Appendix B – Verification Report

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DRAINAGE VERIFICATION REPORT

AT

SIMON HOUSE, BROWNLEY ROAD MANCHESTER M22 5RA

170188-MNP-ZZ-ZZ-RP-C-0003
SEPTEMBER 2025

Directors | David Mason BEng (Hons) CEng MIStructE MICE | Frank Navarro BSc (Eng) CEng MIStructE | Stuart Pledge BEng (Hons) CEng MIStructE
Martin King MCIOB | Stephen Vernon BEng (Hons) CEng MICE MIStructE

Mason Navarro Pledge Ltd. Established in 1999. Offices in London, Hitchin and Manchester.
Registered Office: Invision House, Wilbury Way, Hitchin, Hertfordshire, SG4 0TY. Reg No. 3729171.
Consulting Civil and Structural Engineers

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Report prepared by:

R. James

Richard James
BEng (Hons) IEng MICE
Associate Director

1. INTRODUCTION

1.1. Mason Navarro Pledge Ltd have been appointed to prepare a Drainage Verification Report relating to the SuDS Drainage for the proposed development at Simon House, Brownley Road, Manchester, in order to discharge planning condition 9.

1.2. Planning Condition 9 of 137424/FO/2023 states:

'No development hereby permitted shall be occupied until details of the implementation, maintenance and management of the sustainable drainage scheme have been submitted to and approved by the local planning authority. The scheme shall be implemented and thereafter managed and maintained in accordance with the approved details. Those details shall include:

- *Verification report providing photographic evidence of construction as per design drawings;*
- *As built construction drawings if different from design construction drawings;*
- *Management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public body or statutory undertaker, or any other arrangements to secure the operation of the sustainable drainage scheme throughout its lifetime.'*

1.3. The development consists of a two-storey building with new car parking and associated external landscaping. The building has a curved standard seam roof and the elevation comprise lightweight metal insulated cladding. There is a large external plant frame building as well as some smaller ancillary buildings housing additional plant equipment, substations, etc. The main building occupancy is data servers, mechanical and electric plant rooms at first floor and data servers, mechanical plant rooms, loading bay and meet-me rooms at ground floor.

1.4. This report has been prepared by Richard James BEng (Hons) IEng MICE.

2. DESCRIPTION OF DRAINAGE

2.1 The Final Construction SuDS drainage is shown on drawings:

170188-MNP-ZZ-XX-DR-C-01800-FC01	– Drainage GA
170188-MNP-ZZ-XX-DR-C-2800-FC01	– Drainage Details Sheet 1
170188-MNP-ZZ-XX-DR-C-2801-FC01	– Drainage Details Sheet 2
170188-MNP-ZZ-XX-DR-C-2802-FC01	– Drainage Details Sheet 3

2.2 Surface water run-off from the site is discharged to ground via a system of pipes, manholes and a below ground attenuation tank.

2.3 The drainage has been designed in accordance with current best practice, Manchester City Council guidance and the SuDS manual (C697)

2.4 The drainage has been designed to accommodate all storm events up to and including the 1 in 100-year storm event including a 40% allowance for climate change.

3. CONDITION SURVEY

3.1 To confirm construction accuracy a post construction CCTV survey was carried out by S&C Drains Services Ltd in June 2025. Refer to Appendix A for full report of CCTV findings.

3.2 Refer to Appendix B for Final Construction drainage drawings for reference to CCTV survey report

3.3 Throughout the construction phase of the development, communication was maintained with the contractors and groundworkers in order to resolve any issue that arose on site and solutions were identified that would accord the design requirements and specification.

3.4 As anticipated with most projects a number of amendments were made to the drainage in response to unforeseen problems identified whilst on site. These changes were confirmed prior to the implementation of any works and all changes have been reflected within the revised construction stage revisions.

4. VERIFICATION

4.1 It can be confirmed that the drainage system has been constructed in accordance with the MNP design drawings, details and specification.

4.2 Following a review of the final construction drawings in reference to the post-construction CCTV survey, it can be confirmed that the drainage system has been competently constructed and we are confident that the system will operate effectively within the design principles and in accordance with the MNP design drawings, details and specification.

5. PHOTOGRAPHIC RECORD OF AS BUILT DRAINAGE WORKS

5.1 Attenuation Tank:





5.1 Below Ground Drainage:









6. CONCLUSION

6.1 To the best of our knowledge the Sustainable Urban Drainage System for the development has been constructed as per the agreed scheme and as detailed on the drawings attached in appendix B of this report and will therefore function as per the approved design.

APPENDICIES

APPENDIX A

CCTV SURVEY REPORT

Drainage Report

Prepared For

Site

S&C DRAINS SERVICES

Surveyor: scott

admin@unblockthedrain.com

07949949406

Total Defects for Project

0 0 0 0 0

Total DRB Grades for Project

16 0 0

wythenshawe - CCTV Survey Report : 24/06/25

Name :	S&C DRAINS SERVICES
Contact :	scott
Location :	61 stiirrups meadow
Town :	lowton
Region :	warrington
Postcode :	wa32ss
Email :	admin@unblockthedrain.com
Contact Number :	07949949406
Surveyor :	scott
Valid Certification No :	

Client Information

Name :	
Contact :	
Location :	
Town :	
Region :	
Postcode :	
Tel :	
Mobile :	
Email :	
Fax :	

Site Information

Name :	
Contact :	
Location :	
Town :	
Region :	
Postcode :	
Tel :	
Mobile :	
Email :	
Fax :	

Total Defects for Project

0 0 0 0 0

Total DRB Grades for Project

16 0 0

Report interpretation.

Overview:

Each section of the drainage system is allocated a score indicating areas that require attention. These areas are detailed in the Overview section on the following page and also at the bottom right of the first few pages. We use colour coding as an indicator of severity. Additional information concerning rehabilitation options/recomendations is included in the Overview page, which can also be used as an, "at a glance" indication of system condition. More in depth information for each section, Including images can be found later in the report. Grade indicators are as follows:

Grade A: Drain is serviceable no recommendations required

Grade B: There is an issue that might require remedial works

Grade C: There is a defect that requires remedial works, the drain is not serviceable.

Observations:

Each section of drainage reported on (manhole to manhole for example), contains detailed information about that drain and any observations made concerning condition are detailed below the header section. The observations are colour coded and given a severity score, with more significant defects being given a higher score, using a scale from 1 to 5 as detailed below:

Severity 1 to 2: These defects may require remedial monitoring

Severity 3: These defects probably require some form of remedial works

Severity 4 to 5: Defects that will require remedial repair or replacement

General:

The information provided is relevant at the time of survey. The coding system in this report is based on the Manual of Sewer Condition Classification, 5th edition (MSCC5) domestic codes (BS EN 13508-1:2003). This is the official standard for the water industry.

The severity system is based on significant experience in general practice and the 1 -5 grades represent the severity of individual defects: 5 representing a more serious defect.

Please feel free to contact us for further explanation or pricing for remedial works required.

Overview

Section: 1 **From: MH EXISTING** **To: MHSW5** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 225** **Material: Polyvinyl Chloride** **Use: Surface Water**
Section: 2 **From: MHFWC03** **To: MH FW02** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 150** **Material: Polyvinyl Chloride** **Use: Foul**
Section: 3 **From: MH FW01** **To: UP STREAM** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 150** **Material: Polyvinyl Chloride** **Use: Foul**
Section: 4 **From: MH FW1** **To: MH FE2** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 150** **Material: Polyvinyl Chloride** **Use: Foul**
Section: 5 **From: MH FW 3** **To: MH FW 6** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 150** **Material: Polyvinyl Chloride** **Use: Foul**
Section: 6 **From: MH FW4** **To: UP PIPE A** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Polyvinyl Chloride** **Use: Foul**

Total Defects for Project

0 0 0 0 0

Total DRB Grades for Project

16 0 0

Section: 7 **From: MH FW4** **To: PIPE B** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Polyvinyl Chloride** **Use: Foul**
Section: 8 **From: MHFW5** **To: MHFW6** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Polyvinyl Chloride** **Use: Foul**
Section: 9 **From: MH FW5** **To: MH PIPE** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Polyvinyl Chloride** **Use: Foul**
Section: 10 **From: MHFW5** **To: MHFW4** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Polyvinyl Chloride** **Use: Foul**
Section: 11 **From: MHFW7** **To: MHFW6** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Polyvinyl Chloride** **Use: Foul**
Section: 12 **From: MH7** **To: MH EXISTING** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Polyvinyl Chloride** **Use: Foul**
Section: 13 **From: MH SW2** **To: MH SW1** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 225** **Material: Polyvinyl Chloride** **Use: Surface Water**

Total Defects for Project

0 0 0 0 0

Total DRB Grades for Project

16 0 0

Section: 14 **From: MH SW4** **To: MH SW3** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 225** **Material: Polyvinyl Chloride** **Use: Surface Water**
Section: 15 **From: MHSW4** **To: MHSW2** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 225** **Material: Polyvinyl Chloride** **Use: Surface Water**
Section: 16 **From: MH** **To: MH** **MH**	Grade A	**DRB Grade: A** **Pipe Size: 225** **Material: Polyvinyl Chloride** **Use: Surface Water**

Site: DELTA HOUSE, WYTHENSHAWE

Section 1

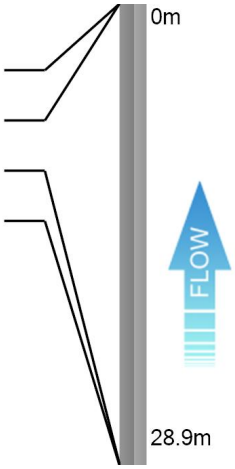
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MH EXISTING	Finish Node Ref:	MHSW5	Direction:	U	Height/Dia:	225
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	28.9	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
28.80m	REM	General remark			0:00:00
28.90m	MHF	Finish node type, manhole			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 1

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
28.80m	0:00:00	REM	General remark HYDRO BRAKE	
28.90m		MHF	Finish node type, manhole MH SURVEY COMPLETE	

Site: DELTA HOUSE, WYTHENSHAWE

Section 2

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MHFWC03	Finish Node Ref:	MH FW02	Direction:	U	Height/Dia:	150
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	0	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole				—
00.00m	WL	Water level 0%			0:00:00	—
00.00m	MHF	Finish node type, manhole				—



Total Defects for section

0	0	0	0	0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 2

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.00m		MHF	Finish node type, manhole MH SURVEY COMPLETE	

Site: DELTA HOUSE, WYTHENSHAWE

Section 3

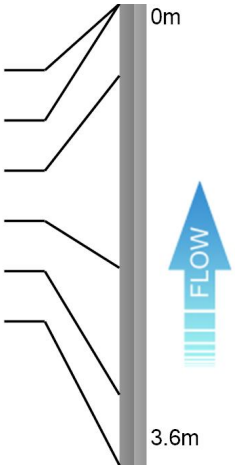
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MH FW01	Finish Node Ref:	UP STREAM	Direction:	U	Height/Dia:	150
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	3.6	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
00.56m	LUH	Line of drain/sewer deviates up [half]			0:00:06
02.06m	LRH	Line of drain/sewer deviates right [half]			0:00:14
03.05m	REM	General remark			0:00:00
03.60m	MHF	Finish node type, manhole			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 3

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.56m	0:00:06	LUH	Line of drain/sewer deviates up [half]	
02.06m	0:00:14	LRH	Line of drain/sewer deviates right [half]	
03.05m	0:00:00	REM	General remark REST BEND SURNEY COMPLETE	
03.60m		MHF	Finish node type, manhole MH REST BEND	

Site: DELTA HOUSE, WYTHENSHAWE

Section 4

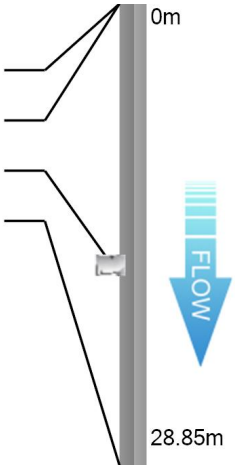
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MH FW1	Finish Node Ref:	MH FE2	Direction:	D	Height/Dia:	150
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	28.85	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
16.99m	JN	Junction 01 : 100mm Diameter			0:00:25
28.85m	MHF	Finish node type, manhole			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 4

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
16.99m	0:00:25	JN	Junction at 01 o'clock: 100mm Diameter	
28.85m		MHF	Finish node type, manhole MH SRVEY COMPLETE	

Site: DELTA HOUSE, WYTHENSHAWE

Section 5

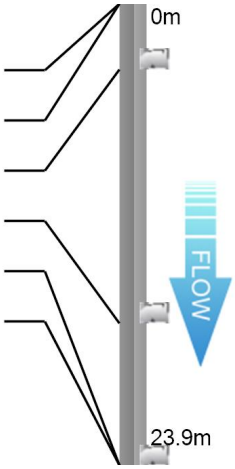
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MH FW 3	Finish Node Ref:	MH FW 6	Direction:	D	Height/Dia:	150
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	23.9	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
03.40m	JN	Junction 11 : 100mm Diameter			0:00:21
16.55m	JN	Junction 11 : 100mm Diameter			0:00:53
23.90m	JN	Junction 10 : 100mm Diameter			0:01:41
23.90m	MHF	Finish node type, manhole			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 5

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
03.40m	0:00:21	JN	Junction at 11 o'clock: 100mm Diameter	
16.55m	0:00:53	JN	Junction at 11 o'clock: 100mm Diameter	
23.90m	0:01:41	JN	Junction at 10 o'clock: 100mm Diameter	
23.90m		MHF	Finish node type, manhole MH SURVEY COMPLETE 30.21	

Site: DELTA HOUSE, WYTHENSHAWE

Section 6

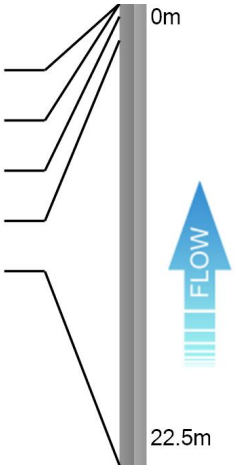
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MH FW4	Finish Node Ref:	UP PIPE A	Direction:	U	Height/Dia:	100
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	22.5	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
00.62m	LRF	Line of drain/sewer deviates right [full]			0:00:07
01.78m	LLH	Line of drain/sewer deviates left [half]			0:00:10
22.50m	MHF	Finish node type, manhole			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 6

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.62m	0:00:07	LRF	Line of drain/sewer deviates right [full]	
01.78m	0:00:10	LLH	Line of drain/sewer deviates left [half]	
22.50m		MHF	Finish node type, manhole MH SURVEY COMPLETE REST BEND	

Site: DELTA HOUSE, WYTHENSHAWE

Section 7

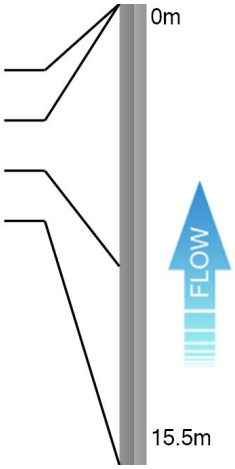
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MH FW4	Finish Node Ref:	PIPE B	Direction:	U	Height/Dia:	100
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	15.5	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
08.82m	LRH	Line of drain/sewer deviates right [half]			0:00:19
15.50m	MHF	Finish node type, manhole			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 7

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
08.82m	0:00:19	LRH	Line of drain/sewer deviates right [half]	
15.50m		MHF	Finish node type, manhole MH LINE UP SHARP REST BEND	

Site: DELTA HOUSE, WYTHENSHAWE

Section 8

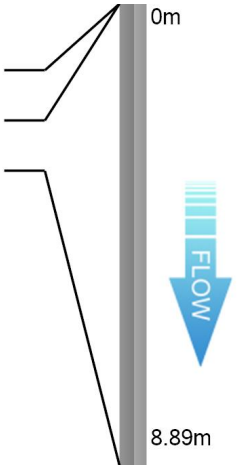
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MHFW5	Finish Node Ref:	MHFW6	Direction:	D	Height/Dia:	100
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	8.89	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
08.89m	MHF	Finish node type, manhole			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 8

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
08.89m		MHF	Finish node type, manhole MH SURVEY COMPLETE	

Site: DELTA HOUSE, WYTHENSHAWE

Section 9

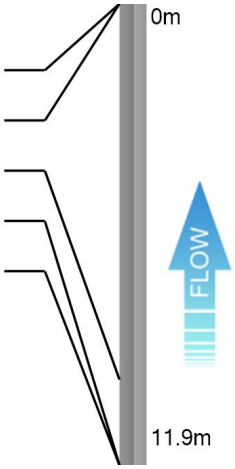
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MH FW5	Finish Node Ref:	MH PIPE	Direction:	U	Height/Dia:	100
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	11.9	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
09.69m	LRH	Line of drain/sewer deviates right [half]			0:00:18
11.89m	LRH	Line of drain/sewer deviates right [half]			0:00:20
11.90m	MHF	Finish node type, manhole			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 9

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
09.69m	0:00:18	LRH	Line of drain/sewer deviates right [half]	
11.89m	0:00:20	LRH	Line of drain/sewer deviates right [half]	
11.90m		MHF	Finish node type, manhole MH SURVEY COMPLETE	

Site: DELTA HOUSE, WYTHENSHAWE

Section 10

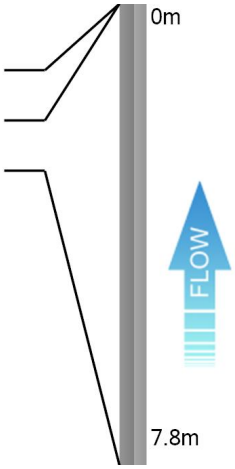
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MHFW5	Finish Node Ref:	MHFW4	Direction:	U	Height/Dia:	100
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	7.8	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
07.80m	MHF	Finish node type, manhole			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 10

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
07.80m		MHF	Finish node type, manhole MH	

Site: DELTA HOUSE, WYTHENSHAWE

Section 11

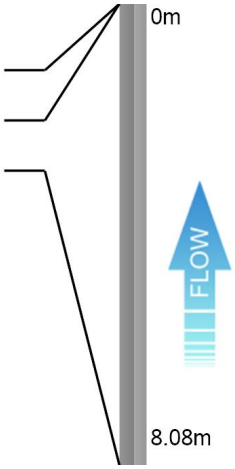
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MHFW7	Finish Node Ref:	MHFW6	Direction:	U	Height/Dia:	100
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	8.08	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
08.08m	MHF	Finish node type, manhole			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 11

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
08.08m		MHF	Finish node type, manhole MH	

Site: DELTA HOUSE, WYTHENSHAWE

Section 12

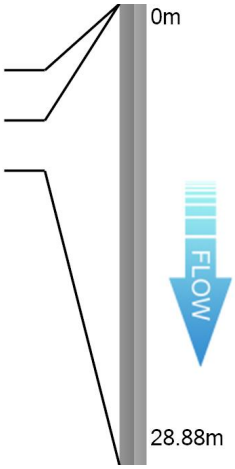
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MH7	Finish Node Ref:	MH EXISTING	Direction:	D	Height/Dia:	100
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	28.88	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
28.88m	MHF	Finish node type, manhole			



Total Defects for section

0	0	0	0	0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 12

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
28.88m		MHF	Finish node type, manhole MH	

Site: DELTA HOUSE, WYTHENSHAWE

Section 13

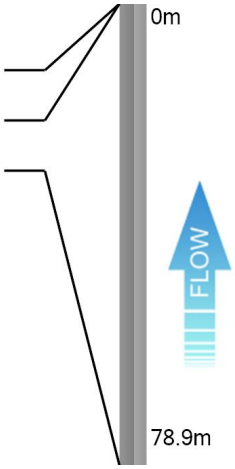
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MH SW2	Finish Node Ref:	MH SW1	Direction:	U	Height/Dia:	225
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	78.9	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
78.90m	MHF	Finish node type, manhole			



Total Defects for section

0	0	0	0	0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images — Section 13

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
78.90m		MHF	Finish node type, manhole MH	

Site: DELTA HOUSE, WYTHENSHAWE

Section 14

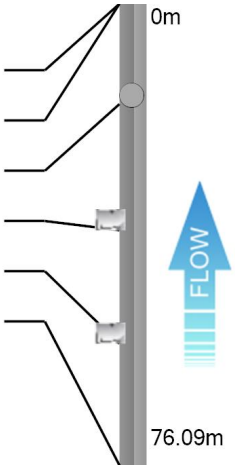
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MH SW4	Finish Node Ref:	MH SW3	Direction:	U	Height/Dia:	225
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	76.09	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
16.53m	JN	Junction 12 : 100mm Diameter			0:00:57
37.32m	JN	Junction 01 : 100mm Diameter			0:02:02
56.04m	JN	Junction 02 : 100mm Diameter			0:03:00
76.09m	MHF	Finish node type, manhole			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 14

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
16.53m	0:00:57	JN	Junction at 12 o'clock: 100mm Diameter	
37.32m	0:02:02	JN	Junction at 01 o'clock: 100mm Diameter	
56.04m	0:03:00	JN	Junction at 02 o'clock: 100mm Diameter	
76.09m		MHF	Finish node type, manhole MH	

Site: DELTA HOUSE, WYTHENSHAWE

Section 15

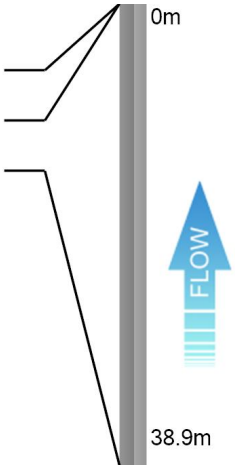
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MHSW4	Finish Node Ref:	MHSW2	Direction:	U	Height/Dia:	225
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	38.9	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
38.90m	MHF	Finish node type, manhole			



Total Defects for section

0	0	0	0	0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 15

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
38.90m		MHF	Finish node type, manhole MH	

Site: DELTA HOUSE, WYTHENSHAWE

Section 16

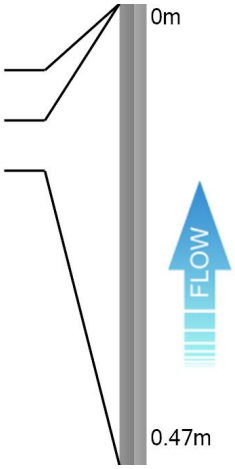
Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
	DELTA HOUSE	WYTHENSHAWE		scott	24/06/2025

Start Node Ref:	MH	Finish Node Ref:	MH	Direction:	U	Height/Dia:	225
Start Node Depth:	0.00	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	PVC	Cleaned	N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	0.47	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
00.47m	MHF	Finish node type, manhole			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 16

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.47m		MHF	Finish node type, manhole MH	

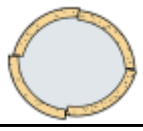
A guide to defects and other observations in drainage systems

More detailed information can be found in the National Standard (BS EN 13508-1:2003) and in the Manual of Sewer Condition Classification (MSCC) 5th Edition, written by the Water Research Centre (WRc).

Use	
Code	**Description**
C	Combined
F	Foul
S	Surface Water
T	Trade Effulent
W	Culverted Watercourse
Z	Other

Common Materials	
Code	**Description**
VC	Vitrified Clay
PVC	Polyvinyl Chloride
CO	Concrete
CI	Cast Iron
PF	Pitch Fibre
PE	Polyethylene
DI	Ductile Iron

Start Node	Description	Finish Node
MH	Manhole	MHF
IC	Inspection Chamber	ICF
GY	Gulley	GYF
RE	Rodding Eye	REF
SK	Soakaway	SKF
BN	Buchan Trap	BNF
BR	Major Connection without Ref	BRF
CP	Cacth Pit	CPF
OC	Other Special Chamber	OCF
OF	Outfall	OFF
OS	Oil Seperator	OSF
WR	Winser Trap	WRF
LH	Lamphole	LHF

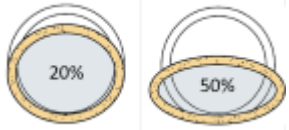
Code	Observation	Description	Attributes	
B	Broken	Pieces pipe have visibly moved	Defined by clock references. Associated with deformity in rigid pipe	
CC CL CM CR	Cracks	Cracks are break lines that are not visibly open	Defined by clock reference position/s. Longitudinal and radiating cracks attract only one clock reference	
CN	Connection	Lateral pipe has been connected after original construction	Described by clock reference position and diameter	

Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

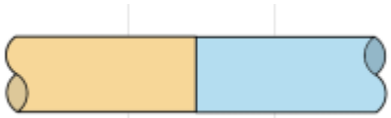
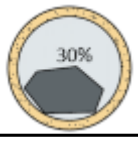
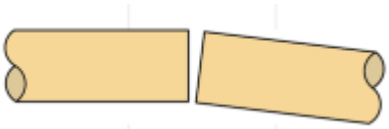
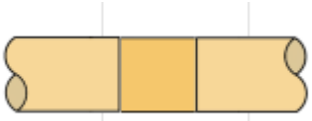
CX(I)	Defective Connection (Intruding)	Defective by intrusion or damage due to factors including: cracks, fractures, obstruction, position etc	Described by clock reference position and diameter (+ % intrusion)	
CU	Loss of Vision	Lens of camera is obscured by debris, water etc. Operator is unable to see drain clearly	'W' can be added if loss of vision is due to water	
D	Deformed	Pipe has lost its structure	Described by percentage loss of height or width. Recorded in 5% increments	
DEE	Deposits Encrustation	Eg. Attached scale deposits evident	Described by clock referenced position and percentage loss of cross-sectional area (5% increments)	
DEG	Deposits Grease	Attached grease deposits evident	Described by clock referenced position and percentage loss of cross-sectional area (5% increments)	
DER DES	Deposits Coarse/Fine	Settled deposits on the invert of the pipe.	Described by percentage loss of height or diameter. Recorded in 5% increments.	
FC FL FM FR	Fractures	Fractures are visibly open. Pieces of pipe have not moved	Defined by clock reference position/s. Longitudinal and radiating fractures attract only one clock reference	
H	Holes	Section of pipe fabric is missing	Defined by clock reference location. Normally two clock references	
I	Infiltration	Water is infiltrating the pipe, normally via a joint but could be via another defect	Can be described in Remarks using terms such as Seeper, Dripper and Runner	
JDL	Joint Displaced Large	Pipe has moved at joint, perpendicular to axis of pipe	More than 1.5 times the pipe wall thickness must be visible	

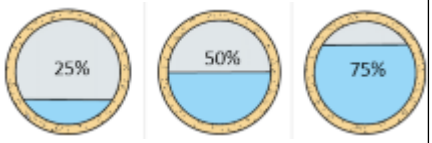
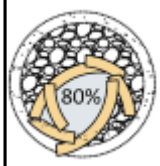
Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

JDM	Joint Displaced Medium	Pipe has moved at joint, perpendicular to axis of pipe	Between 1 and 1.5 times the pipe wall thickness must be visible	
JN	Junction	Lateral pipe was installed at construction	Described by clock reference position and diameter	
JX	Defective Junction	Lateral pipe was installed at construction but is defective in some way	Joint can be defective due to factors including: cracks, fractures, obstruction, position etc	
LD **LU** **LL** **LR**	Line Deviation	LD = Line Down, LU = Line Up, LL = Line Left, LR = Line Right. Not related to CIPP lining.	Additional modifiers are added: Q = Quarter (22.5), H = Half (45), F = Full (90). In degrees.	
LC	Lining Changes	If the drain is lined, the lining material has changed	Position of lining material change	
MC	Material Change	The pipe material has changed	Position of change is noted. Type of material change can be defined	
OB	Obstruction/Obstacle	An obstruction or obstacle is affecting the flow through the pipe	Described in percentage loss of cross-sectional area	
OJL	Open Joint Large	Pipe has moved at joint, along the axis of pipe	More than 1.5 times the pipe wall thickness must be visible	
OJM	Open Joint Medium	Pipe has moved at joint, along the axis of pipe	Between 1 and 1.5 times the pipe wall thickness must be visible	
PC	Pipe Length Changes	Length of individual pipe changes	New length described at this position	

R	Roots	Evidence of root ingress	Roots will normally infiltrate via bad joints, cracks, fractures, breaks etc	
REM	Remark	General remark	Used for additional information	
S	Surface Damage	This might include corrosion, spalling and chemical attack	Position only. Additional information can be added in Remarks	
SA	Survey Abandoned	Used when a survey cannot continue for any reason	The reason for abandoning a survey should be noted in the remarks area	
SC	Shape Changes	Dimension of drain changes	Diameter dimension change recorded. Second dimension is recorded for no circular pipe changes	
SR	Sealing Ring	Sealing ring intrudes into pipe at joint	Described by clock reference position	
V	Vermin	Evidence of Vermin in pipe	Can also be used for evidence within manhole etc	
WL	Water Level	Used to record changes in water level. Always shown at the beginning of every survey, if dry noted as 00.	Described by percentage of height or diameter. Recorded in 5% increments	
XP	Collapsed	Drain is suffering from complete loss of structural integrity. Always followed by SA - Survey Abandoned	Percentage loss of cross-sectional area is recorded. Other related structural defects are not recorded	

APPENDIX B

DRAINAGE LAYOUT AND DETAILS

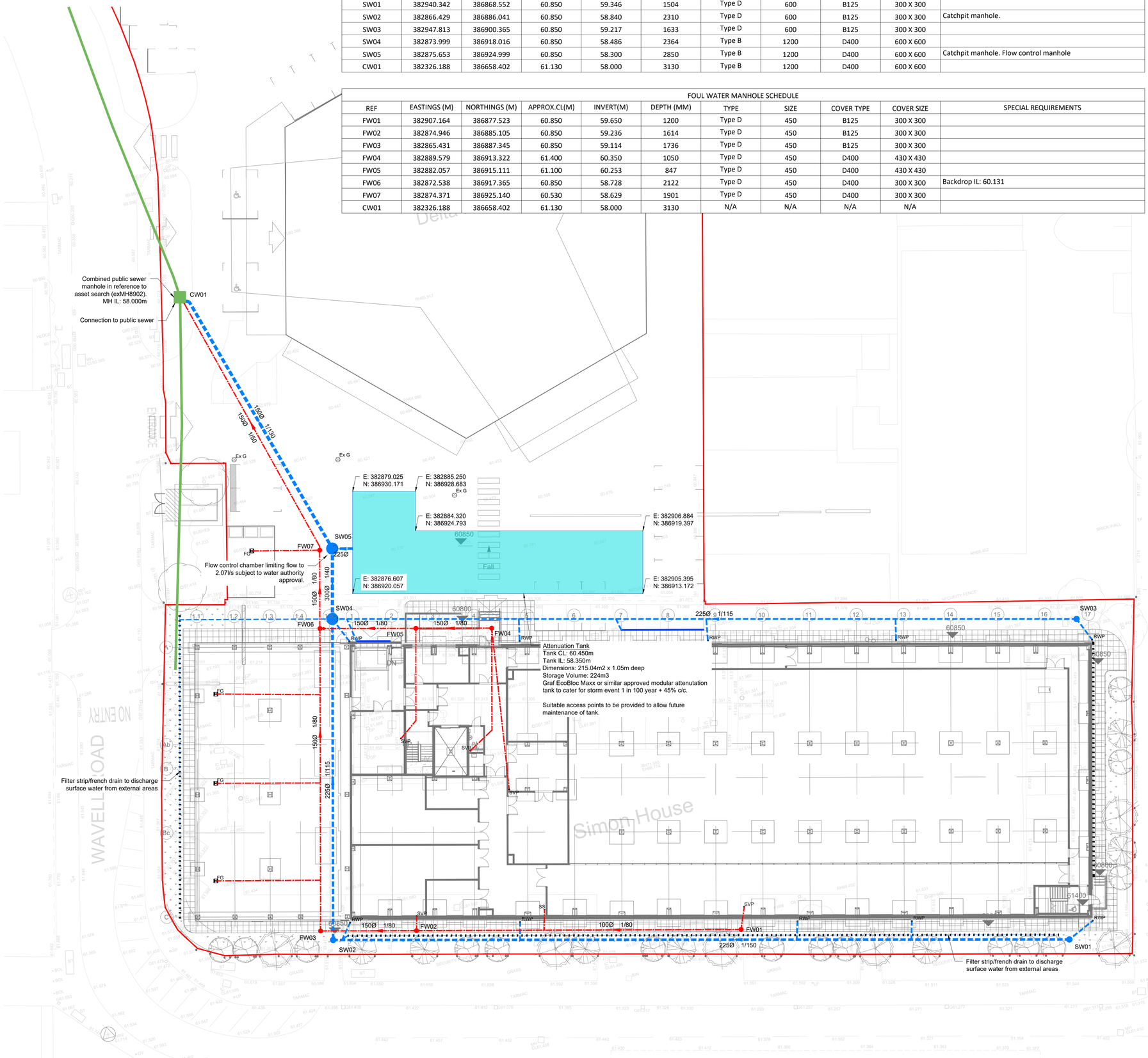
2023 Mason Navarro Pledge

SURFACE WATER MANHOLE SCHEDULE

REF	EASTINGS (M)	NORTHINGS (M)	APPROX.CL(M)	INVERT(M)	DEPTH (MM)	TYPE	SIZE	COVER TYPE	COVER SIZE	SPECIAL REQUIREMENTS
SW01	382940.342	386868.552	60.850	59.346	1504	Type D	600	B125	300 X 300	
SW02	382866.429	386886.041	60.850	58.840	2310	Type D	600	B125	300 X 300	Catchpit manhole.
SW03	382947.813	386900.365	60.850	59.217	1633	Type D	600	B125	300 X 300	
SW04	382873.999	386918.016	60.850	58.486	2364	Type B	1200	D400	600 X 600	
SW05	382875.653	386924.999	60.850	58.300	2850	Type B	1200	D400	600 X 600	Catchpit manhole. Flow control manhole
CW01	382326.188	386658.402	61.130	58.000	3130	Type B	1200	D400	600 X 600	

FOUL WATER MANHOLE SCHEDULE

REF	EASTINGS (M)	NORTHINGS (M)	APPROX.CL(M)	INVERT(M)	DEPTH (MM)	TYPE	SIZE	COVER TYPE	COVER SIZE	SPECIAL REQUIREMENTS
FW01	382907.164	386877.523	60.850	59.650	1200	Type D	450	B125	300 X 300	
FW02	382874.946	386885.105	60.850	59.236	1614	Type D	450	B125	300 X 300	
FW03	382865.431	386887.345	60.850	59.114	1736	Type D	450	B125	300 X 300	
FW04	382889.579	386913.322	61.400	60.350	1050	Type D	450	D400	430 X 430	
FW05	382882.057	386915.111	61.100	60.253	847	Type D	450	D400	430 X 430	
FW06	382872.538	386917.365	60.850	58.728	2122	Type D	450	D400	300 X 300	Backdrop IL: 60.131
FW07	382874.371	386925.140	60.530	58.629	1901	Type D	450	D400	300 X 300	
CW01	382326.188	386658.402	61.130	58.000	3130	N/A	N/A	N/A	N/A	



General Drainage Specification

1. All private drains shall be constructed and commissioned in accordance with the relevant sections of the Building Regulations Approved Documents and relevant British Standards.
2. All rainwater pipes to be 150Ø. All other pipework to be 100Ø minimum unless noted otherwise.
3. Private surface water drains shall be laid at a minimum gradient of 1 in 100 or to the gradients and invert levels shown.
4. Private foul water drains shall be laid at a minimum gradient of 1 in 80 or to the gradients and invert levels shown
5. Foul pipework connections to first access point shall be laid at a minimum gradient of 1 in 40 or to the levels shown.
6. All connections to be made soffit to soffit unless noted otherwise.
7. Pipe bedding to be Class 'B' bedding for rigid pipes and Class 'T' bedding for flexible pipes (100 mm granular bed and surround).
8. Where cover to soffit of pipe is less than 600 mm in private areas, the following shall apply:-
   a) Vitrified clay pipes - provide a 100 mm min. thick concrete bed and surround (instead of class 'B' & 'T' bedding) and a 13 mm thick compressible filler at each joint.
   b) uPVC pipes - provide a concrete bridging (in addition to class 'B' or 'T' bedding) in accordance with appendix A15, Building Regulations part 'H'.
9. All concrete indicated in the construction of drainage infrastructure (pipe bedding, bridging, manholes etc) shall be standardised prescribed concrete ST2 and is to conform to BS EN 206-1 and BS 8500-2. The maximum aggregate size shall be 20mm.
10. Foundations adjacent to pipe runs or manholes are to have their formation level set above the invert level no higher than the equivalent of the horizontal distance between the pipe/excavation trench and the foundation, minus 500mm.
11. Excavations for manholes, pipe runs etc located within a 45 degree load distribution splay from any adjoining existing foundations, are to be adequately supported for the duration of the works and pipe runs protected as note 8 above.
12. Where excavations for pipe runs are parallel and in close proximity to each other and/or other service trenches, The Contractor shall ensure that adequate safety measures, including temporary shoring, are provided in line with current health & safety legislation and good practice. Particular attention is to be paid to adjacent trenches of differing invert levels.
13. All existing drainage found on site during the works shall be investigated, its operational status confirmed and the following applied:-
    a) Inoperative drainage shall be cut back and pipe runs filled with concrete grout.
    b) 'Live' drainage shall be advised to the engineer.

General

1.1. This drawing is to be read in conjunction with all Architect's, Engineer's and Services Engineer's drawings and specifications.
1.2. Do not scale from any of the Civils drawings. All dimensions to be verified on site and any discrepancies should be highlighted.
1.3. All materials to comply with the relevant British Standard.

Legend

Surface Water	Description
	New surface water drain
	New surface water manhole (Size indicated on Manhole Schedule)
	New modular storage tank
RWP	New rain water down pipe
Ex G	Existing Road Gully
	Filter Strip/French Drain
	Linear Drainage Channel

Foul	Description
	New foul water drain
	Backdrop
	New shallow foul inspection chamber (typ. 450mmØ) upto 1200mm deep
SVP	New soil and vent pipe
FG	New foul gully

Combined	Description
	Existing combined sewer
	Existing combined sewer manhole
	New combined sewer manhole (Size indicated on Manhole Schedule)

General	Description
	Site Boundary

⚠ Setting out of internal foul drainage points by others.

⚠ Potential that existing services may require diverting to accommodate the proposed building.

⚠ These drawings are based on TTSP drawings 3447-TSP-ZZ-02-DR-A-20-002 and 3447-TSP-ZZ-XX-DR-A-00-002

⚠ CCTV drainage survey to be undertaken to confirm details of existing drainage.

⚠ Cover depth for attenuation tank based on existing topographical levels.

⚠ Contractor to confirm setting out of tank in line with the requirements of the below ground drainage shown on plan.

CR03 Construction Record 23.07.2025 RJ

REV COMMENTS DATE CHK

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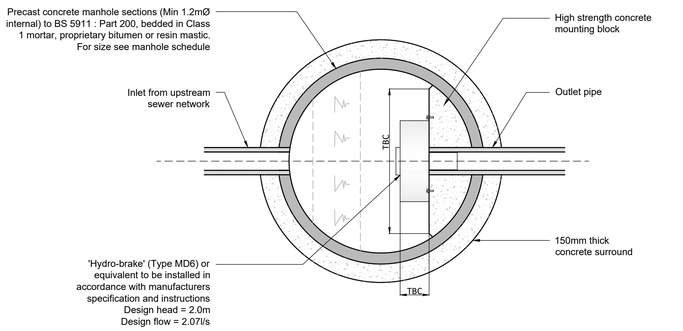
KS DC Manchester

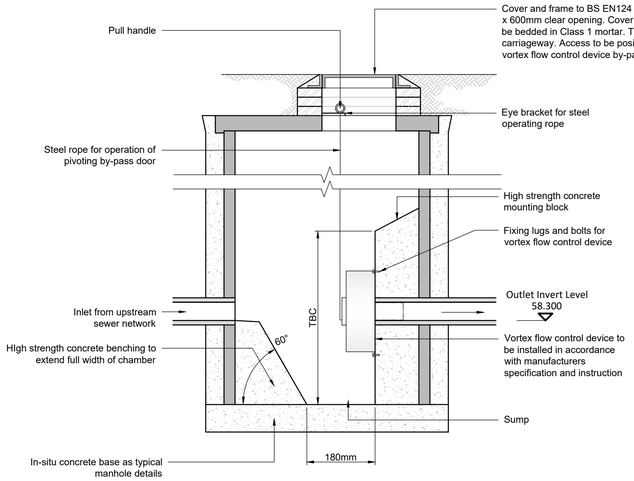
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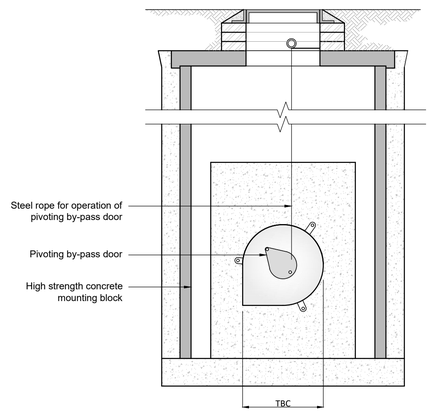
Drainage General Arrangement

SCALE @ A1	DRAWN BY	DATE
1:200	AGD	August 2023
MNP No.	STATUS CODE	REV
223169	CR	CR03

Ref No.
170188-MNP-ZZ-XX-DR-C-01800

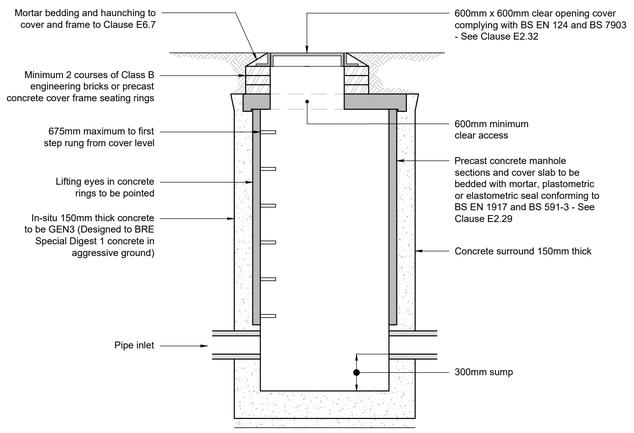


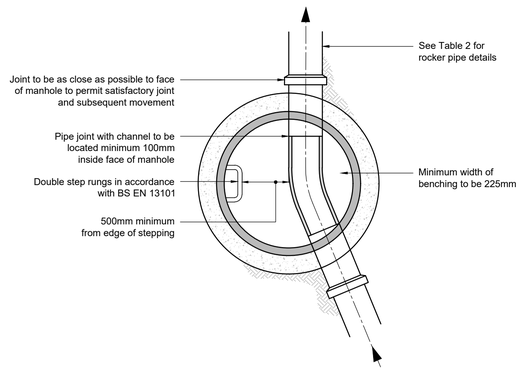




Typical Flow Control Manhole

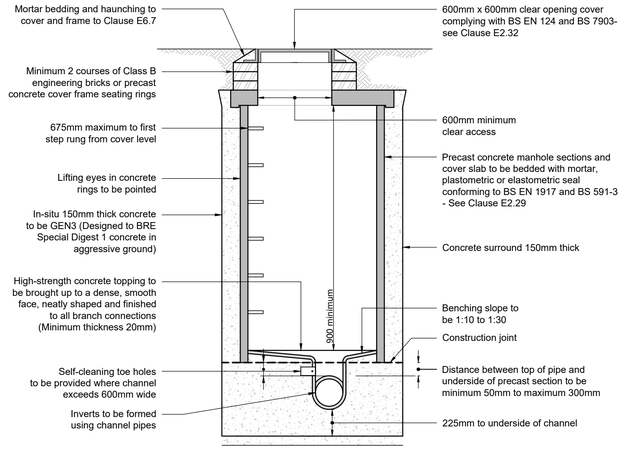
Hydro-brake or Similar approved
(Scale 1:25)

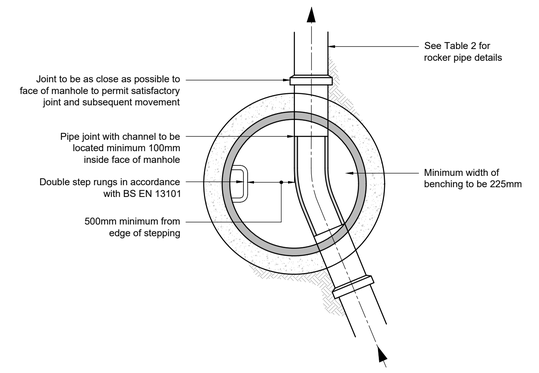




Typical Manhole Detail - Type B with Sump

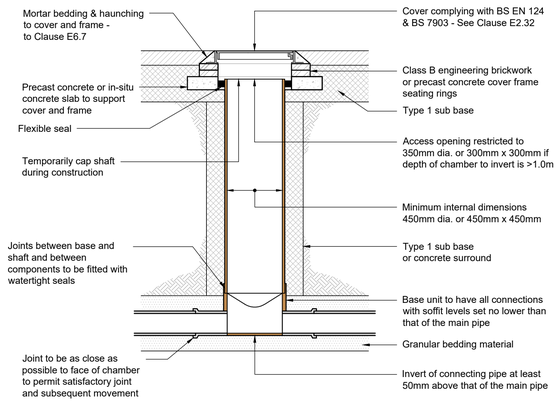
Max depth from cover level to soffit of pipe 3.0m
(Scale 1:25)





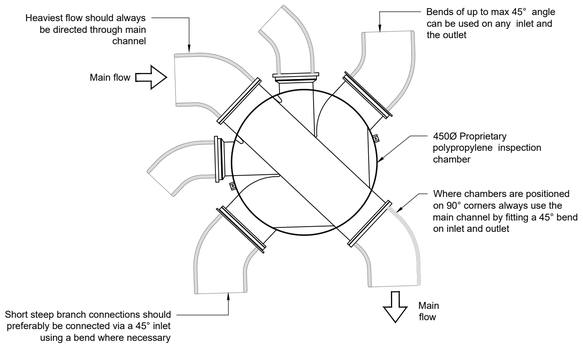
Typical Manhole Detail - Type B

Max depth from cover level to soffit of pipe 3.0m
(Scale 1:25)



Typical Inspection Chamber Detail - Type D

Max depth from cover level to soffit of pipe in areas subject to vehicle loading 3.0m, non-entry
(Scale 1:25)



450Ø Chamber with 3No. 150Ø Inlets & 2No. 100Ø 45° Inlets.

Polypropylene Inspection Chamber Typical Pipework Arrangements

(Scale 1:10)

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administrator for comment before work begins.
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Rocker Pipe Length

Nominal diameter of pipe (mm)	Maximum effective length (m)
150 TO 600	0.6
675 TO 750	1.0
OVER 750	1.25

Manhole Cover Type

Location of manhole	Cover class
Landscape areas	A15
Footpaths and driveways	B125
Car parks	C250
Highway (Inc areas with HGV access)	D400

Compressible Filler and Packing for Pipelines

Nominal diameter of pipe (mm)	Thickness of compressible filler (mm)
Less than 450	18
450 to 1200	36
Exceeding 1200	54

CR03 Construction Record 23.07.25 RJ
REV COMMENTS DATE CHK

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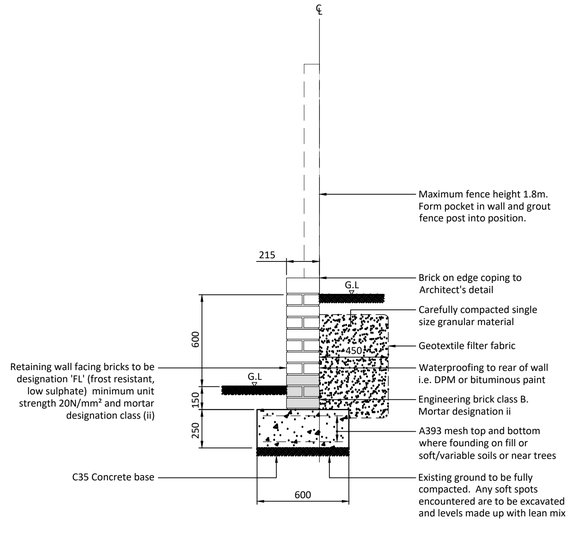
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Site Wide Typical Drainage Details Sheet 1

SCALE @ A1	DRAWN BY	DATE
1:25	AGD	July 2023

MNP No.	STATUS CODE	REV
223169	CR	CR03

Ref No.
170188-MNP-ZZ-XX-DR-C-2800

2022 Mason Navarro Pledge

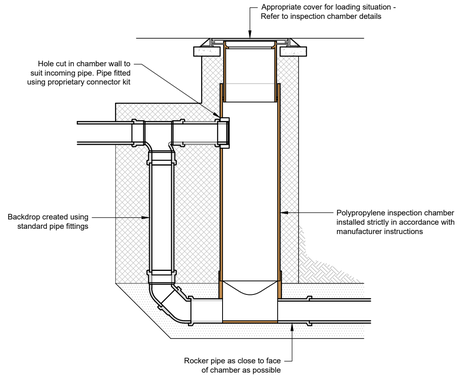


600 Masonry Retaining Wall

(No Fence)

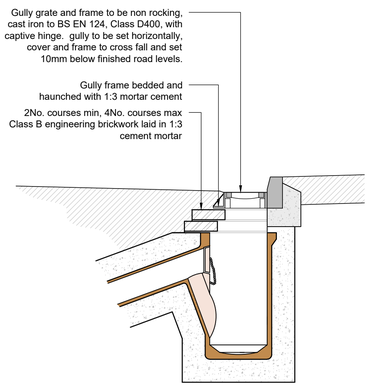
General

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administrator for comment before work begins.
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Typical Inspection Chamber Backdrop Detail

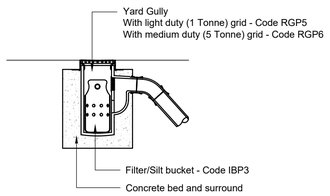
(Scale 1:25)



Gully Detail

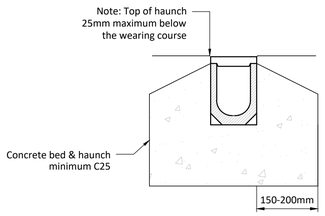
450mm x 900mm for Road Gully, 375mm x 750mm for Car Park Gully

(Scale 1:25)



Trapped Yard Gully

(Scale 1:25)



Note: All drainage channels shall be installed strictly in accordance with manufacturers instructions

ACO Drain Detail

(Scale 1:10)

CR03 Construction Record 23.07.25 RJ

REV COMMENTS DATE CHK

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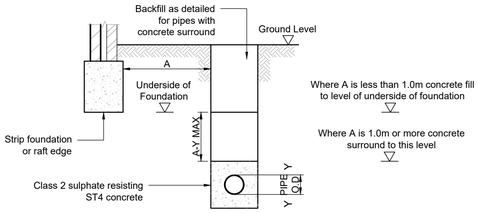
Site Wide Typical Drainage Details Sheet 2

SCALE @ A1	DRAWN BY	DATE
1:25	AGD	July 2023
MNP No.	STATUS CODE	REV
223169	CR	CR03

Ref No.

170188-MNP-ZZ-XX-DR-C-2801

2022 Mason Navarro Pledge

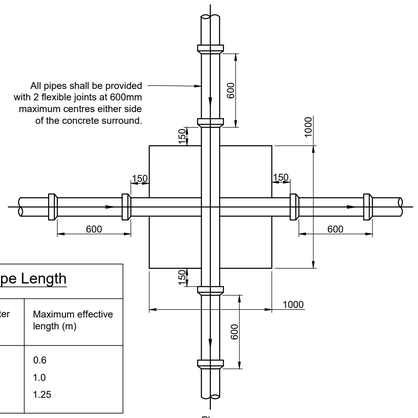


Pipe Runs Near Buildings
(Scale 1:25)

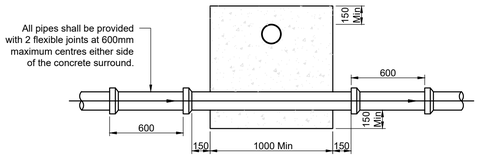
PIPE Ø (mm)	Y minimum		MAXIMUM TRENCH WIDTH	L
	Y1 min	Y2 min		
150	100	200	750	18
225	100	200	825	18
300	100	200	925	18
375	100	200	1090	18
450	150	200	1175	36
525	150	250	1270	36
600	150	250	1370	36
675	150	250	1420	36
750	225	300	1500	36
825	225	300	1585	36

Dimensions for Pipe Bedding

Flexible joints shall be provided in concrete, by inserting compressible board at intervals not exceeding 5000mm precut to diameter, height and width equal to the concrete cross section.
Refer to dimensions for pipe bedding tables for thickness of filler.
For values of y refer to dimensions for pipe bedding tables



Plan

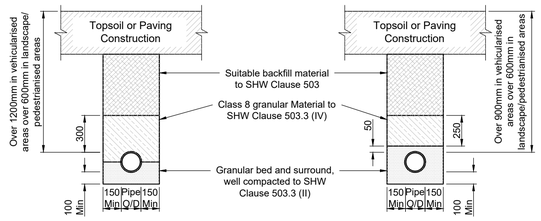


Section

Rocker Pipe Length	
Nominal diameter of pipe (mm)	Maximum effective length (m)
150 TO 600	0.6
675 TO 750	1.0
OVER 750	1.25

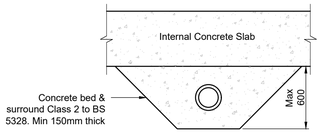
Concrete surround shall be provided where the distance between the soffit of the lower drain and the barrel of the highest drain is less than 300mm

Pipe to Pipe Crossover
(Scale 1:25)



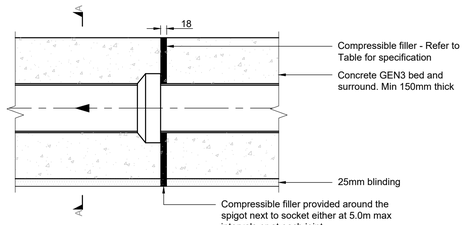
Bedding beneath and at the sides of the pipe to be well compacted the first 300mm of fill above the crown of the pipe is to be lightly tamped by hand. Mechanical compaction may be used only above this level. geotextiles may be used where directed or approved by the engineer to contain bedding material in certain soils e.g. running sand in very wet conditions, where directed or approved by the engineer a temporary land drain may be laid within the granular bed.

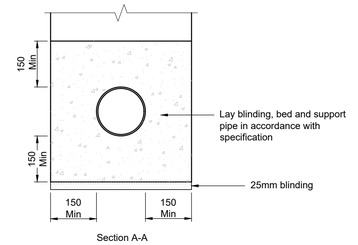
Pipe Bedding Details
(Scale 1:25)



Note
Any pipe beyond max depth, refer to pipe bedding details Class B & T

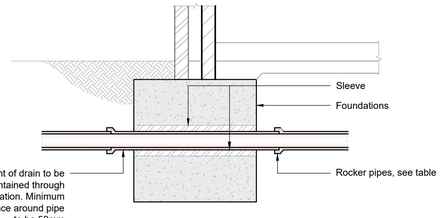
Pipe Bedding Under Slab
(Scale 1:25)





Pipe Bedding Class Z
(Scale 1:10)

General
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administrator for comment before work begins.
1.4 All materials to comply with the relevant British Standard.



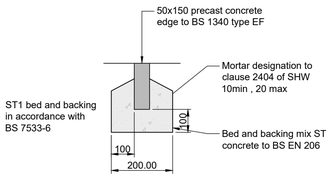
Drains Through Foundations
(Scale 1:25)

Rocker Pipe Length (mm)	Pipe Diameter (mm)
600	150 - 600
1000	675 - 750
1250	> 750

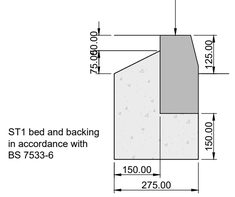
Drain sleeve/duct to be located wholly within the middle third of the foundation depth. Engineer is to be advised if this is not possible. In normal soil conditions the sleeve/duct is to give a 50mm clearance all round the outside of the drain pipe (this may be achieved by lightly packing the space with compressible filler material) maximum sleeve size to be 300mm without reference to the Engineer.

or

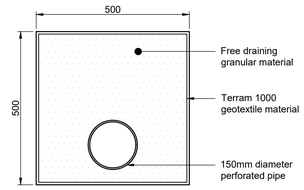
Sleeve/duct is to give a 50mm clearance all round the outside of the drain pipe (this may be achieved by lightly packing the space with compressible filler material) maximum sleeve size to be 300mm without reference to the Engineer.



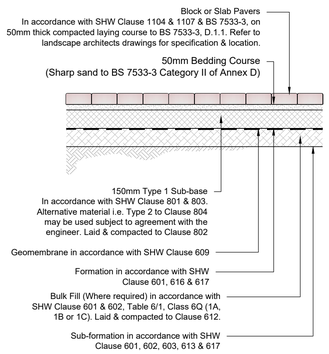
Kerb Detail - EF
(Scale 1:10)



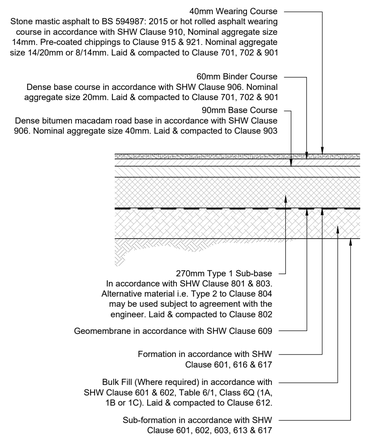
Kerb Detail - HB2
(Scale 1 :10)



French Drain Detail
(Scale 1:10)



Pedestrian Block Paving
(Scale 1:25)



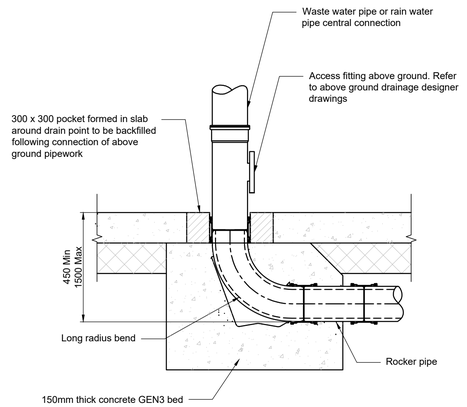
Heavy Duty Vehicular Road
(Scale 1:25)

Pavement Thickness			
CBR%	Sub-base (mm)	Sub-base + Capping (mm)	MPa
2.5	420	250 + 420	32
3	370	230 + 370	36
4	310	220 + 320	43
5	270	200 + 250	49
7	250	170 + 230	61
10	220	150 + 200	77
12	215	150 + 180	86
15	200	150 + 150	100

Note
This Table is based on CD 225 - Design for new pavement foundations (Formerly IAN 73/06 Revision 1 (2009) HD 25/94) Revision 1 (2020)

Note
Details shown on this drawing are based on a minimum subgrade CBR Value of 5%

Note
Capping to be adjusted to suit CBR Values. See Table above, if in doubt contact the Engineer.



Below Ground Pipe Connection Detail
(Scale 1:10)

CR03 Construction Record 23.07.2255 RJ
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DRAWING TITLE
Site Wide Typical Drainage Details Sheet 3

SCALE @ A1	DRAWN BY	DATE
1:25	AGD	July 2023

MNP No.	STATUS CODE	REV
223169	CR	CR03

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170188-MNP-ZZ-XX-DR-C-2802