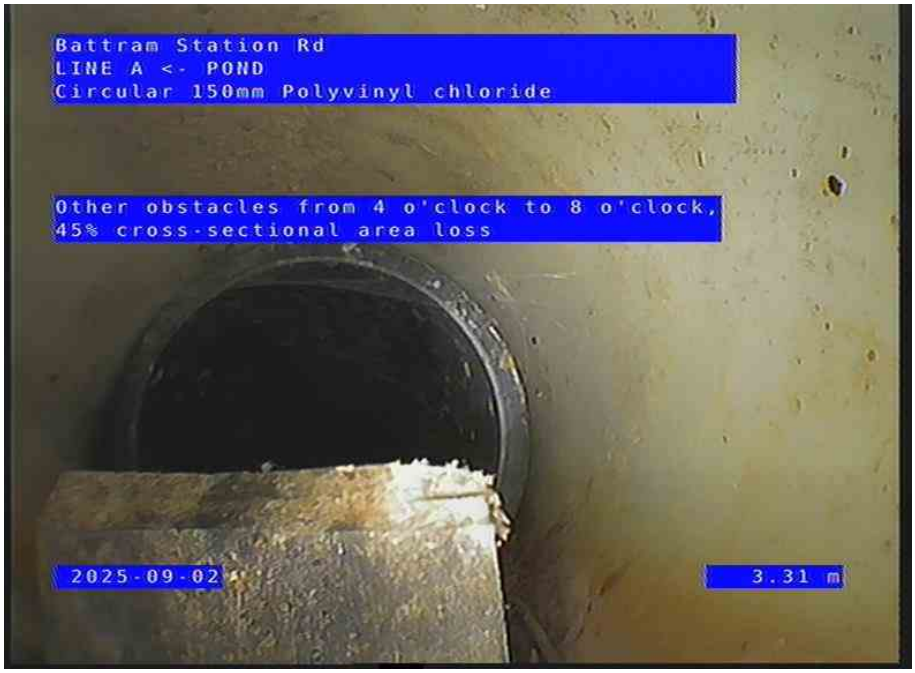
LINE A X_cf1efcf2-1ca3-4c33-a48e-0ccc09262177_20250902_102018_725.jpg, 00:00:01, 0.00 m
Water level, 5% of the vertical dimension

LINE A X_f8dc6610-d613-44ac-b0fa-f0f89af9d991_20250902_102058_725.jpg, 00:00:35, 3.18 m
Deformed sewer or drain, 20%

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE A X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
1	Upstream	LINE A X		



LINE A X_4dbd1224-afce-4983-8647-3f6257893e0a_20250902_102122_331.jpg, 00:00:41, 3.31 m
Other obstacles from 4 o'clock to 8 o'clock, 45% cross-sectional area loss

LINE A X_d28df908-7189-41fa-b5fd-0e00e7e3d187_20250902_102217_976.jpg, 00:01:25, 6.94 m
Finish node, other special chamber, reference: LINE A

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 02/09/2025 - LINE B X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
2	1	02/09/25	10:35	Not Specified	No Rain Or Snow	No	LINE B X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

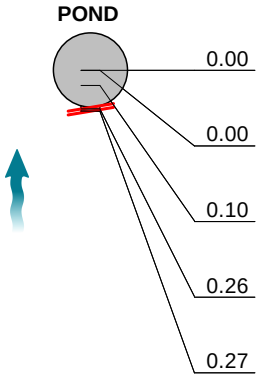
Town or Village:	Battram	**Inspection Direction:**	Upstream	**Upstream Node:**	LINE B
Road:	Station Rd	**Inspected Length:**	0.27 m	**Upstream Pipe Depth:**	
Location:	Fields, farmland etc	**Total Length:**	0.27 m	**Downstream Node:**	POND
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	100 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50

Depth: m
POND



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	OC	Start node, other special chamber, reference: POND: US LINE B	00:00:01		
0.00	WL	Water level, 5% of the vertical dimension	00:00:02	LINE B X_2c77f954-51a5-44	
0.10	DES	Settled deposits, fine, 90% cross-sectional area loss	00:00:13	LINE B X_a7908a96-3034-4	5
0.26	CUD	Loss of vision, silt	00:00:29	LINE B X_7bd12798-6018-4	
0.27	SA	Survey abandoned: UNABLE TO PUSH ON	00:00:30	LINE B X_faa73592-49ad-48	

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	38.5	10.0	5.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE B X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
2	Upstream	LINE B X		

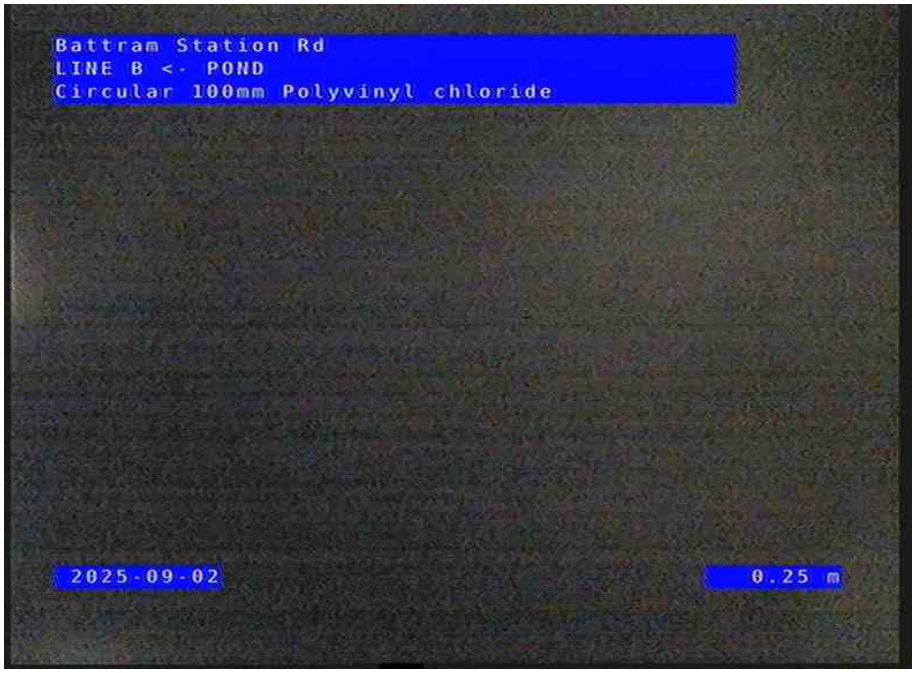
LINE B X_2c77f954-51a5-44b6-9381-f08001ef3423_20250902_103520_070.jpg, 00:00:02, 0.00 m
Water level, 5% of the vertical dimension

LINE B X_a7908a96-3034-480a-85e1-c6022ebd2f92_20250902_103534_829.jpg, 00:00:13, 0.10 m
Settled deposits, fine, 90% cross-sectional area loss

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE B X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
2	Upstream	LINE B X		



LINE B X_7bd12798-6018-4e75-8166-51c4f1a5bcb1_20250902_103613_534.jpg, 00:00:29, 0.26 m
Loss of vision, silt

LINE B X_faa73592-49ad-485d-9719-e85906843596_20250902_103612_759.jpg, 00:00:30, 0.27 m
Survey abandoned

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 02/09/2025 - LINE C X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
3	1	02/09/25	10:43	Not Specified	No Rain Or Snow	No	LINE C X

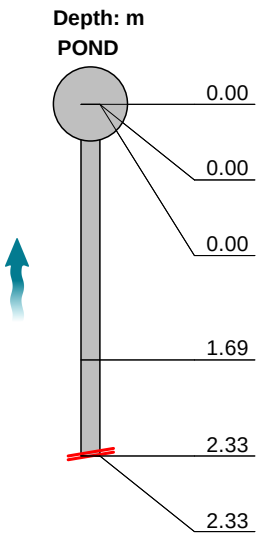
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

Town or Village:	Battram	**Inspection Direction:**	Upstream	**Upstream Node:**	LINE C
Road:	Station Rd	**Inspected Length:**	2.33 m	**Upstream Pipe Depth:**	
Location:	Fields, farmland etc	**Total Length:**	2.33 m	**Downstream Node:**	POND
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:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	OC	Start node, other special chamber, reference: POND: US LINE C	00:00:01		
0.00	WL	Water level, 5% of the vertical dimension	00:00:01	LINE C X_d8dc4f1e-8700-4fa	
0.00	DES	Settled deposits, fine, 20% cross-sectional area loss	00:00:05	LINE C X_c3014773-c768-4	4
1.69	DEX	Settled deposits, other, 75% cross-sectional area loss: LEAVES AND TWIGS	00:00:47	LINE C X_f81d3e96-b997-41	4
2.33	DES	Settled deposits, fine, 90% cross-sectional area loss	00:01:17	LINE C X_1a054f36-9144-40	5
2.33	SA	Survey abandoned: ON DEBRIS	00:01:21	LINE C X_3e150bce-d529-4	

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	3	10.0	9.9	23.0	5.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE C X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
3	Upstream	LINE C X		

LINE C X_d8dc4f1e-8700-4fab-9d74-38ee02580e76_20250902_104318_718.jpg, 00:00:01, 0.00 m
Water level, 5% of the vertical dimension

LINE C X_c3014773-c768-461f-9878-2f5bbd0940dc_20250902_104328_078.jpg, 00:00:05, 0.00 m
Settled deposits, fine, 20% cross-sectional area loss

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE C X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
3	Upstream	LINE C X		

LINE C X_f81d3e96-b997-4124-8110-9d398f2f7348_20250902_104510_719.jpg, 00:00:47, 1.69 m
Settled deposits, other, 75% cross-sectional area loss

LINE C X_1a054f36-9144-4002-b649-2124a908329c_20250902_104539_742.jpg, 00:01:17, 2.33 m
Settled deposits, fine, 90% cross-sectional area loss

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE C X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
3	Upstream	LINE C X		

LINE C X_3e150bce-d529-4956-879b-990377a62418_20250902_104549_988.jpg, 00:01:21, 2.33 m
Survey abandoned

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 02/09/2025 - POND X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
4	1	02/09/25	10:55	Not Specified	No Rain Or Snow	No	POND X

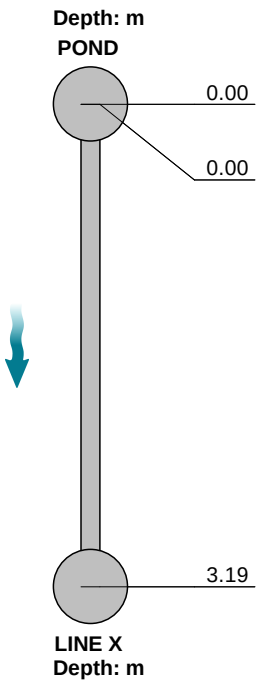
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

Town or Village:	Battram	**Inspection Direction:**	Downstream	**Upstream Node:**	POND
Road:	Station Rd	**Inspected Length:**	3.19 m	**Upstream Pipe Depth:**	
Location:	Fields, farmland etc	**Total Length:**	3.19 m	**Downstream Node:**	LINE X
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:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	OC	Start node, other special chamber, reference: POND: LINE X	00:00:01		
0.00	WL	Water level, 5% of the vertical dimension	00:00:02	POND X_8ff60cd d-85f1-40e	
3.19	OFF	Finish node, outfall, reference: LINE X	00:00:35	POND X_af8361c f-3d96-468	

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	0	0.0	0.0	0.0	1.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - POND X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
4	Downstream	POND X		

POND X_8ff60cdd-85f1-40e6-a63a-e98935cb6ed9_20250902_105513_368.jpg, 00:00:02, 0.00 m
Water level, 5% of the vertical dimension

POND X_af8361cf-3d96-468d-bf76-bfed69c79216_20250902_105555_919.jpg, 00:00:35, 3.19 m
Finish node, outfall, reference: LINE X

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 02/09/2025 - DITCHX

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
5	1	02/09/25	11:10	Not Specified	No Rain Or Snow	No	DITCHX

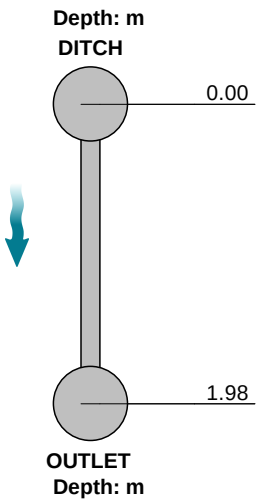
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

Town or Village:	Battram	**Inspection Direction:**	Downstream	**Upstream Node:**	DITCH
Road:	Station Rd	**Inspected Length:**	1.98 m	**Upstream Pipe Depth:**	
Location:	Fields, farmland etc	**Total Length:**	1.98 m	**Downstream Node:**	OUTLET
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	
Flow Control:	No flow control	**Material:**	Other material
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	OC	Start node, other special chamber, reference: DITCH: WALKING DOWN DITCH TO OUTLET	00:00:02		
1.98	OCF	Finish node, other special chamber, reference: OUTLET: OUTLET	00:01:23		

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	0	0.0	0.0	0.0	1.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 02/09/2025 - LINE A X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
6	1	02/09/25	11:14	Not Specified	No Rain Or Snow	No	LINE A X

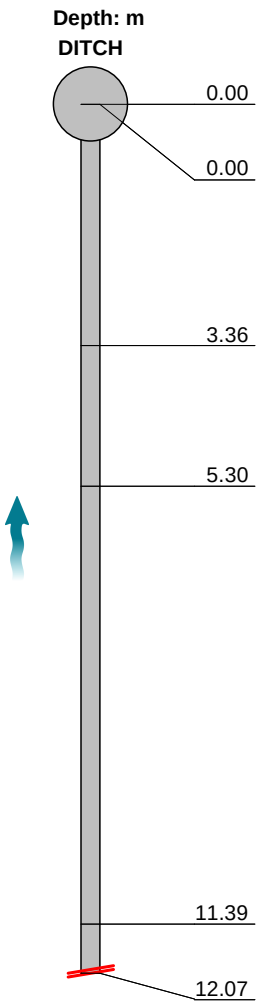
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

Town or Village:	Battram	**Inspection Direction:**	Upstream	**Upstream Node:**	LINE A
Road:	Station Rd	**Inspected Length:**	12.07 m	**Upstream Pipe Depth:**	
Location:	Fields, farmland etc	**Total Length:**	12.07 m	**Downstream Node:**	DITCH
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:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:105



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	OC	Start node, other special chamber, reference: DITCH: US LINE A	00:00:01		
0.00	WL	Water level, 5% of the vertical dimension	00:00:03	LINE A X_8f620086-1530-47f	
3.36	D	Deformed sewer or drain, 40%	00:00:28	LINE A X_5a729ba0-b98f-47	5 / 4
5.30	MCVC	Pipe material changes to vitrified clay at this point	00:00:46	LINE A X_cd990173-de35-4	
11.39	DES	Settled deposits, fine, 60% cross-sectional area loss	00:01:28	LINE A X_8388b26b-17da-4f	4
12.07	SA	Survey abandoned: UNABLE TO PUSH ON	00:01:47	LINE A X_9c6cd0b9-1311-4	

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	165.0	13.7	165.0	5.0	2	8.0	1.1	13.0	4.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE A X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
6	Upstream	LINE A X		

LINE A X_8f620086-1530-47fc-b228-dd7c11f99c0d_20250902_111406_670.jpg, 00:00:03, 0.00 m
Water level, 5% of the vertical dimension

LINE A X_5a729ba0-b98f-47c8-b445-d26585673884_20250902_111436_516.jpg, 00:00:28, 3.36 m
Deformed sewer or drain, 40%

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE A X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
6	Upstream	LINE A X		

LINE A X_cd990173-de35-472e-8f3f-46cded704b9e_20250902_111458_123.jpg, 00:00:46, 5.30 m
Pipe material changes to vitrified clay at this point

LINE A X_8388b26b-17da-4f5f-b9f3-3e3f27577893_20250902_111542_172.jpg, 00:01:28, 11.39 m
Settled deposits, fine, 60% cross-sectional area loss

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE A X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
6	Upstream	LINE A X		

LINE A X_9c6cd0b9-1311-4dae-b337-94111ff0ee6c_20250902_111611_099.jpg, 00:01:47, 12.07 m
Survey abandoned

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 02/09/2025 - LINE B X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
7	1	02/09/25	11:17	Not Specified	No Rain Or Snow	No	LINE B X

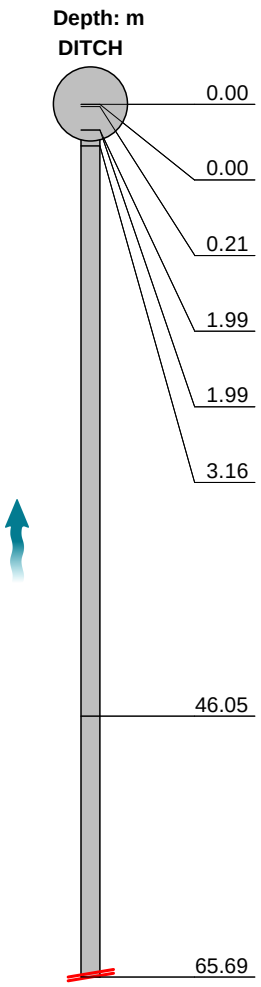
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

Town or Village:	Battram	**Inspection Direction:**	Upstream	**Upstream Node:**	LINE B
Road:	Station Rd	**Inspected Length:**	65.69 m	**Upstream Pipe Depth:**	
Location:	Fields, farmland etc	**Total Length:**	65.69 m	**Downstream Node:**	DITCH
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:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:569



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	OC	Start node, other special chamber, reference: DITCH: US LINE B	00:00:01		
0.00	WL	Water level, 5% of the vertical dimension	00:00:02	LINE B X_b434caa5-bfa3-49	
0.21	RM	Roots, mass, 45% cross-sectional area loss	00:00:14	LINE B X_9ca197d5-672e-4	5
1.99	MCPVC	Pipe material changes to polyvinyl chloride at this point	00:00:28	LINE B X_8a523a12-52d5-4	
1.99	RM	Roots, mass, 30% cross-sectional area loss	00:00:32	LINE B X_60877909-ff8a-4ff	5
3.16	D	Deformed sewer or drain, 40%	00:00:59	LINE B X_771ba19a-6b3c-4	5 / 4
46.05	DES	Settled deposits, fine, 25% cross-sectional area loss: STONE	00:03:48	LINE B X_4f7ee2b8-4565-49	4
65.69	SA	Survey abandoned: UNABLE TO PUSH ON	00:05:19	LINE B X_d2c34f95-e648-4f0	

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	165.0	2.5	165.0	5.0	4	10.0	0.5	30.0	5.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE B X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
7	Upstream	LINE B X		

LINE B X_b434caa5-bfa3-494a-9c28-6e1d5f03e6c1_20250902_111747_683.jpg, 00:00:02, 0.00 m
Water level, 5% of the vertical dimension

LINE B X_9ca197d5-672e-472e-a134-ac756aa4be2c_20250902_111808_531.jpg, 00:00:14, 0.21 m
Roots, mass, 45% cross-sectional area loss

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE B X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
7	Upstream	LINE B X		

LINE B X_8a523a12-52d5-4598-adfa-79297d64821b_20250902_111826_197.jpg, 00:00:28, 1.99 m
Pipe material changes to polyvinyl chloride at this point

LINE B X_60877909-ff8a-4ff7-b8ce-e4085e80d770_20250902_111832_990.jpg, 00:00:32, 1.99 m
Roots, mass, 30% cross-sectional area loss

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE B X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
7	Upstream	LINE B X		

LINE B X_771ba19a-6b3c-43cf-8cca-d9eadca2e894_20250902_111903_661.jpg, 00:00:59, 3.16 m
Deformed sewer or drain, 40%

LINE B X_4f7ee2b8-4565-4925-9930-c6a7cf788497_20250902_112202_988.jpg, 00:03:48, 46.05 m
Settled deposits, fine, 25% cross-sectional area loss

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE B X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
7	Upstream	LINE B X		

LINE B X_d2c34f95-e648-4f05-809a-63f186583184_20250902_112351_163.jpg, 00:05:19, 65.69 m
Survey abandoned

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 02/09/2025 - LINE C X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
8	1	02/09/25	11:27	Not Specified	No Rain Or Snow	No	LINE C X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

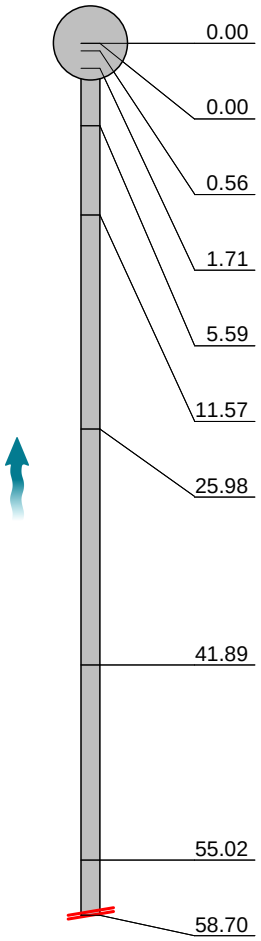
Town or Village:	Battram	**Inspection Direction:**	Upstream	**Upstream Node:**	LINE C
Road:	Station Rd	**Inspected Length:**	58.70 m	**Upstream Pipe Depth:**	
Location:	Fields, farmland etc	**Total Length:**	58.70 m	**Downstream Node:**	DITCH
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	

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:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:509

Depth: m
DITCH



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	OC	Start node, other special chamber, reference: DITCH: US LINE C	00:00:04		
0.00	WL	Water level, 5% of the vertical dimension	00:00:05	LINE C X_103a6b05-6880-4	
0.56	MCPVC	Pipe material changes to polyvinyl chloride at this point	00:00:16	LINE C X_339d1d36-a892-4	
1.71	D	Deformed sewer or drain, 50%	00:00:28	LINE C X_f2df2e9e-1e01-4f3	5 / 4
5.59	D	Deformed sewer or drain, 45%	00:00:52	LINE C X_febc130c-1b4c-4cc	5 / 4
11.57	D	Deformed sewer or drain, 40%	00:01:17	LINE C X_5404a792-ada1-4	5 / 4
25.98	D	Deformed sewer or drain, 40%	00:01:59	LINE C X_4ca82f9c-9923-4f9	5 / 4
41.89	D	Deformed sewer or drain, 35%	00:02:38	LINE C X_3f2f0429-994f-4ed	5 / 4
55.02	D	Deformed sewer or drain, 50%	00:03:16	LINE C X_afbd2fc8-7777-4fd	5 / 4
58.70	SA	Survey abandoned: UNABLE TO PUSH ON	00:03:49	LINE C X_7bd4dc6f-a0e1-4a	

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
6	165.0	16.9	990.0	5.0	6	8.0	0.6	36.0	4.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE C X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
8	Upstream	LINE C X		

LINE C X_103a6b05-6880-4802-9026-c1d53bd8d01b_20250902_112717_572.jpg, 00:00:05, 0.00 m
Water level, 5% of the vertical dimension

LINE C X_339d1d36-a892-4267-bd5b-84b742d270ad_20250902_112732_333.jpg, 00:00:16, 0.56 m
Pipe material changes to polyvinyl chloride at this point

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE C X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
8	Upstream	LINE C X		

LINE C X_f2df2e9e-1e01-4f3a-bd2c-fee4eb057bf0_20250902_112746_685.jpg, 00:00:28, 1.71 m
Deformed sewer or drain, 50%

LINE C X_febc130c-1b4c-4cc0-a10a-1be522bb8f7a_20250902_112815_746.jpg, 00:00:52, 5.59 m
Deformed sewer or drain, 45%

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE C X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
8	Upstream	LINE C X		

LINE C X_5404a792-ada1-4d04-9347-c4bafec37514_20250902_112843_198.jpg, 00:01:17, 11.57 m
Deformed sewer or drain, 40%

LINE C X_4ca82f9c-9923-4f92-860d-def0f38eb5af_20250902_112929_611.jpg, 00:01:59, 25.98 m
Deformed sewer or drain, 40%

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE C X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
8	Upstream	LINE C X		

LINE C X_3f2f0429-994f-4ed7-a8d9-6644d562461f_20250902_113012_819.jpg, 00:02:38, 41.89 m
Deformed sewer or drain, 35%

LINE C X_afbd2fc8-7777-4fd3-a672-df75609fc39e_20250902_113053_259.jpg, 00:03:16, 55.02 m
Deformed sewer or drain, 50%

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE C X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
8	Upstream	LINE C X		

LINE C X_7bd4dc6f-a0e1-4a6b-9815-69223cf84255_20250902_113138_725.jpg, 00:03:49, 58.70 m
Survey abandoned

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 02/09/2025 - LINE A X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
9	1	02/09/25	14:13	Not Specified	No Rain Or Snow	No	LINE A X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

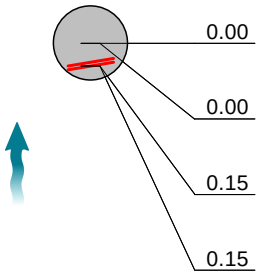
Town or Village:	Battram	**Inspection Direction:**	Upstream	**Upstream Node:**	LINE A
Road:	Station Rd	**Inspected Length:**	0.15 m	**Upstream Pipe Depth:**	
Location:	Fields, farmland etc	**Total Length:**	0.15 m	**Downstream Node:**	MH01
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	3.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	100 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50

Depth: 3.00 m
MH01



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	CP	Start node, catchpit, reference: MH01: US LINE A	00:00:01		
0.00	WL	Water level, 5% of the vertical dimension	00:00:02	LINE A X_50095461-6e63-4	
0.15	D	Deformed sewer or drain, 90%	00:00:25	LINE A X_d7293cbc-3eed-4	5 / 5
0.15	SA	Survey abandoned: ON SQUASHED PIEWORK	00:00:26	LINE A X_4910d2d8-fa24-4e	

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	165.0	1083.4	165.0	5.0	1	10.0	65.7	10.0	5.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE A X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
9	Upstream	LINE A X		

LINE A X_50095461-6e63-4ca5-b6ff-c707f2cce78f_20250902_141333_117.jpg, 00:00:02, 0.00 m
Water level, 5% of the vertical dimension

LINE A X_d7293cbc-3eed-472e-938c-4a3ae21417c3_20250902_141418_442.jpg, 00:00:25, 0.15 m
Deformed sewer or drain, 90%

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - LINE A X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
9	Upstream	LINE A X		

LINE A X_4910d2d8-fa24-4ebb-912b-c789231edbc7_20250902_141419_272.jpg, 00:00:26, 0.15 m
Survey abandoned

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 03/09/2025 - DITCHX

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
10	1	03/09/25	8:09	Not Specified	No Rain Or Snow	No	DITCHX

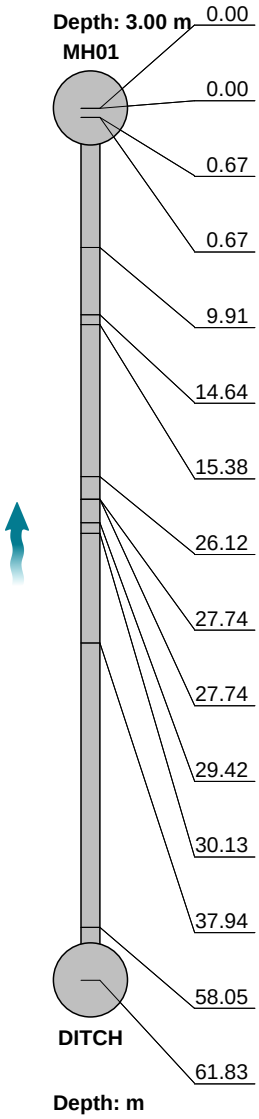
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

Town or Village:	Battram	**Inspection Direction:**	Upstream	**Upstream Node:**	DITCH
Road:	Station Rd	**Inspected Length:**	61.83 m	**Upstream Pipe Depth:**	
Location:	Fields, farmland etc	**Total Length:**	61.83 m	**Downstream Node:**	MH01
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	3.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	300 mm
Flow Control:	No flow control	**Material:**	Concrete
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:536



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: MH01: US TO DITCH	00:00:01		
0.00	WL	Water level, 20% of the vertical dimension	00:00:02	DITCHX_02d20f06-312b-4795-	
0.67	OJL	Open joint, large	00:00:26	DITCHX_61a7d9fc-5945-40b0-	1
0.67	LR	Line deviates right: SLIGHT	00:00:33	DITCHX_5214dd6a-503b-43d4-	
9.91	WL	Water level, 10% of the vertical dimension	00:01:08	DITCHX_8d891bd5-cded-4226-	
14.64	OJL	Open joint, large	00:01:44	DITCHX_92cc8cd6-0789-4405-	1
15.38	MCCI	Pipe material changes to cast iron at this point	00:01:54	DITCHX_9ecd039f-0d38-4e0e-	
26.12	MCCO	Pipe material changes to concrete at this point	00:02:58	DITCHX_d4e4648c-5b9b-4b5d-	
27.74	JDM	Joint displaced, medium	00:03:15	DITCHX_b6d78c6b-8b0e-462b-	1 / 3
27.74	LR	Line deviates right: SLIGHT	00:03:18	DITCHX_9f341506-a52d-4792-	
29.42	RMJ	Roots, mass at joint, 5% cross-sectional area loss	00:03:29	DITCHX_70383fd2-f27f-4e59-bf	3
30.13	RTJ	Roots, tap at joint	00:03:43	DITCHX_2b29cf83-7194-4120-	4
37.94	LR	Line deviates right: SLIGHT	00:04:11	DITCHX_ddc7877f-1efc-4e29-9	
58.05	OJL	Open joint, large	00:05:35	DITCHX_a44096a9-02a8-46a0-	1
61.83	OCF	Finish node, other special chamber, reference: DITCH: OPEN DITCH BY THE POND	00:06:04	DITCHX_933d433e-9aeb-4cd7-	

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
4	2.0	0.1	7.0	1.0	3	5.0	0.2	11.0	4.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - DITCHX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Upstream	DITCHX		

DITCHX_02d20f06-312b-4795-a33d-c234d9aaea91_20250903_080916_313.jpg, 00:00:02, 0.00 m
Water level, 20% of the vertical dimension

DITCHX_61a7d9fc-5945-40b0-929f-cbc84d941264_20250903_080944_107.jpg, 00:00:26, 0.67 m
Open joint, large

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - DITCHX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Upstream	DITCHX		

DITCHX_5214dd6a-503b-43d4-9791-001bcfb0fe31_20250903_080956_133.jpg, 00:00:33, 0.67 m
Line deviates right

DITCHX_8d891bd5-cded-4226-969d-6ffba089eb3f_20250903_081033_938.jpg, 00:01:08, 9.91 m
Water level, 10% of the vertical dimension

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - DITCHX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Upstream	DITCHX		

DITCHX_92cc8cd6-0789-4405-9870-a056ffe9a40a_20250903_081112_780.jpg, 00:01:44, 14.64 m
Open joint, large

DITCHX_9ecd039f-0d38-4e0e-8242-dd12647defbf_20250903_081127_438.jpg, 00:01:54, 15.38 m
Pipe material changes to cast iron at this point

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - DITCHX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Upstream	DITCHX		

DITCHX_d4e4648c-5b9b-4b5d-90e3-ecbf52b81a14_20250903_081235_859.jpg, 00:02:58, 26.12 m
Pipe material changes to concrete at this point

DITCHX_b6d78c6b-8b0e-462b-a7cf-891a0e4140ee_20250903_081301_716.jpg, 00:03:15, 27.74 m
Joint displaced, medium

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - DITCHX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Upstream	DITCHX		

DITCHX_9f341506-a52d-4792-af79-6ab0f0f00e93_20250903_081311_390.jpg, 00:03:18, 27.74 m
Line deviates right

DITCHX_70383fd2-f27f-4e59-bf71-0c6ca39322c7_20250903_081328_845.jpg, 00:03:29, 29.42 m
Roots, mass at joint, 5% cross-sectional area loss

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - DITCHX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Upstream	DITCHX		

DITCHX_2b29cf83-7194-4120-bf1b-24b736061227_20250903_081346_907.jpg, 00:03:43, 30.13 m
Roots, tap at joint

DITCHX_ddc7877f-1efc-4e29-92b3-76e5e1644646_20250903_081420_974.jpg, 00:04:11, 37.94 m
Line deviates right

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - DITCHX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Upstream	DITCHX		

DITCHX_a44096a9-02a8-46a0-a2e5-1f4cf2b29d78_20250903_081547_857.jpg, 00:05:35, 58.05 m
Open joint, large

DITCHX_933d433e-9aeb-4cd7-8f7a-07ca98fae226_20250903_081647_419.jpg, 00:06:04, 61.83 m
Finish node, other special chamber, reference: DITCH

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 02/09/2025 - MH01X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
11	1	02/09/25	14:30	Not Specified	No Rain Or Snow	No	MH01X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

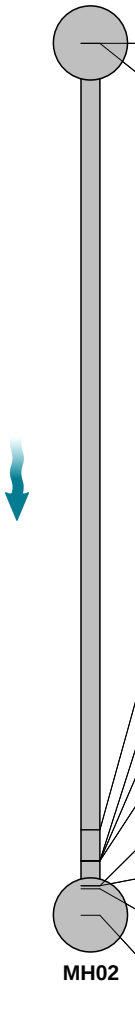
Town or Village:	Battram	**Inspection Direction:**	Downstream	**Upstream Node:**	MH01
Road:	Station Rd	**Inspected Length:**	64.60 m	**Upstream Pipe Depth:**	3.000 m
Location:	Fields, farmland etc	**Total Length:**	64.60 m	**Downstream Node:**	MH02
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	300 mm
Flow Control:	No flow control	**Material:**	Concrete
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:560

Depth: 3.00 m
MH01



MH02
Depth: m

Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: MH01: DS TO MH02	00:00:01		
0.00	WL	Water level, 10% of the vertical dimension	00:00:02	MH01X_08b4f78c-5301-4d64-	
58.29	LR	Line deviates right: SLIGHT	00:03:36	MH01X_4e098c1a-29d7-4f4f-9	
60.57	OJL	Open joint, large	00:04:02	MH01X_b1033ddd-e303-4c28-	1
60.57	CCJ	Crack, circumferential at joint from 7 o'clock to 11 o'clock	00:04:25	MH01X_e2de7cd5-0c3f-450e-8	2 / 2
60.57	LR	Line deviates right	00:04:31	MH01X_9fd05cab-25d8-4c53-b	
62.41	OJL	Open joint, large	00:04:57	MH01X_f7970d14-b9bb-4be4-9	1
62.41	CCJ	Crack, circumferential at joint from 12 o'clock to 3 o'clock	00:05:21	MH01X_502a2ac6-4d39-41e7-	2 / 2
62.62	LR	Line deviates right	00:05:29	MH01X_508cc513-41cb-4872-	
64.60	MHF	Finish node, manhole, reference: MH02	00:05:54	MH01X_10bb6587-95e3-47e6-	

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
4	12.0	0.4	24.0	2.0	2	1.0	0.0	2.0	2.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - MH01X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
11	Downstream	MH01X		

MH01X_08b4f78c-5301-4d64-bd91-e9adaeb147a1_20250902_143031_849.jpg, 00:00:02, 0.00 m
Water level, 10% of the vertical dimension

MH01X_4e098c1a-29d7-4f4f-9258-3f6df99770f4_20250902_143412_386.jpg, 00:03:36, 58.29 m
Line deviates right

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - MH01X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
11	Downstream	MH01X		

MH01X_b1033ddd-e303-4c28-849f-f78511d7cffd_20250902_143442_786.jpg, 00:04:02, 60.57 m
Open joint, large

MH01X_e2de7cd5-0c3f-450e-82bd-aa9b224ed0d7_20250902_143521_145.jpg, 00:04:25, 60.57 m
Crack, circumferential at joint from 7 o'clock to 11 o'clock

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - MH01X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
11	Downstream	MH01X		

MH01X_9fd05cab-25d8-4c53-b640-1a868aa35fb0_20250902_143529_912.jpg, 00:04:31, 60.57 m
Line deviates right

MH01X_f7970d14-b9bb-4be4-92c5-e2925fda31d5_20250902_143601_040.jpg, 00:04:57, 62.41 m
Open joint, large

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - MH01X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
11	Downstream	MH01X		

MH01X_502a2ac6-4d39-41e7-b52a-846109a8b754_20250902_143640_633.jpg, 00:05:21, 62.41 m
Crack, circumferential at joint from 12 o'clock to 3 o'clock

MH01X_508cc513-41cb-4872-b1a1-d9e3d36b2b4f_20250902_143650_079.jpg, 00:05:29, 62.62 m
Line deviates right

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 02/09/2025 - MH01X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
11	Downstream	MH01X		

MH01X_10bb6587-95e3-47e6-9429-810ac190f10c_20250902_143718_258.jpg, 00:05:54, 64.60 m
Finish node, manhole, reference: MH02

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 03/09/2025 - MH02X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
12	1	03/09/25	9:09	Not Specified	No Rain Or Snow	No	MH02X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

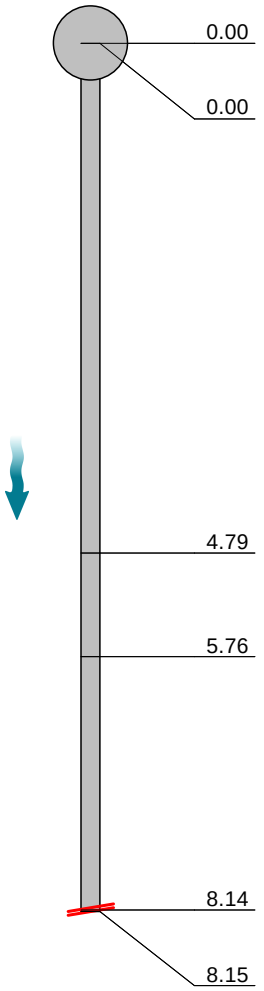
Town or Village:	Battram	**Inspection Direction:**	Downstream	**Upstream Node:**	MH02
Road:	Station Rd	**Inspected Length:**	8.15 m	**Upstream Pipe Depth:**	1.600 m
Location:	Fields, farmland etc	**Total Length:**	8.15 m	**Downstream Node:**	LINE X
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	700 mm
Flow Control:	No flow control	**Material:**	Concrete
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:71

Depth: 1.60 m
MH02



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node, manhole, reference: MH02: DS LINE X	00:00:01		
0.00	WL	Water level, 5% of the vertical dimension	00:00:02	MH02X_a049fbc3-aa63-4b70-	
4.79	WL	Water level, 60% of the vertical dimension	00:00:31	MH02X_f591985c-e0f7-49a2-b0	
5.76	DES	Settled deposits, fine, 60% cross-sectional area loss	00:00:47	MH02X_0e45b625-9eef-418f-b	4
8.14	REM	General remark: LINE FULL SUBMERGED IN DISTANCE	00:01:33	MH02X_f32827ad-fdf7-44fe-9c5	
8.15	SA	Survey abandoned: UNABLE TO DRIVE ON	00:01:32	MH02X_75d770fe-fdf9-40a5-a3	

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	8.0	1.0	8.0	4.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - MH02X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
12	Downstream	MH02X		

MH02X_a049fbc3-aa63-4b70-9bf6-dbb1bfc161be_20250903_090917_145.jpg, 00:00:02, 0.00 m
Water level, 5% of the vertical dimension

MH02X_f591985c-e0f7-49a2-b05c-4c16415e8459_20250903_090953_239.jpg, 00:00:31, 4.79 m
Water level, 60% of the vertical dimension

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - MH02X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
12	Downstream	MH02X		

MH02X_0e45b625-9eef-418f-b28a-dae70a52dba5_20250903_091016_770.jpg, 00:00:47, 5.76 m
Settled deposits, fine, 60% cross-sectional area loss

MH02X_f32827ad-fdf7-44fe-9c5b-48df5d3d9c10_20250903_091308_345.jpg, 00:01:33, 8.14 m
General remark

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - MH02X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
12	Downstream	MH02X		

MH02X_75d770fe-fdf9-40a5-a393-c7de2ec813ae_20250903_091112_745.jpg, 00:01:32, 8.15 m
Survey abandoned

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 03/09/2025 - LINE A X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
13	1	03/09/25	10:56	Not Specified	No Rain Or Snow	No	LINE A X

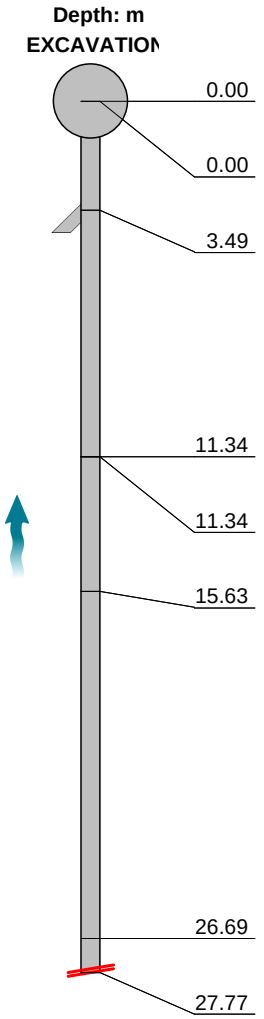
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

Town or Village:	Battram	**Inspection Direction:**	Upstream	**Upstream Node:**	LINE A
Road:	Station Rd	**Inspected Length:**	27.77 m	**Upstream Pipe Depth:**	
Location:	Fields, farmland etc	**Total Length:**	27.77 m	**Downstream Node:**	EXCAVATION
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	450 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:241



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	OC	Start node, other special chamber, reference: EXCAVATION: US LINE A	00:00:01		
0.00	WL	Water level, 20% of the vertical dimension	00:00:02	LINE A X_1a5efcf0-19be-46	
3.49	CN	Connection other than junction at 3 o'clock, 100mm dia: LAND DRAIN	00:00:26	LINE A X_b0051871-698b-4	
11.34	OBMJ	Other obstacles, pipe material in invert at joint from 6 o'clock to 8 o'clock, 20% cross-sectional area loss	00:00:51	LINE A X_6886920e-e2cc-4	5
11.34	MCPVC	Pipe material changes to polyvinyl chloride at this point	00:00:55	LINE A X_685a8018-bc56-4	
15.63	RMJ	Roots, mass at joint, 35% cross-sectional area loss	00:01:15	LINE A X_2f66541f-046b-403	5
26.69	RM	Roots, mass, 80% cross-sectional area loss	00:01:55	LINE A X_38dd412a-d35d-4	5
27.77	SA	Survey abandoned: ON MASS ROOTS	00:02:17	LINE A X_d2c3d344-737e-4	

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	3	20.0	1.4	40.0	5.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - LINE A X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
13	Upstream	LINE A X		

LINE A X_1a5efcf0-19be-46d6-bd21-95abb79e87dd_20250903_105621_835.jpg, 00:00:02, 0.00 m
Water level, 20% of the vertical dimension

LINE A X_b0051871-698b-426b-9526-584446dd0b9e_20250903_105707_786.jpg, 00:00:26, 3.49 m
Connection other than junction at 3 o'clock, 100mm dia

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - LINE A X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
13	Upstream	LINE A X		

LINE A X_6886920e-e2cc-4a91-8a48-47f0d0931437_20250903_105800_883.jpg, 00:00:51, 11.34 m
Other obstacles, pipe material in invert at joint from 6 o'clock to 8 o'clock, 20% cross-sectional area loss

LINE A X_685a8018-bc56-4934-b606-7296700f7c7b_20250903_105807_943.jpg, 00:00:55, 11.34 m
Pipe material changes to polyvinyl chloride at this point

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - LINE A X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
13	Upstream	LINE A X		

LINE A X_2f66541f-046b-403d-ba4c-a0e827d72aa6_20250903_105835_496.jpg, 00:01:15, 15.63 m
Roots, mass at joint, 35% cross-sectional area loss

LINE A X_38dd412a-d35d-4676-a4d8-2c3d895e7210_20250903_105921_464.jpg, 00:01:55, 26.69 m
Roots, mass, 80% cross-sectional area loss

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - LINE A X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
13	Upstream	LINE A X		

LINE A X_d2c3d344-737e-4a30-a9cb-1e3beb534973_20250903_105954_916.jpg, 00:02:17, 27.77 m
Survey abandoned

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Inspection - 03/09/2025 - EXCAVATIONX

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
14	1	03/09/25	10:45	Not Specified	No Rain Or Snow	No	EXCAVATIONX

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	WM19 HWE	Rodder	Not Specified	Not Specified	Not Specified

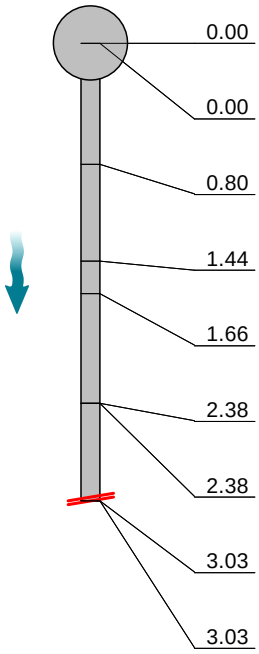
Town or Village:	Battram	**Inspection Direction:**	Downstream	**Upstream Node:**	EXCAVATION
Road:	Station Rd	**Inspected Length:**	3.03 m	**Upstream Pipe Depth:**	
Location:	Fields, farmland etc	**Total Length:**	3.03 m	**Downstream Node:**	LINE X
Surface Type:		**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	450 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Sample condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50

Depth: m
EXCAVATION



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	OC	Start node, other special chamber, reference: EXCAVATION: DS LINE X	00:00:01		
0.00	WL	Water level, 20% of the vertical dimension	00:00:02	EXCAVATIONX_cd4db383-6431	
0.80	CM	Cracks, multiple from 8 o'clock to 2 o'clock	00:00:14	EXCAVATIONX_fb3ae419-af36-	3 / 2
1.44	OJL	Open joint, large	00:00:27	EXCAVATIONX_7ea59fd8-fb10-	1
1.66	CM	Cracks, multiple from 8 o'clock to 5 o'clock	00:00:49	EXCAVATIONX_5e9b7dfb-c590-	3 / 2
2.38	B	Broken pipe from 7 o'clock to 5 o'clock	00:01:15	EXCAVATIONX_6e101af8-ab82-	4
2.38	CM	Cracks, multiple from 12 o'clock to 12 o'clock	00:01:22	EXCAVATIONX_7030b8f5-4c56-	3 / 2
3.03	H	Hole in drain or sewer from 7 o'clock to 10 o'clock	00:02:46	EXCAVATIONX_067b4b73-e942	5
3.03	SA	Survey abandoned: UNABLE TO PASS HOLE	00:02:55	EXCAVATIONX_1aa1f365-0d29-	

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
6	165.0	121.2	367.0	5.0	3	2.0	1.0	3.0	3.0

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - EXCAVATIONX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
14	Downstream	EXCAVATIONX		

EXCAVATIONX_cd4db383-6431-433a-b329-f88c8b4da2f7_20250903_104535_785.jpg,
00:00:02, 0.00 m
Water level, 20% of the vertical dimension

EXCAVATIONX_fb3ae419-af36-46b4-9c9f-69e1a1d58d72_20250903_104557_985.jpg,
00:00:14, 0.80 m
Cracks, multiple from 8 o'clock to 2 o'clock

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - EXCAVATIONX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
14	Downstream	EXCAVATIONX		

EXCAVATIONX_7ea59fd8-fb10-4512-b408-4e7c7cde6ac6_20250903_104613_004.jpg,
00:00:27, 1.44 m
Open joint, large

EXCAVATIONX_5e9b7dfb-c590-4c6a-b6b5-43c09af10d88_20250903_104642_625.jpg,
00:00:49, 1.66 m
Cracks, multiple from 8 o'clock to 5 o'clock

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - EXCAVATIONX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
14	Downstream	EXCAVATIONX		

EXCAVATIONX_6e101af8-ab82-4f12-8fcf-5bf15c7550d6_20250903_104718_200.jpg,
00:01:15, 2.38 m
Broken pipe from 7 o'clock to 5 o'clock

EXCAVATIONX_7030b8f5-4c56-4ab3-8cd7-636d31fe0d8a_20250903_104728_705.jpg,
00:01:22, 2.38 m
Cracks, multiple from 12 o'clock to 12 o'clock

GENERAL UTILITIES NORTHWEST LTD
LIVERPOOL ROAD, IRLAM
Tel. 0161 776 0011
generalutilities@btconnect.com

Section Pictures - 03/09/2025 - EXCAVATIONX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
14	Downstream	EXCAVATIONX		

EXCAVATIONX_067b4b73-e942-4bec-bdc1-ede3130315f6_20250903_104901_041.jpg,
00:02:46, 3.03 m
Hole in drain or sewer from 7 o'clock to 10 o'clock

EXCAVATIONX_1aa1f365-0d29-4d9f-ae78-a4fafe81db5e_20250903_104921_658.jpg,
00:02:55, 3.03 m
Survey abandoned

Conway Development Consultants Ltd.
110 Melbourne Road
Ibstock
Leics
LE67 6NN
07967 718075
Conwaydevelopments@btinternet.com

Client:
Pall-Ex_Group

Project:
DISTRIBUTION_DEPOT
OFF _STATION_ROAD
BAGWORTH

Drawing Title:
DRAINAGE.OPTION.PLAN
SHEET.ONE
–

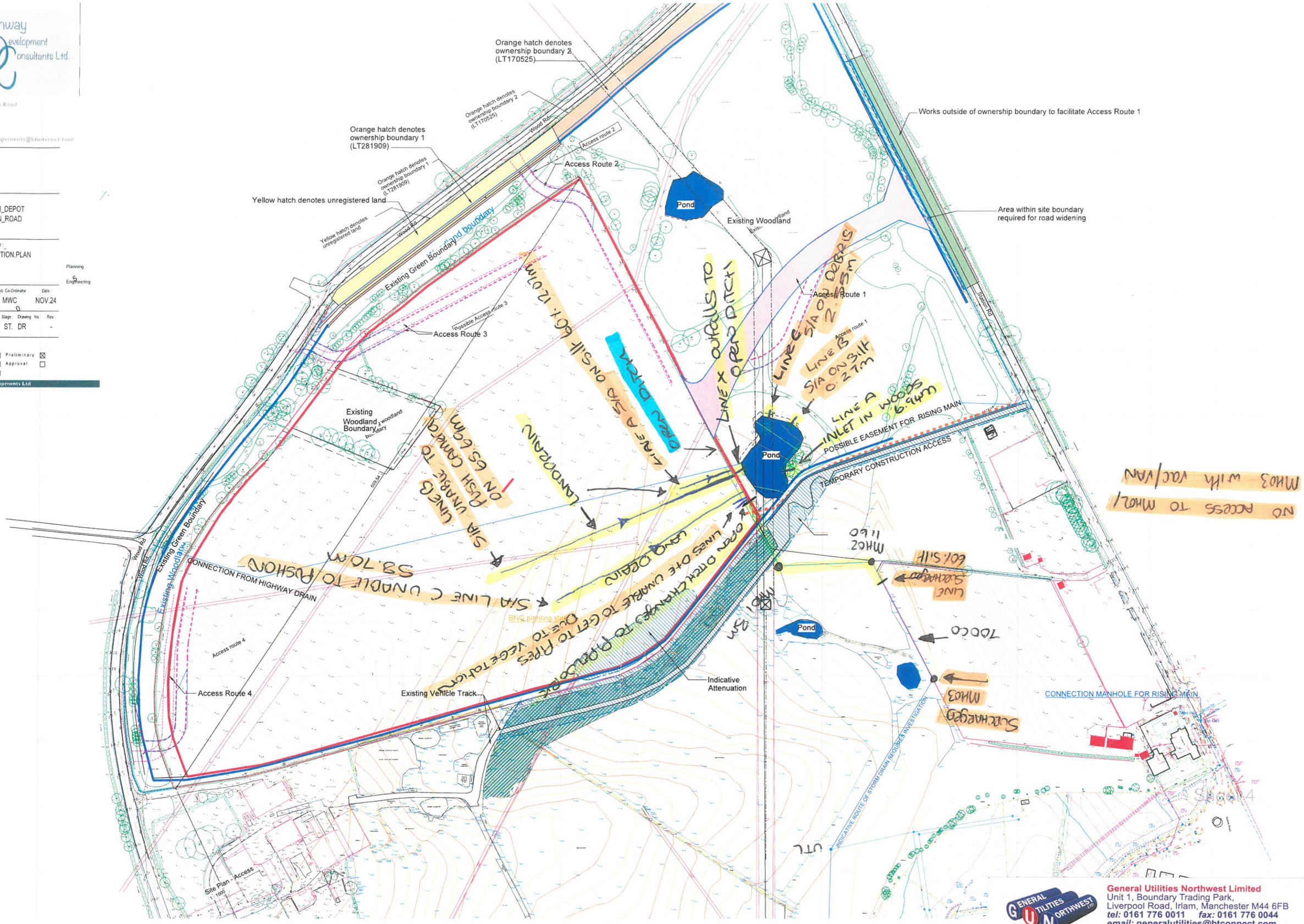
Planning
Engineering

Scale @ A1:	Project Co-Ordinator:	Date:
1:1250	MWC	NOV.24

Job No:	Stage:	Drawing No:	Rev:
9rth	ST.	DR	-

Issue Status:
Construction ☐ Preliminary ☒
Information ☐ Approval ☐
Tender ☐

Conway Developments Ltd



General Utilities Northwest Limited
Unit 1, Boundary Trading Park,
Liverpool Road, Irlam, Manchester M44 6FB
tel: 0161 776 0011 fax: 0161 776 0044
email: generalutilities@btconnect.com
website: www.generalutilitiesnorthwest.co.uk

Conway Development Consultants Ltd.
110 Melbourne Road
Ibstock
Leics
LE67 6NN
07967 718075
Conwaydevelopements@btinternet.com

Client:
Pall-Ex_Group

Project:
DISTRIBUTION_DEPOT
OFF _STATION_ROAD
BAGWORTH

Drawing Title:
DRAINAGE.OPTION.PLAN
SHEET.TWO
--

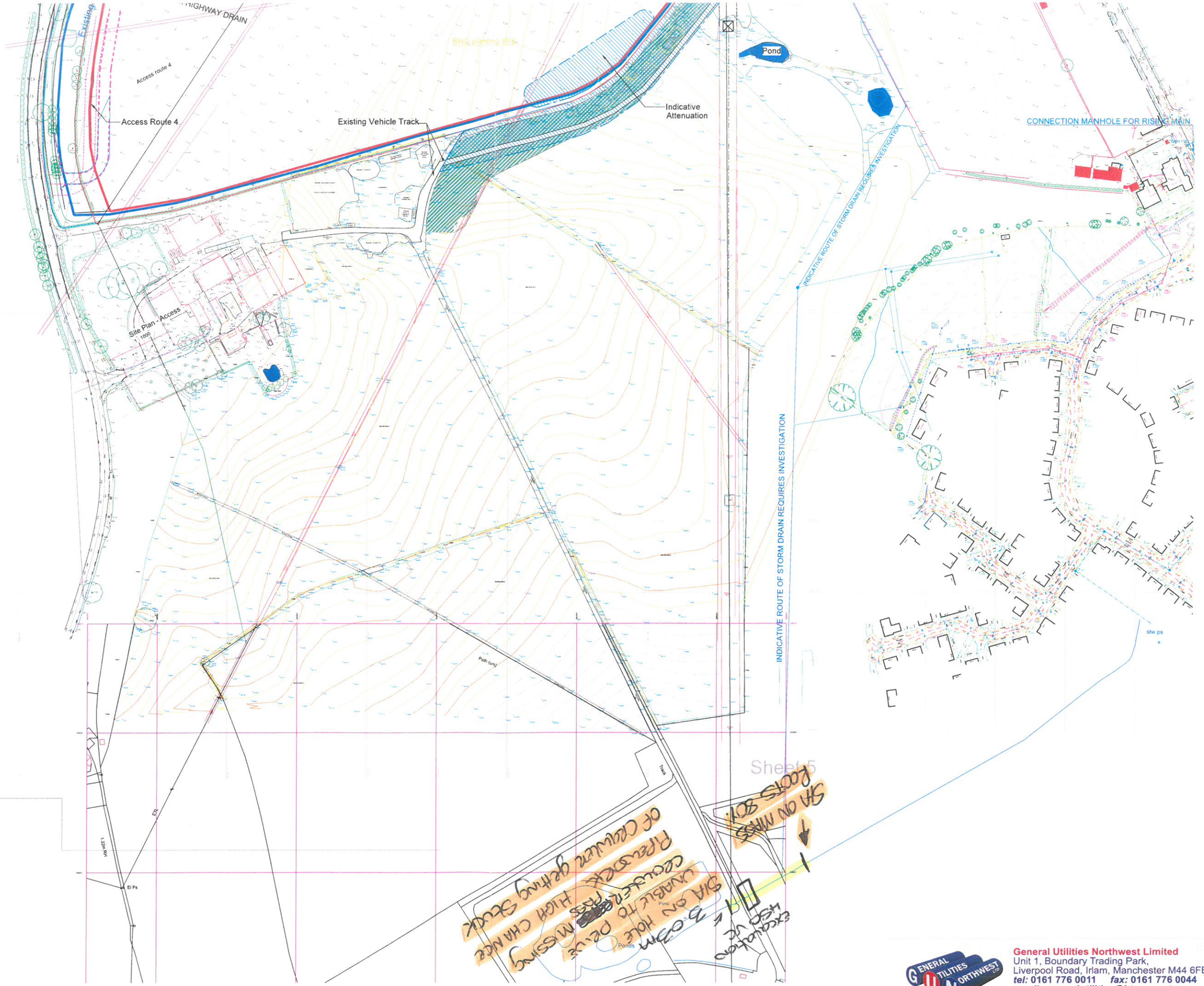
Planning
Engineering

Scale @ A1:	Project Co-Ordinator:	Date:
1:1250	MWC	NOV.24

Job No:	Stage:	Drawing No:	Rev:
23-16	ST. DR		-

Issue Status:
Construction ☐ Preliminary ☒
Information ☐ Approval ☐
Tender ☐

Conway Developments Ltd



General Utilities Northwest Limited
Unit 1, Boundary Trading Park,
Liverpool Road, Irlam, Manchester M44 6FB
tel: 0161 776 0011 fax: 0161 776 0044
email: generalutilities@btconnect.com
website: www.generalutilitiesnorthwest.co.uk

Manhole number

0 1 Nat grid reference | Manhole number: MH01

0 2 Location: PALL EX STATION RD BATTRAM LEICESTERSHIRE

0 3 Year laid * | Status * | Function * 5 | Manhole type * CP | Date of survey

COVER DETAILS NO LID

0 4 Square or rectang. ☐ Double triang. ☐ Single triang. ☐ Circular ☐ Multiple ☐ Hinged ☐ Lockable ☐

PIPE DETAILS

Cover level 3.00 m | Cover duty *

Incoming pipes

	Pipe	Invert level (m)	Depth from cover (m)	Upstream downstream M H ref		Shape	Size (mm)[1] (dia)		Pipe[1] mat.	Lining[2] mat.	Back drop dia (mm)
0 5	A	1.40	.			C		X 100	PVC		
	B	2.99	.			C		X 300	CO		
	C	.	.					X			
	D	.	.					X			
	E	.	.					X			
	F	.	.					X			

Outgoing pipes

X	3.00	.			C		X 300	CO		
Y	.	.					X			

0 6 Cover[1] opening (dia) X mm | Chamber[1] (dia) X 1050 mm | Evidence of surcharge ☐

0 7 Shaft[1] X 600 mm | Shaft depth (from C L) 1.50 m | Toxic atmosphere ☐

MANHOLE CONSTRUCTION DETAILS

0 8 Brick ☐ Pre-cast concrete ✓ In situ concrete ✓ Segments unlined ☐ Segments lined ☐ Step irons 8 Ladder ☐

0 9 Reducing slab ✓ Taper ☐ Side entry ☐ No. of landings ☐ No. of regulating[1] brick courses ☐

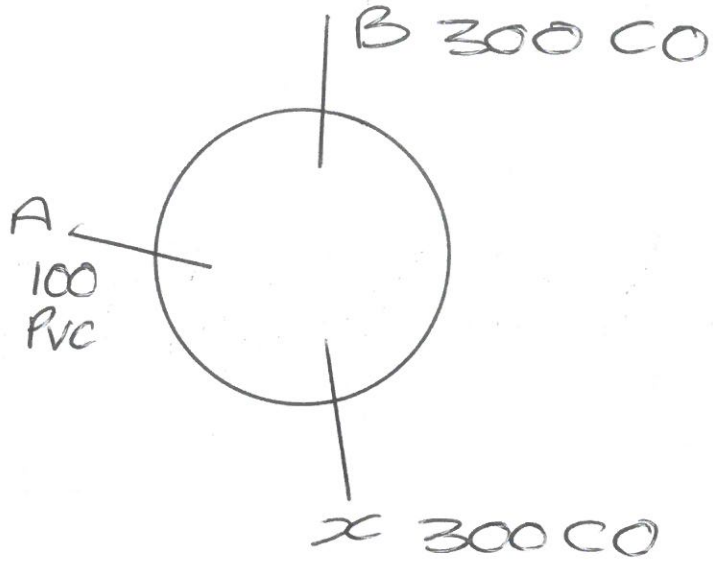
CONDITION INFORMATION

		Cover	Shaft	Irons/ ladder	Chamber	Benching /channel
1 0	O.K.	☐	✓	✓	✓	✓
1 1	Needs attention	☐	☐	☐	☐	☐
1 2	Urgent attention	✓	☐	☐	☐	☐

1 3 REMARKS :-

[1] Data right justified. [2] Data left justified. * See over

DIAGRAM



YEAR LAID — Applies to main outlet

STATUS — Applies to main outlet

- PU — Public
- PR — Private
- 24 — Section 24
- HD — Highway drain
- WC — Culverted watercourse

FUNCTION — Applies to main outlet

- F — Foul
- C — Combined
- S — Surface water

MANHOLE TYPE

- MH — Manhole
- CP — Catchpit
- LH — Lamphole
- RE — Rodding eye
- SO — Storm overflow

COVER DUTY

- L — Light duty
- M — Medium duty
- H — Heavy duty

SHAPE

- C — Circular
- E — Egg
- R — Rectangular
- S — Square
- T — Trapezoidal
- A — Arched
- B — Barrel
- H — Horseshoe (inverted u)
- U — U–shaped with flat top
- X — Other (state in remarks)

PIPE (OR LINING) MATERIAL

- AK — Alkathene
- AC — Asbestos cement
- BR — Brick
- CI — Cast iron
- SI — Spun (grey) iron
- CO — Concrete
- CSB — Conc. segments (bolted)
- CSU — Conc. segments (unbolted)
- CC — Conc. box culvert
- DI — Ductile iron
- GRC — Glass reinforced conc.
- GRP — Glass reinforced plastic
- PSC — Plastic/steel composite
- PVC — Polyvinyl chloride
- PE — Polyethylene
- RPM — Reinforced plastic matrix
- ST — Steel
- VC — Vitrified clay
- PP — Polypropylene
- PF — Pitch fibre
- MAC — Masonry, coursed
- MAR — Masonry, random courses
- XXX — Other (state in remarks)

LINING

- BL — Bitumen
- CL — Cement
- RL — Resin
- PL — Plastic
- IS — Insituform

General Utilities Northwest Limited
Unit 1, Boundary Trading Park,
Liverpool Road, Irlam, Manchester M44 6FB
tel: 0161 776 0011 *fax:* 0161 776 0044
email: generalutilities@btconnect.com
website: www.generalutilitiesnorthwest.co.uk

Manhole number

0 1 Nat grid reference | Manhole number: MH02

0 2 Location: PALL EX STATION RD BATTRAM LEICESTERSHIRE

0 3 Year laid * | Status * | Function *: S | Manhole type *: CP | Date of survey

COVER DETAILS

0 4 Square or rectang.: ✓ | Double triang. | Single triang. | Circular | Multiple | Hinged | Lockable

PIPE DETAILS — Cover level: 1.60 m — Cover duty *: L

Incoming pipes

	Pipe	Invert level (m)	Depth from cover (m)	Upstream /downstream M H ref		Change	Size (mm)[1] (dia)			Pipe[1] mat.	Lining[2] mat.	Back drop dia (mm)
0 5	A	1.46	.			C		X	225	CO		
	B	1.56	.			C		X	300	CO		
	C	1.59	.			C		X	375	CO		
	D	.	.					X				
	E	.	.					X				
	F	.	.					X				

Outgoing pipes

X	1.60	.			C		X	700	CO		
Y	.	.					X				

0 6 Cover[1] opening (dia): 620 x 460 mm — Chamber[1] (dia): x 1050 mm — Evidence of surcharge

0 7 Shaft[1]: 600 x 450 mm — Shaft depth (from C L): 1.50 m — Toxic atmosphere

MANHOLE CONSTRUCTION DETAILS

0 8 Brick | Pre-cast concrete: ✓ | In situ concrete: ✓ | Segments unlined | Segments lined | Step irons: 2 | Ladder

0 9 Reducing slab: ✓ | Taper | Side entry | No. of landings | No. of regulating[1] brick courses

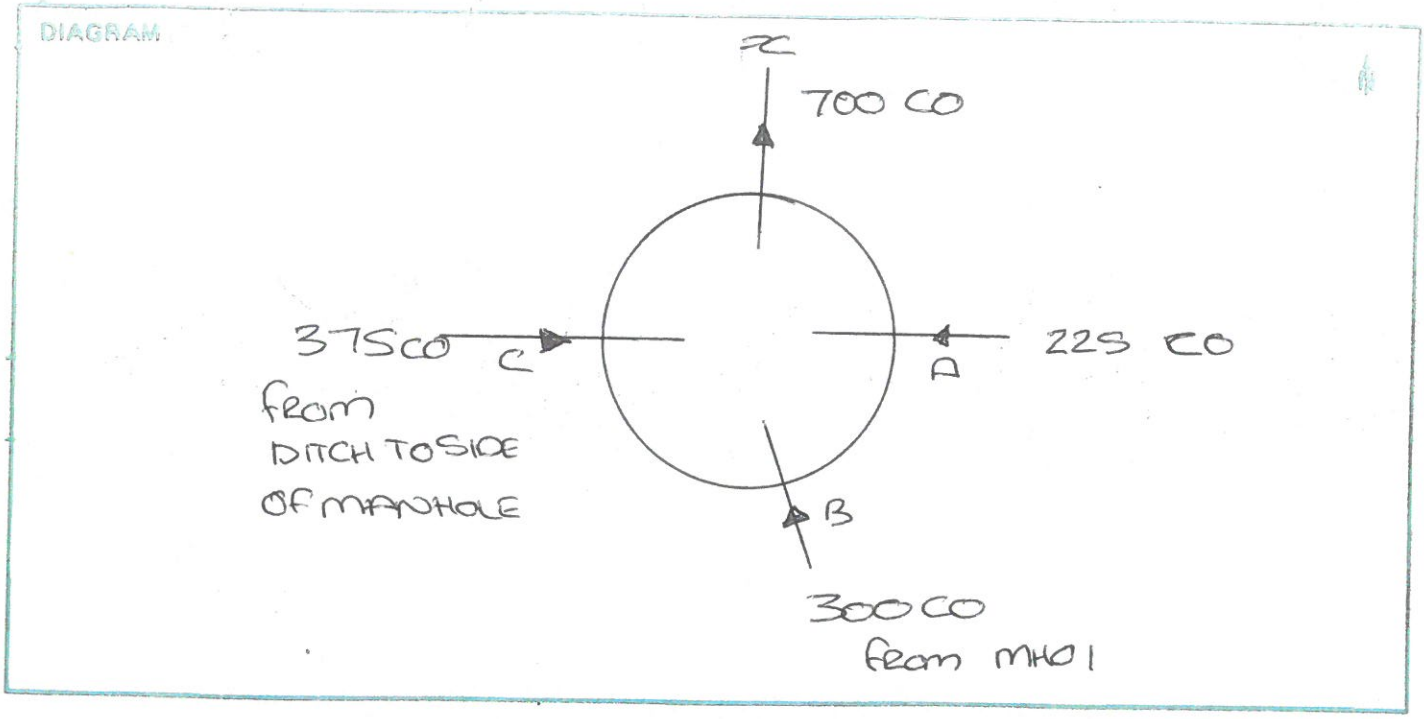
CONDITION INFORMATION

		Cover	Shaft	Irons/ ladder	Chamber	Benching /channel
1 0	O.K.	✓	✓	✓	✓	✓
1 1	Needs attention					
1 2	Urgent attention					

1 3 REMARKS :-

[1] Data right justified. [2] Data left justified. * See over

DIAGRAM

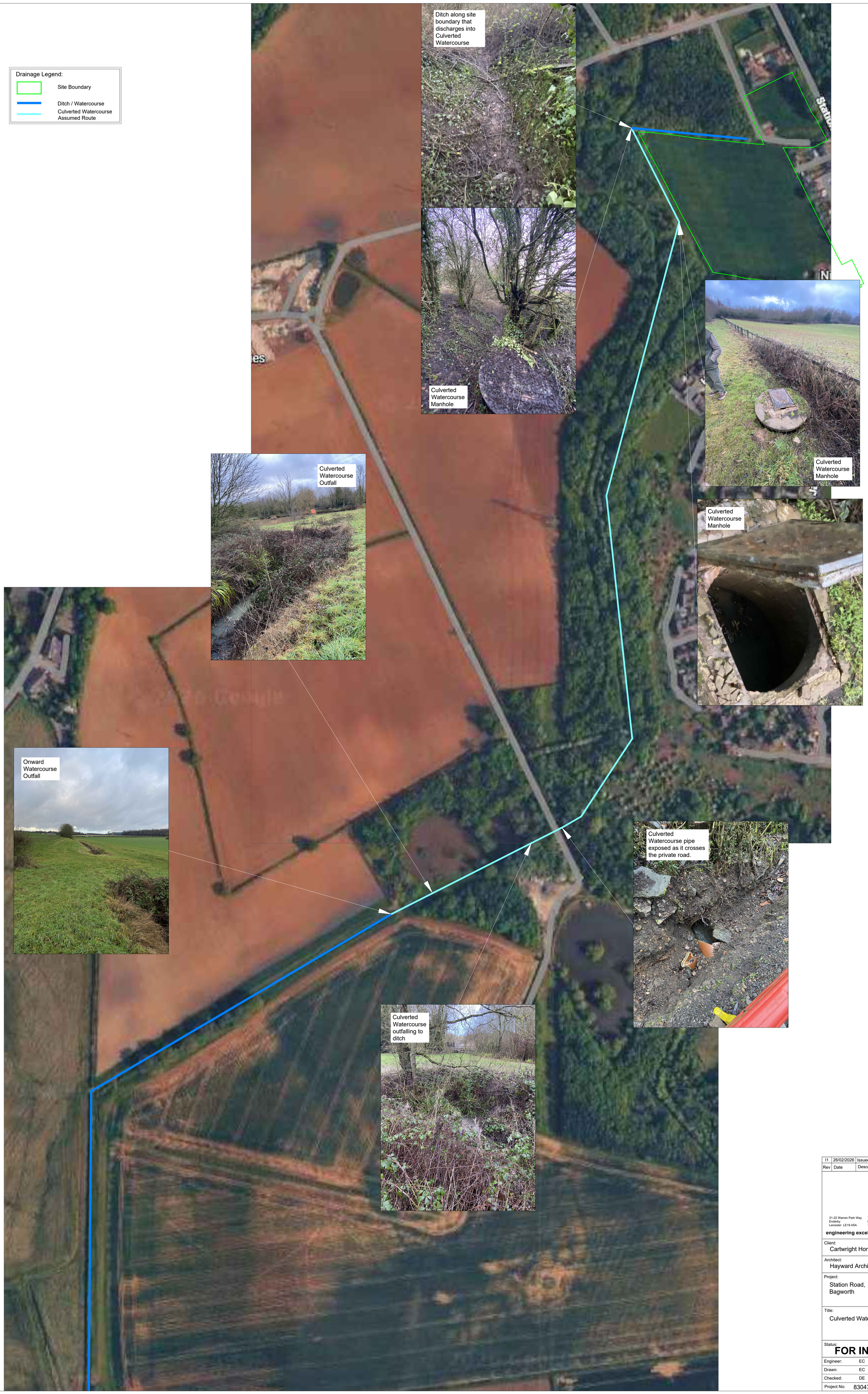


YEAR LAID	Applies to main outlet	
STATUS	PU – Public PR – Private 24 – Section 24 HD – Highway drain WC – Culverted watercourse	Applies to main outlet
FUNCTION	F – Foul C – Combined S – Surface water	Applies to main outlet
MANHOLE TYPE	MH – Manhole CP – Catchpit LH – Lamphole RE – Rodding eye SO – Storm overflow	
COVER DUTY	L – Light duty M – Medium duty H – Heavy duty	
SHAPE	C – Circular E – Egg R – Rectangular S – Square T – Trapezoidal A – Arched B – Barrel H – Horseshoe (inverted u) U – U–shaped with flat top X – Other (state in remarks)	
PIPE (OR LINING) MATERIAL	AK – Alkathene AC – Asbestos cement BR – Brick CI – Cast iron SI – Spun (grey) iron CO – Concrete CSB – Conc. segments (bolted) CSU – Conc. segments (unbolted) CC – Conc. box culvert DI – Ductile iron GRC – Glass reinforced conc. GRP – Glass reinforced plastic PSC – Plastic/steel composite PVC – Polyvinyl chloride PE – Polyethylene RPM – Reinforced plastic matrix ST – Steel VC – Vitrified clay PP – Polypropylene PF – Pitch fibre MAC – Masonry, coursed MAR – Masonry, random courses XXX – Other (state in remarks)	
LINING	BL – Bitumen CL – Cement RL – Resin PL – Plastic IS – Insituform	

General Utilities Northwest Limited
Unit 1, Boundary Trading Park,
Liverpool Road, Irlam, Manchester M44 6FB
tel: 0161 776 0011 *fax:* 0161 776 0044
email: generalutilities@btconnect.com
website: www.generalutilitiesnorthwest.co.uk

APPENDIX VI

WATERCOURSE OUTFALL DRAWINGS



Rev	Date	Description	By / Chk
I1	26/02/2026	Issued for information.	EC / DE

PRP
consulting engineers & surveyors

21-22 Warren Park Way
Enderby
Leicester LE19 4SA

Telephone: 0116 275 1710
leicester@prp.uk.com
www.prp.uk.com

Leicester
Northampton
London

engineering excellence | creating advantage

Client:
Cartwright Homes

Architect:
Hayward Architects Ltd

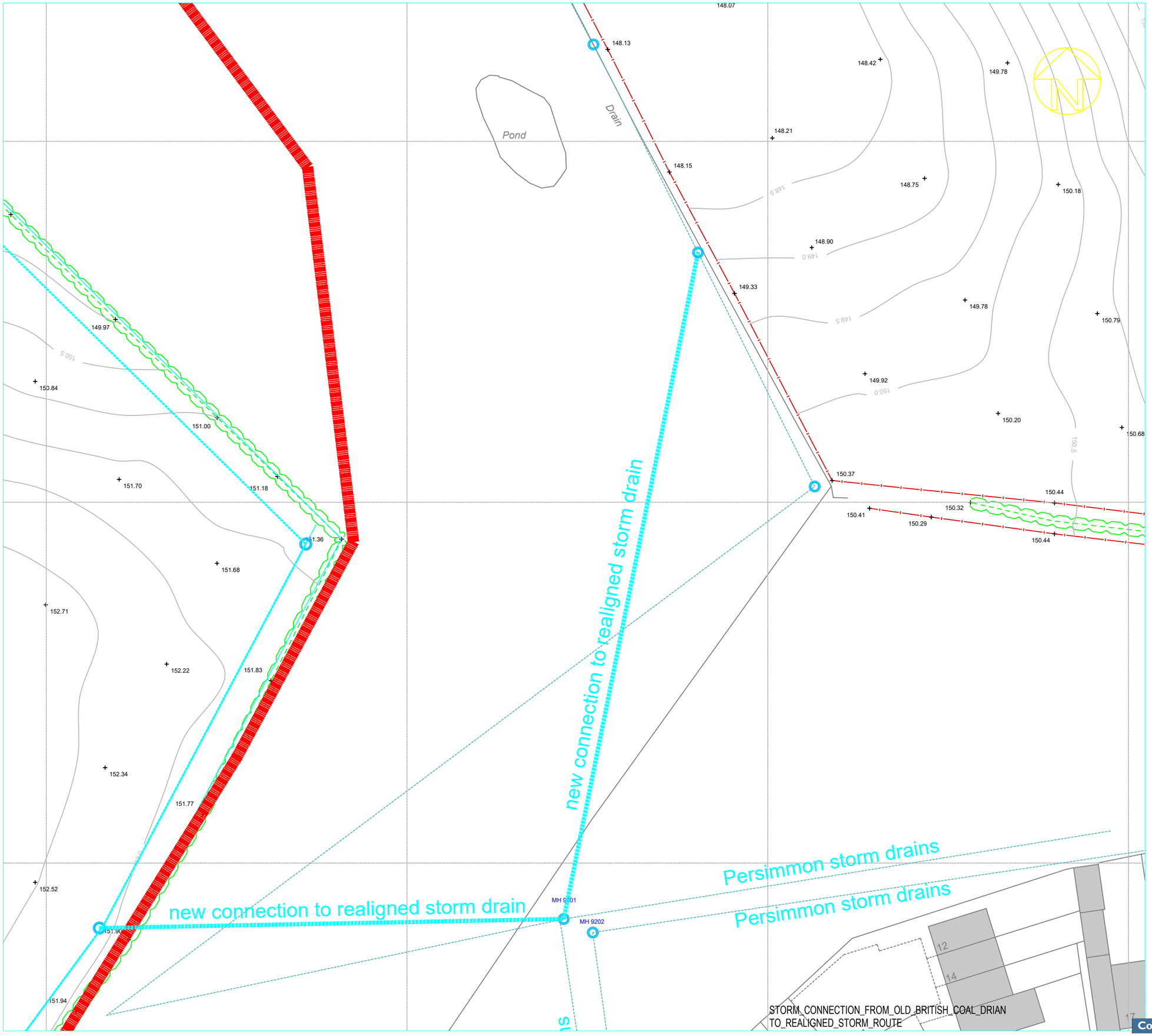
Project:
Station Road,
Bagworth

Title:
Culverted Watercourse Outfall

Status:
FOR INFORMATION

Engineer:	EC	Date:	February 2026
Drawn:	EC	Scales @ A0:	Not to scale
Checked:	DE		
Project No:	83047	Drg No: 200	Rev: I1

© copyright all rights reserved PRP.UK Ltd



STORM_CONNECTION_FROM_OLD_BRITISH_COAL_DRIAN
TO_REALIGNED_STORM_ROUTE

NOTES

GENERAL

This drawing is to be used in conjunction with all relevant drawings, specifications and details.

All dimensions are in millimetres unless noted otherwise.

Do not scale from this drawing.

Rev	Date	By	Ch

Conway Development Consultants Ltd
Bringing Developments forward

110 Melbourne Road
Ibstock
Leics
LE67 6NN
07967 718075
Conwaydevelopements@btinternet.com

SCALE	DATE
1:500@A3	23-02-2026

ST.	DWG-NO	REV
.	35-025	.

Conway Developments Ltd